

## Section 16. Wire Management



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Specifications subject to change. For complete specifications and availability visit [www.lapptannehill.com](http://www.lapptannehill.com)

## SKINTOP® SLN/SLRN

**Construction:** Liquid Tight, Non-Metallic Strain Relief Cable Gland with NPT Threads. **Body:** Polyamide. **Bushing:** CR.

### Features:

Universally suited for all types of machinery & equipment, including automation, motion control, process control and robotics.

### Applications:

Provides great pullout strength and very reliable strain relief. Superior integrated locking mechanism includes an internal ratchet for vibration proof protection. Multi-trapezoidal thread requires just one twist to tighten. Generous high quality neoprene bushing provides a liquid tight and dust proof, hermetic seal.

### Technical Data:

Protection: 70 PSI. Seal: IP 68, 5 Bar (Exceeds NEMA 6/6P Pressure rating)



#### Temperature:

- Static: -40°C to +80°C
- Dynamic: -20°C to +80°C



#### Rated Voltage:

N/A

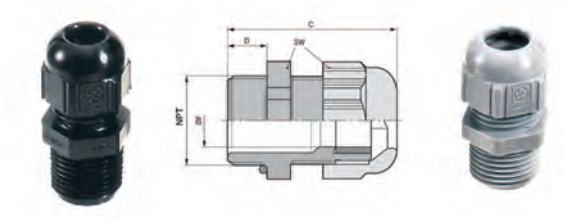


#### Color Code:

- Black (RAL 9005)
- UV Resistant
- Gray: (RAL 7001)



#### Approvals:



### SKINTOP® SLN: Liquid Tight, Non-Metallic Strain Relief Cable Gland with NPT Threads

| Black | Part Number | Gray     | Thread Type & Size | UL Status    | Clamping Range of inches | SW Wrenching Flats inches | C Overall Length inches | D Thread Length inches | Standard Pack Size | Weight 100 pcs. lbs. |
|-------|-------------|----------|--------------------|--------------|--------------------------|---------------------------|-------------------------|------------------------|--------------------|----------------------|
| S2138 | S1138       | NPT-3/8" | R                  | .138 - 0.315 | 0.748                    | 1.693                     | .591                    | 100                    | 2.00               |                      |
| S2112 | S1112       | NPT-1/2" | L                  | .197 - 0.472 | 0.945                    | 1.772                     | .591                    | 100                    | 2.50               |                      |
| S2134 | S1134       | NPT-3/4" | L                  | .512 - 0.709 | 1.299                    | 2.087                     | .591                    | 50                     | 5.50               |                      |
| S2101 | S1101       | NPT-1"   | L                  | .748 - 1.000 | 1.654                    | 2.362                     | .591                    | 25                     | 9.00               |                      |

### SKINTOP® SLRN: Liquid Tight, Non-Metallic Strain Relief Cable Gland with Reducer Bushing

| Black | Part Number | Gray     | Thread Type & Size | UL Status   | Clamping Range of inches | SW Wrenching Flats inches | C Overall Length inches | D Thread Length inches | Standard Pack Size | Weight 100 pcs. lbs. |
|-------|-------------|----------|--------------------|-------------|--------------------------|---------------------------|-------------------------|------------------------|--------------------|----------------------|
| S2238 | S1238       | NPT-3/8" | R                  | .079 - .236 | 0.748                    | 1.693                     | .591                    | 100                    | 2.00               |                      |
| S2212 | S1212       | NPT-1/2" | L                  | .157 - .354 | 0.945                    | 1.772                     | .591                    | 100                    | 2.50               |                      |
| S2234 | S1234       | NPT-3/4" | L                  | .354 - .630 | 1.299                    | 2.087                     | .591                    | 50                     | 5.50               |                      |
| S2201 | S1201       | NPT-1"   | L                  | .551 - .827 | 1.654                    | 2.362                     | .591                    | 25                     | 9.00               |                      |

### NOTES:

1. Locknuts may be ordered separately.
2. UL Status: R = Recognized; L = Listed

Please contact your sales representative for detailed information at [sales@lapptannehill.com](mailto:sales@lapptannehill.com)



**LAPP GROUP**



## SKINTOP® SL/SLR

**Construction:** Liquid Tight, Non-Metallic Strain Relief Cable Gland with PG Threads. **Body:** Polyamide. **Bushing:** CR. **Locknuts:** included.

### Features:

Locknuts included. Universally suited for all types of machinery & equipment, including automation, motion control, process control and robotics.

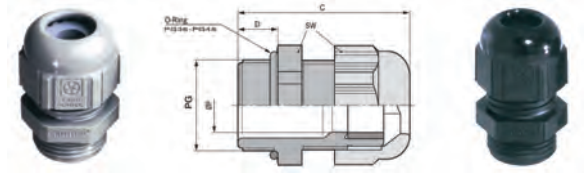
### Applications:

The heavy duty SKINTOP® design provides great pullout strength and very reliable strain relief. Superior integrated locking mechanism includes an internal ratchet for vibration proof protection. Multi-trapezoidal thread requires just one twist to tighten. Generous high quality neoprene bushing provides a liquid tight and dust proof, hermetic seal.

### Technical Data:

Protection: 70 PSI. Seal: IP 68, 5 Bar (Exceeds NEMA 6/6P Pressure rating)

|                                                                                 |                                                       |                                                                                   |                       |                                                                                   |                                                          |
|---------------------------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------|
|  | <b>Temperature:</b>                                   |  | <b>Rated Voltage:</b> |  | <b>Color Code:</b>                                       |
|                                                                                 | • Static: -40°C to +80°C<br>• Dynamic: -20°C to +80°C |                                                                                   | N/A                   |                                                                                   | • Black (RAL 9005)<br>UV Resistant<br>• Gray: (RAL 7001) |



### SKINTOP® SL: Liquid Tight, Non-Metallic Strain Relief Cable Gland with PG Threads

| Black | Part Number | Gray  | Thread Type & Size | UL Status | Clamping Range of inches | SW Wrenching Flats inches | C Overall Length inches | D Thread Length inches | Standard Pack Size | Weight 100 pcs. lbs. |
|-------|-------------|-------|--------------------|-----------|--------------------------|---------------------------|-------------------------|------------------------|--------------------|----------------------|
|       | S2107       | S1107 | PG-7               | R         | 0.098 - 0.256            | 0.591                     | 1.260                   | .315                   | 100                | 1.00                 |
|       | S2109       | S1109 | PG-9               | R         | 0.138 - 0.315            | 0.748                     | 1.417                   | .315                   | 100                | 1.50                 |
|       | S2111       | S1111 | PG-11              | R         | 0.157 - 0.394            | 0.866                     | 1.496                   | .315                   | 100                | 2.00                 |
|       | S2113       | S1113 | PG-13              | L         | 0.236 - 0.472            | 0.945                     | 1.614                   | .354                   | 100                | 2.50                 |
|       | S2116       | S1116 | PG-16              | L         | 0.354 - 0.551            | 1.063                     | 1.732                   | .394                   | 50                 | 3.00                 |
|       | S2121       | S1121 | PG-21              | L         | 0.512 - 0.709            | 1.299                     | 1.929                   | .433                   | 50                 | 5.00                 |
|       | S2129       | S1129 | PG-29              | R         | 0.551 - 0.984            | 1.654                     | 2.205                   | .433                   | 25                 | 8.50                 |
|       | S2136       | S1136 | PG-36              | L         | 0.945 - 1.260            | 2.087                     | 2.598                   | .512                   | 10                 | 17.50                |
|       | S2142       | S1142 | PG-42              | R         | 1.378 - 1.496            | 2.362                     | 2.677                   | .512                   | 5                  | 24.00                |
|       | S2148       | S1148 | PG-48              | L         | 1.535 - 1.732            | 2.559                     | 2.717                   | .551                   | 5                  | 29.00                |

### SKINTOP® SLR: Liquid Tight, Non-Metallic Strain Relief Cable Gland with Reducer Bushing

| Black | Part Number | Gray  | Thread Type & Size | UL Status | Clamping Range of inches | SW Wrenching Flats inches | C Overall Length inches | D Thread Length inches | Standard Pack Size | Weight 100 pcs. lbs. |
|-------|-------------|-------|--------------------|-----------|--------------------------|---------------------------|-------------------------|------------------------|--------------------|----------------------|
|       | S2207       | S1207 | PG-7               | R         | 0.059 - 0.197            | 0.591                     | 1.260                   | .315                   | 100                | 1.00                 |
|       | S2209       | S1209 | PG-9               | R         | 0.079 - 0.236            | 0.748                     | 1.417                   | .315                   | 100                | 1.50                 |
|       | S2211       | S1211 | PG-11              | R         | 0.079 - 0.276            | 0.866                     | 1.496                   | .315                   | 100                | 2.00                 |
|       | S2213       | S1213 | PG-13              | L         | 0.157 - 0.354            | 0.945                     | 1.614                   | .354                   | 100                | 2.50                 |
|       | S2216       | S1216 | PG-16              | L         | 0.236 - 0.472            | 1.063                     | 1.732                   | .394                   | 50                 | 3.00                 |
|       | S2221       | S1221 | PG-21              | L         | 0.354 - 0.630            | 1.299                     | 1.929                   | .433                   | 50                 | 5.00                 |
|       | S2229       | S1229 | PG-29              | R         | 0.433 - 0.787            | 1.654                     | 2.205                   | .433                   | 25                 | 8.50                 |
|       | S2236       | S1236 | PG-36              | L         | 0.669 - 1.024            | 2.087                     | 2.598                   | .512                   | 10                 | 17.50                |
|       | S2242       | S1242 | PG-42              | R         | 0.866 - 1.220            | 2.362                     | 2.677                   | .512                   | 5                  | 24.00                |
|       | S2248       | S1248 | PG-48              | L         | 1.024 - 1.378            | 2.559                     | 2.717                   | .551                   | 5                  | 29.00                |

### NOTES:

UL Status: R = Recognized; L = Listed

Check out our complete inventory of products at [www.lapptannehill.com](http://www.lapptannehill.com)



## SKINTOP® SLM/SLRM

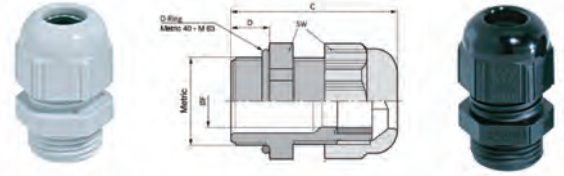
**Construction:** Liquid Tight, Non-Metallic Strain Relief Cable Gland with Metric Threads. **Body:** Polyamide. **Bushing:** CR. **Locknuts:** included.

### Features:

SKINTOP® SLM/SLRM is a durable, liquid tight, easy to assemble strain relief cable gland with Metric threads that is universally suited for all types of machinery & equipment, including automation, motion control, process control and robotics.

### Applications:

The heavy duty SKINTOP® design provides great pullout strength and very reliable strain relief. Superior integrated locking mechanism includes an internal ratchet for vibration proof protection. Multi-trapezoidal thread requires just one twist to tighten. Generous high quality neoprene bushing provides a liquid tight and dust proof, hermetic seal. Economical solution that covers a large clamping range with only 8 sizes.



### Technical Data:

Protection: 70 PSI. Seal: IP 68, 5 Bar (Exceeds NEMA 6/6P Pressure rating), IP 69K



#### Temperature:

- Static: -40°C to +100°C
- Dynamic: -20°C to +100°C



#### Rated Voltage:

N/A



#### Color Code:

- Black (RAL 9005)
- UV Resistant
- Gray (RAL 7001)



#### Approvals:



### SKINTOP® SLM: Liquid Tight, Non-Metallic Strain Relief Cable Gland with Metric Threads

| Black | Part Number<br>Gray | Thread Type &<br>Size | UL<br>Status | Clamping Range<br>of<br>inches | SW<br>Wrenching Flats<br>inches | C<br>Overall Length<br>inches | D<br>Thread Length<br>inches | Standard<br>Pack<br>Size | Weight<br>100 pcs.<br>lbs. |
|-------|---------------------|-----------------------|--------------|--------------------------------|---------------------------------|-------------------------------|------------------------------|--------------------------|----------------------------|
| S2507 | S1507               | M-12X1.5              | R            | 0.138 - 0.276                  | 0.591                           | 1.181                         | .315                         | 100                      | 1.00                       |
| S2509 | S1509               | M-16X1.5              | R            | 0.177 - 0.394                  | 0.748                           | 1.339                         | .315                         | 100                      | 1.50                       |
| S2513 | S1513               | M-20X1.5              | L            | 0.276 - 0.512                  | 0.984                           | 1.457                         | .354                         | 100                      | 2.50                       |
| S2516 | S1516               | M-25X1.5              | L            | 0.354 - 0.669                  | 1.181                           | 1.575                         | .394                         | 50                       | 3.50                       |
| S2521 | S1521               | M-32X1.5              | L            | 0.433 - 0.827                  | 1.417                           | 1.850                         | .394                         | 25                       | 6.00                       |
| S2529 | S1529               | M-40X1.5              | L            | 0.748 - 1.102                  | 1.811                           | 2.047                         | .394                         | 10                       | 10.50                      |
| S2536 | S1536               | M-50X1.5              | L            | 1.063 - 1.378                  | 2.165                           | 2.441                         | .472                         | 5                        | 17.50                      |
| S2542 | S1542               | M-63X1.5              | L            | 1.339 - 1.772                  | 2.598                           | 2.795                         | .472                         | 5                        | 25.50                      |

### SKINTOP® SLRM: Liquid Tight, Non-Metallic Strain Relief Cable Gland with Reducer Bushing

| Black | Part Number<br>Gray | Thread Type &<br>Size | UL<br>Status | Clamping Range<br>of<br>inches | SW<br>Wrenching Flats<br>inches | C<br>Overall Length<br>inches | D<br>Thread Length<br>inches | Standard<br>Pack<br>Size | Weight<br>100 pcs.<br>lbs. |
|-------|---------------------|-----------------------|--------------|--------------------------------|---------------------------------|-------------------------------|------------------------------|--------------------------|----------------------------|
| S2607 | S1607               | M-12X1.5              | R            | 0.039 - 0.197                  | 0.591                           | 1.181                         | .315                         | 100                      | 1.00                       |
| S2609 | S1609               | M-16X1.5              | R            | 0.079 - 0.276                  | 0.748                           | 1.339                         | .315                         | 100                      | 1.50                       |
| S2613 | S1613               | M-20X1.5              | L            | 0.197 - 0.394                  | 0.984                           | 1.457                         | .354                         | 100                      | 2.50                       |
| S2616 | S1616               | M-25X1.5              | L            | 0.236 - 0.512                  | 1.181                           | 1.575                         | .394                         | 50                       | 3.50                       |
| S2621 | S1621               | M-32X1.5              | L            | 0.276 - 0.591                  | 1.417                           | 1.850                         | .394                         | 25                       | 6.00                       |
| S2629 | S1629               | M-40X1.5              | L            | 0.591 - 0.906                  | 1.811                           | 2.047                         | .394                         | 10                       | 10.50                      |
| S2636 | S1636               | M-50X1.5              | L            | 0.866 - 1.142                  | 2.165                           | 2.441                         | .472                         | 5                        | 17.50                      |
| S2642 | S1642               | M-63X1.5              | L            | 1.102 - 1.535                  | 2.598                           | 2.795                         | .472                         | 5                        | 25.50                      |

### NOTES:

UL Status: R = Recognized; L = Listed

Complete catalog available online at: [www.lapptannehill.com](http://www.lapptannehill.com)

## SKINTOP® CLICK/CLICK-R

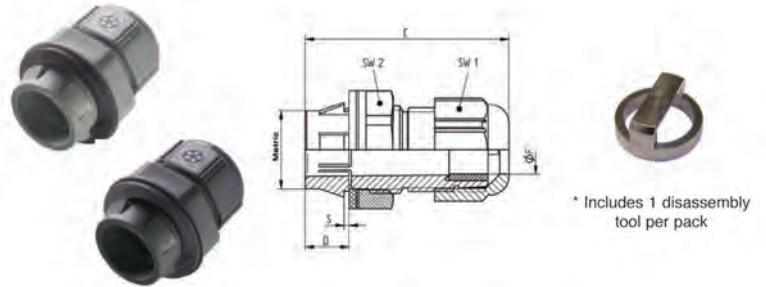
**Construction:** Liquid-Tight, Non-Metallic Strain Relief with Quick "Click" Insertion System. **Body:** Special Polyamide. **Seal:** Special Elastomer.

### Features:

SKINTOP® CLICK/CLICK-R is an innovative cable insertion system that provides fast, highly flexible assembly. Easy snap in place installation results in fixed, centered, strain relief with maximum protection in seconds.

### Applications:

Applications where locknut installation is difficult to reach or secure, such as dual wall enclosures and temperature controlled assemblies where insulation is used.



### Technical Data:

Protection: IP 68, 5 Bar



**Temperature:**  
-20°C to +100°C



**Rated Voltage:**  
N/A



**Color Code:**  
• Black (RAL 9005)  
UV Resistant  
• Gray: (RAL 7001)



**Approvals:**



### SKINTOP® CLICK: Liquid Tight, Non-Metallic Strain Relief with Metric Threads

| Black    | Part Number | Gray | Thread Type & Size | UL Status | Clamping Range of inches | SW1/ SW2 Wrenching Flats inches | C Overall Length inches | D Thread Length inches | M Hole inches | S Wall Thickness inches | Standard Pack Size |
|----------|-------------|------|--------------------|-----------|--------------------------|---------------------------------|-------------------------|------------------------|---------------|-------------------------|--------------------|
| 53112923 | 53112921    | M-12 | R                  |           | .138 - .276              | 0.591/ 0.709                    | 1.575                   | 0.315                  | 0.484 (-.008) | .039 - .157             | 50                 |
| 53112882 | 53112876    | M-16 | R                  |           | .197 - .354              | 0.748/ 0.866                    | 1.654                   | 0.315                  | 0.642 (-.008) | .039 - .157             | 50                 |
| 53112883 | 53112877    | M-20 | L                  |           | .276 - .512              | 0.984/ 1.063                    | 1.791                   | 0.315                  | 0.799 (-.008) | .039 - .157             | 25                 |
| 53112884 | 53112878    | M-25 | L                  |           | .354 - .669              | 1.181/ 1.339                    | 1.909                   | 0.315                  | 0.996 (-.008) | .039 - .157             | 25                 |
| 53112924 | 53112922    | M-32 | L                  |           | .433 - .827              | 1.417/ 1.575                    | 2.165                   | 0.315                  | 1.272 (-.008) | .039 - .157             | 25                 |

### SKINTOP® CLICK-R: Liquid Tight, Non-Metallic Strain Relief with Reducer Bushing & Metric Threads

| Black    | Part Number | Gray | Thread Type & Size | UL Status | Clamping Range of inches | SW1/ SW2 Wrenching Flats inches | C Overall Length inches | D Thread Length inches | M Hole inches | S Wall Thickness inches | Standard Pack Size |
|----------|-------------|------|--------------------|-----------|--------------------------|---------------------------------|-------------------------|------------------------|---------------|-------------------------|--------------------|
| 53112929 | 53112927    | M-12 | R                  |           | .039 - .197              | 0.591/ 0.709                    | 1.575                   | 0.315                  | 0.484 (-.008) | .039 - .157             | 50                 |
| 53112885 | 53112879    | M-16 | R                  |           | .157 - .276              | 0.748/ 0.866                    | 1.654                   | 0.315                  | 0.642 (-.008) | .039 - .157             | 50                 |
| 53112886 | 53112880    | M-20 | L                  |           | .197 - .394              | 0.984/ 1.063                    | 1.791                   | 0.315                  | 0.799 (-.008) | .039 - .157             | 25                 |
| 53112887 | 53112881    | M-25 | L                  |           | .236 - .512              | 1.181/ 1.339                    | 1.909                   | 0.315                  | 0.996 (-.008) | .039 - .157             | 25                 |
| 53112931 | 53112928    | M-32 | L                  |           | .276 - .591              | 1.417/ 1.575                    | 2.165                   | 0.315                  | 1.272 (-.008) | .039 - .157             | 25                 |

UL Status: R = Recognized; L = Listed

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## SKINTOP® FLEX

**Construction:** Liquid Tight, Non-Metallic Spiral Strain Relief Cable Gland in NPT, PG & Metric Threads. **Body:** Polyamide. **Bushing:** CR.

### Features:

Offers additional safety against overstress and conductor breakage. Ideally suited for hand held equipment, moving machinery and robotics.

### Applications:

Superior bending protection for cable conservation and functional reliability. The heavy duty SKINTOP® design provides great pullout strength and very reliable strain relief. Superior integrated locking mechanism includes an internal ratchet for vibration proof protection. Multi-trapezoidal thread requires just one twist to tighten.

### Technical Data:

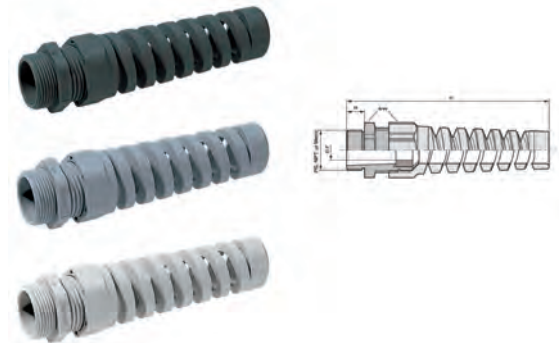
Protection: 70 PSI. Seal: IP 68, 5 Bar (Exceeds NEMA 6/6P Pressure rating)

**Temperature:**  
• NPT & PG: -20°C to +80°C  
• Metric: -20°C to +100°C

**Rated Voltage:**  
N/A

**Color Code:**  
• Black (RAL 9005)  
UV Resistant  
• Gray (RAL 7001)

**Approvals:**  
PG & NPT



## NPT THREADS

### SKINTOP® SLN FLEX: Liquid Tight, Non-Metallic Spiral Strain Relief Cable Gland with NPT Threads

| Black | Part Number | Gray  | Thread Type & Size | UL Status | Clamping Range<br>øF<br>inches | SW<br>Wrenching Flats<br>inches | C<br>Overall Length<br>inches | D<br>Thread Length<br>inches | Standard<br>Pack<br>Size | Weight<br>100 pcs.<br>lbs. |
|-------|-------------|-------|--------------------|-----------|--------------------------------|---------------------------------|-------------------------------|------------------------------|--------------------------|----------------------------|
|       | S2338       | S1338 | NPT-3/8"           | R         | .138 - .315                    | 0.748                           | 3.228                         | .591                         | 100                      | 3.00                       |
|       | S2312       | S1312 | NPT-1/2"           | L         | .197 - .472                    | 0.945                           | 4.094                         | .591                         | 100                      | 5.50                       |
|       | S2334       | S1334 | NPT-3/4"           | L         | .512 - .709                    | 1.299                           | 5.236                         | .591                         | 50                       | 12.00                      |

### SKINTOP® SLRN FLEX: NPT Liquid Tight, Non-Metallic Strain Relief Cable Gland with Reducer Bushing

| Black | Part Number | Gray  | Thread Type & Size | UL Status | Clamping Range<br>øF<br>inches | SW<br>Wrenching Flats<br>inches | C<br>Overall Length<br>inches | D<br>Thread Length<br>inches | Standard<br>Pack<br>Size | Weight<br>100 pcs.<br>lbs. |
|-------|-------------|-------|--------------------|-----------|--------------------------------|---------------------------------|-------------------------------|------------------------------|--------------------------|----------------------------|
|       | S2438       | S1438 | NPT-3/8"           | R         | .079 - .236                    | 0.748                           | 3.228                         | .591                         | 100                      | 3.00                       |
|       | S2412       | S1412 | NPT-1/2"           | L         | .157 - .354                    | 0.945                           | 4.094                         | .591                         | 50                       | 5.50                       |
|       | S2434       | S1434 | NPT-3/4"           | L         | .354 - .630                    | 1.299                           | 5.236                         | .591                         | 25                       | 12.00                      |

## PG THREADS

### SKINTOP® SL FLEX: Liquid Tight, Non-Metallic Spiral Strain Relief Cable Gland with PG Threads

| Black | Part Number | Gray  | Thread Type & Size | UL Status | Clamping Range<br>øF<br>inches | SW<br>Wrenching Flats<br>inches | C<br>Overall Length<br>inches | D<br>Thread Length<br>inches | Standard<br>Pack<br>Size | Weight<br>100 pcs.<br>lbs. |
|-------|-------------|-------|--------------------|-----------|--------------------------------|---------------------------------|-------------------------------|------------------------------|--------------------------|----------------------------|
|       | S2307       | S1307 | PG-7               | R         | .098 - .256                    | 0.591                           | 2.441                         | .315                         | 100                      | 1.50                       |
|       | S2309       | S1309 | PG-9               | R         | .138 - .315                    | 0.748                           | 2.894                         | .315                         | 100                      | 2.50                       |
|       | S2311       | S1311 | PG-11              | R         | .157 - .394                    | 0.866                           | 3.386                         | .315                         | 100                      | 3.25                       |
|       | S2313       | S1313 | PG-13              | L         | .236 - .472                    | 0.945                           | 3.858                         | .354                         | 50                       | 4.00                       |
|       | S2316       | S1316 | PG-16              | L         | .354 - .551                    | 1.063                           | 4.399                         | .394                         | 25                       | 5.50                       |
|       | S2321       | S1321 | PG-21              | L         | .512 - .709                    | 1.299                           | 5.079                         | .433                         | 25                       | 10.00                      |

### SKINTOP® SLR FLEX: PG Liquid Tight, Non-Metallic Spiral Strain Relief Cable Gland with Reducer Bushing

| Black | Part Number | Gray  | Thread Type & Size | UL Status | Clamping Range<br>øF<br>inches | SW<br>Wrenching Flats<br>inches | C<br>Overall Length<br>inches | D<br>Thread Length<br>inches | Standard<br>Pack<br>Size | Weight<br>100 pcs.<br>lbs. |
|-------|-------------|-------|--------------------|-----------|--------------------------------|---------------------------------|-------------------------------|------------------------------|--------------------------|----------------------------|
|       | S2407       | S1407 | PG-7               | R         | .059 - .197                    | 0.591                           | 2.441                         | .315                         | 100                      | 1.50                       |
|       | S2409       | S1409 | PG-9               | R         | .079 - .236                    | 0.748                           | 2.894                         | .315                         | 100                      | 2.50                       |
|       | S2411       | S1411 | PG-11              | R         | .079 - .276                    | 0.866                           | 3.386                         | .315                         | 100                      | 3.25                       |
|       | S2413       | S1413 | PG-13              | L         | .157 - .354                    | 0.945                           | 3.858                         | .354                         | 50                       | 4.00                       |
|       | S2416       | S1416 | PG-16              | L         | .236 - .472                    | 1.063                           | 4.399                         | .394                         | 25                       | 5.50                       |
|       | S2421       | S1421 | PG-21              | L         | .354 - .630                    | 1.299                           | 5.079                         | .433                         | 25                       | 10.00                      |

## METRIC THREADS

### SKINTOP® SL-M FLEX: Liquid Tight, Non-Metallic Spiral Strain Relief Cable Gland with Metric Threads

| Black | Part Number | Gray  | Thread Type & Size | UL Status | Clamping Range<br>øF<br>inches | SW<br>Wrenching Flats<br>inches | C<br>Overall Length<br>inches | D<br>Thread Length<br>inches | Standard<br>Pack<br>Size | Weight<br>100 pcs.<br>lbs. |
|-------|-------------|-------|--------------------|-----------|--------------------------------|---------------------------------|-------------------------------|------------------------------|--------------------------|----------------------------|
|       | S2707       | S1707 | M-12X1.5           | R         | .138 - .276                    | 0.591                           | 2.520                         | .315                         | 100                      | 1.25                       |
|       | S2709       | S1709 | M-16X1.5           | R         | .177 - .394                    | 0.748                           | 3.386                         | .315                         | 100                      | 2.50                       |
|       | S2713       | S1713 | M-20X1.5           | L         | .276 - .512                    | 0.984                           | 3.976                         | .315                         | 50                       | 4.50                       |
|       | S2716       | S1716 | M-25X1.5           | L         | .354 - .669                    | 1.181                           | 4.921                         | .354                         | 25                       | 8.00                       |
|       | S2721       | S1721 | M-32X1.5           | L         | .433 - .827                    | 1.417                           | 5.866                         | .394                         | 25                       | 12.00                      |

**NOTES:** UL Status: R = Recognized; L = Listed

**LAPP GROUP**

SKINTOP® CLICK FLEX

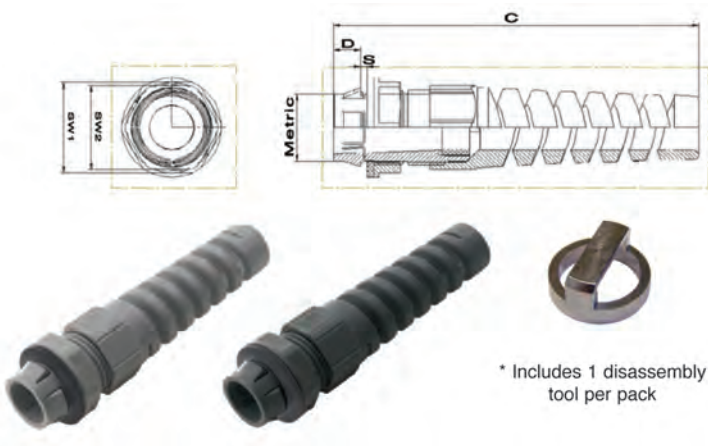
**Construction:** Liquid Tight, Non-Metallic Spiral Strain Relief with Quick “Click” Insertion System for Additional Bending Protection;

**Body:** Special Polyamide. **Seal:** Special Elastomer.

**Features:**  
SKINTOP® CLICK FLEX is an innovative cable insertion system that provides fast, highly flexible assembly. Easy snap in place installation results in fixed, centered, strain relief with maximum protection in seconds.

**Applications:**  
Up to 70% installation time savings due to innovative CLICK system. Ideal for hard to reach dual wall enclosures and limited access spaces. Reduced inventory as no locknuts are required. The heavy duty SKINTOP® design provides great pullout strength and very reliable strain relief. Superior integrated locking mechanism includes an internal ratchet for vibration proof protection.

**Additional Information:**  
Liquid tight, spiral strain relief offers additional safety against over-stress and conductor breakage for applications such as hand held equipment, moving machinery and robotics.



Technical Data:

Protection: IP 68, 5 Bar

 **Temperature:**  
-20°C to +100°C

 **Rated Voltage:**  
N/A

 **Color Code:**  
• Black (RAL 9005)  
UV Resistant  
• Gray: (RAL 7001)

 **Approvals:**  
  


SKINTOP® CLICK FLEX: Liquid Tight, Non-Metallic Spiral Strain Relief with Metric Threads

| Part Number |          | Thread<br>Type & Size | UL<br>Status | Clamping Range<br>of<br>inches | SW1/ SW2<br>Wrenching Flats<br>inches | C<br>Overall Length<br>inches | D<br>Thread Length<br>inches | M<br>Hole<br>inches | S<br>Wall Thickness<br>inches | Standard<br>Pack<br>Size |
|-------------|----------|-----------------------|--------------|--------------------------------|---------------------------------------|-------------------------------|------------------------------|---------------------|-------------------------------|--------------------------|
| Black       | Gray     |                       |              |                                |                                       |                               |                              |                     |                               |                          |
| 53112936    | 53112934 | M-12                  | R            | .138 - .276                    | 0.591/ 0.709                          | 2.913                         | 0.315                        | 0.484 (-.008)       | .039 - .157                   | 50                       |
| 53112909    | 53112906 | M-16                  | R            | .197 - .354                    | 0.748/ 0.866                          | 3.701                         | 0.315                        | 0.642 (-.008)       | .039 - .157                   | 50                       |
| 53112911    | 53112907 | M-20                  | L            | .276 - .512                    | 0.984/ 1.063                          | 4.252                         | 0.315                        | 0.799 (-.008)       | .039 - .157                   | 25                       |
| 53112912    | 53112908 | M-25                  | L            | .354 - .669                    | 1.181/ 1.339                          | 5.000                         | 0.315                        | 0.996 (-.008)       | .039 - .157                   | 25                       |
| 53112937    | 53112935 | M-32                  | L            | .433 - .827                    | 1.417/ 1.575                          | 6.102                         | 0.315                        | 1.272 (-.008)       | .039 - .157                   | 25                       |

UL Status: R = Recognized; L = Listed

Specifications subject to change. For complete specifications and availability visit [www.lapptannehill.com](http://www.lapptannehill.com)



## SKINTOP® GMP-GL

**Construction:** Hexagonal Locknuts for NPT, PG & Metric Connectors.

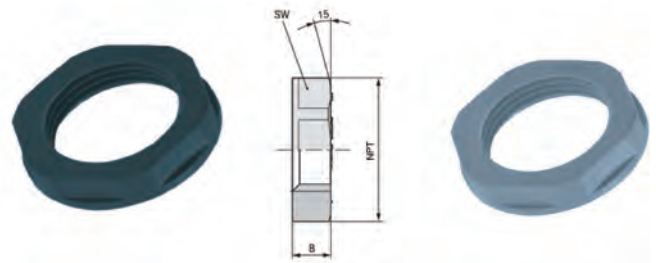
**Body:** Polyamide, glass fiber reinforced. Halogen-Free: Polyamide, UL 94 VO.

**Features:**

Designed for use with SKINTOP® cable glands with NPT, PG and Metric Threads.

**Additional Information:**

Halogen-free metric locknuts are also available.



**Technical Data:**

**Temperature:**  
-20°C to +100°C

**Rated Voltage:**  
N/A

**Color Code:**  
• Black (RAL 9005)  
UV Resistant  
• Gray: (RAL 7001)  
• Light Gray (RAL 7035)  
Halogen-Free

**Approvals:**

### SKINTOP® GMP-GL: NPT Nylon Locknuts

| Part Number | Thread Type & Size | SW Wrenching Flats inches | B Nut Thickness inches | Standard Pack Size | Weight 100 pcs. lbs. |
|-------------|--------------------|---------------------------|------------------------|--------------------|----------------------|
| 911370      | NPT-3/8"           | 0.866                     | .198"                  | 100                | 0.05                 |
| 911371      | NPT-1/2"           | 1.063                     | .236"                  | 100                | 0.05                 |
| 911372      | NPT-3/4"           | 1.417                     | .276"                  | 50                 | 1.00                 |
| 911373      | NPT-1"             | 1.654                     | .276"                  | 50                 | 1.50                 |

\* NPT Locknuts- Black only

### SKINTOP® GMP-GL: PG Nylon Locknuts

| Black    | Part Number | Gray | Thread Type & Size | SW Wrenching Flats inches | B Nut Thickness | Standard Pack Size | Weight 100 pcs. lbs. |
|----------|-------------|------|--------------------|---------------------------|-----------------|--------------------|----------------------|
| 53019200 | 53019000    |      | PG-7               | 0.748                     | .197            | 100                | 0.25                 |
| 53019210 | 53019010    |      | PG-9               | 0.866                     | .197            | 100                | 0.50                 |
| 53019220 | 53019020    |      | PG-11              | 0.945                     | .197            | 100                | 0.50                 |
| 53019230 | 53019030    |      | PG-13              | 1.063                     | .236            | 100                | 0.50                 |
| 53019240 | 53019040    |      | PG-16              | 1.181                     | .236            | 100                | 0.75                 |
| 53019250 | 53019050    |      | PG-21              | 1.417                     | .276            | 50                 | 1.00                 |
| 53019260 | 53019060    |      | PG-29              | 1.811                     | .276            | 50                 | 1.50                 |
| 53019270 | 53019070    |      | PG-36              | 2.362                     | .315            | 25                 | 3.25                 |
| 53019280 | 53019080    |      | PG-42              | 2.559                     | .315            | 25                 | 3.25                 |
| 53019290 | 53019090    |      | PG-48              | 2.756                     | .315            | 25                 | 3.50                 |

### SKINTOP® GMP-GL: Metric Nylon Locknuts

| Black    | Part Number | Light Gray Halogen Free | Thread Type & Size | SW Wrenching Flats inches | B Nut Thickness | Standard Pack Size | Weight 100 pcs. lbs. |
|----------|-------------|-------------------------|--------------------|---------------------------|-----------------|--------------------|----------------------|
| 53119100 | 53119000    | 53119200                | M-12X1.5           | 0.669                     | .197            | 100                | 0.25                 |
| 53119110 | 53119010    | 53119210                | M-16X1.5           | 0.866                     | .197            | 100                | 0.50                 |
| 53119120 | 53119020    | 53119220                | M-20X1.5           | 1.063                     | .236            | 100                | 0.50                 |
| 53119130 | 53119030    | 53119230                | M-25X1.5           | 1.339                     | .236            | 100                | 0.75                 |
| 53119140 | 53119040    | 53119240                | M-32X1.5           | 1.614                     | .276            | 100                | 1.25                 |
| 53119150 | 53119050    | -                       | M-40X1.5           | 1.969                     | .276            | 25                 | 1.75                 |
| 53119160 | 53119060    | -                       | M-50X1.5           | 2.362                     | .315            | 25                 | 2.00                 |
| 53119170 | 53119070    | -                       | M-63X1.5           | 2.953                     | .315            | 25                 | 3.00                 |

Complete catalog available online at: [www.lapptannehill.com](http://www.lapptannehill.com)

SKINTOP® CUBE

**Construction:** **Frame:** Glass fiber reinforced polyamide. **Frame seal:** CR.  
**Clip Module:** Special polyamide. **Clip Module Seal:** LSE 2.

**Features:**  
The simple design of the SKINTOP® CUBE multi-cable bushing system is made up of a SKINTOP® CUBE FRAME and flexible SKINTOP® CUBE MODULE options (clip sealing modules). The CUBE modules can effortlessly be attached to the appropriate assembled cable. The cable is then clicked into the frame and perfectly fixed in place, protected against vibrations, strain relieved and sealed in accordance with IP 64.

**Additional Information:**  
Product Advantages: Easy assembly and disassembly, installation and repair savings, excellent strain relief and sealing protection, reduced parts inventory, durable industrial cable protection.



Technical Data:

Protection: IP 64

**Temperature:**  
-20°C to +80°C

**Rated Voltage:**  
N/A

**Color Code:**  
Black

**Approvals:**

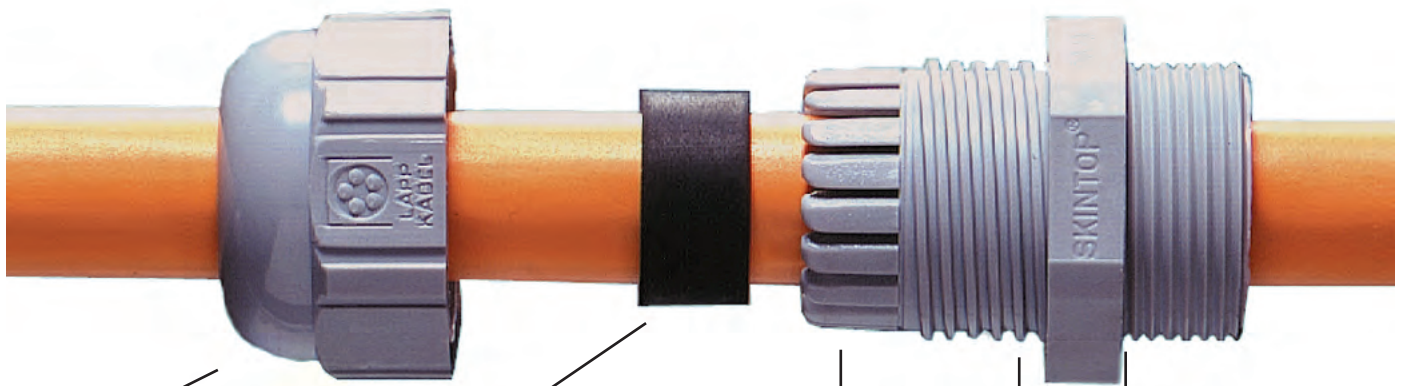
| Part Number<br>Black      | Size                            | Clamping Range |         | Max #<br>of Inserts | Standard<br>Pack Size |
|---------------------------|---------------------------------|----------------|---------|---------------------|-----------------------|
| SKINTOP® CUBE Frame       |                                 |                |         |                     |                       |
| 52220000                  | 16 Panel Cut-Out: (36 x 86 mm)  | inches         | mm      | 8                   | 1                     |
| 52220001                  | 24 Panel Cut-Out: (36 x 112 mm) |                |         | 10                  | 1                     |
| SKINTOP® CUBE Clip Module |                                 |                |         |                     |                       |
| 52220004                  | 20x20 Blank Module              | .039 - .118    | 1 - 3   |                     | 5                     |
| 52220002                  | 20x20 Small Module              | .157 - .236    | 4 - 6   |                     | 5                     |
| 52220003                  | 20x20 Large Module              | .236 - .354    | 6 - 9   |                     | 5                     |
| 52220040                  | 20x20 AS-I BUS                  | AS-I BUS Cable |         |                     | 5                     |
| 52220005                  | 40x40 Small Module              | .354 - .472    | 9 - 12  |                     | 5                     |
| 52220006                  | 40x40 Large Module              | .472 - .629    | 12 - 16 |                     | 5                     |
| 52220007                  | 40x40 Blank Module              |                |         |                     | 5                     |

Please contact your sales representative for detailed information at [sales@lapptannehill.com](mailto:sales@lapptannehill.com)



## THREADING DIMENSIONS & TIGHTENING VALUES FOR SKINTOP® CABLE GLANDS

### SKINTOP® Liquid Tight, Non-Metallic Strain Relief Cable Glands



**Cap nut** with ergonomically designed gripping grooves. The gripping surfaces are generously dimensioned for spanners. Integral locking feature for vibration-resistant assembly.

**Neoprene sealing** for a hermetic seal (IP68)\*. Every SKINTOP® version is available with reducing seal insert for smaller cable diameters.

**Lamellar design** for optimum strain relief and protection of the cable. Widely variable clamping range, therefore only a few gland sizes are necessary.

**Integral sealing ridges** for a water tight junction with the housing.

**Multiple trapezoidal thread** for secure and instant assembly.

Shown here are the carefully matched components of the SKINTOP® screw-type cable glands. It is precisely these parts which guarantee optimum reliability.

#### Even more:

With SKINTOP® you can install the cable in an instant. Just feed it in, turn nut until tight - ready. Your cable is centered, hermetically sealed and completely strain relieved with a turn of the hand. If you do not wish to use your hands, you can work with a spanner wrench or SKINMATIC® RZ tool. Either way, with SKINTOP® you can achieve maximum reliability. SKINTOP® quality is continuously monitored to ensure a level of reliability that has resulted in many international approvals.

#### Resistance properties:

**Rated Temperature:** SKINTOP® NPT & PG  
-20°C to +80°C  
SKINTOP® Metric  
static: -40°C to +100°C  
dynamic: -20°C to +100°C

**Chemical:**

- +Alcohols
- +Aromatic Hydrocarbons
- +Ethers
- +Benzene
- o Chlorinated hydrocarbons
- +Esters
- +Grease, animal-vegetable
- +Fluorinated hydrocarbons
- +Keytones
- +Motor Fuels
- +Weak Alkali Solutions
- Strong Alkali Solutions
- +Petroleum Oils
- +Weak Acids
- Strong Acids
- +Trichlorethylene

**+ = resistant**  
**o = with limited resistance**  
**- = non-resistant**

#### Testing:

SKINTOP®  
Incandescent wire test to IEC 695, Part 2-1  
Test Temperature 750°C  
Strain relief to DIN VDE 0619  
Protection Class IP 68,  
Test to DIN 40050 and 40052

#### International Approvals:

UL #E146370  
CSA #LR50370-10  
VDE #57986 (Metric)  
SEV #100989

\* All IP ratings are dependent on proper installation by the user.

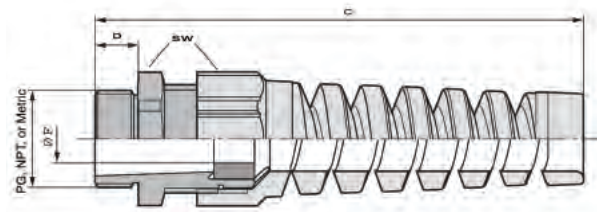
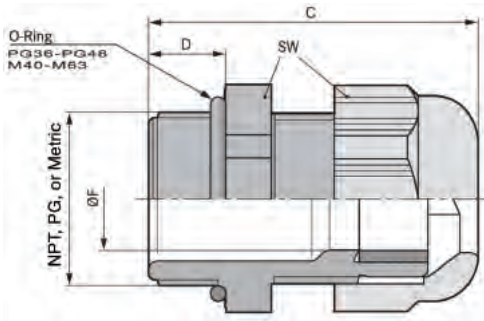


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## THREADING DIMENSIONS & TIGHTENING VALUES FOR SKINTOP® CABLE GLANDS

### SKINTOP® Strain Relief Cable Glands - Polyamide Style



Patented Security:  
Patent # P-2631996

International Approvals:  
UL # E146370      Metric: VDE # 57986  
CSA # LR50370-10      SEV # 100989

#### TECHNICAL DATA:

Protection: Up to 70 PSI

Material: Polyamide — flame retardant,  
self-extinguishing nylon with CR bushing

Rated  
Temperature: PG & NPT: -20°C to +80°C, short term to +100°C  
Metric: -20°C to +100°C

Seal: IP 68 (International Protection —  
highest grade), comparable to NEMA 6  
classification  
First digit (0–6): Dust Protection  
Second digit (0–8): Water Protection

Resistant to: Salt water, weak acids, weak alkalis,  
alcohol, ester, ketones, ether, benzene, gas,  
mineral oil, animal and vegetable oils,  
gasoline, oil, grease and common solvents.

SKINTOP® meets the most stringent demands of  
safety and operational reliability. SKINTOP® can be used in pan-  
els, switches, control boxes, submersible pumps,  
appliances and many machine tool applications.

SKINTOP® is both a strain relief and a liquid tight seal — all in  
one connector.

#### Optimum Seal:

Complete liquid tightness is achieved with a uniquely designed  
molded sealing ring and flange nut combined with a neoprene  
bushing and domed sealing cap.

#### Unique Design:

SKINTOP® outperforms traditional connectors because the design  
consists of three parts which do not require dismantling before  
use.

The internal ratchet mechanism allows the cap to be tightened  
without twisting the cord as it compresses, pushing the collet  
fingers together to form a liquid-tight seal with the neoprene  
compression bushing.

#### Vibration Proof Protection:

An integrated locking mechanism that includes an internal ratchet  
inside the sealing portion of the cord grip provides a self locking  
and vibration proof element that prevents the cap from loosening  
even when subjected to severe vibration.

#### Quick Installation:

The multi-trapezoidal thread requires just one twist to tighten the  
dome cap – automatically adjusting to the size of the cable and  
providing optimum strain relief and liquid tight seal.

#### Durability:

SKINTOP® incorporates a heavy duty design that provides greater  
pullout strength and very reliable strain relief.

#### Easier Handling:

Larger ergonomic design and ridges in the dome cap provide  
easy gripping and mounting by hand or wrench.

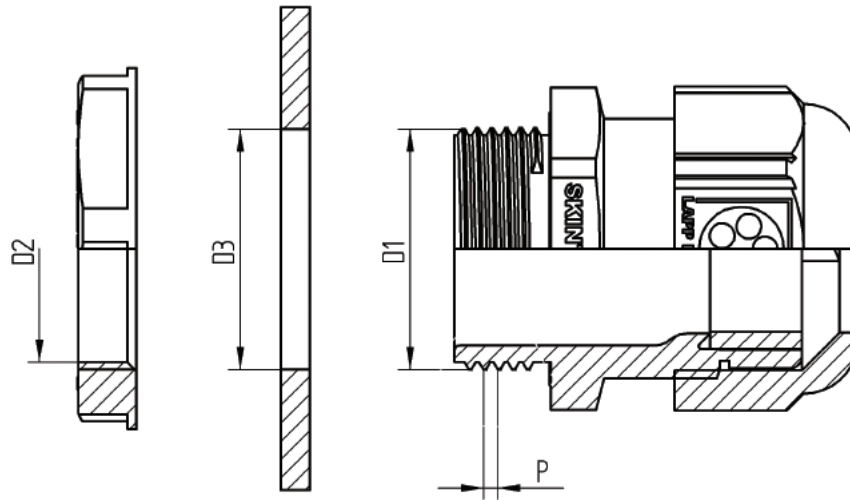
#### Larger Variable Clamping Range:

The uniquely designed collet, combined with the optional reducing  
bushing accommodates a broad range of cords, and cable  
diameters resulting in a reduction in the number of connectors  
required in inventory.

#### Resistant to Impact at Low Temperatures:

The SKINTOP® can withstand impact at low temperatures of  
-20°C.

## THREADING DIMENSIONS & TIGHTENING VALUES FOR SKINTOP® CABLE GLANDS



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All dimensions  
are in mm.

### Metric Thread Technical Data for Assembly, EN 60423 (for cable glands EN 50 262)

| METRIC<br>THREAD | Core Diameter<br>D1 | Pitch<br>P | Outside Diameter<br>D2 | Nominal thread<br>Bore Diameter<br>D3 |
|------------------|---------------------|------------|------------------------|---------------------------------------|
| M12 x 1.5        | 12                  | 1.50       | 10.6                   | 12.3 - 0.2                            |
| M16 x 1.5        | 16                  | 1.50       | 14.6                   | 16.3 - 0.2                            |
| M20 x 1.5        | 20                  | 1.50       | 18.6                   | 20.3 - 0.2                            |
| M25 x 1.5        | 25                  | 1.50       | 23.6                   | 25.3 - 0.2                            |
| M32 x 1.5        | 32                  | 1.50       | 30.6                   | 32.3 - 0.2                            |
| M40 x 1.5        | 40                  | 1.50       | 38.6                   | 40.4 - 0.3                            |
| M50 x 1.5        | 50                  | 1.50       | 48.6                   | 50.4 - 0.3                            |
| M63 x 1.5        | 63                  | 1.50       | 61.6                   | 63.4 - 0.3                            |

### PG Thread Technical Data for Assembly DIN 40430

| PG-THREAD | Core Diameter<br>D1 | Pitch<br>P | Outside Diameter<br>D2 | Nominal thread<br>Bore Diameter<br>D3 |
|-----------|---------------------|------------|------------------------|---------------------------------------|
| PG 7      | 12.5                | 1.270      | 11.3                   | 13.0 ± 0.2                            |
| PG 9      | 15.2                | 1.410      | 13.9                   | 15.7 ± 0.2                            |
| PG 11     | 18.6                | 1.410      | 17.3                   | 19.0 ± 0.2                            |
| PG 13     | 20.4                | 1.410      | 19.1                   | 21.0 ± 0.2                            |
| PG 16     | 22.5                | 1.410      | 21.2                   | 23.0 ± 0.2                            |
| PG 21     | 28.3                | 1.558      | 26.8                   | 28.8 ± 0.2                            |
| PG 29     | 37.0                | 1.558      | 35.5                   | 37.5 ± 0.3                            |
| PG 36     | 47.0                | 1.558      | 45.5                   | 47.5 ± 0.3                            |
| PG 42     | 54.0                | 1.558      | 52.5                   | 54.5 ± 0.3                            |
| PG 48     | 59.3                | 1.558      | 57.8                   | 59.8 ± 0.3                            |

### NPT Thread Technical Data for Assembly ASA B2.1-1945

| NPT-THREAD | Core Diameter<br>D1 | Pitch<br>P | Nominal thread<br>Bore Diameter<br>D3 |
|------------|---------------------|------------|---------------------------------------|
| NPT 1/4"   | 13.7                | 1.41       | 14.0 - 0.2                            |
| NPT 3/8"   | 17.1                | 1.41       | 17.4 - 0.2                            |
| NPT 1/2"   | 21.3                | 1.81       | 21.6 - 0.2                            |
| NPT 3/4"   | 26.7                | 1.81       | 27.0 - 0.2                            |
| NPT 1"     | 33.4                | 2.21       | 33.7 - 0.2                            |
| NPT 1 1/4" | 42.2                | 2.21       | 42.5 - 0.2                            |
| NPT 1 1/2" | 48.3                | 2.21       | 48.7 - 0.2                            |
| NPT 2"     | 60.3                | 2.21       | 60.7 - 0.2                            |

## THREADING DIMENSIONS & TIGHTENING VALUES FOR SKINTOP® CABLE GLANDS

### Tightening Torque\* Metric

Metric SKINTOP® recommended tightening torque for attainment of protection category IP 68-5 bar and strain relief category A acc. to EN 50262

| METRIC<br>THREAD | Tightening torque in Nm |       |
|------------------|-------------------------|-------|
|                  | Polymer                 | Metal |
| M12 x 1.5        | 1.5                     | 8     |
| M16 x 1.5        | 3.0                     | 10    |
| M20 x 1.5        | 6.0                     | 12    |
| M25 x 1.5        | 8.0                     | 12    |
| M32 x 1.5        | 10.0                    | 18    |
| M40 x 1.5        | 13.0                    | 18    |
| M50 x 1.5        | 15.0                    | 20    |
| M63 x 1.5        | 16.0                    | 20    |
| M63 Plus         | --                      | 30    |

Not for ATEX Glands

### Tightening torque values to DIN/VDE 0619, Point 7. (PG & NPT Cable Glands)

| PG<br>THREAD | NPT<br>THREAD | Torque for intermediary in Nm |       | Torque for cap nut |       |
|--------------|---------------|-------------------------------|-------|--------------------|-------|
|              |               | Polymer                       | Metal | Polymer            | Metal |
| PG 7         |               | 2.5                           | 6.25  | 1.7                | 4.2   |
| PG 9         | NPT 3/8"      | 3.75                          | 6.25  | 2.5                | 4.2   |
| PG 11        |               | 3.75                          | 6.25  | 2.5                | 4.2   |
| PG 13        | NPT 1/2"      | 3.75                          | 6.25  | 2.5                | 4.2   |
| PG 16        |               | 5.0                           | 7.50  | 3.3                | 5.0   |
| PG 21        | NPT 3/4"      | 7.5                           | 10.0  | 5.0                | 6.7   |
| PG 29        | NPT 1"        | 7.5                           | 10.0  | 5.0                | 6.7   |
| PG 36        |               | 7.5                           | 10.0  | 5.0                | 6.7   |
| PG 42        |               | 7.5                           | 10.0  | 5.0                | 6.7   |
| PG 48        |               | 7.5                           | 10.0  | 5.0                | 6.7   |

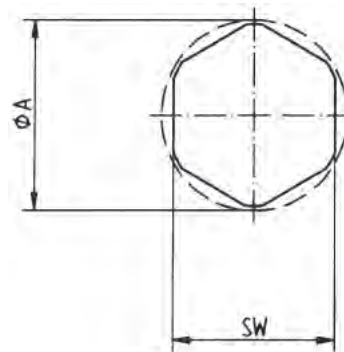
\* Reference: Above values are tightening torques for the intermediary, as well as maximum tightening torques for the cap nuts. To prevent damage of the outer sheath, please note that the different cable materials require various torques.

### Fitting dimensions and widths across flats

The diameter SW indicates the wrenching flats. The diameter A indicates the assembly space required for the relevant hexagon. This diameter corresponds to the width across the corner of the hexagon, plus an assembly tolerance.

Dimensions are in mm

| SW | A    | SW | A    | SW | A    |
|----|------|----|------|----|------|
| 9  | 10.4 | 26 | 29.5 | 46 | 52.5 |
| 11 | 12.5 | 27 | 30.6 | 47 | 52.5 |
| 13 | 14.9 | 28 | 31.8 | 50 | 58.3 |
| 14 | 16.0 | 29 | 32.5 | 53 | 60.0 |
| 15 | 17.1 | 30 | 34.0 | 54 | 61.0 |
| 16 | 18.2 | 32 | 36.2 | 55 | 62.0 |
| 17 | 19.4 | 33 | 37.2 | 57 | 64.4 |
| 18 | 20.4 | 36 | 40.5 | 60 | 67.5 |
| 19 | 22.0 | 37 | 41.5 | 64 | 72.3 |
| 20 | 22.7 | 39 | 44.0 | 65 | 73.1 |
| 21 | 23.9 | 40 | 45.2 | 66 | 74.5 |
| 22 | 25.0 | 41 | 46.1 | 67 | 74.5 |
| 24 | 27.3 | 42 | 47.0 |    |      |
| 25 | 28.3 | 45 | 51.2 |    |      |



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## SKINTOP® MS-NPT/MSR-NPT

**Construction:** Liquid Tight, Metallic Strain Relief Cable Gland with NPT Threads.

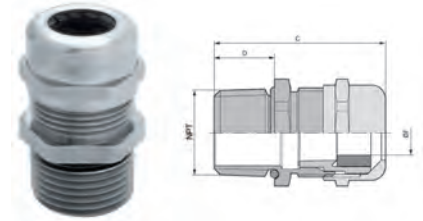
**Body:** Nickel-Plated Brass. **Insert:** Polyamide. **Bushing:** CR. **O-Ring:** Perbunan (NBR).

### Features:

Superior quality, liquid tight, metallic cable gland intended for applications where ruggedness and durability are required. These cable glands are suitable for a wide range of applications from manufacturing machinery to measurement and control equipment, including automation and robotics.

### Applications:

Suitable for use in areas with high demands on special mechanical and chemical stability. The heavy duty SKINTOP® design provides great pullout strength and very reliable strain relief. Extended temperature range due to the nickel-plated brass body. Generous high quality neoprene bushing and perbunan o-ring provide a liquid tight and dust proof, hermetic seal.



### Technical Data:

Locknuts: Add NPT Metal Locknuts. Protection: IP 68, 5 Bar (Exceeds NEMA 6/6P Pressure rating)

**Temperature:**  
-30°C to +100°C

**Rated Voltage:**  
N/A

**Approvals:**



### SKINTOP® MS-NPT: Liquid Tight, Metallic Strain Relief Cable Gland with NPT Threads

| Part Number | Thread Type & Size | Clamping Range<br>øF<br>inches | SW<br>Wrenching Flats<br>inches | C<br>Overall Length<br>inches | D<br>Thread Length<br>inches | Standard<br>Pack<br>Size |
|-------------|--------------------|--------------------------------|---------------------------------|-------------------------------|------------------------------|--------------------------|
| 53112004    | NPT-1/4"           | 0.138 - 0.276                  | 0.630                           | 1.417                         | .591                         | 100                      |
| 53112014    | NPT-3/8"           | 0.177 - 0.394                  | 0.787                           | 1.563                         | .591                         | 100                      |
| 53112024    | NPT-1/2"           | 0.276 - 0.512                  | 0.945                           | 1.673                         | .591                         | 50                       |
| 53112034    | NPT-3/4"           | 0.354 - 0.669                  | 1.142                           | 1.752                         | .591                         | 25                       |
| 53112044    | NPT-1"             | 0.433 - 0.827                  | 1.417                           | 1.929                         | .591                         | 25                       |
| 53112054    | NPT-1-1/4"         | 0.748 - 1.102                  | 1.772                           | 2.264                         | .669                         | 10                       |
| 53112064    | NPT-1-1/2"         | 1.063 - 1.378                  | 2.126                           | 2.421                         | .669                         | 5                        |
| 53112074    | NPT-2"             | 1.339 - 1.772                  | 2.638                           | 2.500                         | .669                         | 5                        |

### SKINTOP® MSR-NPT: NPT Liquid Tight, Metallic Strain Relief Cable Gland with Reducer Bushing

| Part Number | Thread Type & Size | Clamping Range<br>øF<br>inches | SW<br>Wrenching Flats<br>inches | C<br>Overall Length<br>inches | D<br>Thread Length<br>inches | Standard<br>Pack<br>Size |
|-------------|--------------------|--------------------------------|---------------------------------|-------------------------------|------------------------------|--------------------------|
| 53112006    | NPT-1/4"           | 0.039 - 0.197                  | 0.630                           | 1.417                         | .591                         | 100                      |
| 53112016    | NPT-3/8"           | 0.079 - 0.276                  | 0.787                           | 1.563                         | .591                         | 100                      |
| 53112026    | NPT-1/2"           | 0.197 - 0.394                  | 0.945                           | 1.673                         | .591                         | 50                       |
| 53112036    | NPT-3/4"           | 0.236 - 0.512                  | 1.142                           | 1.752                         | .591                         | 25                       |
| 53112046    | NPT-1"             | 0.276 - 0.591                  | 1.417                           | 1.929                         | .591                         | 25                       |
| 53112056    | NPT-1-1/4"         | 0.591 - 0.906                  | 1.772                           | 2.264                         | .669                         | 10                       |
| 53112066    | NPT-1-1/2"         | 0.866 - 1.142                  | 2.126                           | 2.421                         | .669                         | 5                        |
| 53112076    | NPT-2"             | 1.102 - 1.535                  | 2.638                           | 2.500                         | .669                         | 5                        |

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## SKINTOP® MS/MSR

**Construction:** Liquid Tight, Metallic Strain Relief Cable Gland with PG Threads.

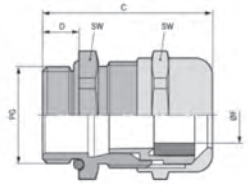
**Body:** Nickel-Plated Brass. **Insert:** Polyamide. **Bushing:** CR. **O-Ring:** Perbunan (NBR).

**Features:**

Superior quality, liquid tight metallic cable gland intended for applications where ruggedness and durability are required. These cable glands are suitable for a wide range of applications from manufacturing machinery to measurement and control equipment, including automation and robotics.

**Applications:**

Suitable for use in areas with high demands on special mechanical and chemical stability. The heavy duty SKINTOP® design provides great pullout strength and very reliable strain relief. Extended temperature range due to the nickel-plated brass body. Generous high quality neoprene bushing and perbunan o-ring provide a liquid tight and dust proof, hermetic seal.



**Technical Data:**

Locknuts: Add SM Locknuts. Protection: IP 68, 5 Bar (Exceeds NEMA 6/6P Pressure rating) when used with o-ring.



**Temperature:**  
-30°C to +100°C



**Rated Voltage:**  
N/A



**Approvals:**



### SKINTOP® MS: Liquid Tight, Metallic Strain Relief Cable Gland with PG Threads

| Part Number | Thread Type & Size | Clamping Range of inches | SW Wrenching Flats inches | C Overall Length inches | D Thread Length inches | Standard Pack Size |
|-------------|--------------------|--------------------------|---------------------------|-------------------------|------------------------|--------------------|
| 52015700    | PG-7               | 0.079 - 0.256            | 0.551                     | 0.984                   | .197                   | 100                |
| 52015710    | PG-9               | 0.157 - 0.315            | 0.669                     | 1.142                   | .236                   | 100                |
| 52015720    | PG-11              | 0.157 - 0.394            | 0.787                     | 1.260                   | .236                   | 50                 |
| 52015730    | PG-13              | 0.197 - 0.472            | 0.866                     | 1.339                   | .256                   | 50                 |
| 52015740    | PG-16              | 0.315 - 0.551            | 0.945                     | 1.378                   | .256                   | 50                 |
| 52015750    | PG-21              | 0.433 - 0.709            | 1.181                     | 1.575                   | .276                   | 25                 |
| 52015760    | PG-29              | 0.630 - 0.984            | 1.575                     | 1.890                   | .315                   | 25                 |
| 52015765    | PG-36              | 0.748 - 1.260            | 1.969                     | 2.441                   | .591                   | 10                 |
| 52015766    | PG-42              | 1.102 - 1.496            | 2.244                     | 2.441                   | .591                   | 5                  |
| 52015767    | PG-48              | 1.339 - 1.732            | 2.520                     | 2.441                   | .591                   | 5                  |

### SKINTOP® MSR: Liquid Tight, Metallic Strain Relief Cable Gland with Reducer Bushing & PG Threads

| Part Number | Thread Type & Size | Clamping Range of inches | SW Wrenching Flats inches | C Overall Length inches | D Thread Length inches | Standard Pack Size |
|-------------|--------------------|--------------------------|---------------------------|-------------------------|------------------------|--------------------|
| 52015770    | PG-7               | 0.079 - 0.197            | .551                      | 0.984                   | .197                   | 100                |
| 52015780    | PG-9               | 0.079 - 0.236            | .669                      | 1.142                   | .236                   | 100                |
| 52015790    | PG-11              | 0.118 - 0.276            | .787                      | 1.260                   | .236                   | 50                 |
| 52015800    | PG-13              | 0.157 - 0.354            | .866                      | 1.339                   | .256                   | 50                 |
| 52015810    | PG-16              | 0.236 - 0.512            | .945                      | 1.378                   | .256                   | 50                 |
| 52015820    | PG-21              | 0.315 - 0.630            | 1.181                     | 1.575                   | .276                   | 25                 |
| 52015830    | PG-29              | 0.413 - 0.787            | 1.575                     | 1.890                   | .315                   | 25                 |
| 52015831    | PG-36              | 0.748 - 1.024            | 1.969                     | 2.441                   | .591                   | 10                 |
| 52015832    | PG-42              | 0.945 - 1.220            | 2.244                     | 2.441                   | .591                   | 5                  |
| 52015833    | PG-48              | 1.102 - 1.378            | 2.520                     | 2.441                   | .591                   | 5                  |

Complete catalog available online at: [www.lapptannehill.com](http://www.lapptannehill.com)



## SKINTOP® MS-M/MSR-M

**Construction:** Liquid Tight, Metallic Strain Relief Cable Gland in Metric Sizes to Meet the European Union Standards.

**Body:** Nickel-Plated Brass. **Insert:** Polyamide. **Bushing:** CR. **O-Ring:** Perbunan (NBR).

### Features:

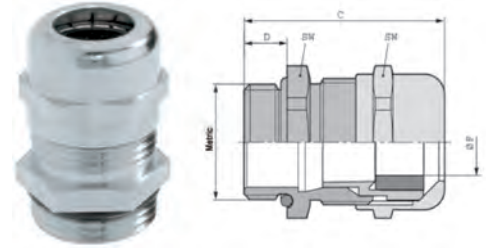
SKINTOP® MS-M/MSR-M is a superior quality, liquid tight, metallic cable gland intended for applications where ruggedness and durability are required. These cable glands are suitable for a wide range of applications from manufacturing machinery to measurement and control equipment, including automation and robotics.

### Applications:

Suitable for use in areas with high demands on special mechanical and chemical stability.

### Additional Information:

SKINTOP® sizes M75X1.5 to M11X2.0 feature the innovative, double lamella gasket for easier assembling of cables with larger diameters. Now with IP 69K protection for the harshest cleaning procedures of industrial machinery with high pressure cleaners and hot water.



### Technical Data:

Locknuts: Add SM-M Locknuts. Protection: 70 PSI, Seal: IP 68, 10 Bar (Exceeds NEMA 6/6P Pressure rating), IP 69K

**Temperature:**  
-30°C to +100°C

**Rated Voltage:**  
N/A

**Approvals:**  
UL US, CSA, CE, VDE, RoHS

### SKINTOP® MS-M: Liquid Tight, Metallic Strain Relief Cable Gland with Metric Threads

| Part Number | Thread Type & Size | Clamping Range of inches | SW Wrenching Flats inches | C Overall Length inches | D Thread Length inches | Standard Pack Size |
|-------------|--------------------|--------------------------|---------------------------|-------------------------|------------------------|--------------------|
| 53112000    | M-12X1.5           | 0.118 - 0.276            | 0.630                     | 1.043                   | 0.256                  | 100                |
| 53112010    | M-16X1.5           | 0.177 - 0.394            | 0.787                     | 1.260                   | 0.276                  | 100                |
| 53112020    | M-20X1.5           | 0.276 - 0.512            | 0.945                     | 1.398                   | 0.315                  | 50                 |
| 53112030    | M-25X1.5           | 0.354 - 0.669            | 1.142                     | 1.476                   | 0.315                  | 25                 |
| 53112040    | M-32X1.5           | 0.433 - 0.827            | 1.417                     | 1.661                   | 0.354                  | 25                 |
| 53112050    | M-40X1.5           | 0.748 - 1.102            | 1.772                     | 1.949                   | 0.354                  | 10                 |
| 53112060    | M-50X1.5           | 1.063 - 1.378            | 2.126                     | 2.047                   | 0.394                  | 5                  |
| 53112070    | M-63X1.5           | 1.339 - 1.772            | 2.638                     | 2.413                   | 0.591                  | 5                  |
| 53112080    | M-63X1.5, plus     | 1.732 - 2.165            | 2.953                     | 2.579                   | 0.591                  | 5                  |
| 53112510    | M-75X1.5           | 2.283 - 2.677            | 3.740                     | 4.134                   | 0.591                  | 1                  |
| 53112512    | M-90X2.0           | 2.598 - 3.071            | 4.528                     | 5.354                   | 0.787                  | 1                  |
| 53112514    | M-110X2.0          | 3.386 - 3.858            | 5.315                     | 6.063                   | 0.984                  | 1                  |

### SKINTOP® MSR-M: Liquid Tight, Metallic Strain Relief Cable Gland with Reducer Bushing & Metric Threads

| Part Number | Thread Type & Size | Clamping Range of inches | SW Wrenching Flats inches | C Overall Length inches | D Thread Length inches | Standard Pack Size |
|-------------|--------------------|--------------------------|---------------------------|-------------------------|------------------------|--------------------|
| 53112100    | M-12X1.5           | 0.039 - 0.197            | 0.630                     | 1.043                   | 0.256                  | 100                |
| 53112110    | M-16X1.5           | 0.079 - 0.276            | 0.787                     | 1.260                   | 0.276                  | 100                |
| 53112120    | M-20X1.5           | 0.197 - 0.394            | 0.945                     | 1.398                   | 0.315                  | 50                 |
| 53112130    | M-25X1.5           | 0.236 - 0.512            | 1.142                     | 1.476                   | 0.315                  | 25                 |
| 53112140    | M-32X1.5           | 0.276 - 0.591            | 1.417                     | 1.661                   | 0.354                  | 25                 |
| 53112150    | M-40X1.5           | 0.591 - 0.906            | 1.772                     | 1.949                   | 0.354                  | 10                 |
| 53112160    | M-50X1.5           | 0.866 - 1.142            | 2.126                     | 2.047                   | 0.394                  | 5                  |
| 53112170    | M-63X1.5           | 1.102 - 1.535            | 2.638                     | 2.413                   | 0.591                  | 5                  |
| 53112511    | M-75X1.5           | 2.087 - 2.480            | 3.740                     | 4.134                   | 0.591                  | 1                  |
| 53112515    | M-110X2.0          | 2.992 - 3.465            | 5.315                     | 6.063                   | 0.984                  | 1                  |

Please note:

IP 69K & DNV pending on size M75

\*UL, CSA, DNV, VDE, and IP 69K pending on sizes M90 and M110

Please contact your sales representative for detailed information at [sales@lapptannehill.com](mailto:sales@lapptannehill.com)



## SKINTOP® MS-SC/MS-SCL

**Construction:** Liquid Tight, Metallic Strain Relief for EMC Shielding Cable Gland with NPT, PG & Metric Threads.

**Body:** Nickel-Plated Brass. **Insert:** Polyamide. **Bushing:** CR. **O-Ring:** Perbunan (NBR).

### Features:

Uniquely designed to address EMC considerations with its simplified grounding feature. In a few easy steps, the cable is grounded, strain relieved and sealed from moisture and dust in accordance with IP 68. The cable gland's contact springs establish a continuous electrical path from the shield of the cable to equipment ground, creating a secure shield connection.

### Applications:

Optimal EMC protection. Suitable for braid shielded cable. Minimal assembly steps. The contact springs' unique design can accept cable diameters with wide dimensional tolerances. Available in both standard and long length threads for heavy-wall applications.

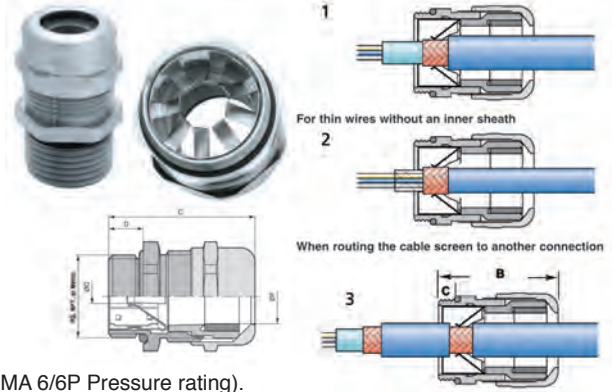
### Technical Data:

Locknuts: Add SM-PE Locknuts. Seal: IP 68, 5 Bar - when used with o-ring (Exceeds NEMA 6/6P Pressure rating).

 **Temperature:**  
-30°C to +100°C

 **Rated Voltage:**  
N/A

 **Approvals:** PG & NPT



### NPT THREADS SKINTOP® MS-SC: Liquid Tight, Metallic Strain Relief Cable Gland with NPT Threads

| Part Number | Thread Type & Size | Clamping Range<br>øF<br>inches | SW<br>Wrenching Flats<br>inches | C<br>Overall Length<br>inches | D<br>Thread Length<br>inches | Standard<br>Pack<br>Size |
|-------------|--------------------|--------------------------------|---------------------------------|-------------------------------|------------------------------|--------------------------|
| 53112910    | NPT-3/8"           | 0.177 - 0.354                  | 0.787                           | 1.563                         | .591                         | 100                      |
| 53112920    | NPT-1/2"           | 0.276 - 0.492                  | 0.945                           | 1.673                         | .591                         | 50                       |
| 53112930    | NPT-3/4"           | 0.354 - 0.650                  | 1.142                           | 1.752                         | .591                         | 25                       |
| 53112940    | NPT-1"             | 0.433 - 0.827                  | 1.417                           | 1.929                         | .669                         | 25                       |
| 53112950    | NPT-1-1/4"         | 0.748 - 1.102                  | 1.772                           | 2.264                         | .669                         | 10                       |
| 53112960    | NPT-1-1/2"         | 1.063 - 1.375                  | 2.126                           | 2.126                         | .669                         | 5                        |

### PG THREADS SKINTOP® MS-SC: Liquid Tight, Metallic Strain Relief Cable Gland with PG Threads

| Part Number | Thread Type & Size | Clamping Range<br>øF<br>inches | SW<br>Wrenching Flats<br>inches | C<br>Overall Length<br>inches | D<br>Thread Length<br>inches | Min ø above<br>braiding | Standard<br>Pack<br>Size |
|-------------|--------------------|--------------------------------|---------------------------------|-------------------------------|------------------------------|-------------------------|--------------------------|
| 53112210    | PG-9               | .118 - 0.315                   | 0.669                           | 1.142                         | .236                         | .157                    | 50                       |
| 53112220    | PG-11              | .157 - 0.394                   | 0.787                           | 1.260                         | .236                         | .157                    | 50                       |
| 53112230    | PG-13              | .197 - 0.472                   | 0.866                           | 1.339                         | .256                         | .157                    | 25                       |
| 53112240    | PG-16              | .315 - 0.551                   | 0.945                           | 1.378                         | .256                         | .236                    | 25                       |
| 53112250    | PG-21              | .433 - 0.689                   | 1.181                           | 1.575                         | .276                         | .315                    | 25                       |
| 53112260    | PG-29              | .630 - 0.984                   | 1.575                           | 1.890                         | .315                         | .512                    | 10                       |
| 53112270    | PG-36              | .748 - 1.260                   | 1.969                           | 2.441                         | .591                         | .630                    | 5                        |

### SKINTOP® MS-SCL: Liquid Tight, Metallic Strain Relief Cable Gland with Extended PG Threads

| Part Number | Thread Type & Size | Clamping Range<br>øF<br>inches | SW<br>Wrenching Flats<br>inches | C<br>Overall Length<br>inches | D<br>Thread Length<br>inches | Min ø above<br>braiding | Standard<br>Pack<br>Size |
|-------------|--------------------|--------------------------------|---------------------------------|-------------------------------|------------------------------|-------------------------|--------------------------|
| 53112310    | PG-9               | .118 - .315                    | 0.669                           | 1.378                         | .472                         | .157                    | 50                       |
| 53112320    | PG-11              | .157 - .394                    | 0.787                           | 1.496                         | .472                         | .157                    | 50                       |
| 53112330    | PG-13              | .197 - .472                    | 0.866                           | 1.555                         | .472                         | .157                    | 25                       |
| 53112340    | PG-16              | .315 - .551                    | 0.945                           | 1.594                         | .472                         | .236                    | 25                       |
| 53112350    | PG-21              | .433 - .689                    | 1.181                           | 1.772                         | .472                         | .315                    | 25                       |
| 53112360    | PG-29              | .630 - .984                    | 1.575                           | 2.047                         | .591                         | .512                    | 10                       |

### METRIC THREADS SKINTOP® MS-SC-M: Liquid-Tight, Metallic Strain Relief Cable Gland with Metric Threads

| Part Number | Thread Type & Size | Clamping Range<br>øF<br>inches | SW<br>Wrenching Flats<br>inches | C<br>Overall Length<br>inches | D<br>Thread Length<br>inches | Standard<br>Pack<br>Size |
|-------------|--------------------|--------------------------------|---------------------------------|-------------------------------|------------------------------|--------------------------|
| 53112610    | M-12X1.5           | 0.138 - 0.276                  | 0.630                           | 1.043                         | .256                         | 50                       |
| 53112620    | M-16X1.5           | 0.177 - 0.354                  | 0.787                           | 1.299                         | .276                         | 50                       |
| 53112630    | M-20X1.5           | 0.276 - 0.492                  | 0.945                           | 1.457                         | .315                         | 25                       |
| 53112640    | M-25X1.5           | 0.354 - 0.650                  | 1.142                           | 1.516                         | .315                         | 25                       |
| 53112650    | M-32X1.5           | 0.433 - 0.827                  | 1.417                           | 1.791                         | .354                         | 25                       |
| 53112660    | M-40X1.5           | 0.748 - 1.102                  | 1.772                           | 1.890                         | .354                         | 10                       |
| 53112670    | M-50X1.5           | 1.063 - 1.378                  | 2.126                           | 2.185                         | .394                         | 5                        |

### SKINTOP® MS-SC-M-XL: Liquid-Tight, Metallic Strain Relief Cable Gland with Extended Metric Threads

| Part Number | Thread Type & Size | Clamping Range<br>øF<br>inches | SW<br>Wrenching Flats<br>inches | C<br>Overall Length<br>inches | D<br>Thread Length<br>inches | Standard<br>Pack<br>Size |
|-------------|--------------------|--------------------------------|---------------------------------|-------------------------------|------------------------------|--------------------------|
| 53112625    | M-16X1.5           | 0.177 - 0.354                  | 0.787                           | 1.496                         | .472                         | 50                       |
| 53112635    | M-20X1.5           | 0.276 - 0.492                  | 0.945                           | 1.614                         | .472                         | 25                       |
| 53112645    | M-25X1.5           | 0.354 - 0.650                  | 1.142                           | 1.673                         | .472                         | 25                       |
| 53112655    | M-32X1.5           | 0.433 - 0.827                  | 1.417                           | 2.028                         | .591                         | 25                       |
| 53112665    | M-40X1.5           | 0.748 - 1.102                  | 1.772                           | 2.126                         | .591                         | 10                       |
| 53112675    | M-50X1.5           | 1.063 - 1.378                  | 2.126                           | 2.382                         | .591                         | 5                        |



## SKINTOP® MS-M BRUSH

**Construction:** Liquid Tight, Metallic Strain Relief for EMC Shielding Applications, Easy to Assemble Cable Gland with Metric Threads.

**Body:** Nickel-Plated Brass. **Insert:** Polyamide. **Bushing:** Special Elastomer. **O-Ring:** Special Elastomer.

### Features:

The SKINTOP® MS-M BRUSH provides centered, fixed strain relief with a liquid tight and dust proof seal (IP68), all in one step. Simply insert the cable, push the screen braid under the innovative EMC brush, tighten and the connection is made.

### Applications:

Faster, easier, reliable screen contact. Maximum assembly and adjustment possibilities. 360°C contact area allows for optimal low-resistance current return ground path.

### Additional Information:

SKINTOP® sizes M75X1.5 to M110X2.0 feature the innovative, double lamella gasket for easier assembling of cables with larger diameters.

### Technical Data:

Seal: IP 68, and IP 69K sizes M25–M63. IP 68 for M68 plus. (Exceeds NEMA 6/6P Pressure rating).

 **Temperature:**  
-30°C to +100°C

 **Rated Voltage:**  
N/A

 **Approvals:**



## SKINTOP® MS-M BRUSH: Liquid Tight, Metallic Strain Relief for EMC Shielding Applications

| Part Number | Thread Type & Size | Clamping Range<br>inches | SW<br>Wrenching Flats<br>inches | Minimum ø above<br>braiding<br>inches | Thread Length<br>inches | Standard<br>Pack<br>Size |
|-------------|--------------------|--------------------------|---------------------------------|---------------------------------------|-------------------------|--------------------------|
| 53112676    | M-25X1.5           | 0.354 - 0.669            | 1.142                           | 0.236                                 | 0.315                   | 10                       |
| 53112677    | M-32X1.5           | 0.433 - 0.827            | 1.417                           | 0.315                                 | 0.354                   | 1                        |
| 53112678    | M-40X1.5           | 0.748 - 1.102            | 1.772                           | 0.394                                 | 0.354                   | 1                        |
| 53112679    | M-50X1.5           | 1.063 - 1.378            | 2.126                           | 0.551                                 | 0.394                   | 1                        |
| 53112680    | M-63X1.5           | 1.339 - 1.772            | 2.638                           | 0.787                                 | 0.591                   | 1                        |
| 53112681    | M-63X1.5, plus     | 1.732 - 2.165            | 2.953                           | 0.984                                 | 0.591                   | 1                        |
| 53112501    | M-75X1.5           | 2.087 - 2.480            | 3.740                           | 1.378                                 | 0.591                   | 1                        |
| 53112500    | M-75X1.5, plus     | 2.283 - 2.677            | 3.740                           | 1.378                                 | 0.591                   | 1                        |
| 53112503    | M-90X2.0           | 2.598 - 3.071            | 4.528                           | 1.772                                 | 0.787                   | 1                        |
| 53112505    | M-110X2.0          | 2.992 - 3.465            | 5.315                           | 2.165                                 | 0.984                   | 1                        |
| 53112504    | M-110X2.0, plus    | 3.386 - 3.858            | 5.315                           | 2.165                                 | 0.984                   | 1                        |

Please note:

\*UL CSA, DNV, and VDE approvals pending on sizes M90X1.5 to M110X2.0

Specifications subject to change. For complete specifications and availability visit [www.lapptannehill.com](http://www.lapptannehill.com)

## SKINDICHT® SM LOCK NUTS

**Construction:** Metal Lock Nuts for NPT, PG and Metric Threaded Products.

**Features:**

SKINDICHT® SM Lock Nuts are required wherever NPT, PG or Metric cable glands must be fastened to a housing, and tapped holes cannot be provided.

**Technical Data:**

**Materials:** NPT: Stamped Steel. PG & Metric: Nickel-Plated Brass.



**Temperature:**  
N/A



**Rated Voltage:**  
N/A



**Approvals:**



**NPT  
Version**



**PG & Metric  
Versions**



### NPT Zinc-Plated Steel Locknuts

| Part Number | Thread Type & Size | Wrenching Flats<br>inches | Nut Thickness<br>inches | Standard Pack Size |
|-------------|--------------------|---------------------------|-------------------------|--------------------|
| 811092*     | NPT- 3/8"          | 0.945                     | .138                    | 100                |
| 811093      | NPT- 1/2"          | 1.102                     | .157                    | 100                |
| 811094      | NPT- 3/4"          | 1.378                     | .157                    | 50                 |
| 811095      | NPT- 1"            | 1.693                     | .157                    | 50                 |

\* Product features a hex design.

### SKINDICHT® SM: PG Brass Lock Nuts

| Part Number | Thread Type & Size | Wrenching Flats |    | Nut Thickness |     | Standard Pack Size |
|-------------|--------------------|-----------------|----|---------------|-----|--------------------|
|             |                    | inches          | mm | inches        | mm  |                    |
| 52003490    | PG-7               | 0.591           | 15 | .110          | 2.8 | 100                |
| 52003500    | PG-9               | 0.709           | 18 | .110          | 2.8 | 100                |
| 52003510    | PG-11              | 0.827           | 21 | .118          | 3.0 | 100                |
| 52003520    | PG-13              | 0.906           | 23 | .118          | 3.0 | 100                |
| 52003530    | PG-16              | 1.024           | 26 | .118          | 3.0 | 100                |
| 52003540    | PG-21              | 1.260           | 32 | .138          | 3.5 | 50                 |
| 52003550    | PG-29              | 1.614           | 41 | .157          | 4.0 | 50                 |
| 52003560    | PG-36              | 2.008           | 51 | .197          | 5.0 | 25                 |
| 52003570    | PG-42              | 2.362           | 60 | .197          | 5.0 | 25                 |
| 52003580    | PG-48              | 2.520           | 64 | .217          | 5.5 | 25                 |

### SKINDICHT® SM-M: Metric Brass Lock Nuts

| Part Number | Thread Type & Size | Wrenching Flats |     | Nut Thickness |      | Standard Pack Size |
|-------------|--------------------|-----------------|-----|---------------|------|--------------------|
|             |                    | inches          | mm  | inches        | mm   |                    |
| 52103000    | M-12X1.5           | 0.591           | 15  | 0.118         | 3.0  | 100                |
| 52103010    | M-16X1.5           | 0.748           | 19  | 0.118         | 3.0  | 100                |
| 52103020    | M-20X1.5           | 0.945           | 24  | 0.138         | 3.5  | 100                |
| 52103030    | M-25X1.5           | 1.181           | 30  | 0.157         | 4.0  | 100                |
| 52103040    | M-32X1.5           | 1.417           | 36  | 0.157         | 4.0  | 100                |
| 52103050    | M-40X1.5           | 1.811           | 46  | 0.197         | 5.0  | 50                 |
| 52103060    | M-50X1.5           | 2.362           | 60  | 0.197         | 5.0  | 50                 |
| 52103070    | M-63X1.5           | 2.756           | 70  | 0.197         | 5.0  | 25                 |
| 52103071    | M-75X1.5           | 2.953           | 75  | 0.315         | 8.0  | 5                  |
| 52103072    | M-90X2.0           | 4.016           | 102 | 0.394         | 10.0 | 1                  |
| 52103073    | M-110X2.0          | 4.882           | 124 | 0.472         | 12.0 | 1                  |

Complete catalog available online at: [www.lapptannehill.com](http://www.lapptannehill.com)



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## SKINDICHT® SM-PE LOCK NUTS

**Construction:** Nickel-Plated Brass Grounding Lock Nuts for PG and Metric Threaded Products.

**Features:**

SKINDICHT® SM-PE Lock Nuts are required wherever varnished, anodized and powder coated housings are used. When the lock nut is tightened, the raised edges cut through the insulating layer, guaranteeing optimum contact.

**Applications:**

Ideal for use with MS-SC cable grounding cable glands.

**Technical Data:**



**Temperature:**  
N/A



**Rated Voltage:**  
N/A



**Approvals:**



### SKINDICHT® SM-PE: PG Brass Lock Nuts

| Part Number | Thread Type & Size | Wrenching Flats |    | Nut Thickness |     | Standard Pack Size |
|-------------|--------------------|-----------------|----|---------------|-----|--------------------|
|             |                    | inches          | mm | inches        | mm  |                    |
| 52103200    | PG-7               | 0.590           | 15 | .185          | 4.7 | 100                |
| 52103210    | PG-9               | 0.709           | 18 | .185          | 4.7 | 100                |
| 52103220    | PG-11              | 0.827           | 21 | .185          | 4.7 | 100                |
| 52103230    | PG-13              | 0.906           | 23 | .185          | 4.7 | 100                |
| 52103240    | PG-16              | 1.024           | 26 | .185          | 4.7 | 100                |
| 52103250    | PG-21              | 1.260           | 32 | .205          | 5.2 | 50                 |
| 52103260    | PG-29              | 1.614           | 41 | .224          | 5.7 | 50                 |
| 52103270    | PG-36              | 2.008           | 51 | .264          | 6.7 | 50                 |

### SKINDICHT® SM-PE-M: Metric Brass Lock Nuts

| Part Number | Thread Type & Size | Wrenching Flats |     | Nut Thickness |      | Standard Pack Size |
|-------------|--------------------|-----------------|-----|---------------|------|--------------------|
|             |                    | inches          | mm  | inches        | mm   |                    |
| 52103300    | M-12X1.5           | 0.591           | 15  | 0.138         | 3.5  | 100                |
| 52103310    | M-16X1.5           | 0.748           | 19  | 0.138         | 3.5  | 100                |
| 52103320    | M-20X1.5           | 0.945           | 24  | 0.146         | 3.7  | 100                |
| 52103330    | M-25X1.5           | 1.181           | 30  | 0.165         | 4.2  | 50                 |
| 52103340    | M-32X1.5           | 1.417           | 36  | 0.185         | 4.7  | 50                 |
| 52103350    | M-40X1.5           | 1.811           | 46  | 0.217         | 5.5  | 25                 |
| 52103360    | M-50X1.5           | 2.362           | 60  | 0.217         | 5.5  | 10                 |
| 52103370    | M-63X1.5           | 2.756           | 70  | 0.276         | 7.0  | 10                 |
| 52103371    | M-75X1.5           | 2.953           | 75  | 0.315         | 8.0  | 5                  |
| 52103372    | M-90X2.0           | 4.016           | 102 | 0.394         | 10.0 | 1                  |
| 52103373    | M-110X2.0          | 4.882           | 124 | 0.472         | 12.0 | 1                  |

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## SKINDICHT® MR-Reducers

**Construction:** Nickel-Plated Brass.

**Features:**

Reducers and Enlargers in PG & Metric Combinations.

**Technical Data:**

Temperature:  
-60°C to +200°C

Rated Voltage:  
N/A

Approvals:  




### SKINDICHT® MR Reducers-PG

| Part Number | Thread Type & Size<br>Male to Female | Standard Pack Size | Part Number | Thread Type & Size<br>Male to Female | Standard Pack Size |
|-------------|--------------------------------------|--------------------|-------------|--------------------------------------|--------------------|
| 52003750    | PG-9 to 7                            | 100                | 52003870    | PG-21 to 16                          | 50                 |
| 52003760    | PG-11 to 7                           | 100                | 52003880    | PG-29 to 13                          | 50                 |
| 52003770    | PG-11 to 9                           | 100                | 52003890    | PG-29 to 16                          | 50                 |
| 52003780    | PG-13 to 7                           | 100                | 52003900    | PG-29 to 21                          | 50                 |
| 52003790    | PG-13 to 9                           | 100                | 52003910    | PG-36 to 16                          | 25                 |
| 52003800    | PG-13 to 11                          | 100                | 52003920    | PG-36 to 21                          | 25                 |
| 52003810    | PG-16 to 7                           | 100                | 52003930    | PG-36 to 29                          | 25                 |
| 52003820    | PG-16 to 9                           | 100                | 52003940    | PG-42 to 29                          | 10                 |
| 52003830    | PG-16 to 11                          | 100                | 52003950    | PG-42 to 36                          | 10                 |
| 52003840    | PG-16 to 13                          | 100                | 52003970    | PG-48 to 36                          | 10                 |
| 52003850    | PG-21 to 11                          | 50                 | 52003980    | PG-48 to 42                          | 10                 |
| 52003860    | PG-21 to 13                          | 50                 |             |                                      |                    |

### SKINDICHT® MR-M Reducers-Metric

| Part Number | Thread Type & Size<br>Male to Female | Standard Pack Size | Part Number | Thread Type & Size<br>Male to Female | Standard Pack Size |
|-------------|--------------------------------------|--------------------|-------------|--------------------------------------|--------------------|
| 52104310    | M-16 to 12                           | 100                | 52104317    | M-40 to 25                           | 50                 |
| 52104311    | M-20 to 12                           | 100                | 52104318    | M-40 to 32                           | 25                 |
| 52104312    | M-20 to 16                           | 100                | 52104319    | M-50 to 32                           | 25                 |
| 52104313    | M-25 to 16                           | 50                 | 52104320    | M-50 to 40                           | 10                 |
| 52104314    | M-25 to 20                           | 50                 | 52104321    | M-63 to 40                           | 10                 |
| 52104315    | M-32 to 20                           | 50                 | 52104322    | M-63 to 50                           | 10                 |
| 52104316    | M-32 to 25                           | 50                 |             |                                      |                    |

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## SKINDICHT® KU Reducers

**Construction:** Polyamide glass fiber reinforced.

### Technical Data:



**Temperature:**  
-40°C to +100°C



**Rated Voltage:**  
N/A



**Color Code:**  
RAL 7035:  
Light Gray



**Approvals:**



### SKINDICHT® KU Reducers-PG

| Part Number | Thread Type & Size<br>Male to Female | Standard Pack Size | Part Number | Thread Type & Size<br>Male to Female | Standard Pack Size |
|-------------|--------------------------------------|--------------------|-------------|--------------------------------------|--------------------|
| 51730010    | PG-11 to 7                           | 50                 | 52025150    | PG-36 to 21                          | 25                 |
| 52025100    | PG-13 to 7                           | 50                 | 52025050    | PG-36 to 29                          | 25                 |
| 52025110    | PG-16 to 9                           | 50                 | 52025160    | PG-42 to 21                          | 25                 |
| 52025120    | PG-21 to 11                          | 25                 | 52025170    | PG-42 to 29                          | 25                 |
| 51730040    | PG-21 to 13                          | 25                 | 52025060    | PG-42 to 36                          | 25                 |
| 52025130    | PG-29 to 13                          | 25                 | 52025180    | PG-48 to 29                          | 25                 |
| 51730050    | PG-29 to 16                          | 25                 | 52025190    | PG-48 to 36                          | 25                 |
| 52025140    | PG-36 to 16                          | 25                 | 52025070    | PG-48 to 42                          | 25                 |

### SKINDICHT® KUS Reducers-PG

| Part Number | Thread Type & Size<br>Male to Female | Standard Pack Size |
|-------------|--------------------------------------|--------------------|
| 52025040    | PG-9 to 7                            | 50                 |
| 51730060    | PG-11 to 9                           | 50                 |
| 51730070    | PG-13 to 11                          | 50                 |
| 51730080    | PG-16 to 13                          | 50                 |

## SKINDICHT® ME-Enlargers

**Construction:** Nickel-Plated Brass. **O-Ring:** NBR.

### Technical Data:



**Temperature:**  
-60°C to +200°C



**Rated Voltage:**  
N/A



**Approvals:**



### ME-Enlargers-PG

| Part Number | Thread Type & Size<br>Male to Female | Standard Pack Size | Part Number | Thread Type & Size<br>Male to Female | Standard Pack Size |
|-------------|--------------------------------------|--------------------|-------------|--------------------------------------|--------------------|
| 52003990    | PG-7 to 9                            | 100                | 52004060    | PG-13 to 21                          | 50                 |
| 52004000    | PG-9 to 11                           | 100                | 52004070    | PG-16 to 21                          | 50                 |
| 52004010    | PG-9 to 13                           | 100                | 52004080    | PG-16 to 29                          | 50                 |
| 52004020    | PG-11 to 13                          | 100                | 52004090    | PG-21 to 29                          | 50                 |
| 52004030    | PG-11 to 16                          | 100                | 52004100    | PG-29 to 36                          | 50                 |
| 52004040    | PG-11 to 21                          | 100                | 52004110    | PG-36 to 42                          | 10                 |
| 52004050    | PG-13 to 16                          | 100                | 52004120    | PG-42 to 48                          | 10                 |

### ME-Enlargers-Metric

| Part Number | Thread Type & Size<br>Male to Female | Standard Pack Size | Part Number | Thread Type & Size<br>Male to Female | Standard Pack Size |
|-------------|--------------------------------------|--------------------|-------------|--------------------------------------|--------------------|
| 52104450    | M-12 to 16                           | 100                | 52104458    | M-32 to 40                           | 50                 |
| 52104452    | M-16 to 20                           | 100                | 52104460    | M-40 to 50                           | 25                 |
| 52104454    | M-20 to 25                           | 100                | 52104462    | M-50 to 63                           | 25                 |
| 52104456    | M-25 to 32                           | 50                 |             |                                      |                    |



**LAPP GROUP**



## SKINDICHT® Perbunan® O-Rings

**Construction:** Perbunan (NBR) Ozone & UV Resistant.

**Features:**

Perbunan® O-Rings provide safe sealing against oil, dust and water when placed on the fastening threads of the connector.

| Part Number | Thread Type & Size | Inner Diameter |    | Thickness |     | Standard Pack Size |
|-------------|--------------------|----------------|----|-----------|-----|--------------------|
|             |                    | inches         | mm | inches    | mm  |                    |
| 53001010    | PG-7               | 0.394          | 10 | .059      | 1.5 | 100                |
| 53102011    | PG-9               | 0.512          | 13 | .059      | 1.5 | 100                |
| 53001020    | PG-11              | 0.630          | 16 | .059      | 1.5 | 100                |
| 52005740    | PG-13              | 0.709          | 18 | .059      | 1.5 | 100                |
| 53001030    | PG-16              | 0.787          | 20 | .059      | 1.5 | 100                |
| 52005750    | PG-21              | 1.024          | 26 | .079      | 2.0 | 100                |
| 53001040    | PG-29              | 1.339          | 34 | .079      | 2.0 | 50                 |
| 52005760    | PG-36              | 1.732          | 44 | .079      | 2.0 | 50                 |
| 53001050    | PG-42              | 1.969          | 50 | .079      | 2.0 | 50                 |
| 52005770    | PG-48              | 2.165          | 55 | .079      | 2.0 | 50                 |

Perbunan® is a registered trademark of BAYER AG



**Technical Data:**

Perbunan (NBR) Ozone & UV Resistant

**Temperature:**  
-20°C to +100°C

**Rated Voltage:**  
N/A

**Approvals:**



## SKINDICHT® JT PTFE O-Rings

**Construction:** PTFE.

**Features:**

JT PTFE O-rings provide safe sealing against oil, water, alkalis, acids, solvents and virtually all chemicals when placed on the fastening threads of a connector. They are suitable for food and dairy applications and have a wide temperature range.

| Part Number | Thread Type & Size | Inner Diameter |       | Thickness |    | Standard Pack Size |
|-------------|--------------------|----------------|-------|-----------|----|--------------------|
|             |                    | inches         | mm    | inches    | mm |                    |
| 53801035    | PG-7               | 0.492          | 0.650 | .079      | 2  | 100                |
| 53801045    | PG-9               | 0.598          | 0.748 | .079      | 2  | 100                |
| 53801055    | PG-11              | 0.732          | 0.886 | .079      | 2  | 100                |
| 53801065    | PG-13              | 0.803          | 0.984 | .079      | 2  | 100                |
| 53801075    | PG-16              | 0.886          | 1.063 | .079      | 2  | 100                |
| 53801085    | PG-21              | 1.114          | 1.319 | .118      | 3  | 50                 |
| 53801095    | PG-29              | 1.457          | 1.713 | .118      | 3  | 50                 |
| 53801105    | PG-36              | 1.850          | 2.165 | .118      | 3  | 25                 |
| 53801115    | PG-42              | 2.126          | 2.480 | .118      | 3  | 25                 |
| 53801125    | PG-48              | 2.335          | 2.717 | .118      | 3  | 25                 |



**Technical Data:**

**Temperature:**  
-120°C to +250°C  
short term up to +300°C

**Rated Voltage:**  
N/A

**Approvals:**



## SKINDICHT® VITON® O-Rings

**Construction:** FKM Fluoroelastomer (Green).

**Features:**

VITON® O-rings provide safe sealing against oil, water, alkalis, acids, solvents and virtually all chemicals when placed on the fastening threads of a connector. They are also suitable for food and dairy applications and have a wide temperature range.

| Part Number | Thread Type & Size | Inner Diameter |    | Thickness |     | Standard Pack Size |
|-------------|--------------------|----------------|----|-----------|-----|--------------------|
|             |                    | inches         | mm | inches    | mm  |                    |
| 52023607    | PG-7               | .394           | 10 | .059      | 1.5 | 100                |
| 52122011    | PG-9               | .512           | 13 | .059      | 1.5 | 100                |
| 52023602    | PG-11              | .630           | 16 | .059      | 1.5 | 100                |
| 52023601    | PG-13              | .709           | 18 | .059      | 1.5 | 100                |
| 52023603    | PG-16              | .787           | 20 | .059      | 1.5 | 50                 |
| 52023604    | PG-21              | 1.024          | 26 | .079      | 2.0 | 50                 |
| 52023606    | PG-29              | 1.339          | 34 | .079      | 2.0 | 50                 |
| 52023608    | PG-36              | 1.732          | 44 | .079      | 2.0 | 25                 |
| 52023609    | PG-42              | 1.969          | 50 | .079      | 2.0 | 25                 |
| 52023611    | PG-48              | 2.165          | 55 | .079      | 2.0 | 25                 |

Viton® is a registered trademark of DuPont de Nemour



**Technical Data:**

**Temperature:**  
-20°C to +200°C

**Rated Voltage:**  
N/A

**Approvals:**



## SKINTOP® DIX BUSHINGS

**Construction:** Multiple Cable Sealing Bushing for PG & NPT SKINTOP® Cable Glands. **Body:** Silicone.

**Features:**

SKINTOP® DIX is a multiple hole sealing bushing designed to allow several cables to be inserted through one cable gland. This results in a reduction of space and cost, as a separate cable gland is not required for each cable.

**Applications:**

SKINTOP® Cable Glands

**Technical Data:**



**Temperature:**  
-30°C to +100°C



**Rated Voltage:**  
N/A



**Color Code:**  
Natural



**Approvals:**  
IP 54  
IP 68 when all holes are optimally filled



| Part Number | Thread Type & Size | Thread Type & Size | # of Holes | Size of Holes |     | Standard Pack Size |
|-------------|--------------------|--------------------|------------|---------------|-----|--------------------|
|             |                    |                    |            | inches        | mm  |                    |
| 53607225    | PG-7               | -                  | 2          | .098          | 2.5 | 100                |
| 53607417    | PG-7               | -                  | 4          | .067          | 1.7 | 100                |
| 53609230    | PG-9               | NPT-3/8"           | 2          | .118          | 3.0 | 100                |
| 53611225    | PG-11              | -                  | 2          | .098          | 2.5 | 100                |
| 53611240    | PG-11              | -                  | 2          | .157          | 4.0 | 100                |
| 53611330    | PG-11              | -                  | 3          | .118          | 3.0 | 100                |
| 53611430    | PG-11              | -                  | 4          | .118          | 3.0 | 100                |
| 53613250    | PG-13              | NPT-1/2"           | 2          | .197          | 5.0 | 100                |
| 53613340    | PG-13              | NPT-1/2"           | 3          | .157          | 4.0 | 100                |
| 53613440    | PG-13              | NPT-1/2"           | 4          | .157          | 4.0 | 100                |
| 53616140    | PG-16              | -                  | 1          | .157          | 4.0 | 50                 |
| 53616225    | PG-16              | -                  | 2          | .098          | 2.5 | 50                 |
| 53616240    | PG-16              | -                  | 2          | .157          | 4.0 | 50                 |
| 53616260    | PG-16              | -                  | 2          | .236          | 6.0 | 50                 |
| 53616340    | PG-16              | -                  | 3          | .157          | 4.0 | 50                 |
| 53616350    | PG-16              | -                  | 3          | .197          | 5.0 | 50                 |
| 53616356    | PG-16              | -                  | 3          | .220          | 5.6 | 50                 |
| 53616360    | PG-16              | -                  | 3          | .236          | 6.0 | 50                 |
| 53616440    | PG-16              | -                  | 4          | .157          | 4.0 | 50                 |
| 53616450    | PG-16              | -                  | 4          | .197          | 5.0 | 50                 |
| 53616540    | PG-16              | -                  | 5          | .157          | 4.0 | 50                 |
| 53621270    | PG-21              | NPT-3/4"           | 2          | .276          | 7.0 | 50                 |
| 53621280    | PG-21              | NPT-3/4"           | 2          | .315          | 8.0 | 50                 |
| 53621370    | PG-21              | NPT-3/4"           | 3          | .276          | 7.0 | 50                 |
| 53621380    | PG-21              | NPT-3/4"           | 3          | .315          | 8.0 | 50                 |
| 53621460    | PG-21              | NPT-3/4"           | 4          | .236          | 6.0 | 50                 |
| 53621550    | PG-21              | NPT-3/4"           | 5          | .197          | 5.0 | 50                 |
| 53621640    | PG-21              | NPT-3/4"           | 6          | .157          | 4.0 | 50                 |
| 53629290    | PG-29              | NPT-1"             | 2          | .354          | 9.0 | 50                 |
| 53629390    | PG-29              | NPT-1"             | 3          | .354          | 9.0 | 50                 |
| 53629470    | PG-29              | NPT-1"             | 4          | .276          | 7.0 | 50                 |
| 53629480    | PG-29              | NPT-1"             | 4          | .315          | 8.0 | 50                 |
| 53629490    | PG-29              | NPT-1"             | 4          | .354          | 9.0 | 50                 |
| 53629556    | PG-29              | NPT-1"             | 5          | .220          | 5.6 | 50                 |
| 53629570    | PG-29              | NPT-1"             | 5          | .276          | 7.0 | 50                 |
| 53629675    | PG-29              | NPT-1"             | 6          | .295          | 7.5 | 50                 |

## SKINTOP® DIX-DV INSERTS

**Construction:** Inserts for SKINTOP® DIX NPT, PG & Metric. **Body:** Polyamide.

**Features:**

SKINTOP® DIX-DV inserts are designed to seal unused positions in SKINTOP® DIX bushings, which need to be closed to ensure the proper class protection.

| Part Number | Diameter |     | Length |    | Standard Pack Size |
|-------------|----------|-----|--------|----|--------------------|
|             | inches   | mm  | inches | mm |                    |
| 53100003    | .118     | 3.0 | .354   | 9  | 100                |
| 53100004    | .157     | 4.0 | .354   | 9  | 100                |
| 53100005    | .197     | 5.0 | .433   | 11 | 100                |
| 53100006    | .236     | 6.0 | .551   | 14 | 100                |
| 53100007    | .276     | 7.0 | .551   | 14 | 100                |
| 53100008    | .315     | 8.0 | .551   | 14 | 100                |
| 53100009    | .354     | 9.0 | .551   | 14 | 100                |



## SILVYN® RILL PA 6

**Construction:** Non-Metallic Flexible Quick Connect Conduit Systems.

**Body:** Polyamide, Halogen & Silicone Free, UL4 VO.

**Features:**

A flexible, non-metallic corrugated conduit suitable for use in various industrial applications. It is resistant to liquids, oils and gases, and highly resistant to acids and solvents.

**Applications:**

Halogen-free, flame retardant and self extinguishing. Durable, long lasting conduit that is rugged yet flexible. For use in controls, moving machine parts, motor and internal connections, as well as industrial, medical and electrical applications.

**Technical Data:**

IP Protection: IP 68

 **Temperature:**  
-40°C to +115°C

 **Rated Voltage:**  
N/A

 **Color Code:**  
Black or Gray

 **Approvals:**



| Part Number<br>Black | Part Number<br>Gray | Outer Diameter |      | Inner Diameter |      | Bend Radius |     | Conduit Coil<br>Put-Ups<br>Feet | NPT        | Thread Type & Size<br>for Fittings |           |
|----------------------|---------------------|----------------|------|----------------|------|-------------|-----|---------------------------------|------------|------------------------------------|-----------|
|                      |                     | inches         | mm   | inches         | mm   | inches      | mm  |                                 |            | PG                                 | Metric    |
| 61746935             | 61746939            | .394           | 10.0 | .256           | 6.5  | .512        | 13  | 164                             | NPT-1/4"   | PG-7                               | M-10X1.0  |
| 61746945             | 61746940            | .512           | 13.0 | .394           | 10.0 | .787        | 20  | 164                             | NPT-1/4"   | PG-9                               | M-12X1.5  |
| 61746955             | 61746950            | .622           | 15.8 | .472           | 12.0 | 1.378       | 35  | 164                             | NPT-3/8"   | PG-11                              | M-16X1.5  |
| 61747015             | 61747010            | .728           | 18.5 | .563           | 14.3 | 1.575       | 40  | 164                             | --         | PG-13                              | --        |
| 61746965             | 61746960            | .835           | 21.2 | .650           | 16.5 | 1.772       | 45  | 164                             | NPT-1/2"   | PG-16                              | M-20X1.5  |
| 61746975             | 61746970            | 1.122          | 28.5 | .906           | 23.0 | 2.165       | 55  | 164                             | NPT-3/4"   | PG-21                              | M-25 X1.5 |
| 61746985             | 61746980            | 1.358          | 34.5 | 1.142          | 29.0 | 2.559       | 65  | 82                              | NPT-1"     | PG-29                              | M-32X1.5  |
| 61746995             | 61746990            | 1.673          | 42.5 | 1.417          | 36.0 | 3.543       | 90  | 82                              | NPT-1-1/4" | PG-36                              | M-40X1.5  |
| 61747005             | 61747000            | 2.146          | 54.5 | 1.890          | 48.0 | 3.937       | 100 | 82                              | NPT-1-1/2" | PG-48                              | M-50X1.5  |

\* Fittings available in NPT, PG, and Metric

## SILVYN® RILL PA 12

**Construction:** Non-Metallic Highly Flexible Quick Connect Conduit Systems.

**Body:** Polyamide, Halogen & Silicone Free, UL 94 V2.

**Features:**

A continuous flex non-metallic, corrugated conduit. It is resistant to liquids, oil and gas, and highly resistant to acids and solvents.

**Applications:**

Halogen-free, flame retardant and self-extinguishing. High flexibility makes it an excellent choice for applications such as machine and plant construction where frequent flexing and bending is required. Durable, long lasting conduit that is rugged yet extremely flexible. For use in controls, moving machine parts, motor and internal connections, as well as industrial, medical and electrical applications.

**Technical Data:**

IP Protection: IP 68

 **Temperature:**  
-50°C to +100°C

 **Rated Voltage:**  
N/A

 **Color Code:**  
Black or Gray

 **Approvals:**



| Part Number<br>Black | Part Number<br>Gray | Outer Diameter |      | Inner Diameter |      | Bend Radius |     | Conduit Coil<br>Put-Ups<br>Feet | NPT        | Thread Type & Size<br>for Fittings |          |
|----------------------|---------------------|----------------|------|----------------|------|-------------|-----|---------------------------------|------------|------------------------------------|----------|
|                      |                     | inches         | mm   | inches         | mm   | inches      | mm  |                                 |            | PG                                 | Metric   |
| 61815105             | 61815100            | .394           | 10.0 | .256           | 6.5  | .512        | 13  | 164                             | NPT-1/4"   | PG-7                               | M-10X1.0 |
| 61815115             | 61815110            | .512           | 13.0 | .394           | 10.0 | .591        | 15  | 164                             | NPT-1/4"   | PG-9                               | M-12X1.5 |
| 61815125             | 61815120            | .622           | 15.8 | .472           | 12.0 | .866        | 22  | 164                             | NPT-3/8"   | PG-11                              | M-16X1.5 |
| 61815185             | 61815180            | .728           | 18.5 | .563           | 14.3 | 1.063       | 27  | 164                             | --         | PG-13                              | --       |
| 61815135             | 61815130            | .835           | 21.2 | .650           | 16.5 | 1.378       | 35  | 164                             | NPT-1/2"   | PG-16                              | M-20X1.5 |
| 61815145             | 61815140            | 1.122          | 28.5 | .906           | 23.0 | 1.772       | 45  | 164                             | NPT-3/4"   | PG-21                              | M-25X1.5 |
| 61815155             | 61815150            | 1.358          | 34.5 | 1.142          | 29.0 | 1.969       | 50  | 82                              | NPT-1"     | PG-29                              | M-32X1.5 |
| 61815165             | 61815160            | 1.673          | 42.5 | 1.417          | 36.0 | 3.150       | 80  | 82                              | NPT-1-1/4" | PG-36                              | M-40X1.5 |
| 61815175             | 61815170            | 2.146          | 54.5 | 1.890          | 48.0 | 3.937       | 100 | 82                              | NPT-1-1/2" | PG-48                              | M-50X1.5 |

\* Fittings available in NPT, PG, and Metric

 **LAPP GROUP**

## SILVYN® FPS Conduit

**Construction:** Continuous Flex Spiral Steel Reinforced PVC Conduit.

**Body:** Flexible PVC with an insulated spiral steel spring.

**Features:**

Designed with an insulated spiral steel spring with a PVC jacket which creates a continuous flexing conduit.

**Applications:**

Strong and durable conduit that is rugged yet extremely flexible. Silicone free, UV and chemical resistant. Airtight and watertight. Excellent for applications where abrasion resistance is a concern.

**Technical Data:**

IP Protection: IP 68



**Temperature:**  
-20° to +80°C



**Rated Voltage:**  
N/A



**Color Code:**  
Gray



**Approvals:**



SILVYN®  
USK



SILVYN®  
LKI

| Part Number | Outer Diameter |    | Inner Diameter |    | Bend Radius |    | Conduit Coil<br>Put-Ups<br>Feet | PG     | Thread Type & Size for Fittings |               |
|-------------|----------------|----|----------------|----|-------------|----|---------------------------------|--------|---------------------------------|---------------|
|             | inches         | mm | inches         | mm | inches      | mm |                                 |        | Metric<br>LKI-M                 | Metric<br>USK |
| 61711550    | .394           | 10 | .276           | 7  | .315        | 8  | 82                              | PG-7   | M-12X1.5                        | M-10X1.5      |
| 61711590    | .551           | 14 | .394           | 10 | .394        | 10 | 82                              | PG-9   | M-16X1.5                        | M-12X1.5      |
| 61711630    | .669           | 17 | .512           | 13 | .512        | 13 | 82                              | PG-11  | M-20X1.5                        | M-16X1.5      |
| 61711670    | .748           | 19 | .591           | 15 | .591        | 15 | 82                              | PG -13 | ---                             | ---           |
| 61711710    | .827           | 21 | .630           | 16 | .669        | 17 | 82                              | PG-16  | M-25X1.5                        | M-20X1.5      |
| 61711750    | 1.063          | 27 | .866           | 22 | .787        | 20 | 82                              | PG-21  | M-32X1.5                        | M-25X1.5      |
| 61711790    | 1.417          | 36 | 1.142          | 29 | .984        | 25 | 82                              | PG-29  | M-40X1.5                        | M-32X1.5      |
| 61711830    | 1.772          | 45 | 1.496          | 38 | 1.417       | 36 | 82                              | PG-36  | M-50X1.5                        | M-40X1.5      |
| 61711910    | 2.205          | 56 | 1.890          | 48 | 1.575       | 40 | 82                              | PG-48  | M-63X1.5                        | M-50X1.5      |

\* Fittings available in PG and Metric

Check out our complete inventory of products at [www.lapptannehill.com](http://www.lapptannehill.com)



**LAPP GROUP**



## SILVYN® KLICK-GN, KLICK-GP, and KLICK-GM

**Construction:** Conduit Connectors for SILVYN® RILL PA 6 & PA 12 Conduit.

**Body:** Polyamide-Silicone Free.

**Features:**

The SILVYN® KLICK-G series is available in NPT, PG and Metric threads.

**Applications:**

This straight conduit gland is used to create a quick, secure connection to the SILVYN® RILL conduit.



**Technical Data:**

IP Protection: IP 68, IP 69K according to DIN 40050 T.9

**Temperature:**  
-30°C to 100°C

**Rated Voltage:**  
N/A

**Color Code:**  
Black or Gray

**Approvals:**



### SILVYN® KLICK-GN: NPT Conduit Connectors

| Part Number<br>Black | Thread Type<br>& Size | Conduit Outer<br>Diameter |      | Thread<br>Length |      | For SILVYN®<br>RILL PA 6 Conduit |          | For SILVYN®<br>RILL PA 12 Conduit |          | Standard<br>Pack Size |
|----------------------|-----------------------|---------------------------|------|------------------|------|----------------------------------|----------|-----------------------------------|----------|-----------------------|
|                      |                       | inches                    | mm   | inches           | mm   | Black                            | Gray     | Black                             | Gray     |                       |
| 61800705             | NPT-1/4"              | .394                      | 10.0 | .453             | 11.5 | 61746935                         | 61746939 | 61815105                          | 61815100 | 50                    |
| 61800715             | NPT-3/8"              | .512                      | 13.0 | .472             | 12.0 | 61746945                         | 61746940 | 61815115                          | 61815110 | 50                    |
| 61800725             | NPT-3/8"              | .622                      | 15.8 | .472             | 12.0 | 61746955                         | 61746950 | 61815125                          | 61815120 | 50                    |
| 61800745             | NPT-1/2"              | .835                      | 21.2 | .472             | 12.0 | 61746965                         | 61746960 | 61815135                          | 61815130 | 50                    |
| 61800755             | NPT-3/4"              | 1.122                     | 28.5 | .551             | 14.0 | 61746975                         | 61746970 | 61815145                          | 61815140 | 25                    |
| 61800765             | NPT-1"                | 1.358                     | 34.5 | .630             | 16.0 | 61746985                         | 61746980 | 61815155                          | 61815150 | 25                    |
| 61800775             | NPT-1-1/4"            | 1.673                     | 42.5 | .709             | 18.0 | 61746995                         | 61746990 | 61815165                          | 61815160 | 25                    |
| 61800785             | NPT-2"                | 2.146                     | 54.5 | .827             | 21.0 | 61747005                         | 61747000 | 61815175                          | 61815170 | 10                    |

### SILVYN® KLICK-GP: PG Conduit Connectors

| Part Number<br>Black | Part Number<br>Gray | Thread Type<br>& Size | Conduit Outer<br>Diameter |      | Thread<br>Length |      | For SILVYN®<br>RILL PA 6 Conduit |          | For SILVYN®<br>RILL PA 12 Conduit |          | Standard<br>Pack Size |
|----------------------|---------------------|-----------------------|---------------------------|------|------------------|------|----------------------------------|----------|-----------------------------------|----------|-----------------------|
|                      |                     |                       | inches                    | mm   | inches           | mm   | Black                            | Gray     | Black                             | Gray     |                       |
| 61800865             | 61800860            | PG-7                  | .394                      | 10.0 | .394             | 10.0 | 61746935                         | 61746939 | 61815105                          | 61815100 | 50                    |
| 61800875             | 61800870            | PG-9                  | .512                      | 13.0 | .394             | 10.0 | 61746945                         | 61746940 | 61815115                          | 61815110 | 50                    |
| 61800885             | 61800880            | PG-11                 | .622                      | 15.8 | .394             | 10.0 | 61746955                         | 61746950 | 61815125                          | 61815120 | 50                    |
| 61800855             | 61800850            | PG-13                 | .728                      | 18.5 | .433             | 11.0 | 61747015                         | 61747010 | 61815185                          | 61815180 | 50                    |
| 61800895             | 61800890            | PG-16                 | .835                      | 21.2 | .472             | 12.0 | 61746965                         | 61746960 | 61815135                          | 61815130 | 50                    |
| 61800905             | 61800900            | PG-21                 | 1.122                     | 28.5 | .472             | 12.0 | 61746975                         | 61746970 | 61815145                          | 61815140 | 25                    |
| 61800915             | 61800910            | PG-29                 | 1.358                     | 34.5 | .472             | 12.0 | 61746985                         | 61746980 | 61815155                          | 61815150 | 25                    |
| 61800925             | 61800920            | PG-36                 | 1.673                     | 42.5 | .453             | 11.5 | 61746995                         | 61746990 | 61815165                          | 61815160 | 25                    |
| 61800935             | 61800930            | PG-48                 | 2.146                     | 54.5 | .571             | 14.5 | 61747005                         | 61747000 | 61815175                          | 61815170 | 10                    |

### SILVYN® KLICK-GM: Metric Conduit Connectors

| Part Number<br>Black | Part Number<br>Gray | Thread Type<br>& Size | Conduit Outer<br>Diameter |      | Thread<br>Length |      | For SILVYN®<br>RILL PA 6 Conduit |          | For SILVYN®<br>RILL PA 12 Conduit |          | Standard<br>Pack Size |
|----------------------|---------------------|-----------------------|---------------------------|------|------------------|------|----------------------------------|----------|-----------------------------------|----------|-----------------------|
|                      |                     |                       | inches                    | mm   | inches           | mm   | Black                            | Gray     | Black                             | Gray     |                       |
| 55501005             | 55501000            | M-10X1.0              | .394                      | 10.0 | .453             | 11.5 | 61746935                         | 61746939 | 61815105                          | 61815100 | 50                    |
| 55501015             | 55501010            | M-12X1.5              | .512                      | 13.0 | .472             | 12.0 | 61746945                         | 61746940 | 61815115                          | 61815110 | 50                    |
| 55501035             | 55501030            | M-16X1.5              | .622                      | 15.8 | .453             | 11.5 | 61746955                         | 61746950 | 61815125                          | 61815120 | 50                    |
| 55501055             | 55501050            | M-20X1.5              | .835                      | 21.2 | .512             | 13.0 | 61746965                         | 61746960 | 61815135                          | 61815130 | 50                    |
| 55501065             | 55501060            | M-25X1.5              | 1.122                     | 28.5 | .512             | 13.0 | 61746975                         | 61746970 | 61815145                          | 61815140 | 25                    |
| 55501075             | 55501070            | M-32X1.5              | 1.358                     | 34.5 | .591             | 15.0 | 61746985                         | 61746980 | 61815155                          | 61815150 | 25                    |
| 55501085             | 55501080            | M-40X1.5              | 1.673                     | 42.5 | .591             | 15.0 | 61746995                         | 61746990 | 61815165                          | 61815160 | 25                    |
| 55501095             | 55501090            | M-50X1.5              | 2.146                     | 54.5 | .610             | 15.5 | 61747005                         | 61747000 | 61815175                          | 61815170 | 10                    |



## SILVYN® KLICK-W Series KLICK-WN, KLICK-WP, and KLICK-WM

**Construction:** Conduit Connectors for SILVYN® RILL PA 6 & PA 12 Conduit.

**Body:** Polyamide-Silicone Free.

**Features:**

The SILVYN® KLICK-W series is available in NPT, PG, and Metric threads.

**Applications:**

This 90°C angled conduit gland is used to create a quick, secure connection to the SILVYN® RILL conduit.



**Technical Data:**

IP Protection: IP 67, IP69K according to the DIN 40050 T.9

**Temperature:**  
-30°C to + 100°C

**Rated Voltage:**  
N/A

**Color Code:**  
Black or Gray

**Approvals:**



RoHS

### SILVYN® KLICK-WN: NPT Conduit Connectors

| Part Number |          | Thread Type & Size | Conduit Outer Diameter |      | Thread Length |      | For SILVYN® RILL PA 6 Conduit |          | For SILVYN® RILL PA 12 Conduit |          | Standard Pack Size |
|-------------|----------|--------------------|------------------------|------|---------------|------|-------------------------------|----------|--------------------------------|----------|--------------------|
| Black       | Gray     |                    | inches                 | mm   | inches        | mm   | Black                         | Gray     | Black                          | Gray     |                    |
| 61800015    | 55502600 | NPT-1/4"           | .394                   | 10.0 | .394          | 10.0 | 61746935                      | 61746939 | 61815105                       | 61815100 | 50                 |
| 61800025    | 55502610 | NPT-1/4"           | .512                   | 13.0 | .453          | 11.5 | 61746945                      | 61746940 | 61815115                       | 61815110 | 50                 |
| 61800035    | 55502620 | NPT-3/8"           | .622                   | 15.8 | .472          | 12.0 | 61746955                      | 61746950 | 61815125                       | 61815120 | 50                 |
| 61800045    | 55502630 | NPT-1/2"           | .835                   | 21.2 | .472          | 12.0 | 61746965                      | 61746960 | 61815135                       | 61815130 | 50                 |
| 61800055    | 55502640 | NPT-3/4"           | 1.122                  | 28.5 | .551          | 14.0 | 61746975                      | 61746970 | 61815145                       | 61815140 | 25                 |
| 61800065    | 55502650 | NPT-1"             | 1.358                  | 34.5 | .630          | 16.0 | 61746985                      | 61746980 | 61815155                       | 61815150 | 10                 |
| 61800075    | 55502660 | NPT-1-1/4"         | 1.673                  | 42.5 | .709          | 18.0 | 61746995                      | 61746990 | 61815165                       | 61815160 | 10                 |
| 61800085    | 55502670 | NPT-1-1/2"         | 2.146                  | 54.5 | .709          | 18.0 | 61747005                      | 61747000 | 61815175                       | 61815170 | 5                  |

### SILVYN® KLICK-WP: PG Conduit Connectors

| Part Number |          | Thread Type & Size | Conduit Outer Diameter |      | Thread Length |    | For SILVYN® RILL PA 6 Conduit |          | For SILVYN® RILL PA 12 Conduit |          | Standard Pack Size |
|-------------|----------|--------------------|------------------------|------|---------------|----|-------------------------------|----------|--------------------------------|----------|--------------------|
| Black       | Gray     |                    | inches                 | mm   | inches        | mm | Black                         | Gray     | Black                          | Gray     |                    |
| 61801025    | 61801020 | PG-9               | .512                   | 13.0 | .394          | 10 | 61746945                      | 61746940 | 61815115                       | 61815110 | 50                 |
| 61801035    | 61801030 | PG-11              | .622                   | 15.8 | .394          | 10 | 61746955                      | 61746950 | 61815125                       | 61815120 | 50                 |
| 56000105    | 56000100 | PG-13              | .728                   | 18.5 | .433          | 11 | 61747015                      | 61747010 | 61815185                       | 61815180 | 50                 |
| 61801045    | 61801040 | PG-16              | .835                   | 21.2 | .472          | 12 | 61746965                      | 61746960 | 61815135                       | 61815130 | 50                 |
| 61801055    | 61801050 | PG-21              | 1.122                  | 28.5 | .472          | 12 | 61746975                      | 61746970 | 61815145                       | 61815140 | 25                 |
| 61801065    | 61801060 | PG-29              | 1.358                  | 34.5 | .472          | 12 | 61746985                      | 61746980 | 61815155                       | 61815150 | 10                 |
| 61801075    | 61801061 | PG-36              | 1.673                  | 42.5 | .472          | 12 | 61746995                      | 61746990 | 61747085                       | 61714200 | 10                 |
| 61801085    | 61801062 | PG-48              | 2.146                  | 54.5 | .551          | 14 | 61747005                      | 61747000 | 61747095                       | 61714210 | 5                  |

### SILVYN® KLICK-WM: Metric Conduit Connectors

| Part Number |          | Thread Type & Size | Conduit Outer Diameter |      | Thread Length |    | For SILVYN® RILL PA 6 Conduit |          | For SILVYN® RILL PA 12 Conduit |          | Standard Pack Size |
|-------------|----------|--------------------|------------------------|------|---------------|----|-------------------------------|----------|--------------------------------|----------|--------------------|
| Black       | Gray     |                    | inches                 | mm   | inches        | mm | Black                         | Gray     | Black                          | Gray     |                    |
| 55501115    | 55501110 | M-10X1.0           | .394                   | 10.0 | .433          | 11 | 61746935                      | 61746939 | 61815105                       | 61815100 | 50                 |
| 55501125    | 55501120 | M-12X1.5           | .512                   | 13.0 | .472          | 12 | 61746945                      | 61746940 | 61815115                       | 61815110 | 50                 |
| 55501145    | 55501140 | M-16X1.5           | .622                   | 15.8 | .472          | 12 | 61746955                      | 61746950 | 61815125                       | 61815120 | 50                 |
| 55501165    | 55501160 | M-20X1.5           | .835                   | 21.2 | .512          | 13 | 61746965                      | 61746960 | 61815135                       | 61815130 | 50                 |
| 55501185    | 55501180 | M-25X1.5           | 1.122                  | 28.5 | .512          | 13 | 61746975                      | 61746970 | 61815145                       | 61815140 | 25                 |
| 55501205    | 55501200 | M-32X1.5           | 1.358                  | 34.5 | .591          | 15 | 61746985                      | 61746980 | 61815155                       | 61815150 | 10                 |
| 55501225    | 55501220 | M-40X1.5           | 1.673                  | 42.5 | .591          | 15 | 61746995                      | 61746990 | 61815165                       | 61815160 | 10                 |
| 55501245    | 55501240 | M-50X1.5           | 2.146                  | 54.5 | .630          | 16 | 61747005                      | 61747000 | 61815175                       | 61815170 | 5                  |



**LAPP GROUP**



## SILVYN® LKI/LKI-M

**Construction:** Conduit Connectors for SILVYN® FD-PU and SILVYN® FPS Conduit.

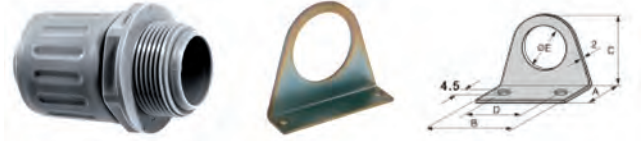
**Body:** Polypropylene.

**Features:**

The SILVYN® LKI is a swivel connector designed to allow the conduit to rotate freely without damage to the conduit or the connection. It is tension and vibration resistant, providing a high quality connection between the protective conduit and the machine.

**Applications:**

The SILVYN® LKI is for use with both the SILVYN® FPS and SILVYN® FD-PU. The SILVYN® BW is a special mounting bracket to be used with the SILVYN LKI to provide the proper sealing protection. Locknuts are available in the SKINTOP® GMP-GL Series.



**Technical Data:**

IP Protection: IP 54

**Temperature:**  
-10°C to +110°C

**Rated Voltage:**  
N/A

**Color Code:**  
Gray

**Approvals:**



### SILVYN® LKI: PG Conduit Connectors

| Part Number | Thread Type & Size | Conduit Outer Diameter |    | Thread Length |    | For SILVYN® FPS Conduit | For SILVYN® FD-PU Conduit | Standard Pack Size |
|-------------|--------------------|------------------------|----|---------------|----|-------------------------|---------------------------|--------------------|
|             |                    | inches                 | mm | inches        | mm |                         |                           |                    |
| 55000000    | PG-7               | .394                   | 10 | .394          | 10 | 61711550                | 64453662                  | 50                 |
| 55000010    | PG-9               | .551                   | 14 | .394          | 10 | 61711590                | 64453672                  | 50                 |
| 55000020    | PG-11              | .669                   | 17 | .394          | 10 | 61711630                | 64453682                  | 50                 |
| 55000030    | PG-13              | .748                   | 19 | .394          | 10 | 61711670                | 64453692                  | 50                 |
| 55000040    | PG-16              | .827                   | 21 | .433          | 11 | 61711710                | 64453702                  | 50                 |
| 55000050    | PG-21              | 1.063                  | 27 | .433          | 11 | 61711750                | 64453712                  | 25                 |
| 55000060    | PG-29              | 1.417                  | 36 | .472          | 12 | 61711790                | 64453721                  | 25                 |
| 55000070    | PG-36              | 1.772                  | 45 | .472          | 12 | 61711830                | 64453731                  | 25                 |
| 55000090    | PG-48              | 2.205                  | 56 | .591          | 15 | 61711910                | 64453751                  | 10                 |

### SILVYN® LKI-M: Metric Conduit Connectors

| Part Number | Thread Type & Size | Conduit Outer Diameter |    | Thread Length |    | For SILVYN® FPS Conduit | For SILVYN® FD-PU Conduit | Standard Pack Size |
|-------------|--------------------|------------------------|----|---------------|----|-------------------------|---------------------------|--------------------|
|             |                    | inches                 | mm | inches        | mm |                         |                           |                    |
| 55501400    | M-12X1.5           | .394                   | 10 | .394          | 10 | 61711550                | 64453612                  | 50                 |
| 55501410    | M-16X1.5           | .551                   | 14 | .394          | 10 | 61711590                | 64453672                  | 50                 |
| 55501420    | M-20X1.5           | .669                   | 17 | .394          | 10 | 61711630                | 64453682                  | 50                 |
| 55501430    | M-25X1.5           | .827                   | 21 | .433          | 11 | 61711710                | 64453702                  | 50                 |
| 55501440    | M-32X1.5           | 1.063                  | 27 | .472          | 12 | 61711750                | 64453712                  | 25                 |
| 55501450    | M-40X1.5           | 1.417                  | 36 | .472          | 12 | 61711790                | 64453721                  | 25                 |
| 55501460    | M-50X1.4           | 1.772                  | 45 | .472          | 12 | 61711830                | 64453731                  | 25                 |
| 55501470    | M-63X1.5           | 2.205                  | 56 | .591          | 15 | 61711910                | 64453751                  | 10                 |

### SILVYN® BW: PG Brackets

| Part Number | Thread Type & Size | A      |    | B      |    | C      |    | D      |    | E      |      | Standard Pack Size |
|-------------|--------------------|--------|----|--------|----|--------|----|--------|----|--------|------|--------------------|
|             |                    | inches | mm | inches | mm | inches | mm | inches | mm | inches | mm   |                    |
| 55000540    | PG-16              | .787   | 20 | 1.969  | 50 | 1.496  | 38 | 1.575  | 40 | .906   | 23.0 | 25                 |
| 55000550    | PG-21              | .787   | 20 | 2.362  | 60 | 1.850  | 47 | 1.969  | 50 | 1.142  | 29.0 | 25                 |
| 55000560    | PG-29              | .787   | 20 | 2.756  | 70 | 2.244  | 57 | 2.362  | 60 | 1.476  | 37.5 | 25                 |
| 55000570    | PG-36              | .787   | 20 | 3.150  | 80 | 2.638  | 67 | 2.756  | 70 | 1.870  | 47.5 | 25                 |

## EPIC® Rectangular Connectors

### Features:

EPIC® Connectors provide a safe, cost-effective solution for your industrial wiring requirements.

### Applications:

EPIC® Rectangular Connectors are designed to meet the power and control connectivity needs and requirements of your business.

### Additional Information:

Watertight IP65

### WATERTIGHT IP65

|                            |                      |                      |                         | INSERTS                                                                           |                      | SINGLE LEVER PANEL MOUNT BASE                                                      |               | DOUBLE LEVER PANEL MOUNT BASE                                                       |
|----------------------------|----------------------|----------------------|-------------------------|-----------------------------------------------------------------------------------|----------------------|------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------|
|                            |                      |                      |                         |  |                      |  |               |  |
| INSERT/<br>HOUSING<br>TYPE | OPERATING<br>VOLTAGE | OPERATING<br>CURRENT | NUMBER<br>OF<br>CONTACT | MALE<br>PLUG                                                                      | FEMALE<br>RECEPTACLE | WITHOUT<br>COVER                                                                   | WITH<br>COVER | WITHOUT<br>COVER                                                                    |
| HBE6                       | 600V                 | 16A                  | 6                       | 10190000                                                                          | 10191000             | 100030C0                                                                           | 100040C0      | -                                                                                   |
| HBE10                      | 600V                 | 16A                  | 10                      | 10192000                                                                          | 10193000             | 10032900                                                                           | 10033900      | 100320C0                                                                            |
| HBE16                      | 600V                 | 16A                  | 16                      | 10194000                                                                          | 10195000             | 10072900                                                                           | 10073900      | 100720C0                                                                            |
| HBE24                      | 600V                 | 16A                  | 24                      | 10196000                                                                          | 10197000             | 10102900                                                                           | 10103900      | 101020C0                                                                            |

### WATERTIGHT IP65

| TOP ENTRY HOOD W/ SINGLE LEVER BOLTS                                               |         |        |        |        | TOP ENTRY HOOD W/ DOUBLE LEVER BOLTS                                                 |        |
|------------------------------------------------------------------------------------|---------|--------|--------|--------|--------------------------------------------------------------------------------------|--------|
|  |         |        |        |        |  |        |
| INSERT/<br>HOUSING<br>TYPE                                                         | PG13.5  | PG16   | PG21   | PG29   | PG21                                                                                 | PG29   |
| HBE6                                                                               | 100110R | -      | 700202 | -      | -                                                                                    | -      |
| HBE10                                                                              | -       | 100409 | -      | -      | -                                                                                    | -      |
| HBE16                                                                              | -       | -      | 100809 | -      | 100800                                                                               | 100900 |
| HBE24                                                                              | -       | -      | 101219 | 101119 | 101210                                                                               | 101110 |

### WATERTIGHT IP65

| SIDE ENTRY HOOD W/ SINGLE LEVER BOLTS                                               |        |        | SIDE ENTRY HOOD W/ DOUBLE LEVER BOLTS                                                |        |        |
|-------------------------------------------------------------------------------------|--------|--------|--------------------------------------------------------------------------------------|--------|--------|
|  |        |        |  |        |        |
| INSERT/<br>HOUSING<br>TYPE                                                          | PG16   | PG21   | PG16                                                                                 | PG21   | PG29   |
| HBE6                                                                                | 100220 | -      | -                                                                                    | -      | -      |
| HBE10                                                                               | 100429 | -      | 100420                                                                               | -      | -      |
| HBE16                                                                               | -      | 100829 | -                                                                                    | 100820 | 100920 |
| HBE24                                                                               | -      | -      | -                                                                                    | 101110 | -      |



**LAPP GROUP**



## EPIC® Connectors

**Construction:** Pin & Sleeve IEC60309-1 & -2

**Features:** EPIC® Connectors provide a safe, cost-effective solution for your industrial wiring requirements.

**Applications:** EPIC® Pin & Sleeve Connectors are designed to meet the power connectivity needs and requirements of your business.

**Additional Information:** MULTIMAX pin and sleeve connectors have a unique patented design that can be assembled in under 20 seconds thus saving money through reduced downtime and installation savings; they are also a sensible alternative to twist lock connectors in many applications.

**Standards:** IEC60309-1 & -2; UL1682 & 1686

### Technical Data:



**Approvals:**

- Conform to IEC 60309-1 and -2 standards; cULus
- Watertight IP67, Splashproof IP44



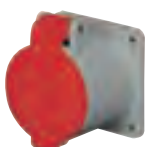
### CEE AND ULYSEE

### WATERTIGHT IP67

|                             |                              | CEE STRAIGHT<br>MALE PLUG WITH<br>CABLE GLAND                                     | CEE STRAIGHT<br>FEMALE CONNECTOR<br>WITH CABLE GLAND                              | CEE FEMALE<br>ANGLED PANEL<br>MOUNT<br>RECEPTACLE                                 | ULYSSE SWITCHED<br>SOCKET OUTLET<br>WITH FUSEHOLDER                                 |
|-----------------------------|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                             |                              |  |  |  |  |
| CURRENT<br>RATING<br>(AMPS) | NUMBER<br>OF WIRES/<br>VOLTS | 477513FX                                                                          | 473513FX                                                                          | 471573FX                                                                          | 400137FX                                                                            |
| 20                          | 4 / 480V                     | 477516FX                                                                          | 473516FX                                                                          | 471577FX                                                                          | 400237FX                                                                            |
| 30                          | 4 / 480V                     |                                                                                   |                                                                                   |                                                                                   |                                                                                     |

### MULTIMAX AND CEE

### SPLASHPROOF IP44

|    |          | MULTIMAX<br>MALE PLUG<br>W/CABLE SLEEVE                                             | MULTIMAX FEMALE<br>CONNECTOR<br>W/CABLE SLEEVE                                      | CEE FEMALE<br>STRAIGHT<br>PANEL MOUNT<br>RECEPTACLE                                 | CEE FEMALE<br>75 DEGREE INTERNAL<br>SURFACE MOUNT<br>RECEPTACLE                       |
|----|----------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|    |          |  |  |  |  |
| 20 | 3 / 125V | 700124FX                                                                            | 720124FX                                                                            | 431611FX                                                                            | 471372FX                                                                              |
|    | 4 / 250V | 700139FX                                                                            | 720139FX                                                                            | 441622FX                                                                            | 471572FX                                                                              |
|    | 4 / 480V | 700137FX                                                                            | 720137FX                                                                            | 441650FX                                                                            |                                                                                       |
| 30 | 3 / 250V | 700226FX                                                                            | 720226FX                                                                            | 433222FX                                                                            | 471576FX                                                                              |
|    | 4 / 480V | 700237FX                                                                            | 720237FX                                                                            | 443250FX                                                                            |                                                                                       |

Specifications subject to change. For complete specifications and availability visit [www.lapptannehill.com](http://www.lapptannehill.com)



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## EPIC® Circular Connectors

**Construction:** EPIC® Circular Connectors: LS1.

**Features:** Rugged nickel-plated, die-cast zinc body. Positive vibration protection for use with motor drives and moving assemblies. Integral EMC cable gland provides strain-relief, IP67/68 protections, and 360° shielding.

**No. of Contacts:** 5+PE, 3+PE+4

**Materials:**

Housing: Nickel Plated Zinc. Insert: PA, PBT, UL94 V-0. Contacts: gold plated copper alloy. Gaskets & Seals: FPM

**Standards:** DIN EN 61984

**Technical Data:**



**Temperature:**  
-25°C to +125°C



**Rated Voltage:**  
• VDE: 630V (2mm contacts)  
250V (1mm contacts)  
• UL: 600V



**Rated Current:**  
• 22 amps (2mm contacts)  
• 7 amps (1mm contacts)



**Impulse Voltage:**  
• 6kV (2mm contacts)  
• 4kV (1mm contacts)



**Contact Resistance:**  
<5m Ohms



**Mating Cycles:**  
500



**Approvals:**



Watertight IP67/68 (10h, 1m)

### LS1 CIRCULAR CONNECTORS

### WATERTIGHT IP67/68 (10h, 1m)

|                      |                      |                          | STRAIGHT<br>PANEL MOUNT<br>INLET                                                   | ANGLED,<br>ROTATABLE PANEL<br>MOUNT INLET                                          | CABLE<br>COUPLER                                                                    | CABLE<br>CONNECTOR                                                                   |
|----------------------|----------------------|--------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                      |                      |                          |  |  |  |  |
| OPERATING<br>VOLTAGE | OPERATING<br>CURRENT | CONTACT<br>CONFIGURATION |                                                                                    |                                                                                    |                                                                                     |                                                                                      |
| 600V                 | 22A                  | 5+PE                     | 76003000                                                                           | 24420058*                                                                          | 76133000                                                                            | 76123000                                                                             |
| 600V                 | 22A                  | 3+PE+4                   | 76004000                                                                           | 24420056*                                                                          | 76134000                                                                            | 76124000                                                                             |

\*IP65

Check out our complete inventory of products at [www.lapptannehill.com](http://www.lapptannehill.com)

## EPIC® Circular Connectors

**Construction:** Rugged Nickel-plated, die-cast Zinc Body.

**Features:** EPIC® Circular Connectors M23. Positive vibration protection for use with motor drives and moving assemblies. Integral EMC cable gland provides strain-relief, IP67/IP68 protection, and 360 degree shielding.

**Applications:** The M23 connectors have many inherent features which offer application advantages and provide significant benefits for the customer. These features make it one of the most application friendly connectors available, and insure quick and easy assembly, high reliability, and long, uninterrupted service life in tough industrial environments.

**No. of Contacts:** 6,7,8+1, 9,12,16,17

**Materials:**

**Housing:** Nickel Plated Zinc. **Insert:** PA, PBT, UL94 V-0. **Contacts:** gold plated copper alloy. **Gaskets & Seals:** FPM.

**Standards:** DIN EN 61984

### Technical Data:

|                                                                                                                                                                            |                                        |                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Rated Voltage:</b> <ul style="list-style-type: none"> <li>• 6,7,8+1,9 poles-150 volts.</li> <li>• 12 &amp; 16 poles-100 volts.</li> <li>• 17 poles-50 volts.</li> </ul> | <b>Impulse Voltage:</b><br>0.8kV       | <b>Approvals:</b><br><br>Watertight IP67/68 (10h, 1m) |
| <b>Rated Current:</b> <ul style="list-style-type: none"> <li>• 6&amp;7 pole: 14 amps; 8+1, 9,12,16,17</li> <li>• pole: 7 amps</li> </ul>                                   | <b>Contact Resistance:</b><br><5m Ohms |                                                                                                                                         |
|                                                                                                                                                                            | <b>Mating Cycles:</b><br>100 minimum   |                                                                                                                                         |

### M23 CIRCULAR CONNECTORS - HOUSINGS

WATERTIGHT IP67/68 (10h, 1m)

| STRAIGHT MOUNT PANEL BASE                                                         | STRAIGHT THRU-HOLE MOUNT PANEL BASE                                                | ANGLED, ROTATABLE FLANGE MOUNT PANEL BASE                                          | CABLE COUPLER                                                                       | CABLE CONNECTOR                                                                      |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |  |  |  |
| 72004000                                                                          | 44420046                                                                           | 24420055*                                                                          | 44420040                                                                            | 44420037                                                                             |

\*IP65

## Insert Configurations

**Features:** Connector inserts will accept both male and female contacts. A complete connection requires one E-Type insert and one P-Type insert.

### M23 CIRCULAR CONNECTORS - INSERTS

|                   |                   |                     | E-TYPE INSERT W/FEMALE SOLDER CONTACTS                                              | E-TYPE INSERT W/MALE SOLDER CONTACTS                                                | P-TYPE INSERT W/FEMALE SOLDER CONTACTS                                              | P-TYPE INSERT W/MALE SOLDER CONTACTS                                                  |
|-------------------|-------------------|---------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| OPERATING VOLTAGE | OPERATING CURRENT | NUMBERS OF CONTACTS |  |  |  |  |
| 100V              | 7A                | 12                  | 73002722                                                                            | 73002720                                                                            | 73002716                                                                            | 73002714                                                                              |
| 100V              | 7A                | 16                  | -                                                                                   | 73002708                                                                            | 73002704                                                                            | -                                                                                     |
| 50V               | 7A                | 17                  | -                                                                                   | 73028500                                                                            | 73018000                                                                            | -                                                                                     |

## EPIC® Rectangular Connectors HA 3/4 Inserts

### Construction:

**HA Plug & Receptacles:** Screw Terminated Inserts.

**Features:** The small HA 3/4 inserts are used whenever space is limited. The HA 3-48 screw terminated inserts fit into HA Series Housings. A modified Housing can fit 64 contacts.

**No. of Contacts:** 3,4,10,16,32,48,64 (+PE)

**Termination:** Screw

**Wire Size:** AWG 20-14 (0.5-2.5mm<sup>2</sup>)

### Technical Data:

 **Rated Voltage:**  
600V

 **Rated Current:**  
• 10A (HA 3/4)  
• 14A (HA 10-64)

 **Approvals:**

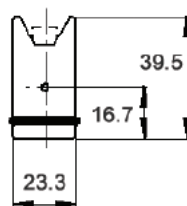


### HA 3/4 Inserts

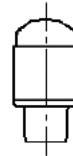
#### HA 3



Plug

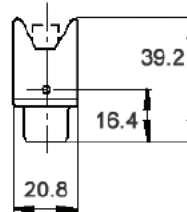


All dimensions  
are in mm.

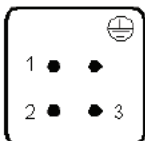


Receptacle

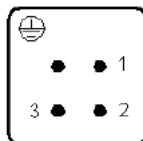
#### HA 4



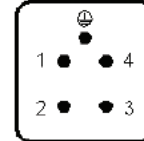
Plug



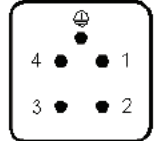
Receptacle



Plug



Receptacle



These inserts fit in  
the HA 3/4 Series  
Housings.

| Description | Plug     | Receptacle |
|-------------|----------|------------|
| HA 3        | 10420000 | 10421000   |
| HA 4        | 10431000 | 10432000   |



Coding Pin:  
10451400

Complete catalog available online at: [www.lapptannehill.com](http://www.lapptannehill.com)

EPIC® Rectangular Connectors HA 10 Inserts

**Construction:**  
**HA Plug & Receptacles:** Screw Terminated Inserts.  
**Features:** The HA 10-48 screw terminated inserts fit into HA Series housings. A modified Housing can fit 64 contacts.  
**No. of Contacts:** 10,16,32,48,64 (+PE)  
**Termination:** Screw  
**Wire Size:** AWG 20-14 (0.5-2.5mm2)

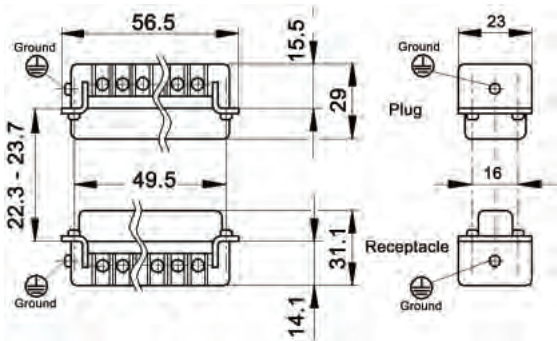
**Technical Data:**  

**Rated Voltage:** 600V

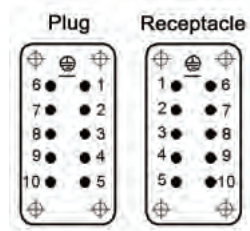
**Rated Current:** 14A (HA 10-64)

**Approvals:**

HA 10 Inserts



View from cable side



All dimensions are in mm.



| Description                   | Plug     | Receptacle |
|-------------------------------|----------|------------|
| HA 10 with Wire Protection    | 10440100 | 10441100   |
| HA 10 without Wire Protection | 10440000 | 10441000   |

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## EPIC® Rectangular Connectors HA 3/4 Housings: Single Lever on Base

**Construction:** Die cast zinc, powder coated/Thermoplastic flame retardant material rated UL 94 V-O.

**Temperature Range:** >-40°C to +125°C

**Specification:** DIN 43652

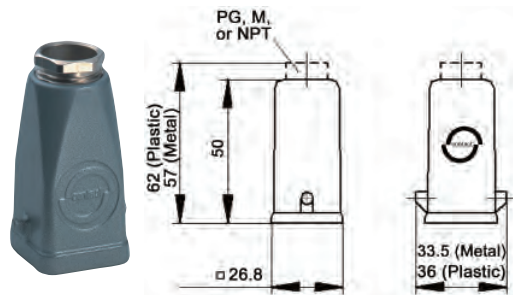
**Protection class:** NEMA 4, NEMA 12, IP65



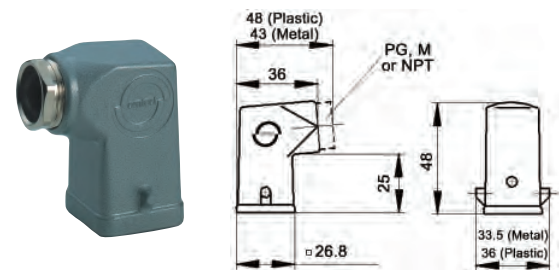
**LAPP GROUP**

### TOP & SIDE ENTRY HOODS

#### TOP ENTRY



#### SIDE ENTRY



All dimensions are in mm.

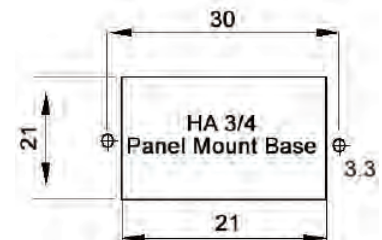
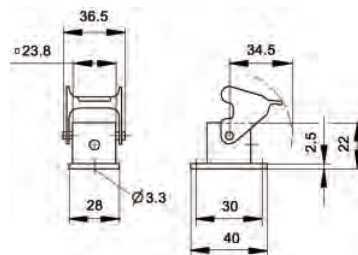
#### Top Entry Hoods

| Material      | Size of Entry |      |        | Without Cable Gland |          | With Cable Gland |          |
|---------------|---------------|------|--------|---------------------|----------|------------------|----------|
|               | PG            | NPT  | Metric | NPT                 | Metric   | PG               | Metric   |
| Zinc Die Cast | 11            | 1/2" | 20     | 105121NP            | -        | 10426500         | 19426500 |
| Black Plastic | 11            | 1/2" | 20     | 104255NP            | 19425500 | 10426700         | -        |
| Grey Plastic  | 11            | 1/2" | 20     | 104260NP            | 19426000 | 10426400         | -        |

#### Side Entry Hoods

| Material      | Size of Entry |      |        | Without Cable Gland |          | With Cable Gland |          |
|---------------|---------------|------|--------|---------------------|----------|------------------|----------|
|               | PG            | NPT  | Metric | NPT                 | Metric   | PG               | Metric   |
| Zinc Die Cast | 11            | 1/2" | 20     | 105123NP            | -        | 10427500         | 19427500 |
| Black Plastic | 11            | 1/2" | 20     | 104273NP            | 19427300 | 10620600         | -        |
| Grey Plastic  | 11            | 1/2" | 20     | 104270NP            | 19427000 | 10427100         | -        |

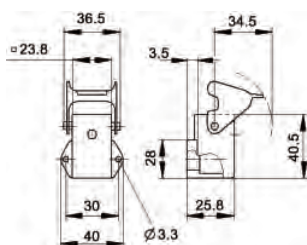
### PANEL MOUNT BASES



All dimensions are in mm.

| Gray Metal | Black Plastic | Gray Plastic |
|------------|---------------|--------------|
| 10422500   | 10422200      | 10422000     |

### ANGLED PANEL MOUNT BASES



| Gray Metal | Black Plastic | Gray Plastic |
|------------|---------------|--------------|
| 10423500   | 10423100      | 10423000     |



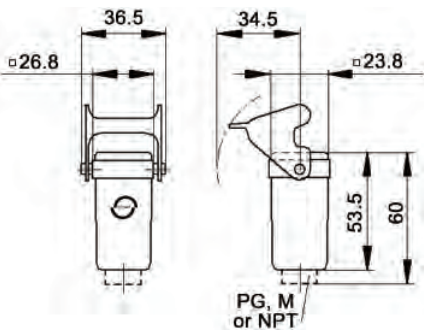
Cable Coupler Hoods

Construction: Metal or Plastic.

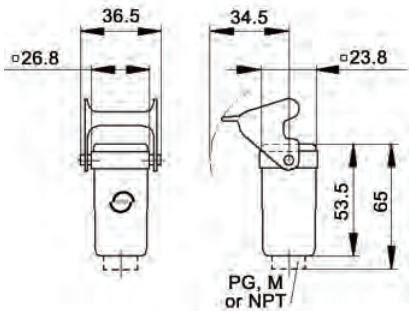


CABLE COUPLER HOODS

METAL



PLASTIC



All dimensions are in mm.

| Material      | Size of Entry |      |        | Without Cable Gland |          | With Cable Gland |          |
|---------------|---------------|------|--------|---------------------|----------|------------------|----------|
|               | PG            | NPT  | Metric | NPT                 | Metric   | PG               | Metric   |
| Zinc Die Cast | 11            | 1/2" | 20     | 105129NP            | 19512900 | 10429500         | 19429500 |
| Black Plastic | 11            | 1/2" | 20     | 104292NP            | 19429200 | 10620300         | -        |
| Grey Plastic  | 11            | 1/2" | 20     | 104290NP            | 19429000 | 10429100         | -        |

Specifications subject to change. For complete specifications and availability visit [www.lapptannehill.com](http://www.lapptannehill.com)



## EPIC® Rectangular Connectors

**Construction:** HA 10 Housings: Single Lever on Base.

**Specification:** DIN 43652.

**Temperature Range:** -40°C to +125°C.

**Protection Class:** NEMA 4, NEMA 12, IP65.

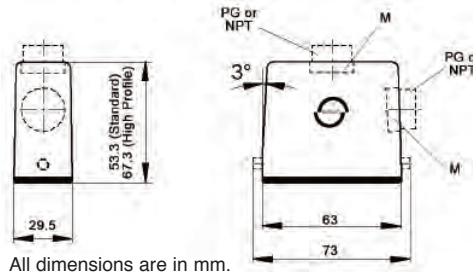
**Material:** Aluminum alloy, powder coated.

**Additional information:** Top Entry Metric hoods do not come with a neck.



### TOP & SIDE ENTRY HOODS

TOP ENTRY



All dimensions are in mm.

SIDE ENTRY



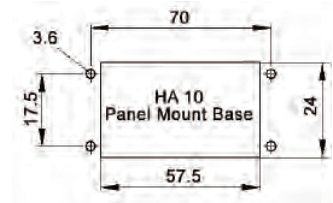
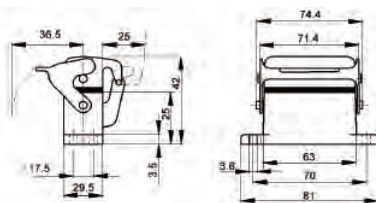
### STANDARD PROFILE

| Position of Cable Entry | Size of Entry |      |        | Part Numbers |          |          | Complete your installation with a SKINTOP® |           |               |              |
|-------------------------|---------------|------|--------|--------------|----------|----------|--------------------------------------------|-----------|---------------|--------------|
|                         | PG            | NPT  | Metric | PG           | NPT      | Metric   | PG- Nylon                                  | PG- Metal | Metric- Nylon | Metric-Metal |
| Top Entry               | 13            | 1/2" | 20     | 104460       | 104460NP | 19446000 | 53015130                                   | 52015730  | 53111020      | 53112020     |
|                         | 16            | 1/2" | 25     | 104461       | 104461NP | 19446100 | 53015140                                   | 52015740  | 53111030      | 53112030     |
| Side Entry              | 16            | 1/2" | 20     | 104450       | 104450NP | 19445000 | 53015140                                   | 52015740  | 53111020      | 53112020     |
|                         | 21            | 3/4" | 25     | 104455       | 104455NP | 19445500 | 53015150                                   | 52015750  | 53111030      | 53112030     |

## Panel Mount Bases



### PANEL MOUNT BASES



| Without Dust Cover | With Dust Cover |
|--------------------|-----------------|
| 104420C0           | 704440C0        |

All dimensions are in mm.

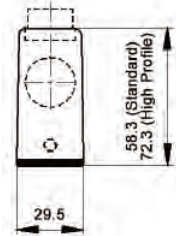
EPIC® Rectangular Connectors

Construction: HA 16 Housings: Single Lever on Base.

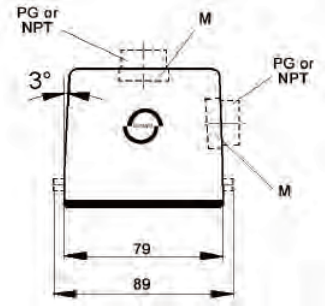
Additional information: Top Entry Metric hoods do not come with a neck.



TOP ENTRY



HOODS



SIDE ENTRY



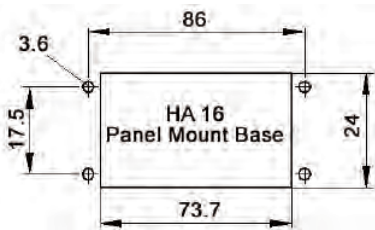
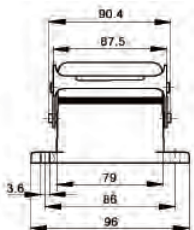
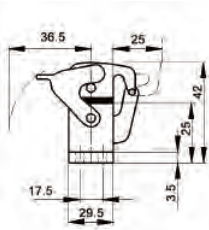
STANDARD PROFILE

| Position of Cable Entry | Size of Entry |      |        | Part Numbers |          |          | Complete your installation with a SKINTOP® |           |               |              |
|-------------------------|---------------|------|--------|--------------|----------|----------|--------------------------------------------|-----------|---------------|--------------|
|                         | PG            | NPT  | Metric | PG           | NPT      | Metric   | PG- Nylon                                  | PG- Metal | Metric- Nylon | Metric-Metal |
| Top Entry               | 16            | 1/2" | 20     | 105650       | 105650NP | 19565000 | 53015140                                   | 52015740  | 53111020      | 53112020     |
|                         | 21            | 3/4" | 25     | 105652       | 105652NP | 19565300 | 53015150                                   | 52015750  | 53111030      | 53112030     |
| Side Entry              | 16            | 1/2" | 20     | 105640       | 105640NP | 19564000 | 53015140                                   | 52015740  | 53111020      | 53112020     |
|                         | 21            | 3/4" | 25     | 105645       | 105645NP | 19564500 | 53015150                                   | 52015750  | 53111030      | 53112030     |

EPIC® Rectangular Connectors-Panel Mount Base



PANEL MOUNT BASE



| Without Dust Cover | With Dust Cover |
|--------------------|-----------------|
| 104620C0           | 704740C0        |

Please contact your sales representative for detailed information at [sales@lapptannehill.com](mailto:sales@lapptannehill.com)



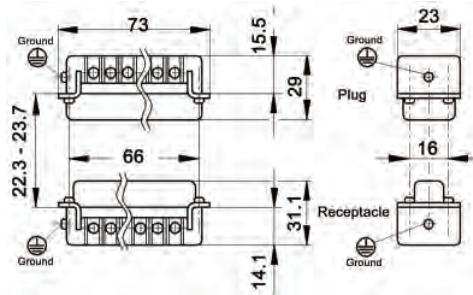
## EPIC® Rectangular Connectors

**Construction:** HA Plug & Receptacles

**Termination:** Screw Terminated.

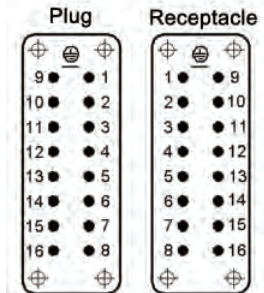


### HA 16 Inserts



All dimensions are in mm.

View from cable side



HA 16

| Description                   | Plug     | Receptacle |
|-------------------------------|----------|------------|
| HA 16 with Wire Protection    | 10530000 | 10531000   |
| HA 16 without Wire Protection | 10532000 | 10533000   |

## EPIC® Rectangular Connectors

**Construction:** HBVE Series.

**Features:** The HBVE series inserts are high voltage inserts which are equipped with switch contacts. The switch contacts lag when inserted and lead when separated. They can be used in an electrical interlock to prevent mating and unmating under power.

**Termination:** HBVE 3 Screw Terminated Inserts

**Wire Size:** 0.5-2.5mm<sup>2</sup> AWG: 20-14



### Technical Data:

**Temperature:**  
-40°C to 125°C

**Test Voltage:**  
6kV

**Contacts:**  
Copper alloy, silver plated

**Contact Resistance:**  
<2mOhm

**Mating Cycles:**  
100 (higher mating cycles depend on the application)

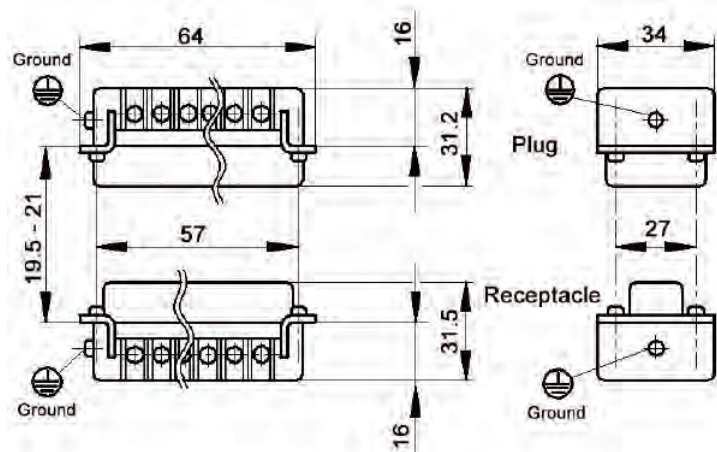
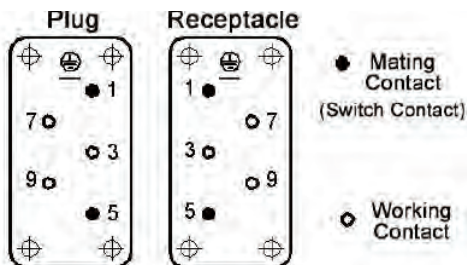
**Rated Voltage Type:**  
600V

**Rated Current:**  
16 amps

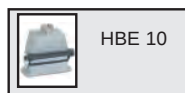
### HBVE 3 SCREW TERMINATED INSERTS



View from cable side



All dimensions are in mm.



HBE 10

| Description             | Plug     | Receptacle |
|-------------------------|----------|------------|
| With wire protection    | 10210010 | 10211010   |
| Without wire protection | 10210110 | 10211110   |



EPIC® Rectangular Connectors

**Construction:** Mixed Power Series.

**Features:** The Mixed Power series inserts provide contacts for power or a combination of power and signal in one insert. These inserts fit into the HBE series housings. Also available: 4 power/2 signal & 4 power/8 signal.

**Contact Material:** Copper alloy, hard silver plated.

**Molding Material:** Thermoplastic resin, fiberglass reinforced.

**Termination Type:** Screw.

**Wire Size:** Screw termination: up to 6 AWG, 16 mm<sup>2</sup> for power contacts. Screw termination: up to 14 AWG, 2.5 mm<sup>2</sup> for signal contacts.

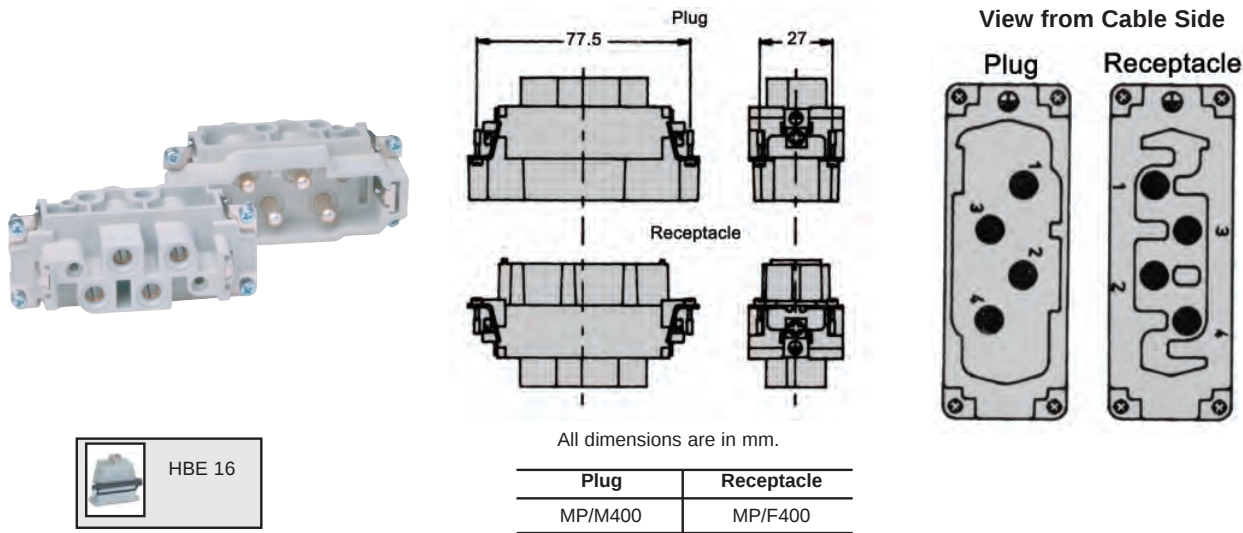
**Contact Resistance:** <0.3mOhm (Principle); <1mOhm (Auxiliary).



**Technical Data:**

|                                       |                                                                       |                                                              |
|---------------------------------------|-----------------------------------------------------------------------|--------------------------------------------------------------|
| <b>Temperature:</b><br>-40°C to 125°C | <b>Test Voltage:</b><br>• 6kV (4x0)<br>• 6kV/4kV (4x2)<br>• 4kV (4x8) | <b>Rated Current:</b><br>• 80 amps power<br>• 16 amps signal |
| <b>Rated Voltage:</b><br>600V UL/CSA  |                                                                       |                                                              |

4 POWER/ 0 SIGNAL MIXED POWER INSERTS



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## EPIC® Rectangular Connectors

**Construction:** HBS Series.

**Features:** The HBS series inserts are characterized by their high current carrying capacity. A secure electrical connection can be made by simple screw termination for cables up to 10 AWG.

**Termination Type:** Screw termination: 0.5-6mm<sup>2</sup> AWG: 20-10.

**Contacts:** 6, 12 (+PE), Copper alloy, silver plated.

**Contact Resistance:** <2mOhm.

**Mating Cycles:** 100 (higher mating cycles depends on the application).



### Technical Data:

**Temperature:**  
-40°C to 125°C

**Test Voltage:**  
6kV

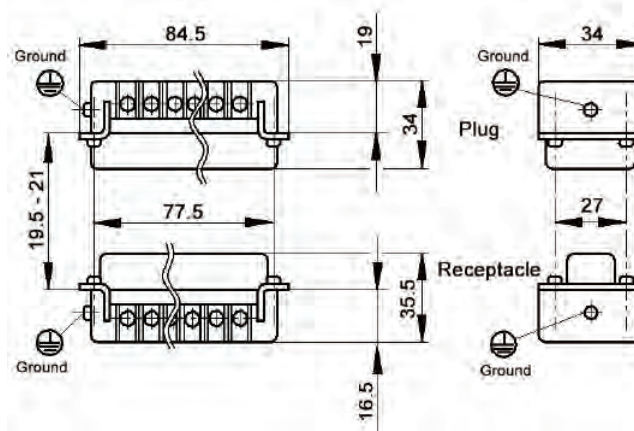
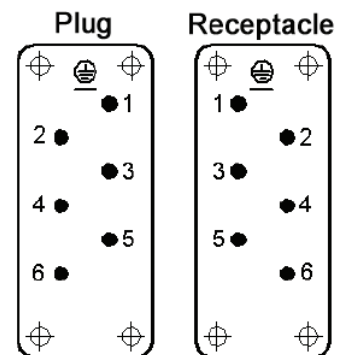
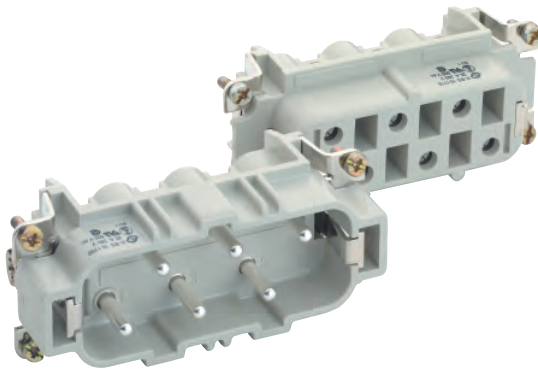
**Rated Voltage:**

- VDE: 400V EPIC HBS 6-12,
- UL: 600V EPIC HBS 6-12,
- CSA: 600V EPIC HBS 6-12

**Rated Current:**  
35 amps

## HBS 6 SCREW TERMINATED INSERTS

View from cable side



All dimensions are in mm.



HBE 16

| Description | Plug     | Receptacle |
|-------------|----------|------------|
| #1-6        | 10170000 | 10171000   |

## Polyethylene Corrugated Loom



**Construction:** Black slit with no stripe. **Insulation:** Polyethylene. **Jacket:** Black

### Features:

The convoluted tubing protects against mechanical aggressions. It has excellent crush and abrasion resistance.

### Applications:

Applications that require the ability to drain moisture from cable assemblies. Excellent for marine, industrial, automotive, or agricultural use.

### Additional Information:

Available in slit and non-slit versions.

### Technical Data:



**Temperature:**  
-40°F to 200°F



**Color Code:**  
Black slit with no stripe

### POLYETHYLENE

| LAPP<br>PART #                  | NOMINAL<br>ID | UPS / BULK<br>BOX QUAN.        | PART<br>DESCRIPTION                                              |
|---------------------------------|---------------|--------------------------------|------------------------------------------------------------------|
| LOOM-1/8-0                      | .177"         | 20,000 FT.<br><i>BULK ONLY</i> | 1/8" ID POLY BLK SLIT                                            |
| LOOM-1/4-0-BX<br>LOOM-1/4-0     | .244"         | 2,500 FT.<br>10,000 FT.        | 1/4" / 6MM ID POLY BLK SLIT                                      |
| LOOM-3/8-0-BX<br>LOOM-3/8-0     | .344"         | 1,500 FT.<br>7,000 FT.         | 3/8" / 9MM ID POLY BLK SLIT                                      |
| LOOM-7/16-0-BX<br>LOOM-7/16-0   | .409"         | 1,200 FT.<br>5,000 FT.         | 7/16" / 10MM ID POLY BLK SLIT                                    |
| LOOM-1/2-0-BX<br>LOOM-1/2-0     | .518"         | 900 FT.<br>3,500 FT.           | 1/2" / 13MM ID POLY. BLK SLIT                                    |
| LOOM-5/8-0-BX<br>LOOM-5/8-0     | .618"         | 700 FT.<br>2,500 FT.           | 5/8" / 16MM ID POLY BLK SLT                                      |
| LOOM-3/4-0-BX<br>LOOM-3/4-0     | .744"         | 500 FT.<br>2,000 FT.           | 3/4" / 19MM ID POLY. BLK SLIT                                    |
| LOOM-7/8-0-BX<br>LOOM-7/8-0     | .878"         | 250 FT.<br>1,500 FT.           | 7/8" / 22MM ID POLY. BLK SLIT                                    |
| LOOM-1-0-BX<br>LOOM-1-0         | 1.031"        | 200 FT.<br>1,000 FT.           | 1" / 25MM ID POLY. BLK SLIT                                      |
| LOOM-1 1/4-0-BX<br>LOOM-1 1/4-0 | 1.201"        | 200 FT.<br>800 FT.             | 1.25" / 30MM ID POLY. BLK SLIT<br>1.25" / 30MM ID POLY. BLK SLIT |
| LOOM-1-1/2-0-BX<br>LOOM-1-1/2-0 | 1.484"        | 100 FT<br>500 FT               | 1 1/2" ID POLY BLK SLIT                                          |
| LOOM-2-0                        | 1.87"         | 300 FT.<br><i>BULK ONLY</i>    | 2"(1.88") ID POLY. BLK SLIT                                      |

UPS BOXES SMALLER QUAN. AS SHOWN PER EACH SIZE

BULK = 1/2 GAYLORDS, 2 PER PALLET FOR CUBED OUT SKID APPROX 4' X 4' X 2' H

Specifications subject to change. For complete specifications and availability visit [www.lapptannehill.com](http://www.lapptannehill.com)



## Polypropylene black slit with green stripe

**Construction:** Polypropylene. **Jacket:** Black slit with green stripe.

**Features:**

The convoluted tubing protects against mechanical aggressions. It has excellent crush and abrasion resistance.

**Applications:**

Excellent for marine, industrial, automotive, or agricultural use.

**Additional Information:**

Available in UPS boxes and bulk.

**Technical Data:**



**Temperature:**  
-40°F to 275°F



**Color Code:**  
Black slit with green stripe

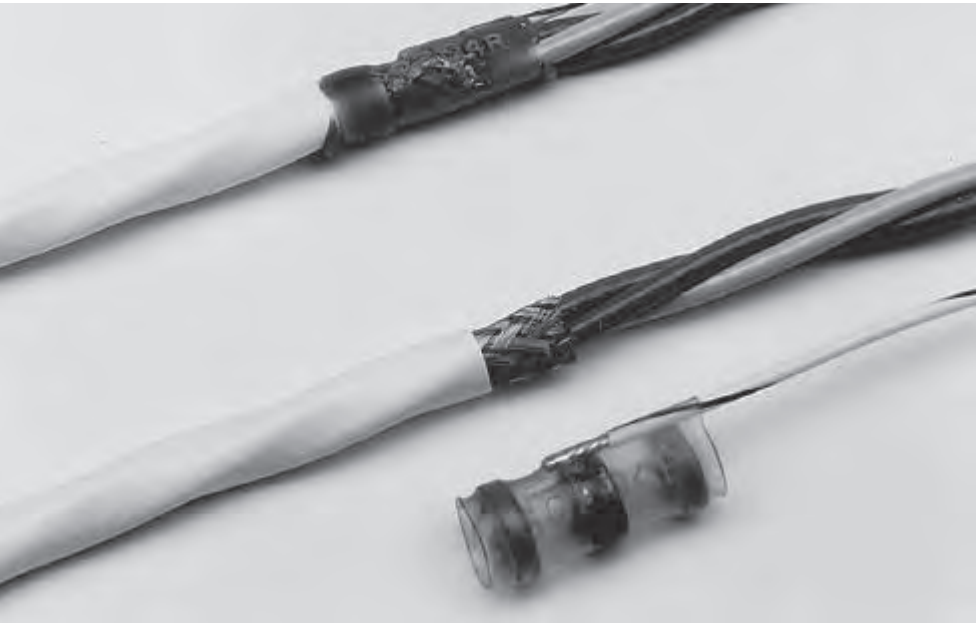


| POLYETHYLENE<br>BLACK SLIT W/ GREEN STRIPE - TEMP. RANGE -40 TO 275F |                  |                         |                                      |
|----------------------------------------------------------------------|------------------|-------------------------|--------------------------------------|
| LAPP<br>PART #                                                       | NOMINAL<br>ID    | UPS / BULK<br>BOX QUAN. | PART<br>DESCRIPTION                  |
| LOOM-1/4-OPP-BX                                                      | .244"            | 2,500 FT.               | 1/4" / 6MM ID PP BLK SLT GRN STRP    |
| LOOM-1/4-OPP                                                         |                  | 10,000 FT.              |                                      |
| LOOM-3/8-OPP-BX                                                      | .344"            | 1,500 FT.               | 3/8" / 9MM ID PP BLK SLT GRN STRP    |
| LOOM-3/8-OPP                                                         |                  | 7,000 FT.               |                                      |
| LOOM-1/2-OPP-BX                                                      | .518"            | 900 FT.                 | 1/2" / 13MM ID PP BLK SLT GRN STRP   |
| LOOM-1/2-OPP                                                         |                  | 3,500 FT.               |                                      |
| LOOM-5/8-OPP                                                         | .618"            | 2,500 FT.               | 5/8" / 16MM ID PP BLK SLT GRN STRP   |
|                                                                      | <i>BULK ONLY</i> |                         |                                      |
| LOOM-3/4-OPP-BX                                                      | .744"            | 500 FT.                 | 3/4" / 19MM ID PP BLK SLT GRN STRP   |
| LOOM-3/4-OPP                                                         |                  | 2,000 FT.               |                                      |
| LOOM-7/8-OPP                                                         | .878"            | 1,500 FT.               | 7/8" / 22MM ID PP BLK SLT GRN STRP   |
|                                                                      | <i>BULK ONLY</i> |                         |                                      |
| LOOM-1-OPP-BX                                                        | 1.031"           | 200 FT.                 | 1" / 25MM ID PP BLK SLT GRN STRP     |
| LOOM-1-OPP                                                           |                  | 1,000 FT.               |                                      |
| LOOM-1 1/4-OPP                                                       | 1.201"           | 800 FT.                 | 1 1/4" / 30MM ID PP BLK SLT GRN STRP |
|                                                                      | <i>BULK ONLY</i> |                         |                                      |
| LOOM-1 1/2-OPP                                                       | 1.484"           | 500 FT.                 | 1 1/2" ID PP BLK SLT GRN STRP        |
|                                                                      | <i>BULK ONLY</i> |                         |                                      |
| LOOM-2-OPP                                                           | 1.87"            | 300 FT.                 | 2" ID PP BLK SLT GRN STRP            |
|                                                                      | <i>BULK ONLY</i> |                         |                                      |

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Shield Termination

SolderSleeve Shield Terminators

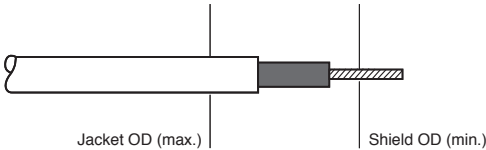


Product Selection Process

1. Select product series from the Product Options table below.

2. Determine cable dimensions.

3. Optional: Select pre-installed wire lead type (see Table G on page 8-47 for type descriptions).
4. Select part number (use the selection table indicated for your product series in the Product Options table below).



Product Options

| Product Series | System Oper. Temperature (Max.) | Used on Cables Rated (Min.) | Environmental Protection | Solder Alloy | Flux Type | Insulation Material     | Part No. Selection Table |
|----------------|---------------------------------|-----------------------------|--------------------------|--------------|-----------|-------------------------|--------------------------|
| CWT            | 125°C [257°F]                   | 85°C [185°F]                | Splash resistant         | Cd18         | RA        | Polyolefin              | A                        |
| SO63*          | 150°C [302°F]                   | 125°C [257°F]               | Immersion resistant      | Sn63         | RMA       | Polyvinylidene fluoride | B                        |
| S01/S02**, S03 | 150°C [302°F]                   | 125°C [257°F]               | Immersion resistant      | Sn63         | RMA       | Polyvinylidene fluoride | C, D                     |
| SO96***        | 175°C [347°F]                   | 150°C [302°F]               | Immersion resistant      | Sn96         | RA        | Polyvinylidene fluoride | E                        |
| SO175****      | 175°C [347°F]                   | 150°C [302°F]               | Immersion resistant      | Sn96         | RA        | Polyvinylidene fluoride | F                        |

\*Meets performance requirements of SAE-AS83519 (formerly MIL-S-83519) and NAS 1747, supplied with BiAlloy temperature indicator.  
\*\*Qualified to SAE-AS83519 (formerly MIL-S-83519), supplied with thermochromic temperature indicator.  
\*\*\*Meets performance requirements of SAE-AS83519 (formerly MIL-S-83519) and NAS 1747, supplied with thermochromic temperature indicator.  
\*\*\*\*Meets performance requirements of SAE-AS83519 (formerly MIL-S-83519), supplied with BiAlloy temperature indicator.  
**Note:** Cadmium-free option (B-152 series) is available for operating temperature of 125°C [257°F]. Consult Tyco Electronics for details.



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## CWT Solder Sleeve Shield Terminators

**Insulation:** Radiation-crosslinked, transparent heat-shrinkable polyolefin, **Jacket:** Solder Alloy: Cd18. Flux Type: RA.

### Features:

Transparent insulation sleeve provides encapsulation, inspectability, strain relief, and insulation. Prefluxed solder preform provides a controlled soldering process. One-piece design offers easy installation and lower installed cost. Optional preinstalled ground leads provide convenience and ease of installation.

### Applications:

Used for shield-to-ground termination.

### Additional Information:

Environmental Protection: Splash resistant. Preinstalled lead (optional). Solder sleeve one-step terminators insulate, strain relieve, and protect terminations from environmental damage in a wide spectrum of low-temperature electrical interconnection applications. They are-as their name says-one-step solutions.

### Technical Data:



#### Temperature:

-55°C to +125°C, 257°F

Used on Cables Rated 85°C (min).



#### Approvals:

UL File E87681

Raychem Specification D-5023

### CWT Series

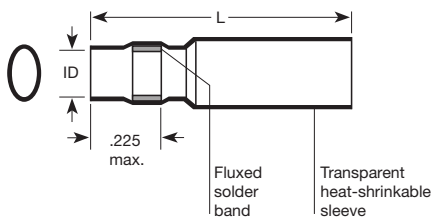
| Cable OD       |                | Part Nos.            |                                               |
|----------------|----------------|----------------------|-----------------------------------------------|
| Jacket OD Max. | Shield OD Min. | No Preinstalled Lead | With Preinstalled Lead (22AWG/0.38 mm² green) |
| 1.7 [.065]     | 0.9 [.035]     | CWT-3801             | —                                             |
| 1.95 [.075]    | 1.1 [.043]     | CWT-3802             | —                                             |
| 2.7 [.105]     | 1.5 [.059]     | CWT-3                | CWT-3-W122-5                                  |
| 4.5 [.180]     | 2.0 [.079]     | CWT-5                | CWT-5-W122-5                                  |
| 6.0 [.235]     | 3.3 [.130]     | CWT-6                | CWT-6-W122-5                                  |
| 7.0 [.275]     | 3.3 [.130]     | CWT-7                | CWT-7-W122-5                                  |
| 8.7 [.340]     | 4.5 [.177]     | CWT-9                | CWT-9-W122-5                                  |
| 10.7 [.420]    | 4.5 [.177]     | CWT-11               | CWT-11-W122-5                                 |
| 13.0 [.510]    | 7.0 [.276]     | CWT-13               | CWT-13-W122-5                                 |

Note: The CWT series is suitable for applications using low-temperature wires (typically rated at 85°C [185°F] to 125°C [257°F]) with bare copper or tin plating.

### Product dimensions and part number system (dimensions in inches)

#### CWT -15XX Series\*

Terminating wires to component terminals  
(pin, post, tab)

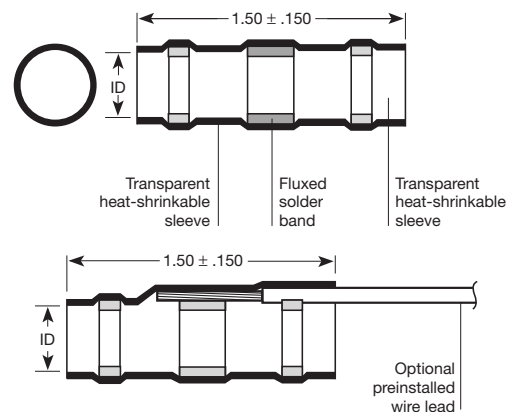


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| Part number | Minimum              |               |
|-------------|----------------------|---------------|
|             | inside diameter (ID) | Length (L)    |
| CWT-1501    | 0.060                | 0.575 ± 0.060 |
| CWT-1502    | 0.090                | 0.575 ± 0.060 |
| CWT-1503    | 0.110                | 0.575 ± 0.060 |
| CWT-1504    | 0.150                | 0.575 ± 0.060 |
| CWT-1505    | 1.102                | 1.00 ± 0.060  |

#### CWT -38XX Series

Terminating ground wire to cable shield  
Terminating coaxial cable  
Wire-to-wire splicing



| Part number | Minimum              |  |
|-------------|----------------------|--|
|             | inside diameter (ID) |  |
| CWT-3801    | 0.065                |  |
| CWT-3802    | 0.075                |  |
| CWT-3803    | 0.105                |  |
| CWT-3805    | 0.180                |  |
| CWT-3806    | 0.235                |  |
| CWT-3807    | 0.275                |  |
| CWT-3809    | 0.340                |  |
| CWT-3811    | 0.420                |  |
| CWT-3813    | 0.510                |  |

SO63 Series—BiAlloy Temperature Indication System

**Construction:** Heat-shrinkable thermoplastic sleeve contains a precisely engineered, fluxed solder band that is visible through the sleeve;  
**Insulation:** The band provides exactly the amount of solder and flux required to terminate the ground lead to the cable shield,  
**Jacket:** Encircling the band is a small temperature indicator ring.

**Features:**  
This ring melts only when the surfaces to be joined have reached the correct soldering temperatures, thus ensuring a properly soldered connection. Process control is built into each sleeve.

**Applications:**  
Used for shield-to-ground termination.

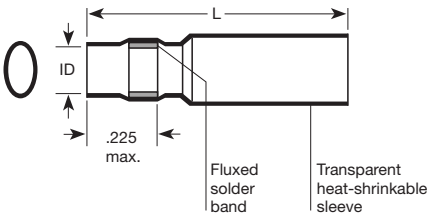
**Additional Information:**  
The SO63 series is immersion resistant, features the Raychem BiAlloy temperature indication system, and meets the performance requirements of SAE-AS83519 (formerly MIL-S-83519),

Technical Data:

Approvals:  
NAS 1747  
RT-1404

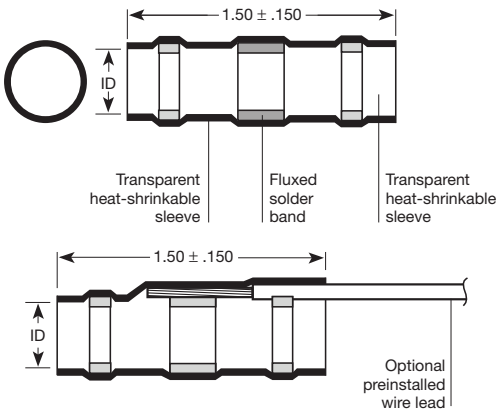
Product dimensions and part number system (dimensions in inches)

CWT -15XX Series\*  
Terminating wires to component terminals  
(pin, post, tab)



Raychem, TE Connectivity, TE connectivity (logo) and TE (logo) are trademarks

CWT -38XX Series  
Terminating ground wire to cable shield  
Terminating coaxial cable  
Wire-to-wire splicing



| Part number | Minimum                 | Length<br>(L) |
|-------------|-------------------------|---------------|
|             | inside diameter<br>(ID) |               |
| CWT-1501    | 0.060                   | 0.575 ± 0.060 |
| CWT-1502    | 0.090                   | 0.575 ± 0.060 |
| CWT-1503    | 0.110                   | 0.575 ± 0.060 |
| CWT-1504    | 0.150                   | 0.575 ± 0.060 |
| CWT-1505    | 1.102                   | 1.00 ± 0.060  |

| Part number | Minimum                 |
|-------------|-------------------------|
|             | inside diameter<br>(ID) |
| CWT-3801    | 0.065                   |
| CWT-3802    | 0.075                   |
| CWT-3803    | 0.105                   |
| CWT-3805    | 0.180                   |
| CWT-3806    | 0.235                   |
| CWT-3807    | 0.275                   |
| CWT-3809    | 0.340                   |
| CWT-3811    | 0.420                   |
| CWT-3813    | 0.510                   |

Table B. SO63 Series

| Cable OD          |                   |                            | Part Nos.                 |                 |                 |                 |               |             |
|-------------------|-------------------|----------------------------|---------------------------|-----------------|-----------------|-----------------|---------------|-------------|
| Jacket OD<br>Max. | Shield OD<br>Min. | No<br>Preinstalled<br>Lead | Preinstalled Lead Option* |                 |                 |                 | Braid Strap   |             |
|                   |                   |                            | 20 AWG                    | 22 AWG          | 24 AWG          | 26 AWG          | Nickel Plated | Tin Plated  |
| 1.95 [0.075]      | 0.90 [.035]       | SO63-1-00                  | SO63-1-55-20-90           | SO63-1-55-22-90 | SO63-1-55-24-90 | SO63-1-55-26-90 | SO63-1-01     | SO63-1-9030 |
| 2.7 [0.105]       | 1.40 [.055]       | SO63-2-00                  | SO63-2-55-20-90           | SO63-2-55-22-90 | SO63-2-55-24-90 | SO63-2-55-26-90 | SO63-2-01     | SO63-2-9030 |
| 4.3 [0.170]       | 2.15 [.085]       | SO63-3-00                  | SO63-3-55-20-90           | SO63-3-55-22-90 | SO63-3-55-24-90 | SO63-3-55-26-90 | SO63-3-01     | SO63-3-9030 |
| 6.0 [0.235]       | 3.30 [.130]       | SO63-4-00                  | SO63-4-55-20-90           | SO63-4-55-22-90 | SO63-4-55-24-90 | SO63-4-55-26-90 | SO63-4-01     | SO63-4-9030 |
| 7.0 [0.275]       | 4.30 [.170]       | SO63-5-00                  | SO63-5-55-20-90           | SO63-5-55-22-90 | SO63-5-55-24-90 | SO63-5-55-26-90 | SO63-5-01     | SO63-5-9030 |

\*See Table G for lead description. Color of wire lead is denoted by the last two digits of the part number as follows:  
90 = White with a black stripe 9 = White 0 = Black 6 = Blue (24 AWG only) 5 = Green (20, 22, 24 AWG)

Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are U.S. equivalents.  
Dimensions are shown for reference purposes only. Specifications subject to change.

## S01/S02 M83519 Series—Thermochromic Temperature Indicator

**Construction:** The M83519 (S01 and S02) series terminators contain a colored thermochromic temperature indicator that exhibits a distinct color change when surfaces have reached wetting temperature.

**Features:**

This color change gives both manufacturing and Quality Control an aid in the inspection of the completed termination.

**Additional Information:**

M83519 is the qualified product listed in SAE-AS83519 (formerly MIL-S-83519). The series features a thermochromic temperature indicator to assist in termination and inspection. The Raychem part number is permanently marked on the sleeve.

**Technical Data:**

✓ **Approvals:**  
MIL-S-83519/1&2  
RT-1404

**Table C. S01/S02 M83519 Series**

| Cable OD          |                   | Part No. (MIL Part Number and Raychem Part No.) by Lead Option |          |                           |          |             |          |
|-------------------|-------------------|----------------------------------------------------------------|----------|---------------------------|----------|-------------|----------|
| Jacket OD<br>Max  | Shield OD<br>Min  | No Preinstalled Lead                                           |          | Preinstalled Lead Option* |          |             |          |
|                   |                   | MIL                                                            | Raychem  | 20 AWG                    |          | 22 AWG      |          |
|                   |                   |                                                                |          | MIL                       | Raychem  | MIL         | Raychem  |
| 1.95 [0.075]      | 0.9 [.035]        | M83519/1-1                                                     | S01-01-R | M83519/2-1                | S02-01-R | M83519/2-6  | S02-06-R |
| 2.7 [0.105]       | 1.40 [.055]       | M83519/1-2                                                     | S01-02-R | M83519/2-2                | S02-02-R | M83519/2-7  | S02-07-R |
| 4.3 [0.170]       | 2.15 [.085]       | M83519/1-3                                                     | S01-03-R | M83519/2-3                | S02-03-R | M83519/2-8  | S02-08-R |
| 6.0 [0.235]       | 3.30 [.130]       | M83519/1-4                                                     | S01-04-R | M83519/2-4                | S02-04-R | M83519/2-9  | S02-09-R |
| 7.0 [0.275]       | 4.30 [.170]       | M83519/1-5                                                     | S01-05-R | M83519/2-5                | S02-05-R | M83519/2-10 | S02-10-R |
| Jacket OD<br>Max. | Shield OD<br>Min. | Preinstalled Lead Option*                                      |          |                           |          |             |          |
|                   |                   | 24 AWG                                                         |          | 26 AWG                    |          |             |          |
| 1.95 [0.075]      | 0.9 [.035]        | M83519/2-11                                                    | S02-11-R | M83519/2-16               | S02-16-R |             |          |
| 2.7 [0.105]       | 1.40 [.055]       | M83519/2-12                                                    | S02-12-R | M83519/2-17               | S02-17-R |             |          |
| 4.3 [0.170]       | 2.15 [.085]       | M83519/2-13                                                    | S02-13-R | M83519/2-18               | S02-18-R |             |          |
| 6.0 [0.235]       | 3.30 [.130]       | M83519/2-14                                                    | S02-14-R | M83519/2-19               | S02-19-R |             |          |
| 7.0 [0.275]       | 4.30 [.170]       | M83519/2-15                                                    | S02-15-R | M83519/2-20               | S02-20-R |             |          |

\*See Table G for lead description.

Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are U.S. equivalents.  
Dimensions are shown for reference purposes only. Specifications subject to change.

## S03 Series

**Construction:** The S03 series terminators contain a colored thermochromic temperature indicator that exhibits a distinct color change when surfaces have reached wetting temperature.

**Features:**

This color change gives both Manufacturing and Quality Control an aid in the inspection of the completed termination.

**Applications:**

Used for shield-to-ground termination.

**Table D. S03 Series**

| Cable OD          |                   | Part No.                  |                           |
|-------------------|-------------------|---------------------------|---------------------------|
| Jacket OD<br>Max. | Shield OD<br>Min. | Preinstalled Lead Option* |                           |
|                   |                   | Tin plated Braid Strap    | Nickel plated Braid Strap |
| 1.95 [0.075]      | 0.9 [.035]        | S03-01-R                  | S03-06-R                  |
| 2.7 [0.105]       | 1.40 [.055]       | S03-02-R                  | S03-07-R                  |
| 4.3 [0.170]       | 2.15 [.085]       | S03-03-R                  | S03-08-R                  |
| 6.0 [0.235]       | 3.30 [.130]       | S03-04-R                  | S03-09-R                  |
| 7.0 [0.275]       | 4.30 [.170]       | S03-05-R                  | S03-10-R                  |

\*See Table G for lead description.

Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are U.S. equivalents.  
Dimensions are shown for reference purposes only. Specifications subject to change.



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SO96 Series—Thermochromic Temperature Indicator

**Construction:** The SO96 series terminators contain a colored thermochromic temperature indicator that exhibits a distinct color change when surfaces have reached wetting temperature.

**Features:**

This color change gives both Manufacturing and Quality Control an aid in the inspection of the completed termination.

**Applications:**

The SO96 series is designed for high-temperature applications with operating temperature requirements up to 200°C.

**Additional Information:**

This series features a thermochromic temperature indicator and meets performance requirements of SAE-AS83519 (formerly MIL-S-83519). The solder SO96 with RA flux compatible with nickel-plated shields.

**Technical Data:**

 **Temperature:**  
175°C (347°F)

Table E. SO96 Series  
(175°C [34°F] rated)

| Cable OD          |                   | No<br>Preinstalled<br>Lead | Part No.                  |             |
|-------------------|-------------------|----------------------------|---------------------------|-------------|
| Jacket OD<br>Max. | Shield OD<br>Min. |                            | Preinstalled Lead Option* |             |
|                   |                   |                            | 22 AWG                    | Braid Strap |
| 1.95 [0.075]      | 0.90 [.035]       | SO96-1-00                  | SO96-1-55-22-90           | SO96-1-01   |
| 2.7 [0.105]       | 1.40 [.055]       | SO96-2-00                  | SO96-2-55-22-90           | SO96-2-01   |
| 4.3 [0.170]       | 2.15 [.085]       | SO96-3-00                  | SO96-3-55-22-90           | SO96-3-01   |
| 6.0 [0.235]       | 3.30 [.130]       | SO96-4-00                  | SO96-4-55-22-90           | SO96-4-01   |
| 7.0 [0.275]       | 4.30 [.170]       | SO96-5-00                  | SO96-5-55-22-90           | SO96-5-01   |

\*See Table G for lead description.

Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are U.S. equivalents.  
Dimensions are shown for reference purposes only. Specifications subject to change.

Specifications subject to change. For complete specifications and availability visit [www.lapptannehill.com](http://www.lapptannehill.com)



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## SO96 Series—Thermochromic Temperature Indicator

Table H. NAS, M83519, and Raychem Cross-Reference

| NAS Part No.      | Raychem D Series Part No.        | NAS Comment                                          |
|-------------------|----------------------------------|------------------------------------------------------|
| 1744-1            | D-1744-01                        |                                                      |
| 1744-2            | D-1744-02                        |                                                      |
| 1744-3            | D-1744-03                        |                                                      |
| 1744-4            | D-1744-04                        |                                                      |
| 1744-5            | D-1744-05                        |                                                      |
| 1744-6            | D-1744-06                        |                                                      |
| 1744-7            | D-1744-07                        |                                                      |
| 1744-8            | D-1744-08                        |                                                      |
| 1745-1            | D-144-25                         | Inactive, Use SAE-AS83519/1-1 (formerly MIL-S-83519) |
| 1745-2            | D-100-00                         | Inactive, Use SAE-AS83519/1-2 (formerly MIL-S-83519) |
| 1745-3            | D-101-00                         | Inactive, Use SAE-AS83519/1-3 (formerly MIL-S-83519) |
| 1745-4            | D-103-00                         | Inactive, Use SAE-AS83519/1-5 (formerly MIL-S-83519) |
| 1745-5            | D-144-26                         |                                                      |
| 1745-6            | D-100-31                         |                                                      |
| 1745-7            | D-101-31                         |                                                      |
| 1745-8            | D-103-31                         |                                                      |
| 1745-9            |                                  | Obsolete - Use NAS1745-13                            |
| 1745-10           |                                  | Obsolete - Use NAS1745-14                            |
| 1745-11           |                                  | Obsolete - Use NAS1745-15                            |
| 1745-12           |                                  | Obsolete - Use NAS1745-16                            |
| 1745-13           | D-142-83                         | Inactive, Use SAE-AS83519/1-1 (formerly MIL-S-83519) |
| 1745-14           | D-142-50                         | Inactive, Use SAE-AS83519/1-2 (formerly MIL-S-83519) |
| 1745-15           | D-142-51                         | Inactive, Use SAE-AS83519/1-3 (formerly MIL-S-83519) |
| 1745-16           | D-142-52                         | Inactive, Use SAE-AS83519/1-5 (formerly MIL-S-83519) |
| 1745-17           | D-107-00                         | Inactive, Use SAE-AS83519/1-4 (formerly MIL-S-83519) |
| 1745-18           | D-104-00                         |                                                      |
| 1745-19           | D-105-00                         |                                                      |
| 1745-20           | D-107-31                         |                                                      |
| 1745-21           | D-104-31                         |                                                      |
| 1745-22           | D-105-31                         |                                                      |
| 1745-23           | D-142-56                         | Inactive, Use SAE-AS83519/1-4 (formerly MIL-S-83519) |
| 1745-24           | D-142-65                         |                                                      |
| 1745-25           | D-142-66                         |                                                      |
| 1746-1            | D-144-25                         | Inactive, Use SAE-AS83519/1-1 (formerly MIL-S-83519) |
| 1746-2            | D-144-00                         | Inactive, Use SAE-AS83519/1-2 (formerly MIL-S-83519) |
| 1746-3            | D-144-01                         | Inactive, Use SAE-AS83519/1-3 (formerly MIL-S-83519) |
| 1746-4            | D-144-02                         | Inactive, Use SAE-AS83519/1-5 (formerly MIL-S-83519) |
| 1746-5            | D-144-26                         |                                                      |
| 1746-6            | D-144-03                         |                                                      |
| 1746-7            | D-144-04                         |                                                      |
| 1746-8            | D-144-05                         |                                                      |
| 1746-9            | D-144-46                         | Inactive, Use SAE-AS83519/1-4 (formerly MIL-S-83519) |
| 1746-10           | D-144-37                         |                                                      |
| Military Part No. | Raychem S01/S02 Series* Part No. | Raychem S063 Series** Part No.                       |
| M83519/1-1        | S01-01-R                         | SO63-1-00                                            |
| M83519/1-2        | S01-02-R                         | SO63-2-00                                            |
| M83519/1-3        | S01-03-R                         | SO63-3-00                                            |
| M83519/1-4        | S01-04-R                         | SO63-4-00                                            |
| M83519/1-5        | S01-05-R                         | SO63-5-00                                            |
| M83519/2-1        | S02-01-R                         | SO63-1-55-20-90                                      |
| M83519/2-2        | S02-02-R                         | SO63-2-55-20-90                                      |
| M83519/2-3        | S02-03-R                         | SO63-3-55-20-90                                      |
| M83519/2-4        | S02-04-R                         | SO63-4-55-20-90                                      |
| M83519/2-5        | S02-05-R                         | SO63-5-55-20-90                                      |
| M83519/2-6        | S02-06-R                         | SO63-1-55-22-90                                      |
| M83519/2-7        | S02-07-R                         | SO63-2-55-22-90                                      |
| M83519/2-8        | S02-08-R                         | SO63-3-55-22-90                                      |
| M83519/2-9        | S02-09-R                         | SO63-4-55-22-90                                      |
| M83519/2-10       | S02-10-R                         | SO63-5-55-22-90                                      |
| M83519/2-11       | S02-11-R                         | SO63-1-55-24-90                                      |
| M83519/2-12       | S02-12-R                         | SO63-2-55-24-90                                      |
| M83519/2-13       | S02-13-R                         | SO63-3-55-24-90                                      |
| M83519/2-14       | S02-14-R                         | SO63-4-55-24-90                                      |
| M83519/2-15       | S02-15-R                         | SO63-5-55-24-90                                      |
| M83519/2-16       | S02-16-R                         | SO63-1-55-26-90                                      |
| M83519/2-17       | S02-17-R                         | SO63-2-55-26-90                                      |
| M83519/2-18       | S02-18-R                         | SO63-3-55-26-90                                      |
| M83519/2-19       | S02-19-R                         | SO63-4-55-26-90                                      |
| M83519/2-20       | S02-20-R                         | SO63-5-55-26-90                                      |

\* QPL listed to SAE-AS83519 (formerly MIL-S-83519)

\*\* Meets performance requirements of SAE-AS83519 (formerly MIL-S-83519)



Raychem, TE Connectivity, TE connectivity (logo) and TE (logo) are trademarks

Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are U.S. equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.



## 3M™ Specialty Bagged Terminals

### Features:

Effective and reliable performance. A wide variety of types, sizes and materials meeting a broad application range, as well as the demands of temperature and weather. Design features that assure the easy installation of 3M products-positive and easy wire insertion, elimination of strand hang-ups and wire twisting and easy insulation entry.

### 3M™ Nylon Insulated Closed End Connectors

| UPC/Product # (054007) | Description | Wire Range (AWG) | Qty/Bag |
|------------------------|-------------|------------------|---------|
| 94813                  | 722-N-A     | 22-14            | 50      |
| 94796                  | 718-N-A     | 18-10            | 50      |



### 3M™ Heat Shrink Seamless Butt Connectors

| UPC/Product # (054007) | Description | Wire Range (AWG) | Qty/Bag |
|------------------------|-------------|------------------|---------|
| 94861                  | MH18BCX     | 22-18            | 25      |
| 94857                  | MH14BCX     | 16-14            | 25      |
| 94850                  | MH10BCX     | 12-10            | 25      |



### 3M™ Nylon Insulated Seamless Butt Connectors



| UPC/Product # (054007) | Description | Wire Range (AWG) | Qty/Bag |
|------------------------|-------------|------------------|---------|
| 94786                  | 61-SN-A     | 22-18            | 100     |
| 94789                  | 62-SN-A     | 16-14            | 100     |
| 94792                  | 63-SN-A     | 12-10            | 50      |



### 3M™ Nylon Insulated with Insulation Grip Butt Connectors



| UPC/Product # (054007) | Description | Wire Range (AWG) | Qty/Bag |
|------------------------|-------------|------------------|---------|
| 94784                  | 61-NB       | 22-18            | 100     |
| 94787                  | 62-NB       | 16-14            | 100     |
| 94790                  | 63-NB       | 12-10            | 50      |



## 3M™ Vinyl Insulated Brazed Seam Butt Connectors



| UPC/Product # (054007) | Description | Wire Range (AWG) | Qty/Bag |
|------------------------|-------------|------------------|---------|
| 94793                  | 64-WP       | 8                | 25      |
| 94795                  | 66-WP       | 4                | 15      |



## 3M™ Vinyl Insulated Butted Seam Butt Connectors



| UPC/Product # (054007) | Description | Wire Range (AWG) | Qty/Bag |
|------------------------|-------------|------------------|---------|
| 94785                  | 61-P        | 22-18            | 100     |
| 94788                  | 62-P        | 16-14            | 100     |
| 94791                  | 63-P        | 12-10            | 50      |



## 3M™ Nylon Fully Insulated with Insulation Grip Female Disconnects



| UPC/Product # (054007) | Description    | Wire Range (AWG) | Male Tab Width (W) x Thickness | Qty/Bag |
|------------------------|----------------|------------------|--------------------------------|---------|
| 94798                  | 71F-187-20-NBL | 22-18            | 0.187 x 0.020                  | 100     |
| 94802                  | 71F-250-32-NBL | 22-18            | 0.250 x 0.032                  | 100     |
| 94815                  | 72F-187-20-NBL | 16-14            | 0.187 x 0.020                  | 100     |
| 94819                  | 72F-250-32-NBL | 16-14            | 0.250 x 0.032                  | 100     |
| 94831                  | 73F-250-32-NBL | 12-10            | 0.250 x 0.032                  | 50      |



## 3M™ Nylon Insulated with Insulation Grip Female Disconnects



| UPC/Product # (054007) | Description   | Wire Range (AWG) | Male Tab Width (W) x Thickness | Qty/Bag |
|------------------------|---------------|------------------|--------------------------------|---------|
| 94797                  | 71F-187-20-NB | 22-18            | 0.187 x 0.020                  | 100     |
| 94801                  | 71F-250-32-NB | 22-18            | 0.250 x 0.032                  | 100     |
| 94814                  | 72F-187-20-NB | 16-14            | 0.187 x 0.020                  | 100     |
| 94818                  | 72F-250-32-NB | 16-14            | 0.250 x 0.032                  | 100     |
| 94830                  | 73F-250-32-NB | 12-10            | 0.187 x 0.020                  | 50      |



## 3M™ Nylon Fully Insulated Butted Seam Female Disconnects



| UPC/Product # (054007) | Description   | Wire Range (AWG) | Male Tab Width (W) x Thickness | Qty/Bag |
|------------------------|---------------|------------------|--------------------------------|---------|
| 94799                  | 71F-187-20-NL | 22-18            | 0.187 x 0.020                  | 100     |
| 94803                  | 71F-250-32-NL | 22-18            | 0.250 x 0.032                  | 100     |
| 94816                  | 72F-187-20-NL | 16-14            | 0.187 x 0.020                  | 100     |
| 94820                  | 72F-250-32-NL | 16-14            | 0.250 x 0.032                  | 100     |
| 94832                  | 73F-250-32-NL | 12-10            | 0.250 x 0.032                  | 50      |



## 3M™ Vinyl Insulated Butted Seam Female Disconnects



| UPC/Product #<br>(054007) | Description   | Wire Range (AWG) | Male Tab Width<br>(W') x Thickness | Qty/Bag |
|---------------------------|---------------|------------------|------------------------------------|---------|
| 94800                     | 71F-187-20-P  | 22-18            | 0.187 x 0.020                      | 100     |
| 94804                     | 71F-250-32-P  | 22-18            | 0.250 x 0.032                      | 100     |
| 94817                     | 72F-187-20-P  | 16-14            | 0.187 x 0.020                      | 100     |
| 94821                     | 72F-250-32-P  | 16-14            | 0.250 x 0.032                      | 100     |
| 94830                     | 73F-250-32-NB | 12-10            | 0.187 x 0.020                      | 50      |
| 94833                     | 73F-250-32-P  | 12-10            | 0.250 x 0.032                      | 50      |



## 3M™ Nylon Insulated with Insulation Grip Bullet Style Female Disconnects

| UPC/Product #<br>(054007) | Description   | Wire Range (AWG) | Qty/Bag |
|---------------------------|---------------|------------------|---------|
| 94838                     | 81F-156-NBL-A | 22-18            | 100     |
| 94839                     | 81F-180-NBL-A | 22-18            | 100     |
| 94842                     | 82F-156-NBL-A | 16-14            | 100     |



## 3M™ Nylon Insulated Butted Seam Bullet Style Female Disconnects

| UPC/Product #<br>(054007) | Description  | Wire Range (AWG) | Male Tab Width (W') | Qty/Bag |
|---------------------------|--------------|------------------|---------------------|---------|
| 94843                     | 82F-180-NL-A | 16-14            | 0.180               | 100     |



## 3M™ Nylon Fully Insulated with Insulation Grip Male Disconnects



| UPC/Product #<br>(054007) | Description    | Wire Range (AWG) | Male Tab Width<br>(W') x Thickness | Qty/Bag |
|---------------------------|----------------|------------------|------------------------------------|---------|
| 94806                     | 71M-187-20-NBL | 22-18            | 0.187 x 0.020                      | 100     |
| 94810                     | 71M-250-32-NBL | 22-18            | 0.250 x 0.032                      | 100     |
| 94823                     | 72M-187-20-NBL | 16-14            | 0.187 x 0.020                      | 100     |
| 94827                     | 72M-250-32-NBL | 16-14            | 0.250 x 0.032                      | 100     |
| 94835                     | 73M-250-32-NBL | 12-10            | 0.250 x 0.032                      | 50      |



Specifications subject to change. For complete specifications and availability visit [www.lapptannehill.com](http://www.lapptannehill.com)



### 3M™ Nylon Insulated with Insulation Grip Male Disconnects



| UPC/Product #<br>(054007) | Description   | Wire Range (AWG) | Male Tab Width<br>(W) x Thickness | Qty/Bag |
|---------------------------|---------------|------------------|-----------------------------------|---------|
| 94805                     | 71M-187-20-NB | 22-18            | 0.187 x 0.020                     | 100     |
| 94809                     | 71M-250-32-NB | 22-18            | 0.250 x 0.032                     | 100     |
| 94822                     | 72M-187-20-NB | 16-14            | 0.187 x 0.020                     | 100     |
| 94826                     | 72M-250-32-NB | 16-14            | 0.250 x 0.032                     | 100     |
| 94834                     | 73M-250-32-NB | 12-10            | 0.250 x 0.032                     | 50      |



### 3M™ Nylon Fully Insulated Butted Seam Male Disconnects



| UPC/Product #<br>(054007) | Description   | Wire Range (AWG) | Male Tab Width<br>(W) x Thickness | Qty/Bag |
|---------------------------|---------------|------------------|-----------------------------------|---------|
| 94807                     | 71M-187-20-NL | 22-18            | 0.187 x 0.020                     | 100     |
| 94811                     | 71M-250-32-NL | 22-18            | 0.250 x 0.032                     | 100     |
| 94824                     | 72M-187-20-NL | 16-14            | 0.187 x 0.020                     | 100     |
| 94828                     | 72M-250-32-NL | 16-14            | 0.250 x 0.032                     | 100     |
| 94836                     | 73M-250-32-NL | 12-10            | 0.250 x 0.032                     | 50      |



### 3M™ Vinyl Insulated Butted Seam Male Disconnects



| UPC/Product #<br>(054007) | Description  | Wire Range (AWG) | Male Tab Width<br>(W) x Thickness | Qty/Bag |
|---------------------------|--------------|------------------|-----------------------------------|---------|
| 94808                     | 71M-187-20-P | 22-18            | 0.187 x 0.020                     | 100     |
| 94812                     | 71M-250-32-P | 22-18            | 0.250 x 0.032                     | 100     |
| 94825                     | 72M-187-20-P | 16-14            | 0.187 x 0.020                     | 100     |
| 94829                     | 72M-250-32-P | 16-14            | 0.250 x 0.032                     | 100     |
| 94837                     | 73M-250-32-P | 12-10            | 0.250 x 0.032                     | 50      |



### 3M™ Nylon Insulated with Insulation Grip Bullet Style Male Disconnects

| UPC/Product #<br>(054007) | Description  | Wire Range (AWG) | Mating Snap Diameter | Qty/Bag |
|---------------------------|--------------|------------------|----------------------|---------|
| 94840                     | 81M-156-NB-A | 22-18            | 0.156                | 100     |
| 94841                     | 81M-180-NB-A | 22-18            | 0.180                | 100     |
| 94844                     | 82M-156-NB-A | 16-14            | 0.156                | 100     |
| 94845                     | 82M-180-NB-A | 16-14            | 0.180                | 100     |



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# Wire Management

## 3M™ Heat Shrink Brazed Seam Ring Tongue Terminals 22-18 AWG

| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 94859                     | MH18-6R/L   | 22-18            | 6         | 25      |
| 94860                     | MH18-8R/L   | 22-18            | 8         | 25      |
| 94858                     | MH18-10R/L  | 22-18            | 10        | 25      |



## 3M™ Heat Shrink Brazed Seam Ring Tongue Terminals 16-14 AWG

| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 94855                     | MH14-6R/L   | 16-14            | 6         | 25      |
| 94856                     | MH14-8R/L   | 16-14            | 8         | 25      |
| 94851                     | MH14-10R/L  | 16-14            | 10        | 25      |
| 94852                     | MH14-14R/S  | 16-14            | 1/4       | 25      |
| 94853                     | MH14-38R/S  | 16-14            | 3/8       | 25      |



## 3M™ Heat Shrink Brazed Seam Ring Tongue Terminals 12-10 AWG

| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 94846                     | MH10-10R    | 12-10            | 10        | 25      |
| 94847                     | MH10-14R    | 12-10            | 1/4       | 25      |
| 94848                     | MH10-38R    | 12-10            | 3/8       | 25      |



## 3M™ Nylon Insulated with Insulation Grip Ring Tongue Terminals 22-18 AWG

| SP UL                     |             |                  |           |         |
|---------------------------|-------------|------------------|-----------|---------|
| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
| 94724                     | 11-6S-NB    | 22-18            | 6         | 100     |
| 94726                     | 11-8-NB     | 22-18            | 8         | 100     |
| 94716                     | 11-10-NB    | 22-18            | 10        | 100     |
| 94718                     | 11-14S-NB   | 22-18            | 1/4       | 100     |
| 94722                     | 11-56S-NB   | 22-18            | 5/16      | 100     |
| 94720                     | 11-38-NB    | 22-18            | 3/8       | 100     |



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## 3M™ Nylon Insulated with Insulation Grip Ring Tongue Terminals 16-14 AWG



| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 94738                     | 12-8-NB     | 16-14            | 8         | 100     |
| 94728                     | 12-10-NB    | 16-14            | 10        | 100     |
| 94730                     | 12-14S-NB   | 16-14            | 1/4       | 100     |
| 94734                     | 12-56S-NB   | 16-14            | 5/16      | 100     |
| 94732                     | 12-38-NB    | 16-14            | 3/8       | 100     |



## 3M™ Nylon Insulated with Insulation Grip Ring Tongue Terminals 12-10 AWG



| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 94750                     | 13-6S-NB    | 12-10            | 6         | 50      |
| 94752                     | 13-8-NB     | 12-10            | 8         | 50      |
| 94740                     | 13-10-NB    | 12-10            | 10        | 50      |
| 94742                     | 13-14S-NB   | 12-10            | 1/4       | 50      |
| 94748                     | 13-56S-NB   | 12-10            | 5/16      | 50      |
| 94744                     | 13-38-NB    | 12-10            | 3/8       | 50      |
| 94746                     | 13-500-NB   | 12-10            | 1/2       | 50      |



## 3M™ Vinyl Insulated Butted Seam Ring Tongue Terminals 22-18 AWG



| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 94725                     | 11-6S-P     | 22-18            | 6         | 100     |
| 94727                     | 11-8-P      | 22-18            | 8         | 100     |
| 94717                     | 11-10-P     | 22-18            | 10        | 100     |
| 94719                     | 11-14S-P    | 22-18            | 1/4       | 100     |



## 3M™ Vinyl Insulated Butted Seam Ring Tongue Terminals 16-14 AWG



| UPC/Product # | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------|-------------|------------------|-----------|---------|
| 94736         | 12-6S-P     | 16-14            | 6         | 100     |
| 94739         | 12-8-P      | 16-14            | 8         | 100     |
| 94729         | 12-10-P     | 16-14            | 10        | 100     |
| 94731         | 12-14S-P    | 16-14            | 1/4       | 100     |
| 94735         | 12-56S-P    | 16-14            | 5/16      | 100     |
| 94733         | 12-38-P     | 16-14            | 3/8       | 100     |



# Wire Management

## 3M™ Vinyl Insulated Butted Seam Ring Tongue Terminals 12-10 AWG



| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 94751                     | 13-6S-P     | 12-10            | 6         | 50      |
| 94753                     | 13-8-P      | 12-10            | 8         | 50      |
| 94741                     | 13-10-P     | 12-10            | 10        | 50      |
| 94743                     | 13-14S-P    | 12-10            | 1/4       | 50      |
| 94749                     | 13-56S-P    | 12-10            | 5/16      | 50      |
| 94745                     | 13-38-P     | 12-10            | 3/8       | 50      |
| 94747                     | 13-500-P    | 12-10            | 1/2       | 50      |



## 3M™ Nylon Insulated Brazed Seam Ring Tongue Terminals 8 AWG



| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 94754                     | 14-14S-WN   | 8                | 1/4       | 25      |
| 94757                     | 14-56-WN    | 8                | 5/16      | 25      |
| 94755                     | 14-38-WN    | 8                | 3/8       | 25      |
| 94756                     | 14-500S-WN  | 8                | 1/2       | 25      |



## 3M™ Nylon Insulated Brazed Seam Ring Tongue Terminals 6 AWG



| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 94758                     | 15-14S-WN   | 6                | 1/4       | 25      |
| 94761                     | 15-56-WN    | 6                | 5/16      | 25      |
| 94759                     | 15-38-WN    | 6                | 3/8       | 25      |
| 94760                     | 15-500S-WN  | 6                | 1/2       | 25      |



## 3M™ Nylon Insulated Brazed Seam Ring Tongue Terminals 4 AWG



| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 94762                     | 16-14-WN    | 4                | 1/4       | 10      |
| 94764                     | 16-500S-WN  | 4                | 1/2       | 10      |



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## 3M™ Nylon Insulated with Insulation Grip Locking Fork Terminals 22-18 AWG



| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 94864                     | SS-31-6-NB  | 22-18            | 6         | 100     |
| 94866                     | SS-31-8-NB  | 22-18            | 8         | 100     |
| 94862                     | SS-31-10-NB | 22-18            | 10        | 100     |



## 3M™ Nylon Insulated with Insulation Grip Locking Fork Terminals 16-14 AWG



| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 94872                     | SS-32-6-NB  | 16-14            | 6         | 100     |
| 94874                     | SS-32-8-NB  | 16-14            | 8         | 100     |
| 94868                     | SS-32-10-NB | 16-14            | 10        | 100     |
| 94870                     | SS-32-14-NB | 16-14            | 1/4       | 100     |



## 3M™ Nylon Insulated with Insulation Grip Locking Fork Terminals 12-10 AWG



| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 94880                     | SS-33-6-NB  | 12-10            | 6         | 50      |



## 3M™ Vinyl Insulated Butted Seam Locking Forks Terminals 22-18 AWG



| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 94865                     | SS-31-6-P   | 22-18            | 6         | 100     |
| 94867                     | SS-31-8-P   | 22-18            | 8         | 100     |
| 94863                     | SS-31-10-P  | 22-18            | 10        | 100     |



## 3M™ Vinyl Insulated Butted Seam Locking Forks Terminals 16-14 AWG



| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 94873                     | SS-32-6-P   | 16-14            | 6         | 100     |
| 94875                     | SS-32-8-P   | 16-14            | 8         | 100     |
| 94869                     | SS-32-10-P  | 16-14            | 10        | 50      |
| 94871                     | SS-32-14-P  | 16-14            | 1/4       | 100     |



## 3M™ Vinyl Insulated Butted Seam Locking Forks Terminals 12-10 AWG

| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 94881                     | SS-33-6-P   | 12-10            | 6         | 50      |
| 94883                     | SS-33-8-P   | 12-10            | 8         | 50      |
| 94877                     | SS-33-10-P  | 12-10            | 10        | 50      |
| 94879                     | SS-33-14-P  | 12-10            | 1/4       | 50      |



## 3M™ Nylon Insulated with Insulation Grip Block Fork Terminals 22-18 AWG

| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 95360                     | BS-31-6-NB  | 22-18            | 6         | 100     |
| 95631                     | BS-31-8-NB  | 22-18            | 8         | 100     |
| 95359                     | BS-31-10-NB | 22-18            | 10        | 100     |



## 3M™ Nylon Insulated with Insulation Grip Block Fork Terminals 16-14 AWG

| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 95363                     | BS-32-6-NB  | 16-14            | 6         | 100     |
| 95364                     | BS-32-8-NB  | 16-14            | 8         | 100     |
| 95362                     | BS-32-10-NB | 16-14            | 10        | 100     |



## 3M™ Nylon Insulated with Insulation Grip Block Fork Terminals 12-10 AWG

| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 95366                     | BS-33-6-NB  | 12-10            | 6         | 50      |
| 95667                     | BS-33-8-NB  | 12-10            | 8         | 50      |
| 95365                     | BS-33-10-NB | 12-10            | 10        | 50      |



## 3M™ Vinyl Insulated Butted Seam Block Fork Terminals 22-18 AWG

| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 95351                     | BS-31-6-P   | 22-18            | 6         | 100     |
| 95352                     | BS-31-8-P   | 22-18            | 8         | 100     |
| 95350                     | BS-31-10-P  | 22-18            | 10        | 100     |



## 3M™ Vinyl Insulated Butted Seam Block Fork Terminals 16-14 AWG



| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 95354                     | BS-32-6-P   | 16-14            | 6         | 100     |
| 95355                     | BS-32-8-P   | 16-14            | 8         | 100     |
| 95353                     | BS-32-10-P  | 16-14            | 10        | 100     |



## 3M™ Vinyl Insulated Butted Seam Block Fork Terminals 12-10 AWG



| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 95357                     | BS-33-6-P   | 12-10            | 6         | 50      |
| 95358                     | BS-33-8-P   | 12-10            | 8         | 50      |
| 95356                     | BS-33-10-P  | 12-10            | 10        | 50      |



## 3M™ Nylon Insulated with Insulation Grip Standard Fork Terminals



| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 94768                     | 31-6-NB     | 22-18            | 6         | 100     |
| 94770                     | 31-8-NB     | 22-18            | 8         | 100     |
| 94774                     | 32-6-NB     | 16-14            | 6         | 100     |
| 94776                     | 32-8-NB     | 16-14            | 8         | 100     |
| 94772                     | 32-10-NB    | 16-14            | 10        | 100     |
| 94780                     | 33-6-NB     | 12-10            | 6         | 50      |
| 94778                     | 33-10-NB    | 12-10            | 10        | 50      |



## 3M™ Vinyl Insulated Butted Seam Standard Fork Terminals



| UPC/Product #<br>(054007) | Description | Wire Range (AWG) | Stud Size | Qty/Bag |
|---------------------------|-------------|------------------|-----------|---------|
| 94769                     | 31-6-P      | 22-18            | 6         | 100     |
| 94771                     | 31-8-P      | 22-18            | 8         | 100     |
| 94767                     | 31-10-P     | 22-18            | 10        | 100     |
| 94775                     | 32-6-P      | 16-14            | 6         | 100     |
| 94777                     | 32-8-P      | 16-14            | 8         | 100     |
| 94773                     | 32-10-P     | 16-14            | 10        | 100     |
| 94781                     | 33-6-P      | 12-10            | 6         | 100     |
| 94783                     | 33-8-P      | 12-10            | 8         | 100     |
| 94779                     | 33-10-P     | 12-10            | 10        | 100     |





## 3M™ ELECTRICAL TAPES

### 3M™ Vinyl Electrical Tapes

#### Scotch® Super 33+™ Professional Grade Vinyl Electrical Tape

**Construction:** 3M Vinyl Electrical Tape

**Features:** Insulates splices up to 600V. Repairs cable jacketing. Resists UV rays, abrasion, corrosion, alkalies and acids. Flame retardant.

| Thickness | Max. Temperature | Roll Size                                                                                                                                                                                     |
|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7 mil     | 105°C<br>221°F   | 3/4" x 66' (19 mm x 20,1 m)<br>3/4" x 44' (19 mm x 13,4 m)<br>3/4" x 20' (19 mm x 6,0 m)<br>3/4" x 36 yd (19 mm x 32,9 m)<br>1" x 36 yd (25,4 mm x 32,9 m)<br>1-1/2" x 36 yd (38 mm x 32,9 m) |

#### Technical Data:



#### Approvals:

UL Listed and CSA Certified



#### Scotch® Heavy Duty Grade Vinyl Electrical Tape Super 88

**Construction:** 3M Vinyl Electrical Tape

**Features:** Thick, heavy duty vinyl protects cable and provides faster build-up. Insulates splices up to 600V. Repairs cable jacketing. Resists abrasion, corrosion, alkalies and acids. Flame retardant.

| Thickness | Max. Temperature | Roll Size                                                                                                                                                                                        |
|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8.5 mil   | 105°C<br>221°F   | 3/4" x 44' (19 mm x 13,4 m)<br>3/4" x 36 yd (19 mm x 32,9 m)<br>1" x 36 yd (25,4 mm x 32,9 m)<br>1-1/2" x 36 yd (38 mm x 32,9 m)<br>1-1/2" x 44' (38 mm x 13,4 m)<br>2" x 36 yd (51 mm x 32,9 m) |

#### Technical Data:



#### Approvals:

UL Listed and CSA Certified



Complete catalog available online at: [www.lapptannehill.com](http://www.lapptannehill.com)



## Scotch® Professional Grade Color Coding Vinyl Electrical Tape 35

**Construction:** 3M Vinyl Electrical Tape

**Features:** 9 fade-resistant colors identify and mark phases/cables. Insulate splices up to 600V. Repair cable jacketing. Resists abrasion, corrosion, alkalies and acids. Flame retardant.

| Thickness | Max. Temperature | Roll Size                                                                                                              |
|-----------|------------------|------------------------------------------------------------------------------------------------------------------------|
| 7 mil     | 105°C<br>221°F   | 3/4" x 60' (19 mm x 18,2 m)<br>1/2" x 20' (12 mm x 6,1 m)<br>3/4" x 66' (19 mm x 20,1 m)<br>1/2" x 20' (12 mm x 6,1 m) |

### Technical Data:

- ✓ **Approvals:**  
UL Listed and  
CSA Certified



## Scotch® Extra Heavy Duty Grade Vinyl Electrical Tape 22

**Construction:** 3M Vinyl Electrical Tape

**Features:** Extra-thick, heavy duty vinyl protects cable and provides faster build-up. Insulates splices up to 600V. Repairs cable jacketing. Resists abrasion, corrosion, alkalies and acids. Flame Retardant.

| Thickness | Max. Temperature | Roll Size                                                                                                                                                         |
|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 mil    | 80°C<br>176°F    | 1/2" x 36 yd (13 mm x 32,9 m)<br>3/4" x 36 yd (19 mm x 32,9 m)<br>1" x 36 yd (25,4 mm x 32,9 m)<br>1-1/2" x 36 yd (38 mm x 32,9 m)<br>2" x 36 yd (51 mm x 32,9 m) |

### Technical Data:

- ✓ **Approvals:**  
UL Listed and  
CSA Certified



## 3M™ Highland™ Medium Grade Vinyl Electrical Tape

**Construction:** 3M Vinyl Electrical Tape

**Features:** Bundles cable and pull wire. Insulate splices up to 600V. Flame retardant.

| Thickness | Max. Temperature | Roll Size                                                  |
|-----------|------------------|------------------------------------------------------------|
| 7 mil     | 80°C<br>176°F    | 3/4" x 60' (19 mm x 20,1 m)<br>3/4" x 66' (19 mm x 20,1 m) |

### Technical Data:

- ✓ **Approvals:**  
UL Listed and  
CSA Certified



## 3M™ Temflex™ Economy Grade Vinyl Electrical Tape 1700

**Construction:** 3M Vinyl Electrical Tape

**Features:** Bundle cable, wire pull and repair cable jacketing. Flame retardant.

| Thickness | Max. Temperature | Roll Size                                                                                   |
|-----------|------------------|---------------------------------------------------------------------------------------------|
| 7 mil     | 80°C<br>176°F    | 3/4" x 60' (19 mm x 18,2 m)<br>3/4" x 36 yd (19 mm x 32,9 m)<br>1" x 66' (25,5 mm x 20,1 m) |

### Technical Data:

- ✓ **Approvals:**  
UL Listed and  
CSA Certified



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## 3M™ Temflex™ Mining Grade Vinyl Electrical Tape 1700P

**Construction:** 3M Vinyl Electrical Tape

**Features:** Insulate and repair mining cable jacketing. Flame retardant. Printed for use in MSHA-approved splicing kits.

| Thickness | Max. Temperature | Roll Size                                                                                     |
|-----------|------------------|-----------------------------------------------------------------------------------------------|
| 7 mil     | 80°C<br>176°F    | 3/4" x 66' (19 mm x 20,1 m)<br>1-1/2" x 44' (38 mm x 13,4 m)<br>1-1/2" x 66' (38 mm x 20,1 m) |



## Scotch® Professional Grade Linerless Rubber Splicing Tape 130C

**Construction:** 3M Insulating and Splicing Tapes

**Features:** Insulate and splice solid dielectric cables through 69kV. Linerless, high-voltage insulating, thermally conductive, self-bonding rubber.

| Thickness | Max. Temperature                                                    | Roll Size                                                                                                                                                                   |
|-----------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 30 mil    | <b>continuous:</b> 90°C / 194°F<br><b>short-term:</b> 130°C / 266°F | 1" x 30' (25 mm x 9,1 m)<br>3/4" x 30' (19 mm x 9,1 m)<br>1-1/2" x 30' (38 mm x 9,1 m)<br>2" x 30' (50 mm x 9,1 m)<br>1" x 10' (25 mm x 3,05 m)<br>1" x 15' (25 mm x 4,6 m) |



## Scotch® Professional Grade Semi-Conducting Tape 13

**Construction:** 3M Insulating and Splicing Tapes

**Features:** Rubber tape, semi-conductive. Compatible with cable semi-conducting jackets. Electrically ground high-voltage connections. Provides cable shield continuation

| Thickness | Max. Temperature                                                    | Roll Size                                                   |
|-----------|---------------------------------------------------------------------|-------------------------------------------------------------|
| 30 mil    | <b>continuous:</b> 90°C / 194°F<br><b>short-term:</b> 130°C / 266°F | 3/4" x 15' (19 mm x 4,5 m)<br>1-1/2" x 66' (38 mm x 20,1 m) |



## Scotch® Professional Grade Lined Rubber Splicing Tape 23

**Construction:** 3M Insulating and Splicing Tapes

**Features:** Insulate and splice solid dielectric cables through 69kV. Lined, insulating, thermally conductive, self-bonding rubber.

| Thickness | Max. Temperature                                                    | Roll Size                                                                                                                                     |
|-----------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| 30 mil    | <b>continuous:</b> 90°C / 194°F<br><b>short-term:</b> 130°C / 266°F | 3/4" x 30' (19 mm x 9,1 m)<br>1" x 20' (19 mm x 25 m)<br>1" x 30' (25 mm x 9,1 m)<br>1-1/2" x 30' (38 mm x 9,1 m)<br>2" x 30' (50 mm x 9,1 m) |



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## Scotch® Professional Grade Shielding Tape 24

**Construction:** 3M Insulating and Splicing Tapes

**Features:** All-metal open-weave shielding braid, conformable, temperature stable. Continue electrostatic shielding across splice.

| Thickness | Max. Temperature | Roll Size                  |
|-----------|------------------|----------------------------|
| 30 mil    | N/A              | 1" x 15' (25 mm x 4,5 m)   |
|           | N/A              | 1" x 100' (25 mm x 30,5 m) |
|           |                  | 2" x 10' (51 mm x 3,05 m)  |



## Scotch® Professional Grade Grounding Tape 25

**Construction:** 3M Insulating and Splicing Tapes

**Features:** All-metal woven braid; high current carrying capacity of 6AWG wire. Solderable. Conformable ground braid for splices and terminations.

| Thickness | Max. Temperature | Roll Size                   |
|-----------|------------------|-----------------------------|
| N/A       | N/A              | 1/2" x 15' (12 mm x 4,57 m) |



## Scotch® Professional Grade Silicone Rubber Tape 70

**Construction:** 3M Insulating and Splicing Tapes

**Features:** Protects and overwraps high-voltage cable terminations and serves as base layer to provide clean reentry into connections. Arc and track resistant. Self-fusing, longlasting, silicone rubber.

| Thickness | Max. Temperature | Roll Size                 |
|-----------|------------------|---------------------------|
| 12 mil    | 180°C<br>356°F   | 1" x 30' (25 mm x 9,14 m) |



## Scotch® Professional Grade Heavy Duty Triangular Silicone Rubber Tape 70HDT

**Construction:** 3M Insulating and Splicing Tapes

**Features:** Protects and overwraps high-voltage cable terminations, and serves as base layer to provide clean reentry into connections. Arc and track resistant. Self-fusing, long-lasting, thick silicone rubber, with a triangular tapered edge profile and a blue guideline for half-lapping.

| Thickness                    | Max. Temperature | Roll Size                 |
|------------------------------|------------------|---------------------------|
| 20 mil center,<br>8 mil edge | 180°C<br>356°F   | 1" x 30' (25 mm x 9,14 m) |



## Scotch® Fire and Electric Arc Proof Tape 77

**Construction:** 3M Insulating and Splicing Tapes

**Features:** Protects cable until limiting devices can interrupt faulted current.

| Thickness | Max. Temperature | Roll Size                    |
|-----------|------------------|------------------------------|
| 30 mil    | N/A              | 1-1/2" x 20' (38 mm x 6,1 m) |
|           |                  | 3" x 20' (76 mm x 6,1 m)     |



## Scotch® Medium Grade Linerless Rubber Splicing Compound 2242

**Construction:** 3M Insulating and Splicing Tapes

**Features:** Splice and insulate cables and connections. General purpose, linerless rubber insulating tape.

| Thickness | Max. Temperature                                                    | Roll Size                                                                                 |
|-----------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 30 mil    | <b>continuous:</b> 90°C / 194°F<br><b>short-term:</b> 130°C / 266°F | 3/4" x 15' (19 mm x 4,56 m)<br>1-1/2" x 15' (38 mm x 4,56 m)<br>2" x 15' (51 mm x 4,56 m) |



## 3M™ Temflex™ Lined Rubber Splicing Tape 2155

**Construction:** 3M Insulating and Splicing Tapes

**Features:** Economical, low-voltage, lined rubber insulating tape. Up to 600 volts.

| Thickness | Max. Temperature | Roll Size                                                  |
|-----------|------------------|------------------------------------------------------------|
| 30 mil    | 80°C<br>176°F    | 3/4" x 22' (19 mm x 6,7 m)<br>1-1/2" x 22' (38 mm x 6,7 m) |



## 3M Scotchfil® Electrical Insulation Putty

**Construction:** 3M Insulating and Splicing Tapes

**Features:** Black, self-fusing, insulating putty in tape form.

| Thickness | Max. Temperature | Roll Size                     |
|-----------|------------------|-------------------------------|
| 125 mil   | 80°C<br>176°F    | 1-1/2" x 60" (38 mm x 1,53 m) |



## Scotch® Varnished Cambric Tape 2510 and 2520

**Construction:** 3M Insulating and Splicing Tapes

**Features:** Yellow, varnish coated cotton cloth 2510: no adhesive; 2520: adhesive.

| Thickness                      | Max. Temperature | Roll Size                                                                                                                                                                                                    |
|--------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2510 is 7 mil<br>2520 is 8 mil | 105°C<br>220°F   | 3/4" x 60' (19 mm x 18,3 m)<br>3/4" x 36 yd (19 mm x 33 m)<br>1" x 36 yd (25 mm x 33 m)<br>1-1/2" x 36 yd (38 mm x 33 m)<br>2" x 36 yd (51 mm x 33 m)<br>36" x 25 yd (914,4 mm x 22,9 m)<br><b>2510 only</b> |



Specifications subject to change. For complete specifications and availability visit [www.lapptannehill.com](http://www.lapptannehill.com)



## Scotch® Professional Grade Vinyl Mastic Sealing Tapes 2200, 2210, 06147, and 06149

**Construction:** 3M Sealing and Insulating Tapes

**Features:** Provides excellent environmental and moisture seal. Conformable and durable mastic for sealing high-voltage cables and accessories. "Built-in" vinyl backing for fast application and abrasion resistance.

| Thickness       | Max. Temperature | Roll Size                              |
|-----------------|------------------|----------------------------------------|
| 2200 is 125 mil | 80°C             | 6-1/2" x 4-1/2" (165 mm x 114 mm) pads |
| 2210 is 90 mil  | 176°F            | 3-1/4" x 4-1/2" (82 mm x 114 mm) pads  |
| 6147 is 45 mil  |                  | 4" x 10' (101 mm x 3,04 m)             |
| 6149 is 45 mil  |                  | 2-1/2" x 10' (63 mm x 3,04 m)          |
|                 |                  | 2-1/2" x 2-1/2" (63 mm x 63 mm) pads   |

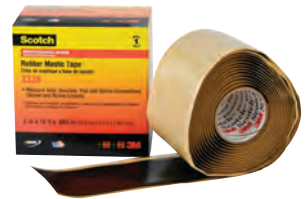


## Scotch® Professional Grade Rubber Mastic Sealing Tape 2228

**Construction:** 3M Sealing and Insulating Tapes

**Features:** Provides excellent environmental and moisture seal. Extra-conformable and durable rubber-backed mastic for sealing high-voltage cables and accessories "Built-in" rubber backing for added conformability. Overwrap with vinyl.

| Thickness | Max. Temperature                                       | Roll Size                                                                        |
|-----------|--------------------------------------------------------|----------------------------------------------------------------------------------|
| 65 mil    | 90°C / 194°F<br>emergency overload<br>of 130°C / 266°F | 2" x 3' (50 mm x 0,9 m)<br>1" x 10' (25 mm x 3,0 m)<br>2" x 10' (51 mm x 3,05 m) |



## 3M™ Scotch-Seal™ Professional Grade Mastic Sealing Tapes 2229

**Construction:** 3M Sealing and Insulating Tapes

**Features:** Provides excellent environmental and moisture seal. Conformable and durable accessories. Overwrap with vinyl.

| Thickness | Max. Temperature | Roll Size                                                 |
|-----------|------------------|-----------------------------------------------------------|
| 125 mil   | 80°C<br>176°F    | 3-3/4" x 10' (95 mm x 3,0 m)<br>1" x 10' (25 mm x 3,05 m) |



## Scotch® Cable Jacket Repair Tape 2234

**Construction:** 3M Sealing and Insulating Tapes

**Features:** Tough, black, self-healing, abrasion-resistant backing for jacket repair on industrial cables. UL recognized 220°F (105°C) temperature rating.

| Thickness | Max. Temperature | Roll Size                |
|-----------|------------------|--------------------------|
| TBD       | 105°C<br>220°F   | 2" x 6' (51 mm x 1,82 m) |



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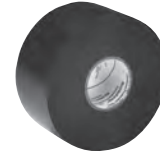


## 3M™ Scotchrap™ Professional Grade Corrosion Protection Tapes 50 and 51

**Construction:** 3M Corrosion Protection Tapes

**Features:** Protect pipe, conduits and fittings from corrosion. All-weather performance and corrosion resistance. Abrasion and impact-resistant.

| Thickness    | Max. Temperature | Roll Size                   |
|--------------|------------------|-----------------------------|
| 50 is 10 mil | 80°C             | 1" x 100' (25 mm x 30,5 m)  |
| 51 is 20 mil | 176°F            | 2" x 100' (51 mm x 30,5 m)  |
|              |                  | 3" x 100' (76 mm x 30,5 m)  |
|              |                  | 4" x 100' (102 mm x 30,5 m) |
|              |                  | 6" x 100' (152 mm x 30,5 m) |



## 3M™ Scotchrap™ Professional Grade Pipe Primer

**Construction:** 3M Corrosion Protection Tapes

**Features:** Quick-dry, non-sag rubber base primer that prepares metal surfaces for tape application. For use with Scotchrap Tapes 50 & 51, Temflex Tapes 1100 & 1200.

| Thickness | Max. Temperature | Roll Size                  |
|-----------|------------------|----------------------------|
| N/A       | 80°C<br>176°F    | 1 gallon can (3,79 liters) |



## 3M™ Temflex™ Economy Grade Corrosion Tape 1100 and 1100P

**Construction:** 3M Corrosion Protection Tapes

**Features:** General purpose corrosion tape.

| Thickness | Max. Temperature | Roll Size                   |
|-----------|------------------|-----------------------------|
| 10 mil    | 80°C<br>176°F    | 2" x 100' (51 mm x 30, 5 m) |

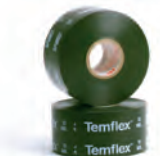


## 3M™ Temflex™ Economy Grade Corrosion Tape 1200 and 1200P

**Construction:** 3M Corrosion Protection Tapes

**Features:** General purpose corrosion tape.

| Thickness | Max. Temperature | Roll Size                   |
|-----------|------------------|-----------------------------|
| 20 mil    | 80°C<br>176°F    | 2" x 100' (51 mm x 30, 5 m) |



## Scotch® Heavy Duty Mining Tape 31

**Construction:** 3M Special Use Tapes

**Features:** Tough, abrasion-resistant backed and flexible tape for jacket repair on mining cables.

| Thickness | Max. Temperature | Roll Size                 |
|-----------|------------------|---------------------------|
| 60 mil    | 90°C<br>194°F    | 2" x 6' (51 mm x 1,8 m)   |
|           |                  | 2" x 8.5' (51 mm x 2,6 m) |
|           |                  | 2" x 10' (51 mm x 3,05 m) |



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## Scotch® Thread Sealant and Lubricant Tape 48

**Construction:** 3M Special Use Tapes

**Features:** Pipe thread sealant that provides a leakproof seal. Leakproof seal helps prevent cross threading on pipe threads.

| Thickness | Max. Temperature | Roll Size                                                                                                            |
|-----------|------------------|----------------------------------------------------------------------------------------------------------------------|
| 3 mil     | 260°C<br>500°F   | 1/4" x 260" (6,3 mm x 7 m)<br>1/2" x 260" (13 mm x 7 m)<br>1/2" x 520" (13 mm x 13 m)<br>1/2" x 1296" (13 mm x 33 m) |



## Scotch® Glass Cloth Tape 27 and 69

**Construction:** 3M Special Use Tapes

**Features:** Woven insulating glass cloth; high temperature resistance. High mechanical strength.

| Thickness                    | Max. Temperature                                                                             | Roll Size                                                                                                                                                                                                                                                |
|------------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 27 is 7 mil<br>69 is 7.5 mil | <b>27 is Class B temp</b><br>(130°C / 266°F)<br><b>69 is class H temp</b><br>(180°C / 356°F) | 1/2" x 66' (12 mm x 20,1 m)<br>3/4" x 66' (19 mm x 20,1 m)<br>3/4" x 60 yd (19 mm x 54,8 m)<br>1" x 60 yd (25 mm x 54,8 m)<br>1-1/2" x 60 yd (38 mm x 54,8 m)<br>1/2" x 36 yd (13 mm x 33 m)<br>3/4" x 36 yd (19 mm x 33 m)<br>1" x 36 yd (25 mm x 33 m) |



## Scotch® Barricade Tape 300

**Construction:** 3M Special Use Tapes

**Features:** Durable polyethylene plastic, bold 2" letters, long roll length, will not tear easily, attracts attention. Barricade applicable in both large and small areas.

| Thickness | Max. Temperature | Roll Size                                                  |
|-----------|------------------|------------------------------------------------------------|
| 3 mil     | N/A              | 3" x 300' (76 mm x 91,4 m)<br>3" x 1000' (76 mm x 304,8 m) |



## 3M™ Duct Tape 6969

**Construction:** 3M Special Use Tapes

**Features:** Extra heavy duty duct tape, excellent adhesion, tears easily. Silver.

| Thickness | Max. Temperature | Roll Size                                                            |
|-----------|------------------|----------------------------------------------------------------------|
| 10.7 mil  | 93°C<br>200°F    | 1-7/8" x 60 yd (48 mm x 54,8 m)<br>2-13/16" x 60 yd (72 mm x 54,8 m) |



## 3M™ Duct Tape 2929

**Construction:** 3M Special Use Tapes

**Features:** Utility grade, conformable cloth duct tape.

| Thickness | Max. Temperature | Roll Size                                                            |
|-----------|------------------|----------------------------------------------------------------------|
| 6 mil     | 93°C<br>200°F    | 1-7/8" x 50 yd (48 mm x 45.7 m)<br>2-13/16" x 50 yd (72 mm x 45.7 m) |



## 3M™ Outdoor Masking and Stucco Tape 5959

**Construction:** 3M Special Use Tapes

**Features:** Construction, marine and maintenance, 90 day UV resistant waterproof backing.



| Thickness | Max. Temperature | Roll Size                       |
|-----------|------------------|---------------------------------|
| 12 mil    | 93°C<br>200°F    | 1-7/8" x 45 yd (48 mm x 41.1 m) |

## 3M™ Value Duct Tape 1900

**Construction:** 3M Special Use Tapes

**Features:** Light duty sealing and holding for non-critical uses, water resistant.



| Thickness | Max. Temperature | Roll Size                                                            |
|-----------|------------------|----------------------------------------------------------------------|
| 5.8 mil   | 93°C<br>200°F    | 1-7/8" x 50 yd (48 mm x 45.7 m)<br>2-13/16" x 50 yd (72 mm x 45.7 m) |

## 3M™ Performance Plus Duct Tape 8979

**Construction:** 3M Special Use Tapes

**Features:** High performance tape that removes cleanly up to six months after exposure to sunlight and temperature extremes. Aggressive adhesive and high tensile strength for demanding applications.



| Thickness | Max. Temperature | Roll Size                                                   |
|-----------|------------------|-------------------------------------------------------------|
| 12.6 mil  | 93°C<br>200°F    | 1" x 60 yd (24 mm x 54, 8 m)<br>2" x 60 yd (51 mm x 54,8 m) |

## 3M™ Temflex™ Cotton Friction Tape 1755

**Construction:** 3M Special Use Tapes

**Features:** Provides extra abrasion resistance for splices and connections.



| Thickness | Max. Temperature | Roll Size                                                                                        |
|-----------|------------------|--------------------------------------------------------------------------------------------------|
| 15 mil    | 80°C<br>176°F    | 3/4" x 60' (19 mm x 18,28 m)<br>3/4" x 82-1/2' (19 mm x 25 m)<br>1-1/2" x 82-1/2' (38 mm x 25 m) |

## Scotch® Performance Masking Tape 232

**Construction:** 3M Special Use Tapes

**Features:** Premium grade masking tape.



| Thickness | Max. Temperature        | Roll Size                                                                                   |
|-----------|-------------------------|---------------------------------------------------------------------------------------------|
| 6.3 mil   | Up to<br>121°C<br>250°F | 3/4" x 60 yd (18 mm x 54.8 m)<br>1" x 60 yd (24 mm x 54.8 m)<br>2" x 60 yd (48 mm x 54.8 m) |



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## Scotch® General Purpose Masking Tape 234

**Construction:** 3M Special Use Tapes

**Features:** General purpose masking tape.

| Thickness | Max. Temperature        | Roll Size                                                                                   |
|-----------|-------------------------|---------------------------------------------------------------------------------------------|
| 6.0 mil   | Up to<br>121°C<br>250°F | 3/4" x 60 yd (18 mm x 54.8 m)<br>1" x 60 yd (24 mm x 54.8 m)<br>2" x 60 yd (48 mm x 54.8 m) |



## 3M™ Paper Tape 200

**Construction:** 3M Special Use Tapes

**Features:** Utility purpose paper tape.

| Thickness | Max. Temperature | Roll Size                                                                                                                                                                                                                     |
|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.5 mil   | 93°C<br>200°F    | 1/2" x 60 yd (12 mm x 54.8 m)<br>3/4" x 60 yd (18 mm x 54.8 m)<br>1" x 60 yd (24 mm x 54.8 m)<br>1-1/2" x 60 yd (36 mm x 54.8 m)<br>2" x 60 yd (48 mm x 54.8 m)<br>3" x 60 yd (72 mm x 54.8 m)<br>4" x 60 yd (96 mm x 54.8 m) |



## 3M™ Duct Tape 3939

**Construction:** 3M Special Use Tapes

**Features:** Heavy duty duct tape; good adhesion, strong backing. Silver.

| Thickness | Max. Temperature | Roll Size                                                                                                                           |
|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| 9 mil     | 65°C<br>150°F    | .94" x 60 yd (24 mm x 54.8 m)<br>1.88" x 60 yd (48 mm x 54.8 m)<br>2.83" x 60 yd (72 mm x 54.8 m)<br>3.77" x 60 yd (96 mm x 54.8 m) |



## Scotch® Heavy Duty All-Weather Duct Tape 2245

**Construction:** 3M Special Use Tapes

**Features:** Resists harsh outdoor conditions and stays pliable.

| Thickness | Max. Temperature       | Roll Size                    |
|-----------|------------------------|------------------------------|
| 9.5 mil   | Up to<br>66°C<br>150°F | 1.88" x 45 yd (48 mm x 40 m) |



## Scotch® Professional HVAC Duct Tape 133DC

**Construction:** 3M Special Use Tapes

**Features:** Aggressive adhesive for air and moisture, light industrial, and HVAC applications.

| Thickness | Max. Temperature | Roll Size                      |
|-----------|------------------|--------------------------------|
| 10 mil    | 93°C<br>200°F    | 1.88" x 60 yd (48 mm x 54.8 m) |

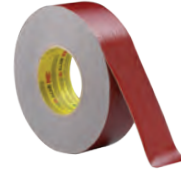


## 3M™ Performance Plus Duct Tape 8979N-Nuclear

**Construction:** 3M Special Use Tapes

**Features:** 6 month clean removal duct tape. Sunlight resistant, leaves behind no sticky residue.

| Thickness | Max. Temperature | Roll Size                                                        |
|-----------|------------------|------------------------------------------------------------------|
| 12.6 mil  | 93°C<br>200°F    | 1.88" x 60 yd (48 mm x 54.8 m)<br>2.83" x 60 yd (72 mm x 54.8 m) |



## Scotch® Transparent Duct Tape 2120-A

**Construction:** 3M Special Use Tapes

**Features:** Transparent, resistant to water and UV rays.

| Thickness | Max. Temperature | Roll Size                    |
|-----------|------------------|------------------------------|
| 9 mil     | 173°F            | 1.88" x 20 yd (48 mm x 18 m) |



## Scotch® Electricians Bundling Tape 2000

**Construction:** 3M Special Use Tapes

**Features:** General purpose easy tear vinyl duct tape.

| Thickness | Max. Temperature | Roll Size                 |
|-----------|------------------|---------------------------|
| 6 mil     | N/A              | 2" x 50 yd (51 mm x 46 m) |



## 3M™ Duct Tape 3900

**Construction:** 3M Special Use Tapes

**Features:** Multi-purpose duct tape. Available in seven colors for color-coding jobs.

| Thickness | Max. Temperature | Roll Size                      |
|-----------|------------------|--------------------------------|
| 7.7 mil   | 93°C<br>200°F    | 1.88" x 60 yd (48 mm x 54.8 m) |



## 3M™ Cloth Gaffers Tape 6910

**Construction:** 3M Special Use Tapes

**Features:** High tack, easy tear coated cloth tape.

| Thickness | Max. Temperature       | Roll Size                      |
|-----------|------------------------|--------------------------------|
| 12 mil    | Up to<br>93°C<br>200°F | 1.88" x 60 yd (48 mm x 54.8 m) |



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## 3M™ Vinyl Duct Tape 3903

**Construction:** 3M Special Use Tapes

**Features:** Low-medium adhesion for all around jobs. Available in seven color for color coding.

| Thickness | Max. Temperature        | Roll Size                      |
|-----------|-------------------------|--------------------------------|
| 6.2 mil   | Up to<br>121°C<br>250°F | 1.97" x 50 yd (50 mm x 45.7 m) |



## Scotch® Premium Heavy Duty Box Sealing Tape 3750

**Construction:** 3M Packaging and Palletizing Tapes

**Features:** Superior performance packaging tape used for heavy duty packaging applications.

| Thickness | Max. Temperature             | Roll Size                     |
|-----------|------------------------------|-------------------------------|
| 3.2 mil   | Short term:<br>65°C<br>151°F | 1-4/5" x 54 yd (48 mm x 50 m) |



## Scotch® Printed Box Sealing Tape 3732 and 3734

**Construction:** 3M Packaging and Palletizing Tapes

**Features:** 3732- "If seal is broken check"  
3734- "Fragile handle with care"  
Tan with red printing

| Thickness | Max. Temperature | Roll Size                          |
|-----------|------------------|------------------------------------|
| N/A       | N/A              | 1-4/5" x 109 yd<br>(48 mm x 100 m) |



## 3M™ Highland™ Commercial Box Sealing Tape 3710

**Construction:** 3M Packaging and Palletizing Tapes

**Features:** Commercial grade box sealing tape.

| Thickness | Max. Temperature             | Roll Size                                                        |
|-----------|------------------------------|------------------------------------------------------------------|
| 2 mil     | Short term:<br>65°C<br>151°F | 1-4/5" x 54 yd (48 mm x 50 m)<br>1-4/5" x 109 yd (48 mm x 100 m) |



## Scotch® Box Sealing Hand Dispensers H-122

**Construction:** 3M Packaging and Palletizing Tapes

**Features:** Box sealing Hand Dispensers

| Thickness | Max. Temperature | Roll Size    |
|-----------|------------------|--------------|
| N/A       | N/A              | 2" (50.8 mm) |



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## Scotch® Series Printed Box Sealing Tape 3770

**Construction:** 3M Packaging and Palletizing Tapes

**Features:** 3771- "If Seal is Broken Check Contents Before Accepting"  
3772- "Fragile Handle with Care"  
3773- "Rush, Rush, Rush"  
3775- "Mixed Merchandise"

| Thickness | Max. Temperature | Roll Size                       |
|-----------|------------------|---------------------------------|
| 1.9 mil   | N/A              | 1-9/10" x 104 yd (48 mm x 100m) |

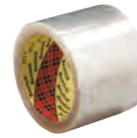


## Scotch® Box Sealing Tape 371

**Construction:** 3M Packaging and Palletizing Tapes

**Features:** Industrial packaging tape.

| Thickness | Max. Temperature | Roll Size                                                              |
|-----------|------------------|------------------------------------------------------------------------|
| 1.9 mil   | N/A              | 2-4/5" x 54.6 yd (72 mm x 50 mm)<br>2-4/5" x 109.3 yd (72 mm x 100 mm) |



## Scotch® Box Sealing Roll-on Dispensers H-180

**Construction:** 3M Packaging and Palletizing Tapes

**Features:** Box sealing Roll-on Dispensers.

| Thickness | Max. Temperature | Roll Size    |
|-----------|------------------|--------------|
| N/A       | N/A              | 2" (50.8 mm) |



## Scotch® Industrial Grade Filament Tape 893

**Construction:** 3M Packaging and Palletizing Tapes

**Features:** Industrial grade filament and packaging tape that is abrasion and moisture resistant.

| Thickness | Max. Temperature             | Roll Size                                                                               |
|-----------|------------------------------|-----------------------------------------------------------------------------------------|
| 6 mil     | Short term:<br>65°C<br>151°F | 1/2" x 60 yd (13 mm x 55 m)<br>3/4" x 60 yd (19 mm x 55 m)<br>1" x 60 yd (25 mm x 55 m) |



## Scotch® Commercial Grade Filament Tape 897

**Construction:** 3M Packaging and Palletizing Tapes

**Features:** Commercial grade filament tape with synthetic rubber resin adhesive.

| Thickness | Max. Temperature | Roll Size                                                                               |
|-----------|------------------|-----------------------------------------------------------------------------------------|
| 6 mil     | 50°C<br>120°F    | 1/2" x 60 yd (13 mm x 55 m)<br>3/4" x 60 yd (19 mm x 55 m)<br>1" x 60 yd (25 mm x 55 m) |



Specifications subject to change. For complete specifications and availability visit [www.lapptannehill.com](http://www.lapptannehill.com)



## Scotch® Filament Tape Dispensers H-10

**Construction:** 3M Special Use Tapes

**Features:** Filament Tape Dispensers.

| Thickness | Max. Temperature | Roll Size  |
|-----------|------------------|------------|
| N/A       | N/A              | 1" (25 mm) |



## Scotch® Film Tape 8210

**Construction:** 3M Special Use Tapes

**Features:** Lightly pink tinted label.

| Thickness | Max. Temperature | Roll Size                 |
|-----------|------------------|---------------------------|
| 2.5 mil   | N/A              | 4" x 72 yd (10 cm x 66 m) |



## Scotch® Pouch Tape 8240

**Construction:** 3M Special Use Tapes

**Features:** Pressure sensitive tape with rectangular window and orange border.

| Thickness | Max. Temperature | Roll Size               |
|-----------|------------------|-------------------------|
| 2.5 mil   | N/A              | 5" x 6" (13 cm x 15 cm) |



## Scotch® Commercial Label Protection Tape 3565

**Construction:** 3M Special Use Tapes

**Features:** Utility grade label protection tape.

| Thickness | Max. Temperature | Roll Size                       |
|-----------|------------------|---------------------------------|
| 1.9 mil   | N/A              | 3-7/10" x 104 yd (96 mm x 95 m) |



## Scotch® Stretchable Tape 8884 and 8886

**Construction:** 3M Special Use Tapes

**Features:** High performance transparent stretchable tape.

| Thickness                  | Max. Temperature | Roll Size                      |
|----------------------------|------------------|--------------------------------|
| 8884- 5 mil<br>8886- 7 mil | N/A              | 1-3/10" x 60 yd (36 mm x 55 m) |



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# Wire Management

## 3M™ Cable Ties

**Construction:** Molded from 6/6 nylon

**Features:**

3M Cable Ties are used to secure wire bundles and harness components quickly. The flexible design allows the user to slip ties easily under and around cables and harnesses. These ties can be used with most standard tensioning/cutoff tools for fast production line fastening.

**Additional Information:**

3M™ Cable Ties are available in a variety of sizes and styles, including weather resistant black for outdoor use.

**Technical Data:**



**Temperature:**

<-40°F (-40°C) to 185°F (85°C).



**Approvals:**

- Products which are UL Listed as noted in the Typical Data section meet UL Standard 1565 for Wire Positioning Devices and are suitable for use in Air Handling Spaces in accordance with Section 300.22 of the National Electric Code.
- U.L. File # E116841
- Products which are UL Recognized are suitable for use in enclosures.
- The 36 and 48 inch cable ties are UL Listed 181B-C mechanical fasteners for use with flexible air ducts.



3M™ Cable Ties Family of Product

## 3M™ Miniature Cable Ties

**Features:**

Bent tips, Flame retardant; fungus inert; resistant to solvents, alkalies and grease.

**Advantages:**

Easy insertion, long life. Saves time and money.



**Miniature Cable Ties**

| Part Number | Length in (mm) | Width in (mm) | Max Bundle Dia. in (mm) | Tensile lb (kg) | Thickness in (mm) | Temperature Rating | Bag Quantity | Color   | Description  |
|-------------|----------------|---------------|-------------------------|-----------------|-------------------|--------------------|--------------|---------|--------------|
| CT4BK18-C   | 4.1 (104)      | .1 (3)        | .75 (19)                | 18 (8)          | .04 (1,0)         | 185°F (85°C)       | 100          | Black   | UV Resistant |
| CT4BK18-M   | 4.1 / 104      | .1 (3)        | .75 (19)                | 18 (8)          | .04 (1,0)         | 185°F (85°C)       | 1000         | Black   | UV Resistant |
| CT4NT18-C   | 4.1 / 104      | .1 (3)        | .75 (19)                | 18 (8)          | .04 (1,0)         | 185°F (85°C)       | 100          | Natural | Standard     |
| CT4NT18-M   | 4.1 / 104      | .1 (3)        | .75 (19)                | 18 (8)          | .04 (1,0)         | 185°F (85°C)       | 1000         | Natural | Standard     |
| CT6BK18-C   | 6.1 / 155      | .1 (3)        | 1.25 (32)               | 18 /(8)         | .05 (1,3)         | 185°F (85°C)       | 100          | Black   | UV Resistant |
| CT6NT18-C   | 6.1 / 155      | .1 (3)        | 1.25 (32)               | 18 /(8)         | .05 (1,3)         | 185°F (85°C)       | 100          | Natural | Standard     |
| CT6NT18-M   | 6.1 / 155      | .1 (3)        | 1.25 (32)               | 18 /(8)         | .05 (1,3)         | 185°F (85°C)       | 1000         | Natural | Standard     |
| CT8BK18-C   | 8.1 / 206      | .1 (3)        | 2 (51)                  | 18 (8)          | .05 (1,3)         | 185°F (85°C)       | 100          | Black   | UV Resistant |
| CT8BK18-M   | 8.1 / 206      | .1 (3)        | 2 (51)                  | 18 (8)          | .05 (1,3)         | 185°F (85°C)       | 100          | Black   | UV Resistant |
| CT8NT18-C   | 8.1 / 206      | .1 (3)        | 2 (51)                  | 18 (8)          | .05 (1,3)         | 185°F (85°C)       | 100          | Natural | Standard     |
| CT8NT18-M   | 8.1 / 206      | .1 (3)        | 2 (51)                  | 18 (8)          | .05 (1,3)         | 185°F (85°C)       | 100          | Natural | Standard     |

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## 3M™ Intermediate Cable Ties

### Features:

Bent tips, Flame retardant; fungus inert; resistant to solvents, alkalies and grease.

### Advantages:

Easy insertion, long life. Saves time and money.

### Intermediate Cable Ties



| Part Number | Length in (mm) | Width in (mm) | Max Bundle Dia. in (mm) | Tensile lb (kg) | Thickness in (mm) | Temperature Rating | Bag Quantity | Color   | Description  |
|-------------|----------------|---------------|-------------------------|-----------------|-------------------|--------------------|--------------|---------|--------------|
| CT6BK40-C   | 5.8 (147)      | .14 (3,6)     | 1.25 (32)               | 40 (18)         | .05 (1,3)         | 185°F (85°C)       | 100          | Black   | UV Resistant |
| CT6BK40-M   | 5.8 (147)      | .14 (3,6)     | 1.25 (32)               | 40 (18)         | .05 (1,3)         | 185°F (85°C)       | 1000         | Black   | UV Resistant |
| CT6NT40-C   | 5.8 (147)      | .14 (3,6)     | 1.25 (32)               | 40 (18)         | .05 (1,3)         | 185°F (85°C)       | 100          | Natural | Standard     |
| CT6NT40-M   | 5.8 (147)      | .14 (3,6)     | 1.25 (32)               | 40 (18)         | .05 (1,3)         | 185°F (85°C)       | 1000         | Natural | Standard     |
| CT8BK40-C   | 8.9 (226)      | .14 (3,6)     | 2 (51)                  | 40 (18)         | .05 (1,3)         | 185°F (85°C)       | 100          | Black   | UV Resistant |
| CT8BK40-M   | 8.9 (226)      | .14 (3,6)     | 2 (51)                  | 40 (18)         | .05 (1,3)         | 185°F (85°C)       | 1000         | Black   | UV Resistant |
| CT8NT40-C   | 8.9 (226)      | .14 (3,6)     | 2 (51)                  | 40 (18)         | .05 (1,3)         | 185°F (85°C)       | 100          | Natural | Standard     |
| CT8NT40-M   | 8.9 (226)      | .14 (3,6)     | 2 (51)                  | 40 (18)         | .05 (1,3)         | 185°F (85°C)       | 1000         | Natural | Standard     |

## 3M™ Standard Cable Ties

### Features:

Bent tips, Flame retardant; fungus inert; resistant to solvents, alkalies and grease.

### Advantages:

Easy insertion, long life. Saves time and money.

### Standard Cable Ties



| Part Number | Length in (mm) | Width in (mm) | Max Bundle Dia. in (mm) | Tensile lb (kg) | Thickness in (mm) | Temperature Rating | Bag Quantity | Color   | Description  |
|-------------|----------------|---------------|-------------------------|-----------------|-------------------|--------------------|--------------|---------|--------------|
| CT8BK50-C   | 7.6 (193)      | .18 (4,6)     | 2 (51)                  | 50 (23)         | .05 (1,3)         | 185°F (85°C)       | 100          | Black   | UV Resistant |
| CT8BK50-M   | 7.6 (193)      | .18 (4,6)     | 3 (76)                  | 50 (23)         | .05 (1,3)         | 185°F (85°C)       | 1000         | Black   | UV Resistant |
| CT8NT50-C   | 7.6 (193)      | .18 (4,6)     | 3 (76)                  | 50 (23)         | .05 (1,3)         | 185°F (85°C)       | 100          | Natural | Standard     |
| CT8NT50-M   | 7.6 (193)      | .18 (4,6)     | 3 (76)                  | 50 (23)         | .05 (1,3)         | 185°F (85°C)       | 1000         | Natural | Standard     |
| CT11BK50-C  | 11.1 (282)     | .18 (4,6)     | 3 (76)                  | 50 (23)         | .05 (1,3)         | 185°F (85°C)       | 100          | Black   | UV Resistant |
| CT11BK50-D  | 11.1 (282)     | .18 (4,6)     | 3 (76)                  | 50 (23)         | .05 (1,3)         | 185°F (85°C)       | 500          | Black   | UV Resistant |
| CT11NT50-C  | 11.1 (282)     | .18 (4,6)     | 3 (76)                  | 50 (23)         | .05 (1,3)         | 185°F (85°C)       | 100          | Natural | Standard     |
| CT11NT50-D  | 11.1 (282)     | .18 (4,6)     | 3 (76)                  | 50 (23)         | .05 (1,3)         | 185°F (85°C)       | 500          | Natural | Standard     |
| CT15BK50-C  | 14.6 (371)     | .18 (4,6)     | 4 (102)                 | 50 (23)         | .05 (1,3)         | 185°F (85°C)       | 100          | Black   | UV Resistant |

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# Wire Management

## 3M™ Heavy Duty Cable Ties

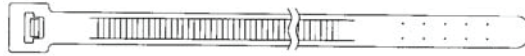
### Features:

Bent tips, Flame retardant; fungus inert; resistant to solvents, alkalies and grease.

### Advantages:

Easy insertion, long life. Saves time and money.

### Heavy Duty Cable Ties



| Part Number | Length in (mm) | Width in (mm) | Max Bundle Dia. in (mm) | Tensile lb (kg) | Thickness in (mm) | Temperature Rating | Bag Quantity | Color   | Description  |
|-------------|----------------|---------------|-------------------------|-----------------|-------------------|--------------------|--------------|---------|--------------|
| CT8BK120-L  | 9 (229)        | .30( 7,6)     | 2 (51)                  | 120 (54)        | .07 (1,8)         | 185°F (85°C)       | 50           | Black   | UV Resistant |
| CT8NT120-L  | 9 (229)        | .30( 7,6)     | 2 (51)                  | 120 (54)        | .07 (1,8)         | 185°F (85°C)       | 50           | Natural | Standard     |
| CT15BK120-C | 15 (381)       | .30( 7,6)     | 4 (102)                 | 120 (54)        | .07 (1,8)         | 185°F (85°C)       | 100          | Black   | UV Resistant |
| CT15BK120-D | 15 (381)       | .30( 7,6)     | 4 (102)                 | 120 (54)        | .07 (1,8)         | 185°F (85°C)       | 500          | Black   | UV Resistant |
| CT15NT120-C | 15 (381)       | .30( 7,6)     | 4 (102)                 | 120 (54)        | .07 (1,8)         | 185°F (85°C)       | 100          | Natural | Standard     |
| CT15NT120-D | 15 (381)       | .30( 7,6)     | 4 (102)                 | 120 (54)        | .07 (1,8)         | 185°F (85°C)       | 500          | Natural | Standard     |

## 3M™ Extra Heavy Duty Cable Ties

### Features:

Bent tips, Flame retardant; fungus inert; resistant to solvents, alkalies and grease.

### Advantages:

Easy insertion, long life. Saves time and money.

### Extra Heavy Duty Cable Ties



†UL Listed 181B-C  
\*\*UL Recognized where noted

| Part Number | Length in (mm) | Width in (mm) | Max Bundle Dia. in (mm) | Tensile lb (kg) | Thickness in (mm) | Temperature Rating | Bag Quantity | Color   | Description      |
|-------------|----------------|---------------|-------------------------|-----------------|-------------------|--------------------|--------------|---------|------------------|
| CT24BK175-L | 24( 610)       | .34 (8,6)     | 7.2 (183)               | 175 (79)        | .09 (2,3)         | 185°F (85°C)       | 50           | Black   | UV Resistant     |
| CT24NT175-L | 24 ( 610)      | .34 (8,6)     | 7.2 (183)               | 175 (79)        | .09 (2,3)         | 185°F (85°C)       | 50           | Natural | Standard         |
| CT36BK175-L | 36 (914)       | .34 (8,6)     | 11 (279)                | 175 (79)        | .09 (2,3)         | 185°F (85°C)       | 50           | Black   | † UV Resistant   |
| CT36NT175-L | 36 (914)       | .34 (8,6)     | 11 (279)                | 175 (79)        | .09 (2,3)         | 185°F (85°C)       | 50           | Natural | † Standard       |
| CT48BK175-L | 47.9 (1217)    | .36 (9,1)     | 14.7 (373)              | 175 (79)        | .07 (1,8)         | 185°F (85°C)       | 50           | Black   | ** †UV Resistant |
| CT48NT175-L | 47.9 (1217)    | .36 (9,1)     | 14.7 (373)              | 175 (79)        | .07 (1,8)         | 185°F (85°C)       | 50           | Natural | ** † Standard    |

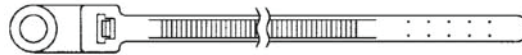
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## 3M™ Mounting Cable Ties, Screw Mount

### Screw Mount Ties



| Part Number  | Length in (mm) | Width in (mm) | Max Bundle Dia. in (mm) | Tensile lb (kg) | Thickness in (mm) | Temperature Rating | Bag Quantity | Color   | Description            |
|--------------|----------------|---------------|-------------------------|-----------------|-------------------|--------------------|--------------|---------|------------------------|
| CT8BK50S-C   | 8.6 (218)      | .18 (4,6)     | 2 (51)                  | 50 (23)         | .06 (1,5)         | 185°F (85°C)       | 100          | Black   | UV Resistant # 10 stud |
| CT8BK50S-M   | 8.6 (218)      | .18 (4,6)     | 2 (51)                  | 50 (23)         | .06 (1,5)         | 185°F (85°C)       | 1000         | Black   | UV Resistant # 10 stud |
| CT8NT50S-C   | 8.6 (218)      | .18 (4,6)     | 2 (51)                  | 50 (23)         | .06 (1,5)         | 185°F (85°C)       | 100          | Natural | Standard # 10 stud     |
| CT8NT50S-M   | 8.6 (218)      | .18 (4,6)     | 2 (51)                  | 50 (23)         | .06 (1,5)         | 185°F (85°C)       | 1000         | Natural | Standard # 10 stud     |
| CT15NT50S-L  | 15.1 (384)     | .18 (4,6)     | 4 (102)                 | 50 (23)         | .06 (1,5)         | 185°F (85°C)       | 50           | Natural | Standard #10 stud      |
| CT15NT50S-D  | 15.1 (384)     | .18 (4,6)     | 4 (102)                 | 50 (23)         | .06 (1,5)         | 185°F (85°C)       | 500          | Natural | Standard #10 stud      |
| CT15NT120S-L | 15.7 (399)     | .30 (7,6)     | 4 (102)                 | 120 (54)        | .07 (1,8)         | 185°F (85°C)       | 50           | Natural | Standard #10 stud      |
| CT15NT120S-D | 15.7 (399)     | .30 (7,6)     | 4 (102)                 | 120 (54)        | .07 (1,8)         | 185°F (85°C)       | 500          | Natural | Standard #10 stud      |

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# Wire Management

## 3M™ Cable Tie Bases

### Features:

3M Cable Tie Bases 06290 Series makes mounting wire and cable a quick, easy and secure process. The bases are available in four styles and five sizes. They are designed so they can be screw-mounted, and eight of the 10 have an adhesive backing for extra easy application.

### Advantages:

Every 3M cable tie can be mounted using one of these cable tie bases.

### Technical Data:

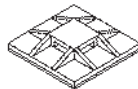
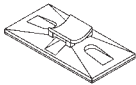


#### Temperature:

<-40°F to 185°F (-40°C to 85°C)

### Mounting Bases:

| Part Number | Dimensions<br>LxWxH<br>in ( mm) | Slot<br>Width<br>in (mm) | Slot<br>Height<br>in (mm) | Color              | Mount Type                               | Bag<br>Quantity | Material |
|-------------|---------------------------------|--------------------------|---------------------------|--------------------|------------------------------------------|-----------------|----------|
| 06294       | .74x.74x.22 (19x19x5,6)         | .21 (5,1)                | .06 (1.5)                 | Natural            | Foam Backed<br>Adhesive                  | 100             | Nylon    |
| 06295       | .74x.74x.22 (19x19x5,6)         | .21 (5,1)                | .06 (1.5)                 | UV Resistant black | Foam Backed<br>Adhesive                  | 100             | Nylon    |
| 06296       | .99x.99x.22 (25x25x5,6)         | .21 (5,1)                | .06 (1.5)                 | Natural            | Foam Backed<br>Adhesive                  | 100             | Nylon    |
| 06297       | .99x.99x.22 (25x25x5,6)         | .21 (5,1)                | .06 (1.5)                 | UV Resistant black | Foam Backed<br>Adhesive                  | 100             | Nylon    |
| 06290       | 2.0x1.0x.35 (51x25x8,9)         | .21 (5,1)                | .18 (4,5)                 | Ivory              | Foam Backed<br>Adhesive                  | 100             | ABS      |
| 06291       | 2.0x1.0x.35 (51x25x8,9)         | .21 (5,1)                | .18 (4,5)                 | Ivory              | Foam Backed<br>Adhesive                  | 250             | ABS      |
| 06292       | 1.0x1.2x.15 (25x25x3,8)         | .21 (5,1)                | .06 (1,5)                 | Ivory              | Foam Backed<br>Adhesive /<br>Screw Mount | 100             | ABS      |
| 06293       | 1.0x1.0x.15 (25x25x3,8)         | .21 (5,1)                | .06 (1,5)                 | Ivory              | Foam Backed<br>Adhesive /<br>Screw Mount | 250             | ABS      |
| 06298       | .60x.41x.28 (15x10x7,0)         | .27 (7)                  | .08 (2,0)                 | Natural            | Screw Mount                              | 100             | Nylon    |
| 06299       | .87x.62x.38 (22x16x10)          | .51 (13)                 | .08 (2,0)                 | Natural            | Screw Mount                              | 100             | Nylon    |



Not finding what you are looking for?

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## Pneumatic Cable Tie Installation Tools

### Features:

- Lightweight ergonomic design is comfortable and easy to use, reducing operation fatigue and the potential for repetitive motion injuries.
- Fast, consistent installation of Subminiature through Heavy cross section cable ties.
- Tension and cut-off mechanism maintains desired tension and provides flush cable tie cut-off, preventing damage to adjacent wire bundles and protecting workers' hands and arms.
- Beveled tie entry allows quick side entry of tie into tool which speeds installation.
- Controlled tip ejection allows operator to quickly and safely remove excess cut-off material, eliminating the need to clean-up work area after completion of installation.
- Narrow nose permits easy access to confined areas, maximizing application flexibility.
- Quick connect fitting allows the operator to easily connect tool to any air supply source, improving portability.
- Two retractable hangers allow for hanging the tool in the work area for easy access and for safe storage of tool when not in use.
- Two adjustment knobs (coarse and fine) allow precision tension settings for consistent, reliable results.
- Tension setting label displays easy-to-read instruction right on the tool for operator convenience.



Easy Tension Adjustment

### Tool Technical Data

| Part Number               | PTS                                                                                                                                       | PTH                                                       |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| Weight                    | 17.3 oz. (490g)                                                                                                                           | 32.0 oz. (907g)                                           |
| Used with Cable Ties      | Subminiature through Standard                                                                                                             | Standard through Heavy                                    |
| Air Supply                | Operates on 70-90 psig (4.8-6.1 bar), non-lubricated air                                                                                  | Operates on 70-100 psig (4.8-6.8 bar), non-lubricated air |
| Tension Setting           | Adjustable                                                                                                                                |                                                           |
| Optional Tool Accessories | PL289N1 Filter/Regulator<br>PPH10 Hose Assembly – 10 ft. (3 m)<br>PHCAQ and PHCAT Adapter Fittings for Hose<br>KPTSTL Tension Locking Kit |                                                           |
|                           | KGTSBLD – Blade Replacement Kit                                                                                                           | KPTHBLD – Blade Replacement Kit                           |

If compressed air is not readily available, consult factory to discuss optional portable air system kit.

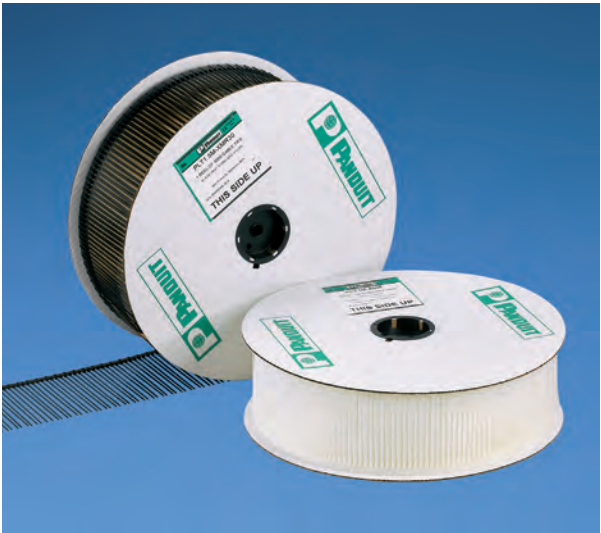
Specifications subject to change. For complete specifications and availability visit [www.lapptannehill.com](http://www.lapptannehill.com)

Reel-Fed Cable Ties-Multiple Styles and Sizes

**Construction:** Continuously molded cable ties (up to 5,000 ties per reel) provide continuous feeding for high productivity and reduced downtime due to fewer reel changes. Available in a full range of tensile strengths, styles, sizes and materials to suit a variety of applications.

**Features:**  
All-Nylon Tie: Reel-fed cable ties in all-nylon (one-piece) locking ties with 18 lbs. minimum loop tensile strength. Available in a variety of colors and materials. Maximum bundle diameter up to .82 in. for the PLT1M-XMR and 1.31 in. for the PLT1.5M-XMR. Barbed Tie (BT1M-XMR and BT1.5M-XMR) Miniature Cross Section. Reel-fed cable ties with exclusive stainless steel locking barb and 30 lbs. demanding applications. Metal locking bar and tie body design provide greater bundle tightness, reducing both rotational and lateral movement of the tie. Maximum bundle diameter up to .82 in. for the BT1M-XMR and 1.31 in. for the BT1.5M-XMR. All-Nylon Tie: (PLT2S-VMR) Standard Cross Section. Reel-fed cable ties in all nylon (one-piece)locking ties with 50 lbs. Minimum loop tensile strength. Maximum bundle diameter up to 2.00 in. Standard cross section cable ties (2,500 ties per reel).

**Applications:**  
Continuously molded cable ties (up to 5,000 ties per reel) provide continuous feeding for high productivity and reduced downtime due to fewer reel changes.



Reel-fed Cable Ties Technical Data

| Material                    | Color   | Styles Available        | Continuous Use Temperature      |
|-----------------------------|---------|-------------------------|---------------------------------|
| Nylon 6.6                   | Natural | PLT1M-XMR, PLT1.5M-XMR, | -75°F to 185°F (-59°C to 85°C)  |
| Weather Resistant Nylon 6.6 | Black   | BT1M-XMR, BT1.5M-XMR,   | -75°F to 185°F (-59°C to 85°C)  |
| Heat Stabilized Nylon 6.6   | Black   | PLT2S-VMR               | -75°F to 239°F (-59°C to 115°C) |
| Flame Retardant Nylon 6.6*  | Natural | BT1.5M-XMR              | -75°F to 212°F (-59°C to 100°C) |
| Military Grade WR Nylon 6.6 | Black   | PLT1M-XMR, PLT1.5M-XMR  | -75°F to 185°F (-59°C to 85°C)  |

Specifications subject to change. For complete specifications and availability visit [www.lapptannehill.com](http://www.lapptannehill.com)

## PANDUCT® Wiring Duct

**Construction:** High quality, innovative wiring duct products used to route, protect and conceal wiring in a wide variety of industrial control and telecommunications applications.

**Features:**

Smooth corners and edges will not abrade wiring or irritate hands. Integrated nonskid liner and unique cover designs insure the duct cover will not slide once installed or during vibration. Scorelines for easy removal of duct fingers and sidewalls. Accessories and tools that increase productivity and lower the installed cost.

**Applications:**

Routing and concealing wiring in electrical control panels provides a liquid tight and dust proof, hermetic seal.

**Technical Data:**

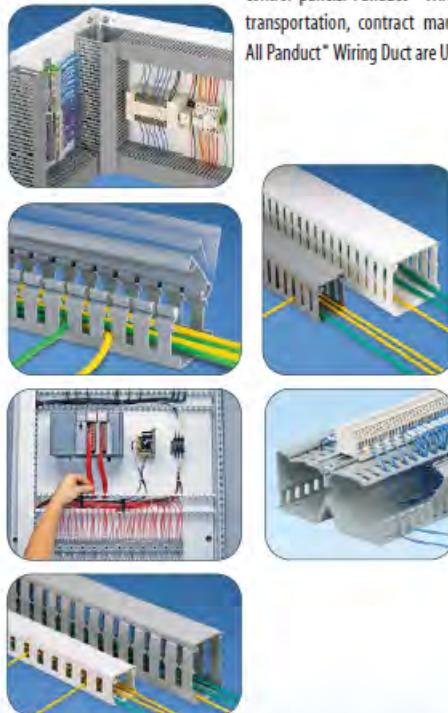


**Approvals:**

UL Recognized as meeting the requirements of UL Standard 1565 for Positioning Devices. CE compliant for panels that are to be exported to Europe. Specially formulated PVC material meets the NFPA79: 2002 flame retardance requirements for nonmetallic duct in industrial equipment

### WIRING DUCT

From the smallest wall mounted panels to the largest integrated turnkey systems Panduit® Panduct® Wiring Duct is the premium wire management solution for routing and concealing wiring in electrical control panels. Panduct® Wiring Duct provide solutions for the original equipment manufacturing, transportation, contract manufacturing, maintenance and repair and communications markets. All Panduct® Wiring Duct are UL Recognized and CSA Certified and most carry the CE mark.



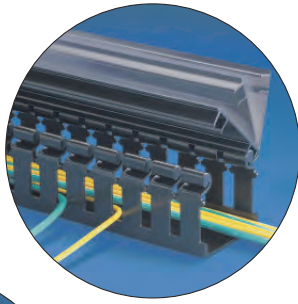
Some of the features and benefits found in Panduct® Wiring Duct include:

- Smooth corners and edges that will not abrade wiring or irritate hands
- Integrated nonskid liners and unique cover designs insure the duct cover will not slide once installed or during vibration
- Specially formulated lead-free PVC material meets the NFPA79: 2007 flame retardancy requirements and carries a UL 94V-0 flammability rating
- Scorelines for easy removal of duct fingers and sidewalls
- Accessories and tools that increase productivity and lower the installed cost

Panduit continues to develop new Panduct® Wiring Duct solutions to satisfy the challenges facing our customers worldwide. Maximize the utilization of enclosure space with PanelMax™ Corner Wiring Duct, DIN Rail Wiring Duct, and Noise Shield. PanelMax™ Corner Wiring Duct fits into unused space in the corner of enclosures providing up to 20% enclosure space savings\*. Integrate component mounting with wire management with PanelMax™ DIN Rail Wiring Duct for up to 30% enclosure space savings. PanelMax™ Noise Shield provides noise mitigation between noisy and sensitive cabling and can reduce air space requirements within the enclosure.

\*Versus panel layouts using conventional wiring duct.

## PANDUCT® Wiring Duct



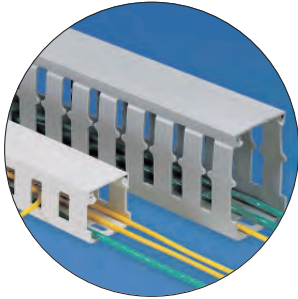
### Type H – Hinged Cover Wiring Duct

Designed for wire management applications where frequent moves, adds, changes or equipment upgrades require repeated, easy and quick access to duct channel.



### Type FL – Flexible Wiring Duct

Designed to route and protect wires installed in control panel applications that require flexibility.



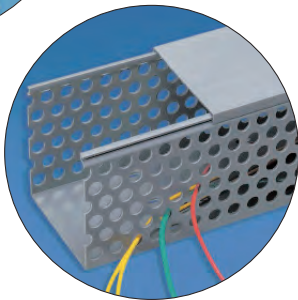
### Type NNC – Halogen Free Metric Wiring Duct

Designed for panel applications where high temperatures or halogen free requirements exist.



### Type TMC – Low Smoke/Low Toxicity Wiring Duct

Designed for wire management applications in public transportation.



### Flush Cover Type D – Round Hole Wiring Duct

Improved profile design provides greater wirefill capacity.

Not finding what you are looking for?  
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## Pan-Lug™ Compression Connectors

**Construction:** Made from high strength, high conductivity electrolytic copper and aluminum alloy materials to provide optimum connectivity for power and grounding applications.

**Features:**

Functional product information is marked directly on the connector, facilitating the identification, orderings, and usage of the compression connector. Color-coded to facilitate quick identification of the proper crimping die.

**Applications:**

Technical Data: Panduit® Pand-Lug™ Compression Connectors are designed for use with many different code and flex conductor types and are available in a broad range of styles and sizes including copper one-hole, two-hole, and blank tongue lugs and splices, aluminum one-hole and two-hole lugs and splices, and copper in-line reducing splices.

**Technical Data:**

Wide assortment of manual, controlled cycle, battery operated hydraulic and pneumatic crimping tools for reliable connections at the lowest installed cost.



**Approvals:**

UL Listed or Recognized, CSA Certified, ABS Type Approved and tested by Telcordia-meets NEBS Level 3, as noted. Terminations using Panduit® Pan-Lug™ Compression Connectors are also UL Listed and CSA Certified with specified competitor tools.

### PAN-LUG™ COMPRESSION CONNECTORS

Panduit® Pan-Lug™ Compression Connectors provide permanent terminations for a variety of power and grounding applications, with innovation, highest reliability, and lowest installed cost. Panduit offers the first and only copper compression lugs and splices that meet Network Equipment-Building Systems (NEBS) Level 3 requirements as tested by Telcordia Technologies. NEBS Level 3 assures that product performance is suitable for equipment applications that demand minimal service interruptions over the life span of the equipment.



- Functional product information is marked directly on the connector, facilitating the identification, ordering, and usage of the compression connector
- Color-coded to facilitate quick identification of the proper crimping die
- Made from high strength, high conductivity electrolytic copper and aluminum alloy materials to provide optimum connectivity for power and grounding applications
- UL Listed or Recognized, CSA Certified, ABS Type Approved and tested by Telcordia – meets NEBS Level 3, as noted
- Terminations using Panduit® Pan-Lug™ Compression Connectors are also UL Listed and CSA Certified with specified competitor tools
- Wide assortment of manual, controlled cycle, battery operated hydraulic and pneumatic crimping tools for reliable connections at the lowest installed cost

Panduit® Pan-Lug™ Compression Connectors are designed for use with many different code and flex conductor types and are available in a broad range of styles and sizes including copper one-hole, two-hole, and blank tongue lugs and splices; aluminum one-hole and two-hole lugs and splices; and copper in-line reducing splices. Panduit offers a wide assortment of Pan-Lug™ Power Connectors to meet customer needs and today's application requirements.

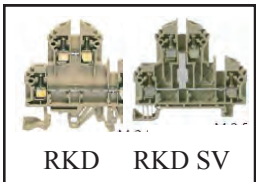
## Feed Through Terminal Blocks



| Cat. No. | Type     | Ratings   | Color | Dimensions            | Wire Size |
|----------|----------|-----------|-------|-----------------------|-----------|
| 1001.2   | RK 2.5-4 | 600V 40A  | Beige | L 48mm W 6mm H 51mm   | AWG 22-11 |
| 1005.2   | RK 6-10  | 600V 65A  | Beige | L 48mm W 8mm H 51.5mm | AWG 22-8  |
| 1050.2   | RK 16    | 600V 65A  | Beige | L 48mm W 8mm H 63mm   | AWG 10-6  |
| 1052.2   | RK 35    | 600V 110A | Beige | L 58mm W 16mm H 76mm  | AWG 12-2  |

## Dual Level Feed Through Terminal Blocks

### Dual Level Feed Through Terminal Blocks PA6.6 UL-V2;



| Cat. No. | Type       | Ratings  | Color | Dimensions            | Wire Size |
|----------|------------|----------|-------|-----------------------|-----------|
| 1206.2   | RKD 2.5    | 300V 20A | Beige | L 59mm W 5mm H 61mm   | AWG 22-14 |
| 1209.2   | RKD 2.5 SV | 300V 20A | Beige | L 59mm W 5mm H 61mm   | AWG 22-14 |
| 1020.2   | RKD 4      | 300V 30A | Beige | L 60mm W 6mm H 65.5mm | AWG 22-12 |
| 1027.2   | RKD 4 SV   | 300V 30A | Beige | L 48mm W 6mm H 65.5mm | AWG 22-12 |

## TS DIN Rails

### Features:

The design of the **TS** DIN rail complies with the European norm DIN EN 60715. The steel DIN rail is galvanized and has a coating of blue chromate that is at least 10 µm thick. We place extra importance on maintaining a high degree of dimensional accuracy. The steel DIN rails can be used as protective-earth busbars (with PE function) in compliance with DIN VDE 0611 part 3. Please note the following when using the rail as a PEN busbar:

- Only one E-Cu rail should be used.
- The short-circuit currents and the rated thermal currents must be observed.

The DIN rails are delivered in standard lengths of 2 meters. All DIN rails are also available in prepared (cut to length) versions, but all types are available pre-cut to customers requirements.



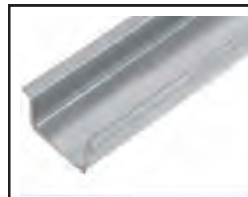
Cat. No. 2094.0  
2 Meter Length  
Slot Size 18x6.3mm  
Galvanized Steel



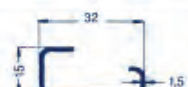
Cat. No. 2026.0  
2 Meter Length  
Galvanized Steel



Cat. No. 2095.0  
2 Meter Length  
Slot Size 18x6.3mm  
Galvanized Steel



Cat. No. 2027.0  
2 Meter Length  
Galvanized Steel



Cat. No. 2093.0  
2 Meter Length  
Slot size 18x6.3mm  
Galvanized Steel

## Feed Through Spring Clamp Terminal Blocks

### PA6.6 UL-VO; 2 Spring Clamps



| Cat. No. | Type       | Ratings   | Color | Dimensions               | Wire Size |
|----------|------------|-----------|-------|--------------------------|-----------|
| 3500.2   | ZRK 2.5/2A | 600V 27A  | Beige | L 59mm W 5.1mm H 39mm    | AWG 20-12 |
| 3515.2   | ZRK 4/2A   | 600V 35A  | Beige | L 64mm W 6.1mm H 42mm    | AWG 20-10 |
| 3581.2   | ZRK 6/2A   | 600V 50A  | Beige | L 65mm W 8.1mm H 47.5mm  | AWG 22-8  |
| 3597.2   | ZRK 10/2A  | 500V 55A  | Beige | L 74mm W 10.1mm H 50.5mm | AWG 16-6  |
| 3636.2   | ZRK 16/2A  | 1000V 65A | Beige | L 82mm W 12.1mm H 51.5mm | AWG 14-4  |

### PA6.6 UL-VO; 3 Spring Clamps



| Cat. No. | Type       | Ratings  | Color | Dimensions              | Wire Size |
|----------|------------|----------|-------|-------------------------|-----------|
| 3501.2   | ZRK 2.5/3A | 600V 27A | Beige | L 71.3mm W 5.1mm H 39mm | AWG 20-12 |
| 3516.2   | ZRK 4/3A   | 600V 35A | Beige | L 78.5mm W 6.1mm H 42mm | AWG 20-10 |

### PA6.6 UL-VO; 4 Spring Clamps



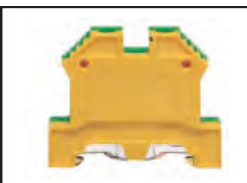
| Cat. No. | Type         | Ratings  | Color | Dimensions              | Wire Size |
|----------|--------------|----------|-------|-------------------------|-----------|
| 3502.2   | ZRK 2.5/4A   | 600V 27A | Beige | L 83.6mm W 5.1mm H 39mm | AWG 20-12 |
| 3503.2   | ZRK 2.5/2x2A | 600V 27A | Beige | L 83.6mm W 5.1mm H 39mm | AWG 20-12 |
| 3517.2   | ZRK 4/4A     | 600V 35A | Beige | L 93mm W 6.1mm H 42mm   | AWG 20-10 |
| 3518.2   | ZRK 4/2x2A   | 600V 35A | Beige | L 93mm W 6.1mm H 42mm   | AWG 22-10 |

xx/2x2A 2 clamps each side not connected to opposite side

### Accessories Spring Clamp Terminal Blocks

| Block Type   | End-Plate | Block Type | End-Plate | Block Type | End-Plate | Block Type | End-Plate | Block Type | End-Plate |
|--------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|
| ZRK 2.5/2A   | 3700.2    | ZRK 4/2A   | 3703.2    | ZRK 6/2A   | 3760.2    | ZSL 2.5/2A | 3700.1    | ZSL 6/2A   | 3760.1    |
| ZRK 2.5/3A   | 3701.2    | ZRK 4/3A   | 3704.2    | ZRK 10/2A  | 3788.2    | ZSL 2.5/3A | 3701.1    | ZSL 10/2A  | 3788.1    |
| ZRK 2.5/4A   | 3702.2    | ZRK 4/4A   | 3705.2    | ZRK 16/2A  | 3799.2    | ZSL 2.5/4A | 3702.1    | ZSL 16/2A  | 3799.1    |
| ZRK 2.5/2x2A | 3702.2    | ZRK 4/2x2A | 3705.2    |            |           | ZSL 4/2A   | 3703.1    |            |           |
|              |           |            |           |            |           | ZSL 4/3A   | 3704.1    |            |           |
|              |           |            |           |            |           | ZSL 4/4A   | 3705.1    |            |           |

## Ground Terminal Blocks



| Cat. No. | Type      | Ratings | Color        | Dimensions             | Wire Size |
|----------|-----------|---------|--------------|------------------------|-----------|
| 1056.2   | SL 2.5/35 | —       | Green/Yellow | L 52mm W 6mm H 47mm    | AWG 22-12 |
| 1212.2   | SL 4/35   | —       | Green/Yellow | L 56mm W 8mm H 47mm    | AWG 22-11 |
| 1213.2   | SL 10/35  | —       | Green/Yellow | L 56mm W 10mm H 47mm   | AWG 20-6  |
| 1197.2   | SL 16/35  | —       | Green/Yellow | L 50mm W 12mm H 58.5mm | AWG 10-4  |
| 1199.2   | SL 35/35  | —       | Green/Yellow | L 58mm W 16mm H 71.5mm | AWG 12-2  |

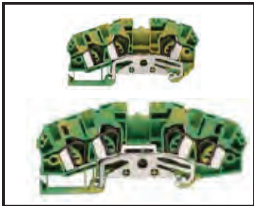
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[www.lapptannehill.com](http://www.lapptannehill.com)

**CONTA CLIP**

## Ground Spring Clamp Terminal Blocks



| Cat. No. | Type       | Color        | Dimensions               | Wire Size |
|----------|------------|--------------|--------------------------|-----------|
| 3510.2   | ZSL 2.5/2A | Green/Yellow | L 59mm W 5.1mm H 39mm    | AWG 20-12 |
| 3525.2   | ZSL 4/2A   | Green/Yellow | L 64mm W 6.1mm H 42mm    | AWG 20-10 |
| 3589.2   | ZSL 6/2A   | Green/Yellow | L 65mm W 8.1mm H 47.5mm  | AWG 22-8  |
| 3598.2   | ZSL 10/2A  | Green/Yellow | L 74mm W 10.1mm H 50.5mm | AWG 16-6  |
| 3637.2   | ZSL 16/2A  | Green/Yellow | L 82mm W 12.1mm H 51.5mm | AWG 14-4  |



| Cat. No. | Type       | Color        | Dimensions              | Wire Size |
|----------|------------|--------------|-------------------------|-----------|
| 3511.2   | ZSL 2.5/3A | Green/Yellow | L 71.3mm W 5.1mm H 39mm | AWG 20-12 |
| 3522.2   | ZSL 4/3A   | Green/Yellow | L 78.5mm W 6.1mm H 42mm | AWG 20-10 |
| 3512.2   | ZSL 2.5/4A | Green/yellow | L 83.6mm W 5.1mm H 39mm | AWG 20-12 |
| 3527.2   | ZSL 4/4A   | Green/Yellow | L 93mm W 6.1mm H 42mm   | AWG 20-10 |

## End Stops



Screw Type  
Cat. No. 2005.2  
Type ES 35  
Light to Medium  
Applications



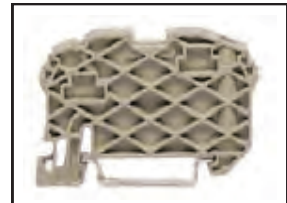
Screw Type  
Cat. No. 2826.2  
Type ES 35/2/K  
Medium To Heavy  
Applications



Screw Type  
Cat. No. 2761.0  
Type HES 35 ST  
Heavy  
Applications



Screw Less Type  
Cat. No. 3811.2  
Type ZES 35/2  
Light  
Applications



Screw Less Type  
Cat. No. 3748.2  
Type ZES 35  
Light to Medium  
Applications

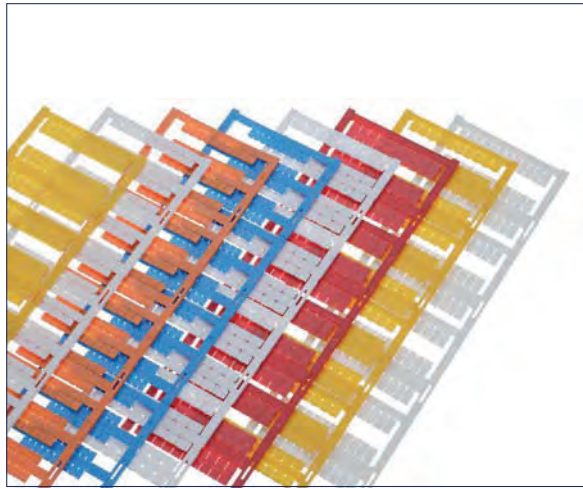
## Fuse Terminal Blocks



| Cat. No. | Type      | Ratings  | Color | Dimensions              | Wire Size |
|----------|-----------|----------|-------|-------------------------|-----------|
| 2190.2   | STK 1     | 600V 16A | Beige | L 57.5mm W 8mm H 45.5mm | AWG 22-12 |
| 2462.2   | STK 1 LED | 115V -   | Beige | L 57.5mm W 8mm H 45.5mm | AWG 22-12 |
| 1078.2   | STK 2     | 600V 16A | Beige | L 51.4mm W 8mm H 43.5mm | AWG 22-12 |
| 1079.2   | STKD 1    | 600V 16A | Beige | L 67.0mm W 8mm H 60.0mm | AWG 22-12 |

Specifications subject to change. For complete specifications and availability visit [www.lapptannehill.com](http://www.lapptannehill.com)

## Terminal Block Marking Tags



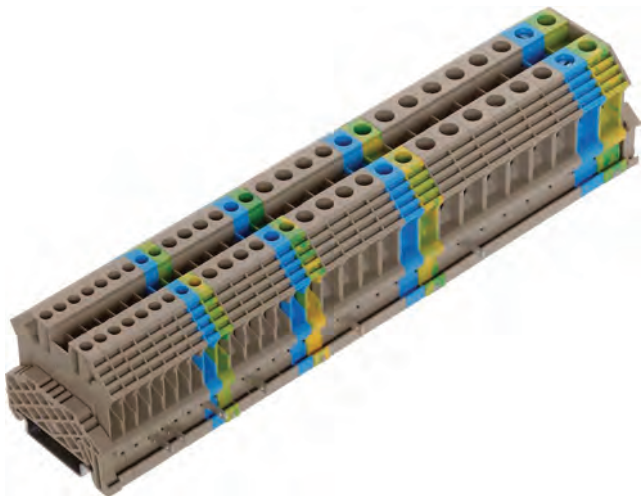
Please Select by the “W” Dimension of the Terminal Blocks

| PMC SB 5 FW           |               | PMC SB 5 FS           |               | PMC SB 6 FW           |               | PMC SB 6 FS           |               |
|-----------------------|---------------|-----------------------|---------------|-----------------------|---------------|-----------------------|---------------|
|                       |               |                       |               |                       |               |                       |               |
| Type                  | Cat. No.      | Type                  | Cat. No.      | Type                  | Cat. No.      | Type                  | Cat. No.      |
| PMC SB 5/50 FW 1-10   | <b>4601.7</b> | PMC SB 5/50 FS 1-10   | <b>4636.7</b> | PMC SB 6/50 FW 1-10   | <b>4703.7</b> | PMC SB 6/50 FS 1-10   | <b>4738.7</b> |
| PMC SB 5/50 FW 11-20  | <b>4602.7</b> | PMC SB 5/50 FS 11-20  | <b>4637.7</b> | PMC SB 6/50 FW 11-20  | <b>4704.7</b> | PMC SB 6/50 FS 11-20  | <b>4739.7</b> |
| PMC SB 5/50 FW 21-30  | <b>4603.7</b> | PMC SB 5/50 FS 21-30  | <b>4638.7</b> | PMC SB 6/50 FW 21-30  | <b>4705.7</b> | PMC SB 6/50 FS 21-30  | <b>4740.7</b> |
| PMC SB 5/50 FW 31-40  | <b>4604.7</b> | PMC SB 5/50 FS 31-40  | <b>4639.7</b> | PMC SB 6/50 FW 31-40  | <b>4706.7</b> | PMC SB 6/50 FS 31-40  | <b>4741.7</b> |
| PMC SB 5/50 FW 41-50  | <b>4605.7</b> | PMC SB 5/50 FS 41-50  | <b>4640.7</b> | PMC SB 6/50 FW 41-50  | <b>4707.7</b> | PMC SB 6/50 FS 41-50  | <b>4742.7</b> |
| PMC SB 5/50 FW 51-60  | <b>4606.7</b> | PMC SB 5/50 FS 51-60  | <b>4641.7</b> | PMC SB 6/50 FW 51-60  | <b>4708.7</b> | PMC SB 6/50 FS 51-60  | <b>4743.7</b> |
| PMC SB 5/50 FW 61-70  | <b>4607.7</b> | PMC SB 5/50 FS 61-70  | <b>4642.7</b> | PMC SB 6/50 FW 61-70  | <b>4709.7</b> | PMC SB 6/50 FS 61-70  | <b>4744.7</b> |
| PMC SB 5/50 FW 71-80  | <b>4608.7</b> | PMC SB 5/50 FS 71-80  | <b>4643.7</b> | PMC SB 6/50 FW 71-80  | <b>4710.7</b> | PMC SB 6/50 FS 71-80  | <b>4745.7</b> |
| PMC SB 5/50 FW 81-90  | <b>4609.7</b> | PMC SB 5/50 FS 81-90  | <b>4644.7</b> | PMC SB 6/50 FW 81-90  | <b>4711.7</b> | PMC SB 6/50 FS 81-90  | <b>4746.7</b> |
| PMC SB 5/50 FW 91-100 | <b>4610.7</b> | PMC SB 5/50 FS 91-100 | <b>4645.7</b> | PMC SB 6/50 FW 91-100 | <b>4712.7</b> | PMC SB 6/50 FS 91-100 | <b>4747.7</b> |

Please contact your sales representative for detailed information at [sales@lapptannehill.com](mailto:sales@lapptannehill.com)

**CONTACTCLIP**

Screw Connection System SRK



New Series Feed Through Terminal Blocks



| Cat. No. | Type      | Ratings  | Color | Dimensions          | Wire Size |
|----------|-----------|----------|-------|---------------------|-----------|
| 17100.2  | SRK2.5/2A | 600V 20A | Beige | L 48mm W 5mm H 47mm | AWG 22-12 |
| 17104.2  | SRK 4/2A  | 600V 30A | Beige | L 48mm W 6mm H 47mm | AWG 22-11 |
| 17108.2  | SRK 6/2A  | 600V 50A | Beige | L 48mm W 8mm H 47mm | AWG 22-8  |
| 17112.2  | SRK 10/2A | 600V 65A | Beige | L 48mm W10mm H 47mm | AWG 10-6  |

Not finding what you are looking for?

Please contact us at [sales@lapptannehill.com](mailto:sales@lapptannehill.com), or visit our website at: [www.lapptannehill.com](http://www.lapptannehill.com)



## Accessories specific to the Screw Connection System. End Plates / Visual Separation

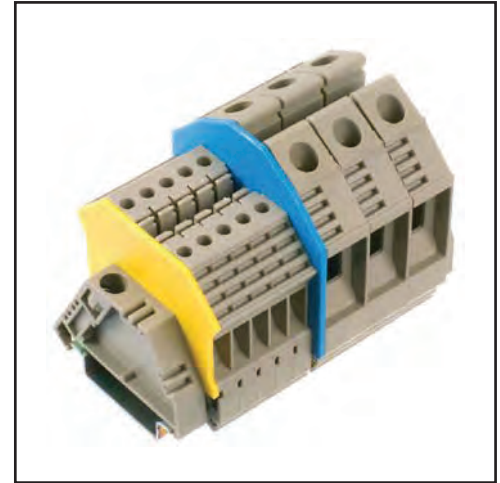
### Description:

AP end plates are usually inserted at the end of a clamp point. If work is carried out within a terminal block with different/various sized terminal blocks, end plates must also be inserted in order to ensure contact protection and the safety of the fingers. The outer dimensions of the end plates correspond to the dimensions of the terminal blocks.

Coloured end plates are often inserted in order to mark a clear distinction between different power circuits or voltage levels. In addition, the use of end plates lengthens the airways and leakage paths, which in turn influence the rated voltage.

Rapid installation of the end plates is enabled by notched plugs.

Due to the special construction of the RK series, no end plates must be inserted for adjacent QI cross connectors with different potentials.



### Accessories

| Block Type | End-Plate Cat. No. | Block Type | Internal Screw Jumper | Cat. No. | Block Type  | Internal Screw Jumper | Cat. No. | Block Type  | External Jumper | Cat. No. |
|------------|--------------------|------------|-----------------------|----------|-------------|-----------------------|----------|-------------|-----------------|----------|
| RK 2.5-4   | 2001.2             | RK 2.5-4   | 2 Pole                | 2019.0   | RKD 2.5     | 2 Pole                | 2567.0   | STK 1       | 2 Pole          | 2067.0   |
| RK 6-10    | 2001.2             | RK 2.5-4   | 3 Pole                | 2020.0   | RKD 2.5     | 3 Pole                | 2568.0   | STK 1       | 3 Pole          | 2068.0   |
| RK 16      | 2104.2             | RK 2.5-4   | 4 Pole                | 2021.0   | RKD 2.5     | 4 Pole                | 2569.0   | STK 1       | 4 Pole          | 2069.0   |
| RK 35      | 2116.2             | RK 2.5-4   | 10 Pole               | 2022.0   | RKD 2.5     | 10 Pole               | 2570.0   | STK 1 LED   | 2 Pole          | 2067.0   |
| RKD 2.5    | 2101.2             | RK 6-10    | 2 Pole                | 2060.0   | RKD 2.5 SV  | 2 Pole                | 2567.0   | STK 1 LED   | 3 Pole          | 2068.0   |
| RKD 2.5 SV | 2101.2             | RK 6-10    | 3 Pole                | 2061.0   | RKD 2.5 SV  | 3 Pole                | 2568.0   | STK 1 LED   | 4 Pole          | 2069.0   |
| RKD 4      | 2101.2             | RK 6-10    | 4 Pole                | 2062.0   | RKD 2.5 SV  | 4 Pole                | 2569.0   | STK 2       | 2 Pole          | 2067.0   |
| RKD 4 SV   | 2101.2             | RK 6-10    | 10 Pole               | 2063.0   | RKD 2.5 SV  | 10 Pole               | 2570.0   | STK 2       | 3 Pole          | 2068.0   |
| IKD ALL    | 2699.2             | RK 16      | 2 Pole                | 2112.0   | IKD 2.5/Q   | 2 Pole                | 2422.0   | STK 2       | 4 Pole          | 2069.0   |
| STK 1      | 2046.2             | RK 16      | 3 Pole                | 2113.0   | IKD 2.5/Q   | 3 Pole                | 2423.0   | STKD 1      | 2 Pole          | 2067.0   |
| STK1 LED   | 2046.2             | RK 16      | 4 Pole                | 2114.0   | IKD 2.5/Q   | 4 Pole                | 2424.0   | STKD 1      | 3 Pole          | 2068.0   |
| STK 2      | 2186.2             | RK 16      | 10 Pole               | 2115.0   | IKD 2.5/Q   | 10 Pole               | 2525.0   | STKD 1      | 4 Pole          | 2069.0   |
| STKD 1     | 2187.2             | RK 35      | 2 Pole                | 2164.0   | IKD 2.5/F/Q | 2 Pole                | 2422.0   | SK 1/35 ALL | 2 Pole          | 2366.0   |
| SK1/35 ALL | 2047.2             | RK 35      | 3 Pole                | 2165.0   | IKD 2.5/F/Q | 3 Pole                | 2423.0   | SK 1/35 ALL | 3 Pole          | 2367.0   |
|            |                    | RK 35      | 4 Pole                | 2166.0   | IKD 2.5/F/Q | 4 Pole                | 2424.0   | SK 1/35 ALL | 4 Pole          | 2368.0   |
|            |                    | RK 35      | 10 Pole               | 2167.0   | IKD 2.5/F/Q | 10 Pole               | 2425.0   | SK 1/35 ALL | 10 Pole         | 2369.0   |

## Conta Strips™

**Construction:** **Insert:** Nickel Plated Copper Alloy. **Screw:** Zinc-Yellow Chromate Plated Steel.

**Features:**

- Side Wire Entry
- Housing: Polyamide 6.6
- Wire Protector/Center Barrier: Stainless Steel



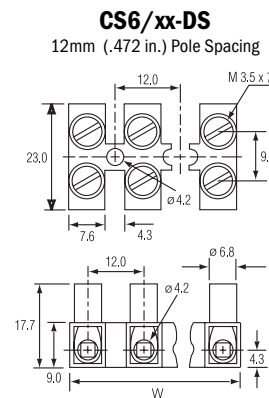
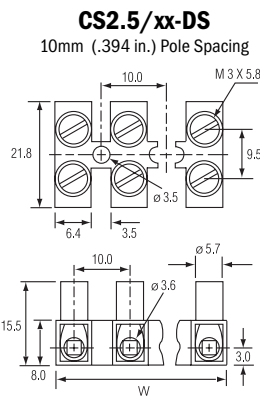
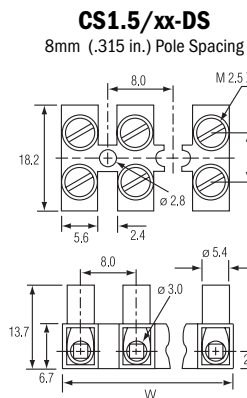
**Applications:**

Developed for quick and efficient wire-to-wire connections in lighting, appliances, HVAC and industrial equipment/devices where low cost, wire terminations are needed. Conta-Strips™ are modern replacements for traditional Double Row Barrier Style Terminal Blocks. Unlike Barrier Blocks, they feature a touch-proof design with totally recessed metal parts which eliminate any chance of accidental shorts and minimize the possibility of electrical shock. Easy to use, Conta-Strips™ are supplied with open clamps ready for immediate wire hookup. Simply, strip the wire, insert and tighten the screw for a reliable electrical connection. Conta-Strips™ eliminate the need for costly and labor intensive wire preparations associated with the use of spade or ring lugs. Conta-Strips™ are available in 12 Pole Strips which can be readily cut to any pole position using a saw or a utility knife. Or, they can be ordered pre-cut to the required number of poles. Use versions with a flat base and a 300V Rating for Commercial and General Industrial Applications where Industrial Control Equipment is not present.

**Technical Data:**



**Color:**  
White, Translucent



| Ordering Information:<br>xx= No. of Poles | Cat. No.                        | Width - W<br>mm (in.) | Std. Pack | Cat. No.                      | Width - W<br>mm (in.) | Std. Pack | Cat. No.                      | Width - W<br>mm (in.) | Std. Pack |
|-------------------------------------------|---------------------------------|-----------------------|-----------|-------------------------------|-----------------------|-----------|-------------------------------|-----------------------|-----------|
| 2                                         | 27001.3                         | 13.6 (.54)            | 100       | 27097.3                       | 17.0 (.67)            | 100       | 27193.3                       | 20.0 (.79)            | 100       |
| 3                                         | 27002.3                         | 21.5 (.85)            | 100       | 27098.3                       | 27.0 (1.06)           | 100       | 27194.3                       | 32.0 (1.26)           | 100       |
| 4                                         | 27003.3                         | 29.5 (1.16)           | 100       | 27099.3                       | 37.0 (1.46)           | 100       | 27195.3                       | 44.0 (1.73)           | 100       |
| 5                                         | 27004.3                         | 37.4 (1.47)           | 100       | 27100.3                       | 47.0 (1.85)           | 100       | 27196.3                       | 56.0 (2.21)           | 100       |
| 6                                         | 27005.3                         | 45.4 (1.79)           | 50        | 27101.3                       | 57.0 (2.24)           | 50        | 27197.3                       | 68.0 (2.68)           | 50        |
| 7                                         | 27006.3                         | 53.3 (2.10)           | 50        | 27102.3                       | 67.0 (2.64)           | 50        | 27198.3                       | 80.0 (3.15)           | 50        |
| 8                                         | 27007.3                         | 61.3 (2.41)           | 50        | 27103.3                       | 77.0 (3.03)           | 50        | 27199.3                       | 92.0 (3.62)           | 50        |
| 9                                         | 27008.3                         | 69.2 (2.72)           | 50        | 27104.3                       | 87.0 (3.43)           | 50        | 27200.3                       | 104.0 (4.10)          | 50        |
| 10                                        | 27009.3                         | 77.2 (3.04)           | 50        | 27105.3                       | 97.0 (3.82)           | 50        | 27201.3                       | 116.0 (4.57)          | 25        |
| 11                                        | 27010.3                         | 85.1 (3.35)           | 50        | 27106.3                       | 107.0 (4.21)          | 50        | 27202.3                       | 128.0 (5.04)          | 25        |
| 12                                        | 27011.3                         | 93.0 (3.66)           | 50        | 27107.3                       | 117.0 (4.61)          | 50        | 27203.3                       | 140.0 (5.51)          | 25        |
| <b>Electrical Ratings:</b>                |                                 |                       |           |                               |                       |           |                               |                       |           |
| IEC 947-7-1                               | 400V / 18A / 1.5mm <sup>2</sup> |                       |           | 400V / 26A / 4mm <sup>2</sup> |                       |           | 400V / 40A / 6mm <sup>2</sup> |                       |           |
| CSA LR 703305                             | 300V / 15A / 22-16 AWG          |                       |           | 300V / 30A / 18-12 AWG        |                       |           | 300V / 40A / 18-10 AWG        |                       |           |
| E196136                                   | 300V / 20A / 22-12 AWG          |                       |           | 300V / 30A / 22-10 AWG        |                       |           | 300V / 40A / 20-8 AWG         |                       |           |
| Insulation Stripping Length mm (in.)      | 5 (.20)                         |                       |           | 6 (.24)                       |                       |           | 7 (.28)                       |                       |           |
| Tightening Torque Nm (lbf.-in.)           | .75 (6.5)                       |                       |           | .85 (7.5)                     |                       |           | .85 (7.5)                     |                       |           |
| Screw Hole Diameter mm (in.)              | 3.0 (.12)                       |                       |           | 3.5 (.14)                     |                       |           | 4.0 (.16)                     |                       |           |
| Mounting Hole Diameter mm (in.)           | 2.8 (.110)                      |                       |           | 3.5 (.138)                    |                       |           | 4.2 (.165)                    |                       |           |
| <b>Accessories:</b>                       |                                 |                       |           |                               |                       |           |                               |                       |           |
| External Insulated Jumpers:*              |                                 |                       |           |                               |                       |           |                               |                       |           |
| 2 Pole                                    | Cat.No. 27435.4                 | Std.Pack 50           |           | Cat.No. 27447.4               | Std.Pack 50           |           | Cat.No. 27459.4               | Std.Pack 50           |           |
| 3 Pole                                    | Cat.No. 27436.4                 | Std.Pack 50           |           | Cat.No. 27448.4               | Std.Pack 50           |           | Cat.No. 27460.4               | Std.Pack 50           |           |
| 4 Pole                                    | Cat.No. 27437.4                 | Std.Pack 50           |           | Cat.No. 27449.4               | Std.Pack 50           |           | Cat.No. 27461.4               | Std.Pack 50           |           |
| 12 Pole†                                  | Cat.No. 27445.4                 | Std.Pack 10           |           | Cat.No. 27457.4               | Std.Pack 10           |           | Cat.No. 27469.4               | Std.Pack 10           |           |
| Marking Plates:                           |                                 |                       |           |                               |                       |           |                               |                       |           |
| Blank                                     |                                 |                       |           | Cat.No. 27495.7               | Std.Pack 25           |           | Cat.No. 27496.7               | Std.Pack 25           |           |
| Numbered 1 - 12                           |                                 |                       |           | Cat.No. 27498.7               | Std.Pack 25           |           | Cat.No. 27500.7               | Std.Pack 25           |           |
| Numbered 13 - 24                          |                                 |                       |           | Cat.No. 27499.7               | Std.Pack 25           |           | Cat.No. 27501.7               | Std.Pack 25           |           |

\* For Electrical Ratings see corresponding Conta-Strips

† Other Pole Positions available, contact Conta-Clip, Inc.

**Note: Dimensions on Diagrams are shown in mm. Metric Conversion: in. = mm x 0.03937**

## Conta Strips™

**Construction:** **Insert:** Nickel Plated Copper Alloy. **Screw:** Zinc-Yellow Chromate Plated Steel.

### Features:

- Side Wire Entry
- Housing: Polyamide 6.6
- Wire Protector/Center Barrier: Stainless Steel



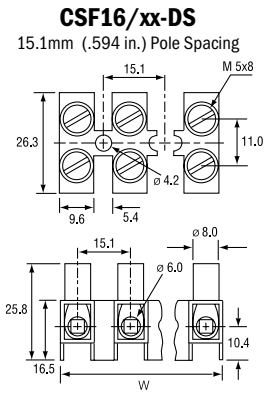
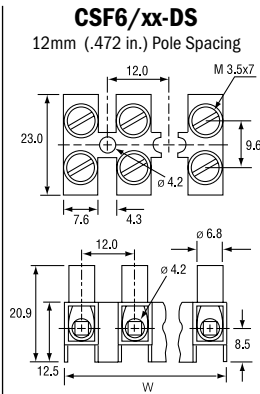
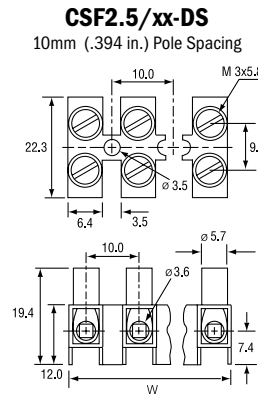
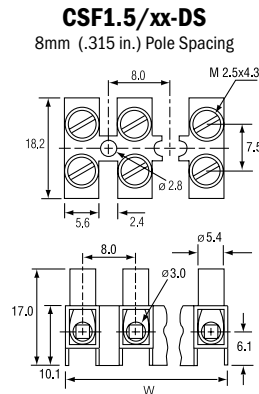
### Applications:

Developed for quick and efficient wire-to-wire connections in lighting, appliances, HVAC and industrial equipment/devices where low cost, wire terminations are needed. Conta-Strips™ are modern replacements for traditional Double Row Barrier Style Terminal Blocks. Unlike Barrier Blocks, they feature a touch-proof design with totally recessed metal parts which eliminate any chance of accidental shorts and minimize the possibility of electrical shock. Easy to use, Conta-Strips™ are supplied with open clamps ready for immediate wire hookup. Simply, strip the wire, insert and tighten the screw for a reliable electrical connection. Conta-Strips™ eliminate the need for costly and labor intensive wire preparations associated with the use of spade or ring lugs. Conta-Strips™ are available in 12 Pole Strips which can be readily cut to any pole position using a saw or a utility knife. Or, they can be ordered pre-cut to the required number of poles. Use versions with a flat base and a 300V Rating for Commercial and General Industrial Applications where Industrial Control Equipment is not present.

### Technical Data:



**Color:**  
White, Translucent



| Ordering Information:<br>xx= No. of Poles | Cat. No.                        | Width - W<br>mm (in.) | Std. Pack | Cat. No.                      | Width - W<br>mm (in.) | Std. Pack | Cat. No.                      | Width - W<br>mm (in.) | Std. Pack | Cat. No.                       | Width - W<br>mm (in.) | Std. Pack |
|-------------------------------------------|---------------------------------|-----------------------|-----------|-------------------------------|-----------------------|-----------|-------------------------------|-----------------------|-----------|--------------------------------|-----------------------|-----------|
| 2                                         | 27025.3                         | 13.6 (.54)            | 100       | 27121.3                       | 17.0 (.67)            | 100       | 27217.3                       | 20.0 (.79)            | 100       | 27289.3                        | 25.0 (.98)            | 50        |
| 3                                         | 27026.3                         | 21.5 (.85)            | 100       | 27122.3                       | 27.0 (1.06)           | 100       | 27218.3                       | 32.0 (1.26)           | 100       | 27290.3                        | 40.0 (1.58)           | 50        |
| 4                                         | 27027.3                         | 29.5 (1.16)           | 100       | 27123.3                       | 37.0 (1.46)           | 100       | 27219.3                       | 44.0 (1.73)           | 100       | 27291.3                        | 55.0 (2.17)           | 50        |
| 5                                         | 27028.3                         | 37.4 (1.47)           | 100       | 27124.3                       | 47.0 (1.85)           | 100       | 27220.3                       | 56.0 (2.21)           | 100       | 27292.3                        | 70.0 (2.76)           | 50        |
| 6                                         | 27029.3                         | 45.4 (1.79)           | 50        | 27125.3                       | 57.0 (2.24)           | 50        | 27221.3                       | 68.0 (2.68)           | 50        | 27293.3                        | 86.0 (3.39)           | 25        |
| 7                                         | 27030.3                         | 53.3 (2.10)           | 50        | 27126.3                       | 67.0 (2.64)           | 50        | 27222.3                       | 80.0 (3.15)           | 50        | 27294.3                        | 101.0 (3.98)          | 25        |
| 8                                         | 27031.3                         | 61.3 (2.41)           | 50        | 27127.3                       | 77.0 (3.03)           | 50        | 27223.3                       | 92.0 (3.62)           | 50        | 27295.3                        | 116.0 (4.57)          | 25        |
| 9                                         | 27032.3                         | 69.2 (2.72)           | 50        | 27128.3                       | 87.0 (3.43)           | 50        | 27224.3                       | 104.0 (4.10)          | 50        | 27296.3                        | 131.0 (5.16)          | 25        |
| 10                                        | 27033.3                         | 77.2 (3.04)           | 50        | 27129.3                       | 97.0 (3.82)           | 50        | 27225.3                       | 116.0 (4.57)          | 25        | 27297.3                        | 146.0 (5.75)          | 10        |
| 11                                        | 27034.3                         | 85.1 (3.35)           | 50        | 27130.3                       | 107.0 (4.21)          | 50        | 27226.3                       | 128.0 (5.04)          | 25        | 27298.3                        | 161.0 (6.34)          | 10        |
| 12                                        | 27035.3                         | 93.0 (3.66)           | 50        | 27131.3                       | 117.0 (4.61)          | 50        | 27227.3                       | 140.0 (5.51)          | 25        | 27299.3                        | 176.0 (6.93)          | 10        |
| <b>Electrical Ratings:</b><br>IEC 947-7-1 | 400V / 18A / 1.5mm <sup>2</sup> |                       |           | 400V / 26A / 4mm <sup>2</sup> |                       |           | 400V / 44A / 6mm <sup>2</sup> |                       |           | 800V / 82A / 16mm <sup>2</sup> |                       |           |
| CSA LR 703305                             | 300V / 15A / 22-16 AWG          |                       |           | 600V / 30A / 18-12 AWG        |                       |           | 600V / 40A / 18-10 AWG        |                       |           | 600V / 65A / 18-6 AWG          |                       |           |
| E196136                                   | 600V / 20A / 22-12 AWG          |                       |           | 600V / 30A / 22-10 AWG        |                       |           | 600V / 40A / 20-8AWG          |                       |           | 600V / 63A / 14-6 AWG          |                       |           |
| Insulation Stripping Length mm (in.)      | 5 (.20)                         |                       |           | 6 (.24)                       |                       |           | 7 (.28)                       |                       |           | 8 (.32)                        |                       |           |
| Tightening Torque Nm (lbf.-in.)           | .75 (6.5)                       |                       |           | .85 (7.5)                     |                       |           | .85 (7.5)                     |                       |           | 2.4 (21.0)                     |                       |           |
| Screw Hole Diameter mm (in.)              | 3.0 (.12)                       |                       |           | 3.5 (.14)                     |                       |           | 4.0 (.16)                     |                       |           | 5.5 (.22)                      |                       |           |
| Mounting Hole Diameter mm (in.)           | 2.8 (.110)                      |                       |           | 3.5 (.138)                    |                       |           | 4.2 (.165)                    |                       |           | 4.2 (.165)                     |                       |           |
| <b>Accessories:</b>                       |                                 |                       |           |                               |                       |           |                               |                       |           |                                |                       |           |
| External Insulated Jumpers:*              |                                 |                       |           |                               |                       |           |                               |                       |           |                                |                       |           |
| 2 Pole                                    | Cat.No. 27435.4                 | Std.Pack 50           |           | Cat.No. 27447.4               | Std.Pack 50           |           | Cat.No. 27459.4               | Std.Pack 50           |           | Cat.No. 27471.4                | Std.Pack 20           |           |
| 3 Pole                                    | Cat.No. 27436.4                 | Std.Pack 50           |           | Cat.No. 27448.4               | Std.Pack 50           |           | Cat.No. 27460.4               | Std.Pack 50           |           | Cat.No. 27472.4                | Std.Pack 20           |           |
| 4 Pole                                    | Cat.No. 27437.4                 | Std.Pack 50           |           | Cat.No. 27449.4               | Std.Pack 50           |           | Cat.No. 27461.4               | Std.Pack 50           |           | Cat.No. 27473.4                | Std.Pack 20           |           |
| 12 Pole†                                  | Cat.No. 27445.4                 | Std.Pack 10           |           | Cat.No. 27457.4               | Std.Pack 10           |           | Cat.No. 27469.4               | Std.Pack 10           |           | Cat.No. 27481.4                | Std.Pack 5            |           |
| <b>Marking Plates:</b>                    |                                 |                       |           |                               |                       |           |                               |                       |           |                                |                       |           |
| Blank                                     |                                 |                       |           | Cat.No. 27495.7               | Std.Pack 25           |           | Cat.No. 27496.7               | Std.Pack 25           |           | Cat.No. 27497.7                | Std.Pack 25           |           |
| Numbered 1 - 12                           |                                 |                       |           | Cat.No. 27498.7               | Std.Pack 25           |           | Cat.No. 27500.7               | Std.Pack 25           |           | Cat.No. 27502.7                | Std.Pack 25           |           |
| Numbered 13 - 24                          |                                 |                       |           | Cat.No. 27499.7               | Std.Pack 25           |           | Cat.No. 27501.7               | Std.Pack 25           |           | Cat.No. 27503.7                | Std.Pack 25           |           |
| <b>Isolation Partition:</b>               |                                 |                       |           | Cat.No. 27487.4               | Std.Pack 10           |           | Cat.No. 27487.4               | Std.Pack 10           |           |                                |                       |           |
| <b>Mounting Pins:</b>                     |                                 |                       |           | Cat.No. 27490.4               | Std.Pack 100          |           | Cat.No. 27490.4               | Std.Pack 100          |           | Cat.No. 27491.4                | Std.Pack 100          |           |

\* For Electrical Ratings see corresponding Conta-Strips

† Other Pole Positions available, contact Conta-Clip, Inc.

**Note: Dimensions on Diagrams are shown in mm. Metric Conversion: in. = mm x 0.03937**

# Wire Management

## Tinned Copper Tubular Braid

**Construction:** All Tinned Copper Tubular Braids are made with the individual ends of wire that conforms to ASTM-B 33 specification.

**Features:**

Braid is formed to maintain coverages of 90% shielding over the nominal diameters specified. (70% for .078" and smaller).

**Applications:**

As required by all Allied Mil-Specs and other industrial specifications.



**Technical Data:** **Approvals:**  
• ASTM-B 33 specification

| Part No. | AA59569         | QQB575         | Nominal I.D. | AWG of Individual Ends | No. of Strands (Carriers) | No. of Wires per Strand | Total No. of Wires | Approx. AWG Equivalent | Nom. Circular Mills | Calculated Amperage | Approx. Shipping Weight (Lbs/1000 Ft) |
|----------|-----------------|----------------|--------------|------------------------|---------------------------|-------------------------|--------------------|------------------------|---------------------|---------------------|---------------------------------------|
| 110      | AA59569R32T0062 | QQB575R32T0062 | 1/16"        | 32                     | 16                        | 1                       | 16                 | 20                     | 1,011               | 9                   | 6                                     |
| 112      | AA59569R32T0109 | QQB575R32T0109 | 7/64"        | 32                     | 16                        | 2                       | 32                 | 17                     | 2,023               | 18                  | 9                                     |
| 114      | AA59569R32T0125 | QQB575R32T0125 | 1/8"         | 32                     | 24                        | 2                       | 48                 | 15                     | 3,034               | 25                  | 13                                    |
| 116      | AA59569R32T0171 | QQB575R32T0171 | 11/64"       | 32                     | 24                        | 3                       | 72                 | 14                     | 4,551               | 32                  | 18                                    |
| 118      | AA59569R32T0203 | QQB575R32T0203 | 13/64"       | 32                     | 24                        | 5                       | 120                | 11                     | 7,585               | 46                  | 28                                    |
| 120      | AA59569R32T0375 | QQB575R32T0375 | 3/8"         | 32                     | 48                        | 3                       | 144                | 11                     | 9,102               | 46                  | 38                                    |
| 122      | AA59569R32T0500 | QQB575R32T0500 | 1/2"         | 32                     | 48                        | 4                       | 192                | 9                      | 12,136              | 62                  | 45                                    |
| 124      | AA59569R32T0781 | QQB575R32T0781 | 25/32"       | 32                     | 48                        | 7                       | 336                | 7                      | 21,239              | 88                  | 53                                    |
| 132      | AA59569R34T0062 | QQB575R34T0062 | 1/16"        | 34                     | 16                        | 2                       | 32                 | 19                     | 1,272               | 11                  | 8                                     |
| 134      | AA59569R34T0109 | QQB575R34T0109 | 7/64"        | 34                     | 16                        | 4                       | 64                 | 16                     | 2,544               | 19                  | 12                                    |
| 136      | AA59569R34T0125 | QQB575R34T0125 | 1/8"         | 34                     | 24                        | 3                       | 72                 | 16                     | 2,862               | 19                  | 12                                    |
| 137      | Not on spec     | Not on spec    | 9/64"        | 34                     | 24                        | 4                       | 96                 | 15                     | 3,816               | 26                  | 17                                    |
| 138      | AA59569R34T0171 | QQB575R34T0171 | 11/64"       | 34                     | 24                        | 5                       | 120                | 14                     | 4,770               | 32                  | 20                                    |
| 140      | Not on spec     | Not on spec    | 3/16"        | 34                     | 24                        | 6                       | 144                | 13                     | 5,724               | 38                  | 22                                    |
| 142      | Not on spec     | Not on spec    | 1/4"         | 34                     | 24                        | 7                       | 168                | 12                     | 6,678               | 41                  | 26                                    |
| 144      | Not on spec     | Not on spec    | 3/8"         | 34                     | 24                        | 8                       | 192                | 11                     | 7,632               | 46                  | 30                                    |
| 145      | AA59569R34T0375 | QQB575R34T0375 | 3/8"         | 34                     | 48                        | 5                       | 240                | 10                     | 9,740               | 53                  | 38                                    |
| 146      | AA59569R34T0500 | QQB575R34T0500 | 1/2"         | 34                     | 48                        | 7                       | 336                | 9                      | 13,356              | 62                  | 53                                    |
| 148      | Not on spec     | Not on spec    | 5/8"         | 34                     | 48                        | 8                       | 384                | 8                      | 15,264              | 64                  | 56                                    |
| 150      | Not on spec     | Not on spec    | 11/16"       | 34                     | 48                        | 10                      | 480                | 7                      | 19,080              | 81                  | 67                                    |
| 152      | AA59569R34T0781 | QQB575R34T0781 | 25/32"       | 34                     | 48                        | 11                      | 528                | 7                      | 20,988              | 85                  | 77                                    |
| 153      | Not on spec     | Not on spec    | 13/16"       | 34                     | 48                        | 12                      | 576                | 7                      | 22,896              | 90                  | 85                                    |
| 160      | AA59569R36T0031 | QQB575R36T0031 | 1/32"        | 36                     | 24                        | 1                       | 24                 | 22                     | 600                 | 7                   | 5                                     |
| 162      | AA59569R36T0062 | QQB575R36T0062 | 1/16"        | 36                     | 24                        | 2                       | 48                 | 19                     | 1,200               | 11                  | 7                                     |
| 163      | AA59569R36T0078 | QQB575R36T0078 | 5/64"        | 36                     | 24                        | 3                       | 72                 | 18                     | 1,800               | 16                  | 9                                     |
| 164      | AA59569R36T0109 | QQB575R36T0109 | 7/64"        | 36                     | 24                        | 4                       | 96                 | 16                     | 2,400               | 19                  | 11                                    |
| 166      | AA59569R36T0125 | QQB575R36T0125 | 1/8"         | 36                     | 24                        | 5                       | 120                | 15                     | 3,000               | 25                  | 13                                    |
| 167      | AA59569R36T0156 | QQB575R36T0156 | 5/32"        | 36                     | 24                        | 10                      | 240                | 12                     | 6,000               | 40                  | 24                                    |
| 168      | AA59569R36T0171 | QQB575R36T0171 | 11/64"       | 36                     | 24                        | 7                       | 168                | 14                     | 4,200               | 32                  | 17                                    |
| 170      | AA59569R34T0203 | QQB575R34T0203 | 13/64"       | 34                     | 24                        | 8                       | 192                | 11                     | 7,630               | 46                  | 31                                    |
| 170/1    | AA59569R36T0203 | QQB575R36T0203 | 13/64"       | 36                     | 24                        | 13                      | 312                | 11                     | 7,800               | 46                  | 31                                    |
| 171      | AA59569R36T0250 | QQB575R36T0250 | 1/4"         | 36                     | 24                        | 16                      | 384                | 10                     | 9,600               | 53                  | 38                                    |
| 171/1    | AA59569R30T0281 | QQB575R30T0281 | 9/32"        | 30                     | 24                        | 5                       | 120                | 9                      | 12,060              | 60                  | 47                                    |
| 171/2    | AA59569R30T0375 | QQB575R30T0375 | 3/8"         | 30                     | 24                        | 7                       | 168                | 8                      | 16,880              | 75                  | 62                                    |
| 172      | AA59569R36T0375 | QQB575R36T0375 | 3/8"         | 36                     | 48                        | 8                       | 384                | 10                     | 9,600               | 53                  | 40                                    |
| 173      | AA59569R30T0437 | QQB575R30T0437 | 7/16"        | 30                     | 24                        | 10                      | 240                | 6                      | 24,120              | 90                  | 85                                    |
| 173/1    | AA59569R30T0500 | QQB575R30T0500 | 1/2"         | 30                     | 24                        | 15                      | 360                | 5                      | 36,180              | 120                 | 122                                   |
| 174      | AA59569R36T0500 | QQB575R36T0500 | 1/2"         | 36                     | 48                        | 11                      | 528                | 9                      | 13,200              | 62                  | 53                                    |
| 175      | AA59569R30T0562 | QQB575R30T0562 | 9/16"        | 30                     | 48                        | 10                      | 480                | 3                      | 48,240              | 145                 | 156                                   |
| 175/1    | AA59569R30T0656 | QQB575R30T0656 | 21/32"       | 30                     | 48                        | 16                      | 768                | 1                      | 77,180              | 190                 | 259                                   |
| 176      | AA59569R36T0781 | QQB575R36T0781 | 25/32"       | 36                     | 48                        | 18                      | 864                | 7                      | 21,600              | 88                  | 79                                    |
| 177      | AA59569R30T0875 | QQB575R30T0875 | 7/8"         | 30                     | 48                        | 7                       | 336                | 5                      | 33,770              | 100                 | 123                                   |
| 178      | AA59569R30T1000 | QQB575R30T1000 | 1"           | 30                     | 48                        | 8                       | 384                | 4                      | 38,600              | 120                 | 140                                   |
| 179      | AA59569R30T1125 | QQB575R30T1125 | 1-1/8"       | 30                     | 48                        | 9                       | 432                | 4                      | 43,420              | 130                 | 155                                   |
| 180      | Not on spec     | Not on spec    | 1-1/4"       | 30                     | 48                        | 10                      | 480                | 3                      | 48,240              | 145                 | 168                                   |
| 181      | AA59569R30T1375 | QQB575R30T1375 | 1-3/8"       | 30                     | 48                        | 11                      | 528                | 3                      | 53,060              | 145                 | 185                                   |
| 182      | AA59569R30T1500 | QQB575R30T1500 | 1-1/2"       | 30                     | 48                        | 12                      | 576                | 3                      | 57,890              | 145                 | 200                                   |
| 183      | AA59569R30T2000 | QQB575R30T2000 | 2"           | 30                     | 48                        | 14                      | 672                | 2                      | 67,540              | 180                 | 230                                   |
| 184      | Not on spec     | Not on spec    | 2-1/4"       | 30                     | 48                        | 16                      | 768                | 1                      | 77,180              | 190                 | 260                                   |

## Tinned Copper Flat Braids

**Construction:** A specific number of ends of tinned copper wire, braided with a specific number of carriers (strands) which is subsequently mill-rolled for specific width and thickness.

**Applications:**

A flat braid has a specific current-carrying capacity. High currents are easily carried at low voltages. Typically used as a flexible ground strap where flexibility, strange configurations and solderability are of prime importance.



| Part No. | AA59569         | QQB575         | Nominal Flat Width | Nominal Thickness | AWG of Individual Ends | No. of Strands (Carriers) | No. of Wires per Strand | Total No. of Wires | Approx. AWG Equivalent | Nom. Circular Mills | Calculated Amperage | Approx. Shipping Weight (Lbs/1000 Ft) |
|----------|-----------------|----------------|--------------------|-------------------|------------------------|---------------------------|-------------------------|--------------------|------------------------|---------------------|---------------------|---------------------------------------|
| 221      | Not on spec     | Not on spec    | .025"              | .015"             | 36                     | 8                         | 1                       | 8                  | 27                     | 200                 | 4                   | 3                                     |
| 222      | Not on spec     | Not on spec    | .031"              | .020"             | 36                     | 16                        | 1                       | 16                 | 24                     | 400                 | 6                   | 4                                     |
| 223      | AA59569F36T0031 | QQB575F36T0031 | .046"              | .020"             | 36                     | 24                        | 1                       | 24                 | 22                     | 600                 | 7                   | 5                                     |
| 224      | Not on spec     | Not on spec    | .094"              | .020"             | 36                     | 16                        | 3                       | 48                 | 19                     | 1,200               | 11                  | 7                                     |
| 225      | AA59569F36T0062 | QQB575F36T0062 | .093"              | .031"             | 36                     | 24                        | 2                       | 48                 | 19                     | 1,200               | 11                  | 7                                     |
| 226      | Not on spec     | Not on spec    | .109"              | .020"             | 36                     | 16                        | 4                       | 64                 | 18                     | 1,800               | 16                  | 8                                     |
| 229      | AA59569F36T0078 | QQB575F36T0078 | .125"              | .020"             | 36                     | 24                        | 3                       | 72                 | 18                     | 1,800               | 16                  | 9                                     |
| 229/1    | AA59569F36T0109 | QQB575F36T0109 | .156"              | .031"             | 36                     | 24                        | 4                       | 96                 | 16                     | 2,400               | 19                  | 11                                    |
| 230      | AA59569F36T0125 | QQB575F36T0125 | .187"              | .020"             | 36                     | 24                        | 5                       | 120                | 15                     | 3,000               | 25                  | 13                                    |
| 231      | AA59569F36T0171 | QQB575F36T0171 | .250"              | .030"             | 36                     | 24                        | 7                       | 168                | 14                     | 4,200               | 32                  | 17                                    |
| 231/1    | AA59569F36T0156 | QQB575F36T0156 | .250"              | .046"             | 36                     | 24                        | 10                      | 240                | 12                     | 6,000               | 40                  | 24                                    |
| 231/2    | AA59569F36T0203 | QQB575F36T0203 | .281"              | .046"             | 36                     | 24                        | 13                      | 312                | 11                     | 7,800               | 46                  | 31                                    |
| 232      | Not on spec     | Not on spec    | .375"              | .030"             | 36                     | 48                        | 6                       | 288                | 12                     | 7,200               | 40                  | 28                                    |
| 232/1    | Not on spec     | Not on spec    | .375"              | .045"             | 30                     | 24                        | 5                       | 120                | 9                      | 12,060              | 60                  | 47                                    |
| 233      | AA59569F36T0375 | QQB575F36T0375 | .625"              | .030"             | 36                     | 48                        | 8                       | 384                | 10                     | 9,600               | 53                  | 40                                    |
| 233/1    | AA59569F36T0500 | QQB575F36T0500 | .625"              | .046"             | 36                     | 48                        | 11                      | 528                | 9                      | 13,200              | 62                  | 53                                    |
| 233/2    | Not on Spec     | Not on Spec    | .500"              | .030"             | 36                     | 48                        | 8                       | 384                | 10                     | 9,600               | 53                  | 39                                    |
| 234      | AA59569F36T0781 | QQB575F36T0781 | .750"              | .040"             | 36                     | 48                        | 18                      | 864                | 7                      | 20,800              | 88                  | 79                                    |
| 235      | Not on spec     | Not on spec    | 1.000"             | .045"             | 36                     | 48                        | 18                      | 864                | 7                      | 20,800              | 85                  | 75                                    |
| 236      | Not on spec     | Not on spec    | .812"              | .045"             | 36                     | 48                        | 19                      | 912                | 7                      | 22,800              | 93                  | 80                                    |
| 236/1    | Not on spec     | Not on spec    | .875"              | .050"             | 36                     | 48                        | 22                      | 1,056              | 6                      | 26,400              | 105                 | 95                                    |
| 237      | Not on spec     | Not on spec    | .750"              | .040"             | 36                     | 24                        | 67                      | 1,608              | 4                      | 40,200              | 125                 | 140                                   |
| 238      | Not on spec     | Not on spec    | 1.625"             | .080"             | 36                     | 48                        | 84                      | 4,032              | Jan-00                 | 100,800             | 230                 | 359                                   |
| 240      | AA59569F30T0437 | QQB575F30T0437 | .500"              | .093"             | 30                     | 24                        | 10                      | 240                | 6                      | 24,120              | 90                  | 85                                    |
| 242      | AA59569F30T0500 | QQB575F30T0500 | .625"              | .093"             | 30                     | 24                        | 15                      | 360                | 5                      | 36,180              | 120                 | 122                                   |
| 244      | Not on spec     | Not on spec    | .750"              | .110"             | 30                     | 24                        | 20                      | 480                | 3                      | 48,000              | 145                 | 170                                   |
| 246      | Not on spec     | Not on spec    | .875"              | .120"             | 30                     | 24                        | 24                      | 576                | 3                      | 57,600              | 165                 | 193                                   |
| 248      | Not on spec     | Not on spec    | .937"              | .130"             | 30                     | 24                        | 26                      | 624                | 2                      | 62,400              | 170                 | 210                                   |
| 250      | Not on spec     | Not on spec    | .937"              | .130"             | 30                     | 24                        | 27                      | 648                | 2                      | 64,800              | 175                 | 225                                   |
| 252      | Not on spec     | Not on spec    | 1.000"             | .140"             | 30                     | 24                        | 32                      | 768                | 1                      | 76,800              | 195                 | 270                                   |
| 260      | Not on spec     | Not on spec    | .750"              | .050"             | 30                     | 48                        | 5                       | 240                | 6                      | 24,000              | 93                  | 88                                    |
| 262      | AA59569F30T0875 | QQB575F30T0875 | 1.375"             | .050"             | 30                     | 48                        | 7                       | 336                | 5                      | 33,770              | 100                 | 123                                   |
| 264      | Not on spec     | Not on spec    | 1.000"             | .070"             | 30                     | 48                        | 8                       | 384                | 4                      | 38,400              | 120                 | 137                                   |
| 266      | Not on spec     | Not on spec    | 1.250"             | .080"             | 30                     | 48                        | 10                      | 480                | 3                      | 48,000              | 145                 | 168                                   |
| 268      | AA59569F30T1375 | QQB575F30T1375 | 1.500"             | .060"             | 30                     | 48                        | 11                      | 528                | 3                      | 53,060              | 145                 | 185                                   |
| 270      | Not on spec     | Not on spec    | .875"              | .090"             | 30                     | 48                        | 12                      | 576                | 2                      | 57,600              | 150                 | 200                                   |
| 272      | Not on spec     | Not on spec    | 1.375"             | .090"             | 30                     | 48                        | 14                      | 672                | 2                      | 67,200              | 165                 | 230                                   |
| 274      | Not on spec     | Not on spec    | 1.500"             | .100"             | 30                     | 48                        | 16                      | 768                | 1                      | 76,800              | 180                 | 265                                   |
| 276      | Not on spec     | Not on spec    | 1.625"             | .110"             | 30                     | 48                        | 18                      | 864                | 1                      | 86,400              | 200                 | 283                                   |
| 278      | Not on spec     | Not on spec    | 1.375"             | .120"             | 30                     | 48                        | 22                      | 1,056              | Jan-00                 | 105,600             | 235                 | 362                                   |
| 279      | Not on spec     | Not on spec    | 1.750"             | .130"             | 30                     | 48                        | 26                      | 1,248              | Feb-00                 | 124,800             | 250                 | 430                                   |
| 280      | Not on spec     | Not on spec    | 2.000"             | .130"             | 30                     | 48                        | 28                      | 1,344              | Feb-00                 | 134,400             | 255                 | 464                                   |
| 282      | Not on spec     | Not on spec    | 2.000"             | .140"             | 30                     | 48                        | 32                      | 1,536              | Mar-00                 | 153,600             | 290                 | 530                                   |
| 284      | Not on spec     | Not on spec    | 2.000"             | .150"             | 30                     | 48                        | 35                      | 1,680              | Mar-00                 | 168,000             | 320                 | 570                                   |
| 286      | Not on spec     | Not on spec    | 2.375"             | .175"             | 30                     | 48                        | 44                      | 2,112              | Apr-00                 | 211,200             | 370                 | 730                                   |
| 287      | Not on spec     | Not on spec    | 3.000"             | .190"             | 30                     | 48                        | 47                      | 2,256              | Apr-00                 | 225,600             | 390                 | 780                                   |
| 288      | Not on spec     | Not on spec    | 2.500"             | .190"             | 30                     | 48                        | 52                      | 2,496              | 250 MCM                | 249,600             | 410                 | 900                                   |

## Large Flat Tinned Copper Flat Braids

**Construction:** A specific number of ends of tinned copper wire, braided with a specific number of carriers (strands) which is subsequently mill-rolled for specific width and thickness.

**Applications:**

A flat braid has a specific current-carrying capacity. High currents are easily carried at low voltages. Typically used as a flexible ground strap where flexibility, strange configurations and solderability are of prime importance.



| CCC NO. | NOMINAL FLAT WIDTH | NOMINAL THICKNESS | AWG. OF INDIV ENDS | NO. OF STRANDS (CARRIER) | NO. OF WIRES PER STRAND | TOTAL NO. OF INDIV. WIRES | APPROX. AWG. EQUIV. | NOMINAL CIRCULAR MILLS | CURRENT CARRYING CAPACITY (AMPS) | APPROX. SHIPPING WEIGHT LBS. |
|---------|--------------------|-------------------|--------------------|--------------------------|-------------------------|---------------------------|---------------------|------------------------|----------------------------------|------------------------------|
| 240 *   | 1/2"               | 0.08              | 30                 | 24                       | 10                      | 240                       | 6                   | 24000                  | 93                               | 83                           |
| 242 *   | 5/8"               | 0.085             | 30                 | 24                       | 15                      | 360                       | 5                   | 36000                  | 120                              | 121                          |
| 244     | 3/4"               | 0.11              | 30                 | 24                       | 20                      | 480                       | 3                   | 48000                  | 145                              | 170                          |
| 246     | 7/8"               | 0.12              | 30                 | 24                       | 24                      | 576                       | 3                   | 57600                  | 165                              | 193                          |
| 248     | 15/16"             | 0.13              | 30                 | 24                       | 26                      | 624                       | 2                   | 62400                  | 170                              | 210                          |
| 250     | 15/16"             | 0.13              | 30                 | 24                       | 27                      | 648                       | 2                   | 64800                  | 175                              | 225                          |
| 252     | 1"                 | 0.14              | 30                 | 24                       | 32                      | 768                       | 1                   | 76800                  | 195                              | 270                          |
| 260     | 3/4"               | 0.05              | 30                 | 48                       | 5                       | 240                       | 6                   | 24000                  | 93                               | 88                           |
| 262 *   | 1-3/8"             | 0.06              | 30                 | 48                       | 7                       | 336                       | 5                   | 33600                  | 100                              | 129                          |
| 264     | 1"                 | 0.07              | 30                 | 48                       | 8                       | 384                       | 4                   | 38400                  | 120                              | 137                          |
| 266     | 1-1/4"             | 0.08              | 30                 | 48                       | 10                      | 480                       | 3                   | 48000                  | 145                              | 168                          |
| 268 *   | 1-1/2"             | 0.045             | 30                 | 48                       | 11                      | 528                       | 3                   | 52800                  | 145                              | 192                          |
| 270     | 7/8"               | 0.09              | 30                 | 48                       | 12                      | 576                       | 2                   | 57600                  | 150                              | 200                          |
| 272     | 1-3/8"             | 0.09              | 30                 | 48                       | 14                      | 672                       | 2                   | 67200                  | 165                              | 230                          |
| 274     | 1-1/2"             | 0.1               | 30                 | 48                       | 16                      | 768                       | 1                   | 76800                  | 180                              | 265                          |
| 276     | 1-5/8"             | 0.11              | 30                 | 48                       | 18                      | 864                       | 1                   | 86400                  | 200                              | 283                          |
| 278     | 1-3/8"             | 0.12              | 30                 | 48                       | 22                      | 1056                      | 1/0                 | 105600                 | 235                              | 362                          |
| 279     | 1-3/4"             | 0.13              | 30                 | 48                       | 26                      | 1248                      | 2/0                 | 124800                 | 250                              | 430                          |
| 280     | 2"                 | 0.13              | 30                 | 48                       | 28                      | 1344                      | 2/0                 | 134400                 | 255                              | 464                          |
| 282     | 2"                 | 0.14              | 30                 | 48                       | 32                      | 1536                      | 3/0                 | 153600                 | 290                              | 530                          |
| 284     | 2"                 | 0.15              | 30                 | 48                       | 35                      | 1680                      | 3/0                 | 168000                 | 320                              | 570                          |
| 286     | 2 3/8"             | 0.175             | 30                 | 48                       | 44                      | 2112                      | 4/0                 | 211200                 | 370                              | 730                          |
| 287     | 3"                 | 0.19              | 30                 | 48                       | 47                      | 2256                      | 4/0                 | 225600                 | 390                              | 780                          |
| 288     | 2 1/2"             | 0.19              | 30                 | 48                       | 52                      | 2496                      | 250 MCM             | 249600                 | 410                              | 900                          |

\* Denotes QQB575 construction

NOTE: When bare copper is required add (B) to our part #

EXAMPLE - 240B

## 025" PVC Solid & SR-PVC Stranded Microzip Ribbon

**Construction:** This Microzip consists of 30 AWG solid bare or stranded tinned copper. Conductors are then fully extruded with PVC insulation. A red polarity stripe is added to the first conductor for easy identification. Standard color is gray. **Insulation:** PVC.

### Features:

Tight tolerances on 0.025" pitch flat ribbon cable. Solid conductor construction for lower cost alternative with improved impedance performance over stranded. 80 Conductor Ultra ATA 100 Compliant.

### Applications:

Ultra ATA 33, 66, 100 and 133. High density interconnect.

### Technical Data:



#### Temperature:

- UL Temp: 105°C
- CSA Temp: 105°C



#### Rated Voltage:

150V



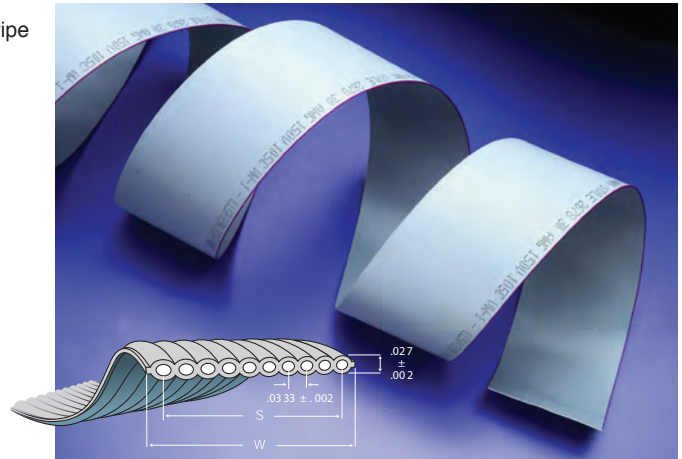
#### Color Code:

Standard color is gray



#### Approvals:

- UL Style: 2678.
- CSA Style: AWM I A/B FT-1



| Series No. | Conductor<br>AWG<br>Stranding<br>Coating | Insulation | Conductor<br>Resistance<br>Ω/Mft.<br>@ 20°C | Capacitance     |                   | Impedance               |                          | Propagation Delay |                          |
|------------|------------------------------------------|------------|---------------------------------------------|-----------------|-------------------|-------------------------|--------------------------|-------------------|--------------------------|
|            |                                          |            |                                             | pF/ft.<br>(G-S) | pF/ft.<br>(G-S-G) | (G-S-G)<br>(Ohms)<br>SE | (G-S)<br>(Ohms)<br>Diff. | ns/ft.            | Skew<br>ns/ft.<br>(Max.) |
| 23129      | 30 AWG<br>1/30<br>BC                     | PVC        | 104                                         | 14.2            | 25                | 80                      | 130                      | 1.52              | 0.036                    |
| 23113      | 30 AWG<br>7/38<br>TC                     | PVC        | 106                                         | 15.8            | 23.30             | 75                      | 110                      | 1.62              | 0.030                    |



| Part No.          | Insulation | No. of<br>Conductors | Width<br>"W" | Span<br>"S"     | Pitch<br>Tolerance | Standard<br>Put-ups |
|-------------------|------------|----------------------|--------------|-----------------|--------------------|---------------------|
| 23129-20-P-00100  | PVC        | 20                   | 0.500"       | 0.475" ± 0.005" | ± 0.0016"          | 100'                |
| 23129-25-P-00100  | PVC        | 25                   | 0.625"       | 0.600" ± 0.005" | ± 0.0016"          | 100'                |
| 23129-26-P-00100  | PVC        | 26                   | 0.650"       | 0.625" ± 0.005" | ± 0.0016"          | 100'                |
| 23129-34-P-00100  | PVC        | 34                   | 0.850"       | 0.825" ± 0.005" | ± 0.0016"          | 100'                |
| 23129-40-P-00100  | PVC        | 40                   | 1.000"       | 0.975" ± 0.005" | ± 0.0016"          | 100'                |
| 23129-50-P-00100  | PVC        | 50                   | 1.250"       | 1.225" ± 0.005" | ± 0.0016"          | 100'                |
| 23129-60-P-00100  | PVC        | 60                   | 1.500"       | 1.475" ± 0.005" | ± 0.0016"          | 100'                |
| 23129-68-P-00400  | PVC        | 68                   | 1.700"       | 1.675" ± 0.005" | ± 0.0016"          | 400'                |
| 23129-80-P-00400  | PVC        | 80                   | 2.000"       | 1.975" ± 0.005" | ± 0.0016"          | 400'                |
| 23129-100-P-00100 | PVC        | 100                  | 2.500"       | 2.475" ± 0.007" | ± 0.0016"          | 100'                |
| 23113-10-P-00100  | PVC        | 10                   | 0.250"       | 0.225" ± 0.005" | ± 0.0016"          | 100'                |
| 23113-16-P-00100  | PVC        | 16                   | 0.400"       | 0.375" ± 0.005" | ± 0.0016"          | 100'                |
| 23113-20-P-00100  | PVC        | 20                   | 0.500"       | 0.475" ± 0.005" | ± 0.0016"          | 100'                |
| 23113-26-P-00100  | PVC        | 26                   | 0.650"       | 0.625" ± 0.005" | ± 0.0016"          | 100'                |
| 23113-30-P-00100  | PVC        | 30                   | 0.750"       | 0.725" ± 0.005" | ± 0.0016"          | 100'                |
| 23113-34-P-00100  | PVC        | 34                   | 0.850"       | 0.825" ± 0.005" | ± 0.0016"          | 100'                |
| 23113-40-P-00100  | PVC        | 40                   | 1.000"       | 0.975" ± 0.005" | ± 0.0016"          | 100'                |
| 23113-50-P-00100  | PVC        | 50                   | 1.250"       | 1.225" ± 0.005" | ± 0.0016"          | 100' & 500'         |
| 23113-60-P-00100  | PVC        | 60                   | 1.500"       | 1.475" ± 0.005" | ± 0.0016"          | 100'                |
| 23113-80-P-00400  | PVC        | 80                   | 2.000"       | 1.975" ± 0.005" | ± 0.0016"          | 400'                |
| 23113-100-P-00100 | PVC        | 100                  | 2.500"       | 2.475" ± 0.007" | ± 0.0016"          | 100'                |

Other conductor counts available upon request. 20030 28 AWG 7/36 also available. All data is for reference only and is subject to change.  
Note: 23113 thickness is 0.025 ± 0.002.

## 025" PVC Stranded Micro Quick-Twist

**Construction:** Micro Quick-Twist is built with 30 AWG stranded tinned copper. Each conductor is individually extruded with PVC. Conductors are pulled into pairs then bonded into flat sections for IDC termination points. No lamination tapes are used on the flat sections for 23195 and 20050.0. **Insulation:** PVC.

**Features:**

Excellent noise and cross talk reduction characteristics. Ideal for IDC termination with High-Density connectors. Great alternative to FEP and TPO cables when higher performance is demanded of a stranded cable.

**Applications:**

SCSI, Fast-XX, SPI-2 and SPI-3

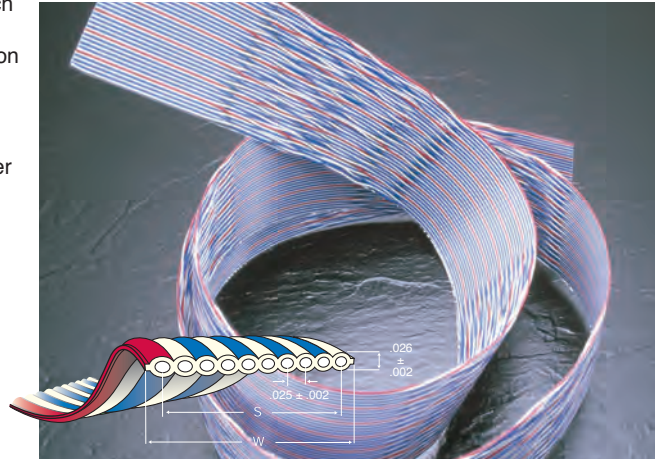
**Technical Data:**

 **Temperature:**  
105°C

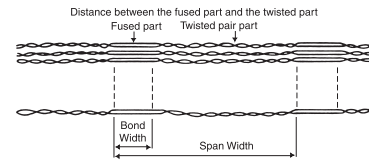
 **Rated Voltage:**  
150V

 **Color Code:**  
Standard multicolor is Red, White, Blue, White, Blue, White, Blue, White, Blue, White, repeat.  
All data is for reference only and is subject to change.

 **Approvals:**  
• UL/cUL Listing: 20528  
• UL/cUL Flame Rating: VW-1



TYPICAL THICKNESS FOR 20098 AND 20099. THICKNESS FOR 20050 AND 23195 IS .024 ± .002.



| Eco-Index: RoHS Values |       |       |       |                 |
|------------------------|-------|-------|-------|-----------------|
| <90ppm                 | <5ppm | <5ppm | <5ppm | <1000ppm        |
| Pb                     | Cd    | Cr+6  | Hg    | PBDE's<br>PPB's |

| Series No. | Conductor<br>AWG<br>Stranding<br>Coating | Insulation                  | Conductor<br>Resistance<br>Ω/Mft.<br>@ 20°C | Capacitance     |                   | Impedance               |                          | Propagation Delay |                          |
|------------|------------------------------------------|-----------------------------|---------------------------------------------|-----------------|-------------------|-------------------------|--------------------------|-------------------|--------------------------|
|            |                                          |                             |                                             | pF/ft.<br>(G-S) | pF/ft.<br>(G-S-G) | (G-S-G)<br>(Ohms)<br>SE | (G-S)<br>(Ohms)<br>Diff. | ns/ft.            | Skew<br>ns/ft.<br>(Max.) |
| 23195      | 30 AWG<br>7/38<br>TC                     | PVC                         | 106                                         | 14.9            | 18.9              | 91                      | 117                      | 1.56              | 0.035                    |
| 20050      |                                          |                             |                                             | 14.6            | 19.2              | 82                      | 113                      | 1.52              | 0.035                    |
| 20098      | 30 AWG<br>7/38<br>TC                     | SR-PVC<br>Dual<br>Laminated | 106                                         | 17.0            | 22.0              | 81                      | 106                      | 1.56              | 0.035                    |
| 20099      |                                          |                             |                                             | 17.9            | 23.0              | 74                      | 100                      |                   |                          |

| Part No.          | Insulation | No. of<br>Pairs | Width<br>"W" | Span<br>"S" | Pitch<br>Tolerance | Span<br>Length Inch<br>(mm) | Bond<br>Length<br>Inch (mm) |
|-------------------|------------|-----------------|--------------|-------------|--------------------|-----------------------------|-----------------------------|
| 23195-26-P-00200  | PVC        | 13              | 0.650"       | 0.625"      | ± 0.002"           | 9.84 (250)                  | 1.57 (40)                   |
| 23195-34-P-00200  | PVC        | 17              | 0.850"       | 0.825"      | ± 0.002"           | 9.84 (250)                  | 1.57 (40)                   |
| 23195-50-P-00200  | PVC        | 25              | 1.250"       | 1.225"      | ± 0.002"           | 9.84 (250)                  | 1.57 (40)                   |
| 23195-68-P-00200  | PVC        | 34              | 1.700"       | 1.675"      | ± 0.002"           | 9.84 (250)                  | 1.57 (40)                   |
| 23195-80-P-00200  | PVC        | 40              | 2.000"       | 1.975"      | ± 0.002"           | 9.84 (250)                  | 1.57 (40)                   |
| 23195-100-P-00200 | PVC        | 50              | 2.500"       | 2.475"      | ± 0.002"           | 9.84 (250)                  | 1.57 (40)                   |
| 20050-68-P-00200  | PVC        | 34              | 1.700"       | 1.675"      | ± 0.002"           | 4.92 (125)                  | 1.57 (40)                   |
| 20098-68-P-00200  | SR-PVC     | 34              | 1.700"       | 1.675"      | ± 0.002"           | 9.84 (250)                  | 1.57 (40)                   |
| 20099-26-P-00200  | SR-PVC     | 13              | 0.650"       | 0.625"      | ± 0.002"           | 4.92 (125)                  | 1.57 (40)                   |
| 20099-68-P-00200  | SR-PVC     | 34              | 1.700"       | 1.675"      | ± 0.002"           | 4.92 (125)                  | 1.57 (40)                   |

## 0.050" Rainbow Ribbon

**Construction:** Ribbon cable is constructed with 28 AWG (7/36) tinned copper. Each conductor is first extruded with SR-PVC and then all conductors are pulled in parallel and extruded in clear PVC. No lamination tapes that can impede IDC termination are used.

**Features:**

Individually color coded conductors for easy identification. Fully extruded construction. No lamination tapes to impede termination. Zip construction. Symmetrically round conductors improve IDC termination.

**Applications:**

Internal wiring of electronic equipment.

**Technical Data:**



**Temperature:**

- UL Temp: 105°C
- CSA Temp: 105°C



**Rated Voltage:**

300V



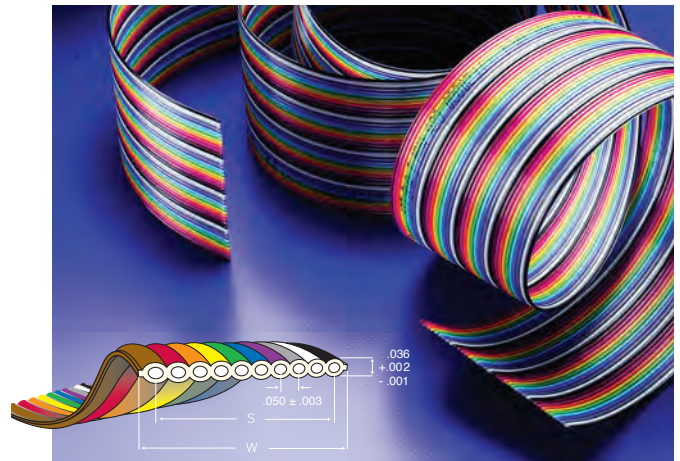
**Color Code:**

Brown, Red, Orange, Yellow, Green, Blue, Violet, Gray, White, Black and repeat.



**Approvals:**

- UL Style: 20932
- CSA listing: AWM I A/B FT-1



|                        |       |       |       |                 |
|------------------------|-------|-------|-------|-----------------|
| Eco-Index: RoHS Values |       |       |       |                 |
| <90ppm                 | <5ppm | <5ppm | <5ppm | <1000ppm        |
| Pb                     | Cd    | Cr+6  | Hg    | PBDE's<br>PPB's |

| Series No. | Conductor<br>AWG<br>Stranding<br>Coating | Insulation    | Conductor<br>Resistance<br>Ω/Ω/Mft.<br>@ 20°C | Capacitance     |                   | Impedance               |                          | Propagation Delay |                          |
|------------|------------------------------------------|---------------|-----------------------------------------------|-----------------|-------------------|-------------------------|--------------------------|-------------------|--------------------------|
|            |                                          |               |                                               | pF/ft.<br>(G-S) | pF/ft.<br>(G-S-G) | (G-S-G)<br>(Ohms)<br>SE | (G-S)<br>(Ohms)<br>Diff. | ns/ft.            | Skew<br>ns/ft.<br>(Max.) |
| 23026      | 28 AWG<br>7/36<br>TC                     | SR-PVC<br>PVC | 67.5                                          | 7.48            | 14.05             | 98                      | 135                      | 1.45              | 0.086                    |

| Part No.         | Conductors | No. of<br>Conductors | Width<br>"W" | Span<br>"S"     | Pitch<br>Tolerance | Standard<br>Put-ups |
|------------------|------------|----------------------|--------------|-----------------|--------------------|---------------------|
| 23026-09-P-00100 | SR-PVC/PVC | 9                    | 0.450"       | 0.400" ± 0.006" | ± 0.003"           | 100'                |
| 23026-10-P-00100 | SR-PVC/PVC | 10                   | 0.500"       | 0.450" ± 0.006" | ± 0.003"           | 100'                |
| 23026-14-P-00100 | SR-PVC/PVC | 14                   | 0.700"       | 0.650" ± 0.006" | ± 0.003"           | 100'                |
| 23026-15-P-00100 | SR-PVC/PVC | 15                   | 0.750"       | 0.700" ± 0.006" | ± 0.003"           | 100'                |
| 23026-16-P-00100 | SR-PVC/PVC | 16                   | 0.800"       | 0.750" ± 0.008" | ± 0.003"           | 100'                |
| 23026-20-P-00100 | SR-PVC/PVC | 20                   | 1.000"       | 0.950" ± 0.008" | ± 0.003"           | 100'                |
| 23026-24-P-00100 | SR-PVC/PVC | 24                   | 1.200"       | 1.150" ± 0.008" | ± 0.003"           | 100'                |
| 23026-25-P-00100 | SR-PVC/PVC | 25                   | 1.250"       | 1.200" ± 0.008" | ± 0.003"           | 100'                |
| 23026-26-P-00100 | SR-PVC/PVC | 26                   | 1.300"       | 1.250" ± 0.008" | ± 0.003"           | 100'                |
| 23026-34-P-00100 | SR-PVC/PVC | 34                   | 1.700"       | 1.650" ± 0.011" | ± 0.003"           | 100'                |
| 23026-37-P-00100 | SR-PVC/PVC | 37                   | 1.850"       | 1.800" ± 0.011" | ± 0.003"           | 100'                |
| 23026-40-P-00100 | SR-PVC/PVC | 40                   | 2.000"       | 1.950" ± 0.011" | ± 0.003"           | 100'                |
| 23026-50-P-00100 | SR-PVC/PVC | 50                   | 2.500"       | 2.450" ± 0.011" | ± 0.003"           | 100'                |
| 23026-60-P-00100 | SR-PVC/PVC | 60                   | 3.000"       | 2.950" ± 0.011" | ± 0.003"           | 100'                |
| 23026-64-P-00100 | SR-PVC/PVC | 64                   | 3.200"       | 3.150" ± 0.011" | ± 0.003"           | 100'                |

Other conductor counts available upon request. Available in 26 AWG (20002) and 30 AWG (20042). All data is for reference only and is subject to change.

Specifications subject to change. For complete specifications and availability visit [www.lapptannehill.com](http://www.lapptannehill.com)

## 0.050" TPO Stranded Flat Ribbon

**Construction:** This 0.050" flat ribbon cable is constructed with 28 AWG stranded tinned copper then fully extruded with a Thermoplastic Olefin (TPO). A red co-extruded stripe is applied in lieu of ink to prevent flaking;

**Insulation:** Thermoplastic Olefin (TPO).

**Features:**

TPO insulated for superior electrical performance, i.e. high impedance and low capacitance. Outstanding low temperature characteristics. Improved heat aging over conventional PVC. Alternate gauges also available.

**Applications:**

Ideal for higher controlled impedance environments.

**Technical Data:**



**Temperature:**

- UL Temp: 105°C
- CSA Temp: 105°C



**Color Code:**

Gray with a red co-extruded stripe



**Rated Voltage:**

300V



**Approvals:**

- UL Style: 20346
- CSA Listing: AWM I A/B FT-1



RED POLARITY STRIPE ON #1 COND EDGE.



| Eco-Index: RoHS Values |       |       |       |                 |
|------------------------|-------|-------|-------|-----------------|
| <90ppm                 | <5ppm | <5ppm | <5ppm | <1000ppm        |
| Pb                     | Cd    | Cr+6  | Hg    | PBDE's<br>PPB's |

| Series No. | Conductor<br>AWG<br>Stranding<br>Coating | Insulation | Conductor<br>Resistance<br>Ω/Mft.<br>@ 20°C | Capacitance     |                   | Impedance               |                          | Propagation Delay |                          |
|------------|------------------------------------------|------------|---------------------------------------------|-----------------|-------------------|-------------------------|--------------------------|-------------------|--------------------------|
|            |                                          |            |                                             | pF/ft.<br>(G-S) | pF/ft.<br>(G-S-G) | (G-S-G)<br>(Ohms)<br>SE | (G-S)<br>(Ohms)<br>Diff. | ns/ft.            | Skew<br>ns/ft.<br>(Max.) |
| 23065      | 28 AWG<br>7/36<br>TC                     | TPO        | 67.5                                        | 5.60            | 9.70              | 145                     | 106                      | 1.26              | 0.020                    |

| Part No.         | Insulation | No. of<br>Conductors | Width<br>"W" | Span<br>"S"     | Pitch<br>Tolerance | Standard<br>Put-ups |
|------------------|------------|----------------------|--------------|-----------------|--------------------|---------------------|
| 23065-20-P-00100 | TPO        | 20                   | 1.000"       | 0.950" ± 0.008" | ± 0.002"           | 100'                |
| 23065-34-P-00100 | TPO        | 34                   | 1.700"       | 1.650" ± 0.011" | ± 0.002"           | 100'                |
| 23065-40-P-00100 | TPO        | 40                   | 2.000"       | 1.950" ± 0.011" | ± 0.002"           | 100'                |
| 23065-50-P-00100 | TPO        | 50                   | 2.500"       | 2.450" ± 0.011" | ± 0.002"           | 100'                |

Other conductor counts available upon request. Other variations include 24 AWG and 26 AWG cables. All data is for reference only and is subject to change.

Please contact your sales representative for detailed information at [sales@lapptannehill.com](mailto:sales@lapptannehill.com)



## Round to Flat Ribbon

**Construction:** Cable core consists of slit and bonded flat gray ribbon cable. Core is folded and twisted into a round format before being taped with either Polyester (23149) or Aluminum/Polyester (23122) tape (A side out). For dual shielded versions, cable is then braided. The core is jacketed in Black PVC. **Jacket:** Black PVC.

### Features:

Chooses from Shielded or Unshielded. Shielded cable includes an aluminum tape and braid shield. Cable core features .050" pitch gray ribbon cable for use with popular IDC connectors. Core is slit 1.50" then bonded 0.75" for ease of termination.

### Applications:

Appliance wire and consumer products.

### Technical Data:



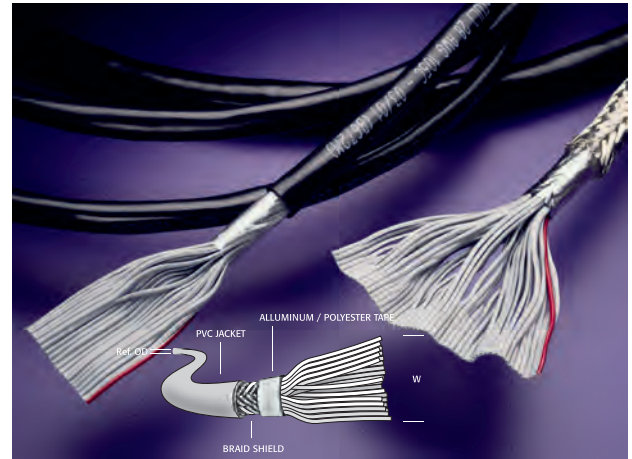
**Temperature:**  
UL/CSA: 105°C



**Rated Voltage:**  
300V



**Approvals:**  
• UL Style 20381  
• CSA Style: AWM IIB



| Eco-Index: RoHS Values |       |       |       |                 |
|------------------------|-------|-------|-------|-----------------|
| <90ppm                 | <5ppm | <5ppm | <5ppm | <1000ppm        |
| Pb                     | Cd    | Cr+6  | Hg    | PBDE's<br>PPB's |

| Series No. | Conductor<br>AWG<br>Stranding<br>Coating | Insulation | Shielding              | Conductor<br>Resistance<br>$\Omega$ /Mft.<br>@ 20°C | Capacitance<br>(G-S-G)<br>pF/ft. | Impedance<br>(G-S-G)<br>(Ohms) | Prop.<br>Delay<br>ns/ft. | Jacket |
|------------|------------------------------------------|------------|------------------------|-----------------------------------------------------|----------------------------------|--------------------------------|--------------------------|--------|
| 23122      | 28 AWG<br>7/36                           | PVC        | AL/PET<br>Tape & Braid | 67.5                                                | 24.5                             | 65                             | 1.62                     | PVC*   |
| 23149      | TC                                       |            | None                   |                                                     | 17.3                             | 90                             |                          |        |

| Part No.         | No. of<br>Conductors | Jacket OD (Ref.) |        | Width<br>"W" | Span<br>"S" |
|------------------|----------------------|------------------|--------|--------------|-------------|
|                  |                      | inches           | mm     |              |             |
| 23122-16-P-00660 | 16                   | 0.275            | 6.985  | 0.800"       | 0.750"      |
| 23122-20-P-00660 | 20                   | 0.309            | 7.849  | 1.000"       | 0.950"      |
| 23122-25-P-00660 | 25                   | 0.313            | 7.950  | 1.250"       | 1.200"      |
| 23122-26-P-00660 | 26                   | 0.318            | 8.077  | 1.300"       | 1.250"      |
| 23122-34-P-00660 | 34                   | 0.363            | 9.220  | 1.700"       | 1.650"      |
| 23122-37-P-00660 | 37                   | 0.351            | 8.915  | 1.850"       | 1.800"      |
| 23122-40-P-00660 | 40                   | 0.413            | 10.490 | 2.000"       | 1.950"      |
| 23122-50-P-00660 | 50                   | 0.438            | 11.125 | 2.500"       | 2.450"      |
| 23122-60-P-00660 | 60                   | 0.458            | 11.633 | 3.000"       | 2.950"      |
| 23149-16-P-00660 | 16                   | 0.268            | 6.807  | 0.800"       | 0.750"      |
| 23149-20-P-00660 | 20                   | 0.289            | 7.341  | 1.000"       | 0.950"      |
| 23149-26-P-00660 | 26                   | 0.298            | 7.569  | 1.250"       | 1.200"      |
| 23149-40-P-00660 | 40                   | 0.347            | 8.814  | 2.000"       | 1.950"      |
| 23149-50-P-00660 | 50                   | 0.409            | 10.389 | 2.500"       | 2.450"      |

Other conductor counts available upon request. This product is available in 30 AWG solid and stranded constructions. Please consult with factory for more information. \*Standard jacket color is Black. Other colors are available by special request. All data is for reference only and is subject to change.

0.050" Quick-Twist Cable

**Construction:** 0.050" Quick Twist cable is built with 28AWG (7/35 stranded TC). Conductors are individually extruded with one of eleven different PVC colors. The cable consists of twist and flat sections at regular intervals of 1.57" bonded (flat) and 18.11" twisted.

**Features:**  
Packaged on 100' Reels. 0.050" Pitch for use with today's low cost IDC connectors. Multi-color for easy channel identification. Twisted pairs for reduced cross talk.

**Applications:**  
Internal wiring of appliances, electronic computers and business equipment.

Technical Data:

- **Temperature:**  
UL Temp: 80°C
- **Rated Voltage:**  
300V
- **Color Code:**  
Brown, Red, Orange, Yellow, Green, Blue, Violet, Gray, White, Black (repeat), Tan (common).
- **Approvals:**  
UL Style: 20012



|          |         |          |          |              |
|----------|---------|----------|----------|--------------|
| <1000ppm | <100ppm | <1000ppm | <1000ppm | <1000ppm     |
| Pb       | Cd      | Cr+6     | Hg       | PBDE's/PPB's |



| Series No. | Conductor<br>AWG | Insulation            | Conductor Resistance Ω/km<br>at 20°C (Max.) | Insulation Resistance MΩ-<br>km at 20°C (Min.) |
|------------|------------------|-----------------------|---------------------------------------------|------------------------------------------------|
| 23220      | 28 7/38 TC       | Heat Resistant<br>PVC | 228                                         | 100                                            |

| Part No.         | No. of Pairs | Width Inches | Span Inches | Approx Wgt<br>Lbs/reel |
|------------------|--------------|--------------|-------------|------------------------|
| 23220-10-P-00100 | 5            | 0.500        | 0.450       | 1.2                    |
| 23220-20-P-00100 | 10           | 1.000        | 0.950       | 2.5                    |
| 23220-34-P-00100 | 17           | 1.700        | 1.650       | 4.2                    |
| 23220-50-P-00100 | 25           | 2.500        | 2.450       | 6.2                    |
| 23220-60-P-00100 | 30           | 3.000        | 2.950       | 7.4                    |
| 23220-64-P-00100 | 32           | 3.200        | 3.150       | 7.8                    |

**Notes:** Other conductor counts available upon request. All data is for reference only and subject to change.

Check out our complete inventory of products at [www.lapptannehill.com](http://www.lapptannehill.com)

# NEMA Configurations Chart

## North American Locking Plugs and Receptacles

| VOLTAGE      | NEMA | 15 AMPERE                                                                                   |                                                                                             | 20 AMPERE                                                                                      |                                                                                                | 30 AMPERE                                                                                      |                                                                                                | 50 AMPERE  |      | 60 AMPERE  |      |
|--------------|------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------|------|------------|------|
|              |      | RECEPTACLE                                                                                  | PLUG                                                                                        | RECEPTACLE                                                                                     | PLUG                                                                                           | RECEPTACLE                                                                                     | PLUG                                                                                           | RECEPTACLE | PLUG | RECEPTACLE | PLUG |
| 125V         | L1   | <br>L1-15R | <br>L1-15P |                                                                                                |                                                                                                |                                                                                                |                                                                                                |            |      |            |      |
| 250V         | L2   |                                                                                             |                                                                                             | <br>L2-20R    | <br>L2-20P    |                                                                                                |                                                                                                |            |      |            |      |
| 125V         | L5   | <br>L5-15R | <br>L5-15P | <br>L5-20R    | <br>L5-20P    | <br>L5-30R    | <br>L5-30P    |            |      |            |      |
| 250V         | L6   | <br>L6-15R | <br>L6-15P | <br>L6-20R    | <br>L6-20P    | <br>L6-30R    | <br>L6-30P    |            |      |            |      |
| 277V         | L7   | <br>L7-15R | <br>L7-15P | <br>L7-20R    | <br>L7-20P    | <br>L7-30R    | <br>L7-30P    |            |      |            |      |
| 480V         | L8   |                                                                                             |                                                                                             | <br>L8-20R   | <br>L8-20P   | <br>L8-30R   | <br>L8-30P   |            |      |            |      |
| 600V         | L9   |                                                                                             |                                                                                             | <br>L9-20R  | <br>L9-20P  | <br>L9-30R  | <br>L9-30P  |            |      |            |      |
| 125/<br>250V | L10  |                                                                                             |                                                                                             | <br>L10-20R | <br>L10-20P | <br>L10-30R | <br>L10-30P |            |      |            |      |
| 3Ø250V       | L11  |                                                                                             |                                                                                             | <br>L11-20R | <br>L11-20P | <br>L11-30R | <br>L11-30P |            |      |            |      |
| 3Ø480V       | L12  |                                                                                             |                                                                                             | <br>L12-20R | <br>L12-20P | <br>L12-30R | <br>L12-30P |            |      |            |      |
| 3Ø600V       | L13  |                                                                                             |                                                                                             |                                                                                                |                                                                                                | <br>L13-30R | <br>L13-30P |            |      |            |      |
| 125/<br>250V | L14  |                                                                                             |                                                                                             | <br>L14-20R | <br>L14-20P | <br>L14-30R | <br>L14-30P |            |      |            |      |

## NEMA Configurations Chart

### North American Locking Plugs and Receptacles

| VOLTAGE         | NEMA | 15 AMPERE                                                                                      |      | 20 AMPERE                                                                                      |                                                                                                | 30 AMPERE                                                                                      |                                                                                                | 50 AMPERE  |      | 60 AMPERE  |      |
|-----------------|------|------------------------------------------------------------------------------------------------|------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------|------|------------|------|
|                 |      | RECEPTACLE                                                                                     | PLUG | RECEPTACLE                                                                                     | PLUG                                                                                           | RECEPTACLE                                                                                     | PLUG                                                                                           | RECEPTACLE | PLUG | RECEPTACLE | PLUG |
| 3Ø250V          | L15  |                                                                                                |      | <br>L15-20R   | <br>L15-20P   | <br>L15-30R   | <br>L15-30P   |            |      |            |      |
| 3Ø480V          | L16  |                                                                                                |      | <br>L16-20R   | <br>L16-20P   | <br>L16-30R   | <br>L16-30P   |            |      |            |      |
| 3Ø600V          | L17  |                                                                                                |      |                                                                                                |                                                                                                | <br>L17-30R   | <br>L17-30P   |            |      |            |      |
| 3ØY<br>120/208V | L18  | <br>L18-20R   |      | <br>L18-20P   |                                                                                                | <br>L18-30R   | <br>L18-30P   |            |      |            |      |
| 3ØY<br>277/480V | L19  | <br>L19-20R   |      | <br>L19-20P   |                                                                                                | <br>L19-30R   | <br>L19-30P   |            |      |            |      |
| 3ØY<br>347/600V | L20  | <br>L20-20R |      | <br>L20-20P |                                                                                                | <br>L20-30R | <br>L20-30P |            |      |            |      |
| 3ØY<br>120/208V | L21  | <br>L21-20R |      | <br>L21-20P |                                                                                                | <br>L21-30R | <br>L21-30P |            |      |            |      |
| 3ØY<br>277/480V | L22  | <br>L22-20R |      | <br>L22-20P |                                                                                                | <br>L22-30R | <br>L22-30P |            |      |            |      |
| 3ØY<br>347/600V | L23  | <br>L23-20R |      | <br>L23-20P |                                                                                                | <br>L23-30R | <br>L23-30P |            |      |            |      |
| 347V            | L24  |                                                                                                |      | <br>L24-20R | <br>L24-20P |                                                                                                |                                                                                                |            |      |            |      |

Complete catalog available online at: [www.lapptannehill.com](http://www.lapptannehill.com)

## Lacing Tape A-A-52080 Type 1 (MIL-T-43435B Type I)

**Construction:** Flat braid made from high tenacity continuous nylon yarn.

**Features:**

- High tensile strength,
- Good chemical resistance,
- Excellent abrasion resistance,
- Excellent knot retention.

**Temperature:** 55° C to +121°C

**Elongation:** 40% max

**Finish weight (impregnated % of material by weight):**

- Finish A (natural)
- Finish B (wax): 15% – 32%
- Finish C (synthetic rubber/ elastomer): 7% – 17%
- Finish E (synthetic resin/vinyl): 15% – 30%

**Finishes:**

A. Natural, No finish

B. Wax: A microcrystalline wax with a melting point above 54°C compounded with a fungicide that does not contain either copper or mercuric materials. Excellent knot retention, yet the finish does not have too great a “waxy” feel to the user. Microcrystalline wax is soft, pliable, and easy to tie.

C. Synthetic Rubber or Elastomer: A special continuous coating of fungistatic synthetic rubber containing no corrosive compounding ingredients. Knots tied with this finish will not slip. This finish will not flake or dust.

D. Glass/TFE: The glass/TFE combination has excellent tensile strength and abrasion resistance. Also resists fungus, acids and flames.

E. Synthetic Resin or Vinyl: A thermoplastic synthetic resin with a melting point above 177°C for use where a “wax free” type is specified. It is a non-dusting or flaking, dry finish with good knot tying qualities.



| Part No. | Finish | Color        | Width, Nom |      | Thickness, Nom. |      | Break Strength, Min. |      | Availability* |     |
|----------|--------|--------------|------------|------|-----------------|------|----------------------|------|---------------|-----|
|          |        |              | Inch       | mm   | Inch            | mm   | lb                   | kg   | Yd            | m   |
| 801530W  | A      | Natural      | 0.050      | 1.27 | 0.010           | 0.25 | 15                   | 6.8  | 500           | 457 |
| 801536B  | B      | Black        | 0.050      | 1.27 | 0.010           | 0.25 | 15                   | 6.8  | 500           | 457 |
| 801536W  | B      | Natural      | 0.050      | 1.27 | 0.010           | 0.25 | 15                   | 6.8  | 500           | 457 |
| 802534B  | B      | Black        | 0.060      | 1.52 | 0.012           | 0.30 | 25                   | 11.3 | 500           | 457 |
| 802534W  | B      | Natural      | 0.060      | 1.52 | 0.012           | 0.30 | 25                   | 11.3 | 500           | 457 |
| LC-134   | B      | Black, White | 0.060      | 1.52 | 0.012           | 0.30 | 25                   | 11.3 | 500           | 457 |
| 805032B  | E      | Black        | 0.085      | 2.16 | 0.014           | 0.36 | 50                   | 22.7 | 500           | 457 |
| 805032W  | E      | Natural      | 0.085      | 2.16 | 0.014           | 0.36 | 50                   | 22.7 | 500           | 457 |
| 805036B  | B      | Black        | 0.085      | 2.16 | 0.014           | 0.36 | 50                   | 22.7 | 500           | 457 |
| 805036W  | B      | Natural      | 0.085      | 2.16 | 0.014           | 0.36 | 50                   | 22.7 | 500           | 457 |
| 805040B  | C      | Black        | 0.085      | 2.16 | 0.014           | 0.36 | 50                   | 22.7 | 500           | 457 |
| 805040W  | C      | Natural      | 0.085      | 2.16 | 0.014           | 0.36 | 50                   | 22.7 | 500           | 457 |
| LC-143   | E      | Black, White | 0.085      | 2.16 | 0.014           | 0.36 | 50                   | 22.7 | 500           | 457 |
| 808036B  | B      | Black        | 0.110      | 2.79 | 0.015           | 0.38 | 80                   | 36.3 | 250           | 228 |
| 808036W  | B      | White        | 0.110      | 2.79 | 0.015           | 0.38 | 80                   | 36.3 | 250           | 228 |

\*Bobbins/tubes may contain multiple lengths.

Specifications subject to change. For complete specifications and availability visit [www.lapptannehill.com](http://www.lapptannehill.com)



## A-A-52081 (formerly MIL-T-43435B Type II)

**Construction:** Flat braid made from high-tenacity continuous polyester yarn.

**Temperature:** 73°C to +177°C

**Elongation:** 40% max

**Finish weight (impregnated % of material by weight):**

- Finish A (natural)
- Finish B (wax): 15% – 32%
- Finish C (synthetic rubber/elastomer): 7% – 17%
- Finish E (synthetic resin/vinyl): 15% – 30%

| Part No. | Finish | Color        | Width, Nom. |      | Thickness, Nom. |      | Break Strength, Min. |      | Availability* |     |
|----------|--------|--------------|-------------|------|-----------------|------|----------------------|------|---------------|-----|
|          |        |              | Inch        | mm   | Inch            | mm   | lb                   | kg   | Yd            | m   |
| 801566B  | C      | Black        | 0.050       | 1.27 | 0.010           | 0.25 | 15                   | 6.8  | 500           | 457 |
| 802566B  | C      | Black        | 0.060       | 1.52 | 0.012           | 0.30 | 25                   | 11.3 | 500           | 457 |
| C164     | B      | Black, White | 0.062       | 1.57 | 0.010           | 0.25 | 25                   | 11.3 | 500           | 457 |
| 805058B  | E      | Black        | 0.085       | 2.16 | 0.014           | 0.36 | 50                   | 22.7 | 500           | 457 |
| 805058W  | E      | Natural      | 0.085       | 2.16 | 0.014           | 0.36 | 50                   | 22.7 | 500           | 457 |
| 805060B  | A      | Black        | 0.085       | 2.16 | 0.014           | 0.36 | 50                   | 22.7 | 500           | 457 |
| 805062B  | B      | Black        | 0.085       | 2.16 | 0.014           | 0.36 | 50                   | 22.7 | 500           | 457 |
| 805062W  | B      | Natural      | 0.085       | 2.16 | 0.014           | 0.36 | 50                   | 22.7 | 500           | 457 |
| 805066W  | C      | Natural      | 0.085       | 2.16 | 0.014           | 0.36 | 50                   | 22.7 | 500           | 457 |
| C162     | B      | Black, White | 0.085       | 2.16 | 0.014           | 0.36 | 50                   | 22.7 | 500           | 457 |
| 808060W  | A      | Natural      | 0.110       | 2.79 | 0.015           | 0.38 | 80                   | 36.3 | 500           | 457 |
| 808058B  | E      | Black        | 0.110       | 2.79 | 0.015           | 0.38 | 80                   | 36.3 | 250           | 228 |
| C160     | B      | Black, White | 0.200       | 5.08 | 0.016           | 0.41 | 135                  | 61.2 | 250           | 228 |

\*Bobbins/tubes may contain multiple lengths.

## A-A-52083 (formerly MIL-T-43435B Type IV)

**Construction:** Flat braid made from continuous filament glass yarn coated with PTFE before braiding.

**Temperature:** Glass maintain strength and stability to 427°C.

**Elongation:** 5% max

**Finish weight (impregnated % of material by weight):**

Finish D (glass/TFE): 10% – 20%

| Part No. | Finish | Color   | Width, Nom. |      | Thickness, Nom. |      | Break Strength, Min. |      | Availability* |     |
|----------|--------|---------|-------------|------|-----------------|------|----------------------|------|---------------|-----|
|          |        |         | Inch        | mm   | Inch            | mm   | lb                   | kg   | Yd            | m   |
| 807510W  | D      | Natural | 0.085       | 2.16 | 0.016           | 0.41 | 75                   | 34.0 | 500           | 457 |
| 810010W  | D      | Natural | 0.110       | 2.79 | 0.016           | 0.41 | 100                  | 45.3 | 250           | 228 |

\*Bobbins/tubes may contain multiple lengths.



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## A-A-52084 (formerly MIL-T-43435B Type V)

**Construction:** Flat braid made from continuous filament aramid yarn.

**Temperature:** -55°C to +260°C

**Elongation:** 40% max

**Finish weight (impregnated % of material by weight):**

- Finish C (synthetic rubber/elastomer): 7% – 17%

| Part No. | Finish | Color   | Width, Nom. |      | Thickness, Nom. |      | Break Strength, Min. |      | Availability* |     |
|----------|--------|---------|-------------|------|-----------------|------|----------------------|------|---------------|-----|
|          |        |         | Inch        | mm   | Inch            | mm   | lb                   | kg   | Yd            | m   |
| 803554   | C      | Natural | 0.075       | 1.91 | 0.012           | 0.30 | 35                   | 15.9 | 500           | 457 |

\*Bobbins/tubes may contain multiple lengths.

## MIL-DTL-713 Type P

**Construction:** Twisted nylon cord made from high-tenacity continuous filament yarn.

**Temperature:** 55° C to +121°C

**Elongation:** 20% min.

**Finish weight (impregnated % of material by weight):**

- Finish B (wax): 20% – 32%

| Part No. | Finish | Color   | Diameter, Nom. |      | Break Strength, Min. |      | Availability* |      |
|----------|--------|---------|----------------|------|----------------------|------|---------------|------|
|          |        |         | Inch           | mm   | lb                   | kg   | lb            | kg   |
| 803215B  | B      | Black   | 0.023          | 0.58 | 32                   | 14.5 | 1             | 0.45 |
| 803215W  | B      | Natural | 0.023          | 0.58 | 32                   | 14.5 | 1             | 0.45 |
| 804812W  | A      | Natural | 0.025          | 0.64 | 48                   | 21.8 | 1             | 0.45 |
| 804814B  | B      | Black   | 0.025          | 0.64 | 48                   | 21.8 | 1             | 0.45 |
| 804814W  | B      | Natural | 0.025          | 0.64 | 48                   | 21.8 | 1             | 0.45 |
| 807013B  | B      | Black   | 0.040          | 1.02 | 70                   | 31.7 | 1             | 0.45 |
| 807013W  | B      | Natural | 0.040          | 1.02 | 70                   | 31.7 | 1             | 0.45 |

\*Weight per spool; bobbins/tubes may contain multiple lengths.

## Telecommunications-Grade Polyester Yarn

**Construction:** Round, twisted polyester cord made from high-tenacity industrial polyester fiber.

**Melt Temperature:** 121°C

**Elongation:** 17% – 27%

**Finish weight (impregnated % of material by weight):**

- 9 ply: 7% – 17%
- 12 ply: 35%

| Part No. | Finish | Color   | Diameter, Nom. |      | Break Strength, Min. |      | Plies | Availability* |      |
|----------|--------|---------|----------------|------|----------------------|------|-------|---------------|------|
|          |        |         | Inch           | mm   | lb                   | kg   |       | lb            | kg   |
| 812030W  | Wax    | Natural | 0.030          | 0.76 | 32                   | 14.5 | 9     | 0.5           | 0.22 |
| 815040W  | Wax    | Natural | 0.030          | 0.76 | 32                   | 14.5 | 12    | 0.5           | 0.22 |

\*Weight per tube; bobbins/tubes may contain multiple lengths.



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