

## TMS-SCE Military grade heat shrinkable wire identification sleeves

TMS-SCE marker sleeves are designed to meet the wire and cable marking needs of manufacturers with high performance requirements. Made from durable, flame retarded, radiation-crosslinked heat-shrinkable polyolefin, TMS-SCE marker sleeves can be used in a wide variety of applications. The marker sleeves meet the performance requirements of SAE-AMS- DTL-23053/5 classes 1 and 3 and the TMS-SCE-2X products are made from tubing fully compliant with this specification. The marks are permanent immediately after printing and remain legible even when exposed to abrasion, aggressive cleaning solvents, and military fuels and oils. The sleeves meet the mark permanence requirements of SAE AS81531 4.6.2 and MIL-STD-202F both before and after shrinking.

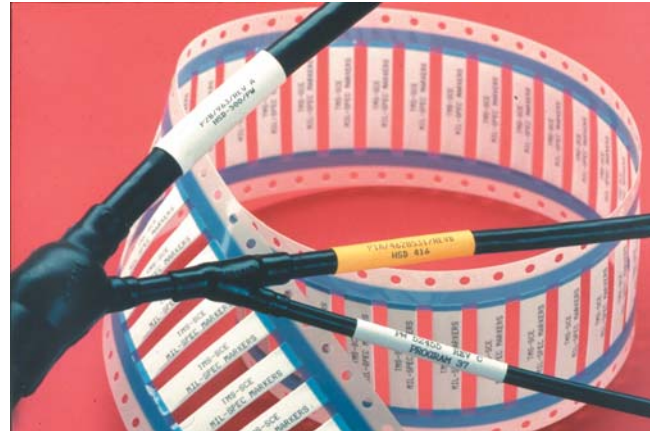
Both 2:1 and 3:1 shrink ratios are available. The 2:1 products provide a thick, rugged sleeve wall and are particularly easy to handle. The lightweight 3:1 products provide extremely fast shrinking and cover a wider range of wire diameters, thus simplifying inventory.

The marker sleeves are designed to be printed by computer-driven dot matrix or thermal transfer printers, providing several advantages in terms of reduced errors, cycle time and cost.

Supplied in a thin, flat "ladder" format, the sleeves are held horizontally between two hole-punched polyester strips. This configuration feeds directly from the storage box into a Tyco Electronics-recommended printer. Tyco Electronics-recommended ribbons should always be used. The ladder format provides automatic kitting of the marker sleeves in the desired sequence. A standard heat gun with reflector is used to shrink the sleeves onto the wire or cable.

## Features and benefits

- Permanent identification sleeves.
- Computer-printable.
- Lightweight for aerospace applications.
- Military specification material and print performance.
- 2:1 and 3:1 shrink ratio.
- CSA Certified.
- UL Recognized, VW all flame tubing test rated.
- Quick recovery for heat sensitive areas.



## Temperature rating

|                              |                 |                 |
|------------------------------|-----------------|-----------------|
| Operating temperature range  | -55°C to +135°C | -67°F to +275°F |
| Minimum recovery temperature | +85°C           | +185°F          |
| Maximum storage temperature  | +40°C           | +104°F          |

## Specifications/approvals

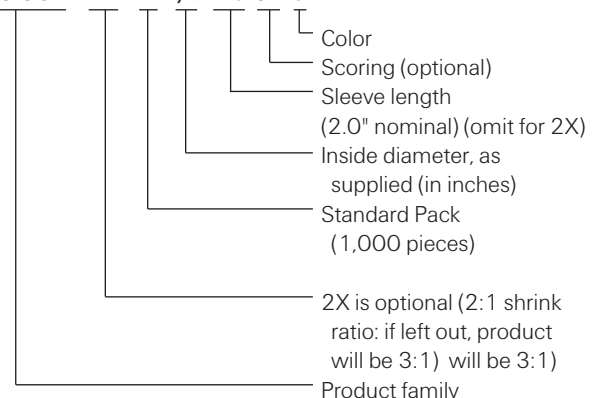
|                  |                                                                                     |
|------------------|-------------------------------------------------------------------------------------|
| Tyco Electronics | RW-2511                                                                             |
| Military         | SAE-AMS-DTL-23053/5 classes 1 and 3,<br>SAE AS81531 4.6.2, MIL-STD-202F Method 215J |
| Industry         | UL Recognized – Standard 224, file E35586<br>CSA Certified – File 31929             |

## Printer information

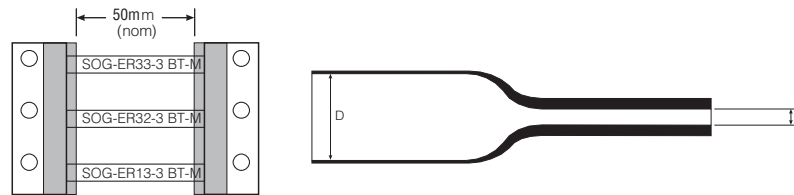
|                          |                                                                                                                                          |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Tyco Electronics printer | AM6310 (dot matrix)<br>T200 Series (thermal transfer, low volume)<br>T312M (thermal transfer)                                            |
| Tyco Electronics ribbon  | 1892BK04-RIBBON (dot matrix)<br>TMS-101-RIBBON-4RPSCE (thermal transfer for T208M)<br>TMS-RJS-RIBBON-4RPSCE (thermal transfer for T312M) |

## Part numbering system

TMS-SCE - 2X -1K-1/8-2.0-S1-9



Ordering information



Available sizes and formats

| Ordering description                                                | Inside diameter      |               |                       |               | Recommended use range |               | Recovered wall thickness |               | Weight |
|---------------------------------------------------------------------|----------------------|---------------|-----------------------|---------------|-----------------------|---------------|--------------------------|---------------|--------|
|                                                                     | Expanded D (minimum) |               | Recovered d (maximum) |               |                       |               |                          |               |        |
|                                                                     | mm                   | <i>inches</i> | mm                    | <i>inches</i> | mm                    | <i>inches</i> | mm                       | <i>inches</i> |        |
| TMS-SCE-1K- <sup>3</sup> / <sub>32</sub> -2.0- <i>&lt;color&gt;</i> | 2.36                 | 0.093         | 0.79                  | 0.031         | 0.81 - 1.90           | 0.032 - 0.075 | 0.53 ± 0.08              | 0.021 ± 0.003 | 1.50   |
| TMS-SCE-2X-1K- <sup>3</sup> / <sub>32</sub> - <i>&lt;color&gt;</i>  | 2.36                 | 0.093         | 1.17                  | 0.046         | 1.27 - 1.90           | 0.050 - 0.075 | 0.64 ± 0.08              | 0.025 ± 0.003 | 2.04   |
| TMS-SCE-1K- <sup>1</sup> / <sub>8</sub> -2.0- <i>&lt;color&gt;</i>  | 3.18                 | 0.125         | 1.07                  | 0.042         | 1.11 - 2.66           | 0.044 - 0.105 | 0.58 ± 0.08              | 0.023 ± 0.003 | 2.03   |
| TMS-SCE-2X-1K- <sup>1</sup> / <sub>8</sub> - <i>&lt;color&gt;</i>   | 3.18                 | 0.125         | 1.58                  | 0.062         | 1.75 - 2.66           | 0.069 - 0.105 | 0.64 ± 0.08              | 0.025 ± 0.003 | 2.75   |
| TMS-SCE-1K- <sup>3</sup> / <sub>16</sub> -2.0- <i>&lt;color&gt;</i> | 4.75                 | 0.187         | 1.57                  | 0.062         | 1.75 - 4.06           | 0.069 - 0.160 | 0.58 ± 0.08              | 0.023 ± 0.003 | 2.68   |
| TMS-SCE-2X-1K- <sup>3</sup> / <sub>16</sub> - <i>&lt;color&gt;</i>  | 4.75                 | 0.187         | 2.36                  | 0.093         | 2.54 - 4.06           | 0.100 - 0.160 | 0.64 ± 0.08              | 0.025 ± 0.003 | 3.62   |
| TMS-SCE-1K- <sup>1</sup> / <sub>4</sub> -2.0- <i>&lt;color&gt;</i>  | 6.35                 | 0.250         | 2.11                  | 0.083         | 2.31 - 5.46           | 0.091 - 0.215 | 0.58 ± 0.08              | 0.023 ± 0.003 | 3.51   |
| TMS-SCE-2X-1K- <sup>1</sup> / <sub>4</sub> - <i>&lt;color&gt;</i>   | 6.35                 | 0.250         | 3.18                  | 0.125         | 3.81 - 5.46           | 0.150 - 0.215 | 0.64 ± 0.08              | 0.025 ± 0.003 | 5.94   |
| TMS-SCE-1K- <sup>3</sup> / <sub>8</sub> -2.0- <i>&lt;color&gt;</i>  | 9.53                 | 0.375         | 3.18                  | 0.125         | 3.47 - 8.12           | 0.137 - 0.320 | 0.61 ± 0.08              | 0.024 ± 0.003 | 5.04   |
| TMS-SCE-2X-1K- <sup>3</sup> / <sub>8</sub> - <i>&lt;color&gt;</i>   | 9.53                 | 0.375         | 4.75                  | 0.187         | 5.59 - 8.12           | 0.220 - 0.320 | 0.64 ± 0.08              | 0.025 ± 0.003 | 8.50   |
| TMS-SCE-1K- <sup>1</sup> / <sub>2</sub> -2.0- <i>&lt;color&gt;</i>  | 12.70                | 0.500         | 4.22                  | 0.166         | 4.64 - 10.79          | 0.183 - 0.425 | 0.61 ± 0.08              | 0.024 ± 0.003 | 6.81   |
| TMS-SCE-2X-1K- <sup>1</sup> / <sub>2</sub> - <i>&lt;color&gt;</i>   | 12.70                | 0.500         | 6.35                  | 0.250         | 6.99 - 10.79          | 0.275 - 0.425 | 0.64 ± 0.08              | 0.025 ± 0.003 | 11.45  |
| TMS-SCE-1K- <sup>3</sup> / <sub>4</sub> -2.0- <i>&lt;color&gt;</i>  | 19.05                | 0.750         | 6.35                  | 0.250         | 6.99 - 16.25          | 0.275 - 0.640 | 0.61 ± 0.08              | 0.024 ± 0.003 | 12.03  |
| TMS-SCE-2X-1K- <sup>3</sup> / <sub>4</sub> - <i>&lt;color&gt;</i>   | 19.05                | 0.750         | 9.53                  | 0.375         | 10.16 - 16.25         | 0.400 - 0.640 | 0.76 ± 0.08              | 0.030 ± 0.003 | 20.63  |
| TMS-SCE-1K-1-2.0- <i>&lt;color&gt;</i>                              | 25.40                | 1.000         | 8.46                  | 0.333         | 9.29 - 21.59          | 0.366 - 0.850 | 0.64 ± 0.08              | 0.025 ± 0.003 | 15.35  |
| TMS-SCE-1K-1 <sup>1</sup> / <sub>2</sub> -2.0- <i>&lt;color&gt;</i> | 38.10                | 1.500         | 19.05                 | 0.750         | 20.95 - 33.02         | 0.825 - 1.300 | 0.51 ± 0.08              | 0.020 ± 0.003 | 27.51  |
| TMS-SCE-1K-2-2.0- <i>&lt;color&gt;</i>                              | 50.80                | 2.000         | 25.40                 | 1.000         | 27.94 - 44.95         | 1.100 - 1.750 | 0.64 ± 0.08              | 0.025 ± 0.003 | 47.27  |
| TMS-SCE-1K-2 <sup>1</sup> / <sub>4</sub> -2.0- <i>&lt;color&gt;</i> | 57.15                | 2.250         | 19.05                 | 0.750         | 22.32 - 50.80         | 0.880 - 2.000 | 0.76 ± 0.08              | 0.030 ± 0.003 | 42.06  |

Total width as supplied 90.18 mm (3.550 inches) including tape and carrier width.

Options

|                       |                                                                           |  |                                                                                                                 |       |             |       |             |        |      |       |
|-----------------------|---------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------|-------|-------------|-------|-------------|--------|------|-------|
| Prescoring            | Perforated score to produce multiple markers from each sleeve.            |  |                                                                                                                 |       |             |       |             |        |      |       |
|                       | Number of prescores                                                       |  | 1 prescore                                                                                                      |       | 2 prescores |       | 3 prescores |        |      |       |
|                       | Code                                                                      |  | S1                                                                                                              |       | S2          |       | S3          |        |      |       |
| Package sizes         | Standard                                                                  |  | 1K - 1000-piece packs                                                                                           |       |             |       |             |        |      |       |
|                       | Nonstandard                                                               |  | Smaller and larger pack sizes are available. Please contact Tyco Electronics.                                   |       |             |       |             |        |      |       |
|                       | Fanfolded                                                                 |  | Fanfolded option available for use with dot matrix printers                                                     |       |             |       |             |        |      |       |
| Colors                | Standard                                                                  |  | Yellow                                                                                                          | White |             |       |             |        |      |       |
|                       | Code                                                                      |  | 4                                                                                                               | 9     |             |       |             |        |      |       |
|                       | Nonstandard                                                               |  | Red                                                                                                             | Pink  | Orange      | Green | Blue        | Violet | Gray | Black |
|                       | Code                                                                      |  | 2                                                                                                               | 2L    | 3           | 5     | 6           | 7      | 8    | 0     |
|                       | Note:                                                                     |  | 2X products meet the color requirements of MIL-STD-104 class 1; otherwise colors are pastel for print contrast. |       |             |       |             |        |      |       |
| Ordering information: | Specify product name, pack size, sleeve size, prescore format, and color. |  |                                                                                                                 |       |             |       |             |        |      |       |
| Ordering example:     | TMS-SCE-1K- <sup>1</sup> / <sub>8</sub> -2.0-S1-9 (scored once)           |  |                                                                                                                 |       |             |       |             |        |      |       |

## CM-SCE Polyolefin tie-on cable marker tags

CM-SCE markers are flat, rigid, non-adhesive labels that can be used to identify large cables and wire bundles in environments such as military and aerospace. Marker tags are applied to cables or wire bundles with cable ties.

Print performance meets or exceeds the requirements of SAE AS81531 4.6.2 and MIL-STD-202F.

## Features and benefits

- Side entry provides access to big size and wire bundles as well as retrofit and repair capability.
- Highly flame-retardant.
- Highly resistant to abrasion, mechanical abuses, fluids, lubricants and solvents.
- Ease of use: markers can be easily removed from the carrier.
- Easy installation: only standard cable tie-wraps are needed to install markers. No extra steps required.
- Excellent print permanence when printing on the rough side of the marker.



## Temperature rating

|                             |                 |                 |
|-----------------------------|-----------------|-----------------|
| Operating temperature range | -55°C to +135°C | -67°F to +275°F |
|-----------------------------|-----------------|-----------------|

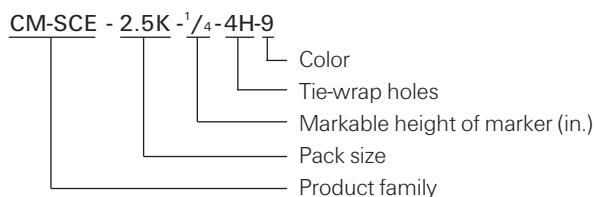
## Specifications/approvals

|                  |                                    |
|------------------|------------------------------------|
| Tyco Electronics | RW-2513                            |
| Military         | Mark permanence: SAE AS81531 4.6.2 |
|                  | Solvent resistance: MIL-STD-202F   |
|                  | Method 215J                        |

## Printer information

|                          |                                           |
|--------------------------|-------------------------------------------|
| Tyco Electronics printer | AM6310 (dot matrix)                       |
|                          | T312M (thermal transfer)                  |
| Tyco Electronics ribbon  | 1892BK04-RIBBON (dot matrix) (dot matrix) |
|                          | 1966-RIBBON (thermal transfer)            |

## Part numbering system



Ordering information

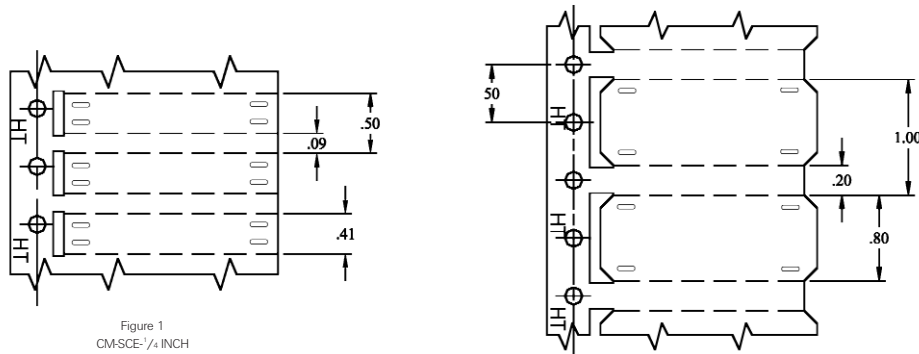


Figure 1  
CM-SCE-1/4 INCH

Available sizes and formats

| Ordering description       | Size | Markable height |        | Markable length |        | Recommended use range |               |
|----------------------------|------|-----------------|--------|-----------------|--------|-----------------------|---------------|
|                            |      | mm              | inches | mm              | inches | mm                    | inches        |
| CM-SCE-1/4-6H- <color>     | 1/4  | 6.40            | 0.250  | 50.80           | 2.000  | 5.08 – 12.50          | 0.200 – 0.492 |
| CM-SCE-1/4-4H- <color>     | 1/4  | 6.40            | 0.250  | 50.80           | 2.000  | 5.08 – 12.50          | 0.200 – 0.492 |
| CM-SCE-TP-1/4-4H- <color>* | 1/4  | 6.40            | 0.250  | 50.80           | 2.000  | 5.08 – 12.50          | 0.200 – 0.492 |
| CM-SCE-1/2-4H- <color>     | 1/2  | 12.70           | 0.500  | 50.80           | 2.000  | 12.50 and up          | 0.492 and up  |
| CM-SCE-TP-1/2-4H- <color>* | 1/2  | 12.70           | 0.500  | 50.80           | 2.000  | 12.50 and up          | 0.492 and up  |
| CM-SCE-1/2-6H- <color>     | 1/2  | 12.70           | 0.500  | 50.80           | 2.000  | 12.50 and up          | 0.492 and up  |
| CM-SCE-TP-1/2-6H- <color>* | 1/2  | 12.70           | 0.500  | 50.80           | 2.000  | 12.50 and up          | 0.492 and up  |

\* for thermal transfer printing

Options

|                |               |                                           |
|----------------|---------------|-------------------------------------------|
| Tie-wrap holes | 1/4-inch tags | Four holes standard                       |
|                | 1/2-inch tags | Four holes      Six holes                 |
|                | Code          | 4H                  6H                    |
| Fanfold        | Code          | Fx (substitute package size code for "x") |
| Package sizes  | Standard      | 250 pieces                                |
| Colors         | Standard      | White                                     |
|                | Code          | 9                                         |
|                | Nonstandard   | Yellow                                    |
|                | Code          | 4                                         |

Ordering information: Specify product name, markable height of marker, pack size, number of tie wraps and color.

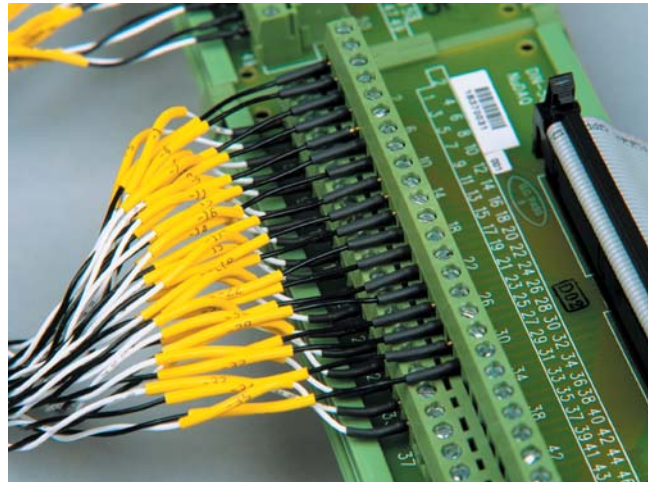
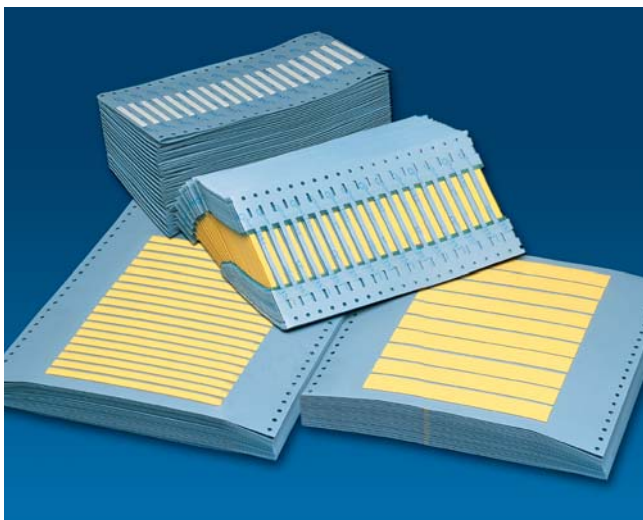
Ordering example: CM-SCE-2.5K-1/4-4H-9

## HS 2:1 Shrink ratio heat shrinkable wire identification system

HS sleeves are thin wall, flame retarded radiation cross-linked polyolefin heat-shrinkable tubing, assembled as organized cut sleeves on a paper carrier. HS products are 2:1 shrink ratio. They are used in identification of wires and cables by computer-based printing onto sleeves. These products are suited to a wide variety of applications, including those with military standard requirements. The products meet the material and performance requirements of SAE AMS-DTL-23053/5 class 1.

## Features and benefits

- Shrink ratio of 2:1 recovers to half of supplied diameter. Contact Tyco Electronics for 3:1 option.
- Comes in several sleeve lengths: 38mm, 50mm and 152mm.
- Sleeve diameter from 0.093" to 1.5" (2.4mm to 38.1mm).
- Flame retarded – meets ASTM D 2671 and UL 224 (clause 14) standards.
- Single sided and double sided printing formats available.
- Standard dot matrix printable. Contact Tyco Electronics for thermal printable options.
- Heat resistance: +175°C (+347°F) for 168 hours or +250°C (+482°F) for 4 hours with no deterioration of properties.
- Concentricity: 70% minimum for low distortion of legends.
- Easy-to-use fan-fold format for improved kitting and marker selection.



## Temperature rating

|                              |                 |                 |
|------------------------------|-----------------|-----------------|
| Operating temperature range  | -55°C to +135°C | -67°F to +275°F |
| Minimum recovery temperature | +120°C          | +248°F          |
| Maximum storage temperature  | +40°C           | +104°F          |

## Specifications/approvals

|                  |                                                                                                            |
|------------------|------------------------------------------------------------------------------------------------------------|
| Tyco Electronics | TTDS-033                                                                                                   |
| Military         | SAE AMS-DTL-23053/5 Class 1<br>(material and performance)<br>SAE AS81531 4.6.2<br>MIL-STD-202F Method 215J |
| Industry         | ASTM D 2671<br>UL 224 (clause 14)                                                                          |

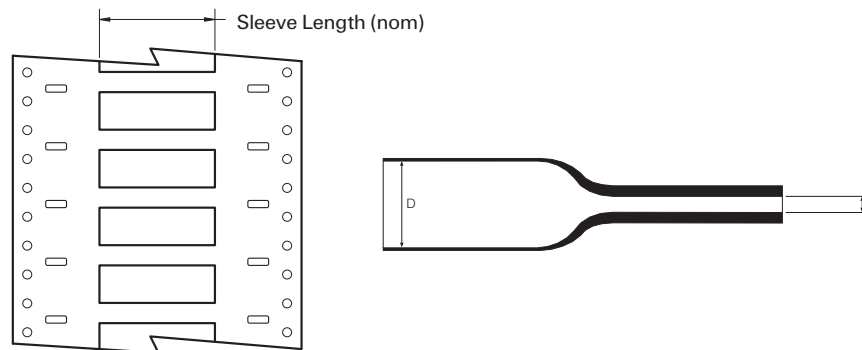
## Printer information

|                          |                                                                   |
|--------------------------|-------------------------------------------------------------------|
| Tyco Electronics printer | AM6310 (dot matrix)                                               |
| Tyco Electronics ribbon  | 1892BK03 (dot matrix – high performance)<br>1892BK04 (dot matrix) |

## Part numbering system

|                      |                                  |
|----------------------|----------------------------------|
| HS-048-YW-1-NF-050-B |                                  |
| HS                   | Product family                   |
| 048                  | Inside diameter as supplied (mm) |
| YW                   | Color                            |
| 1                    | Scoring                          |
| NF                   | Format                           |
| 050                  | Sleeve length (mm)               |
| B                    | Pack size                        |

Ordering information



Available sizes and formats

| Ordering<br>description                             | Inside diameter        |               |                           |               |                          |               | Pack size (uncut sleeves)<br>NF(B)    DS(B)    WF(B) |                   |     |
|-----------------------------------------------------|------------------------|---------------|---------------------------|---------------|--------------------------|---------------|------------------------------------------------------|-------------------|-----|
|                                                     | D (min)<br>As supplied |               | d (max)<br>After recovery |               | Recommended<br>use range |               |                                                      |                   |     |
|                                                     |                        |               |                           |               |                          |               |                                                      |                   |     |
|                                                     | mm                     | <i>inches</i> | mm                        | <i>inches</i> | mm                       | <i>inches</i> | 38 and 50mm<br>lengths                               | 152 mm<br>lengths |     |
| HS024- <color-prescore-format-length-pack size>2.40 | 0.093                  |               | 1.17                      | 0.050         | 1.27-1.90                | 0.050-0.075   | 1650                                                 | 1100              | N/A |
| HS032-<color-prescore-format-length-pack size> 3.20 | 0.126                  |               | 1.58                      | 0.060         | 1.75-2.66                | 0.069-0.105   | 1100                                                 | 1100              | 550 |
| HS048-<color-prescore-format-length-pack size> 4.80 | 0.189                  |               | 2.36                      | 0.090         | 2.54-4.06                | 0.100-0.160   | 1100                                                 | 1100              | 500 |
| HS064-<color-prescore-format-length-pack size> 6.35 | 0.250                  |               | 3.18                      | 0.125         | 3.81-5.46                | 0.150-0.215   | 550                                                  | 550               | 500 |
| HS095-<color-prescore-format-length-pack size> 9.53 | 0.374                  |               | 4.75                      | 0.187         | 5.59-8.12                | 0.220-0.320   | 550                                                  | 550               | 275 |
| HS127-<color-prescore-format-length-pack size>12.70 | 0.500                  |               | 6.35                      | 0.250         | 6.99-10.79               | 0.275-0.425   | 550                                                  | 300               | 250 |
| HS190-<color-prescore-format-length-pack size>19.05 | 0.750                  |               | 9.53                      | 0.375         | 10.16-16.25              | 0.400-0.640   | 300                                                  | 300               | 175 |
| HS254-<color-prescore-format-length-pack size>25.40 | 1.000                  |               | 12.70                     | 0.500         | 9.29-21.59               | 0.366-0.850   | 300                                                  | 300               | 125 |
| HS381-<color-prescore-format-length-pack size>38.10 | 1.500                  |               | 19.05                     | 0.750         | 20.95-22.02              | 0.825-1.300   | 100                                                  | 100               | 75  |

Options

|            |                                                                   |             |            |             |             |              |
|------------|-------------------------------------------------------------------|-------------|------------|-------------|-------------|--------------|
| Prescoring | Perforated score to produce multiple marker sleeves from each HS. |             |            |             |             |              |
|            | Number of prescores                                               | 0 prescores | 1 prescore | 2 prescores | 3 prescores | 5* prescores |
|            | Markers per sleeve                                                | 1           | 2          | 3           | 4           | 6*           |
|            | Code                                                              | 1           | 2          | 3           | 4           | 6*           |

\*Wide format only

|                     |          |                                                                                                             |                                  |
|---------------------|----------|-------------------------------------------------------------------------------------------------------------|----------------------------------|
| Package sizes       | B        | Standard for narrow format: NF (single sided) and DS (double sided)                                         |                                  |
|                     | X        | Bulk for narrow format (contains double the number of markers in a narrow format B pack): NF (single sided) |                                  |
|                     | B        | Standard for wide format: WF (single sided)                                                                 |                                  |
| Colors              | Standard | White                                                                                                       | Yellow                           |
|                     | Code     | WE                                                                                                          | YW                               |
| Format              | NF       | Single-sided printing – narrow format                                                                       |                                  |
|                     | DS       | Double-sided printing – narrow format                                                                       |                                  |
|                     | WF       | Single-sided printing – wide format                                                                         |                                  |
| Uncut sleeve length | 038      | 38 mm (1.5") – narrow format                                                                                | Ordering example: HS032WE2NF038B |
|                     | 050      | 50 mm (2") – narrow format                                                                                  | Ordering example: HS064YW3NF050X |
|                     | 152      | 152 mm (6") – wide format                                                                                   | Ordering example: HS095WE6WF152B |

Ordering information: Specify product name, color, prescores, format, sleeve length and pack size.

Ordering example: HS032WE2NF038B

Used to identify large cables and bundles either pre- or post-termination, these flame retarded HL cable markers are suitable for use in environments with temperatures of  $-55^{\circ}\text{C}$  to  $+135^{\circ}\text{C}$  ( $-67^{\circ}\text{F}$  to  $+275^{\circ}\text{F}$ ). The markers are easily applied with standard cable ties.

HL markers are presented as organized markers assembled onto either a fanfolded or reeled paper carrier for ease of selection and kitting and are available in an extensive range of sizes.

They are available with the surface designed for either dot matrix or thermal transfer printers.

### Features and benefits

- Recommended for use where de-termination of wires is not possible for large ID wires or wire bundles.
- Heat resistant to  $+175^{\circ}\text{C}$  for 168 hours or  $+250^{\circ}\text{C}$  for 4 hours with no deterioration in properties.
- Several printable widths and heights available.
- Non-standard color options available.



### Temperature rating

|                             |                                                 |                                                 |
|-----------------------------|-------------------------------------------------|-------------------------------------------------|
| Operating temperature range | $-55^{\circ}\text{C}$ to $+135^{\circ}\text{C}$ | $-65^{\circ}\text{F}$ to $+275^{\circ}\text{F}$ |
|-----------------------------|-------------------------------------------------|-------------------------------------------------|

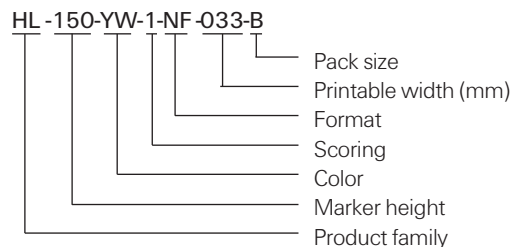
### Specifications/approvals

|                  |                          |
|------------------|--------------------------|
| Tyco Electronics | TTDS-037                 |
| Military         | SAE AS81531 4.6.2        |
|                  | MIL-STD-202F Method 215J |
| Industry         | UL 224 (clause 14)       |
|                  | ASTM D 2671              |

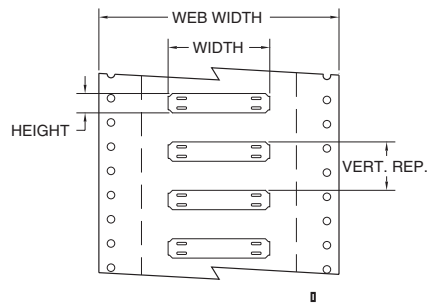
### Printer information

|                          |                                          |
|--------------------------|------------------------------------------|
| Tyco Electronics printer | AM 6310 (dot matrix)                     |
|                          | T312M (thermal transfer)                 |
| Tyco Electronics ribbon  | 1892BK04 (dot matrix)                    |
|                          | 1892BK03 (dot matrix – high performance) |
|                          | 1950-RIBBON-4T300 (thermal transfer)     |

### Part numbering system



Ordering information



Available sizes and formats

| Ordering description      | Marker dimensions (W X H) |               | Printable area (W X H) |               | Pack size |      |
|---------------------------|---------------------------|---------------|------------------------|---------------|-----------|------|
|                           | mm                        | inches        | mm                     | inches        | NF        | TS   |
| HL104<color>1<format>025B | 45.00 x 10.40             | 1.800 x 0.400 | 25.00 x 10.40          | 1.000 x 0.400 | 550       | 1000 |
| HL104<color>1<format>033B | 52.00 x 10.40             | 2.100 x 0.400 | 33.00 x 10.40          | 1.300 x 0.400 | 550       | 1000 |
| HL104<color>1<format>038B | 58.00 x 10.40             | 2.300 x 0.400 | 38.00 x 10.40          | 1.500 x 0.400 | 550       | 1000 |
| HL104<color>1<format>050B | 70.00 x 10.40             | 2.750 x 0.400 | 50.00 x 10.40          | 2.000 x 0.400 | 550       | 1000 |
| HL104<color>1<format>070B | 90.00 x 10.40             | 3.500 x 0.400 | 70.00 x 10.40          | 2.750 x 0.400 | 550       | 1000 |
| HL150<color>1<format>025B | 45.00 x 15.00             | 1.800 x 0.600 | 25.00 x 15.00          | 1.000 x 0.600 | 550       | 500  |
| HL150<color>1<format>033B | 52.00 x 15.00             | 2.100 x 0.600 | 33.00 x 15.00          | 1.300 x 0.600 | 550       | 500  |
| HL150<color>1<format>038B | 58.00 x 15.00             | 2.300 x 0.600 | 38.00 x 15.00          | 1.500 x 0.600 | 550       | 500  |
| HL150<color>1<format>050B | 70.00 x 15.00             | 2.750 x 0.600 | 50.00 x 15.00          | 2.000 x 0.600 | 550       | 500  |
| HL150<color>1<format>070B | 90.00 x 15.00             | 3.500 x 0.600 | 70.00 x 15.00          | 2.750 x 0.600 | 550       | 500  |
| HL203<color>1<format>025B | 45.00 x 20.30             | 1.800 x 0.800 | 25.00 x 20.30          | 1.000 x 0.800 | 550       | 500  |
| HL203<color>1<format>033B | 52.00 x 20.30             | 2.100 x 0.800 | 33.00 x 20.30          | 1.300 x 0.800 | 550       | 500  |
| HL203<color>1<format>038B | 58.00 x 20.30             | 2.300 x 0.800 | 38.00 x 20.30          | 1.500 x 0.800 | 550       | 500  |
| HL203<color>1<format>050B | 70.00 x 20.30             | 2.750 x 0.800 | 50.00 x 20.30          | 2.000 x 0.800 | 550       | 500  |
| HL203<color>1<format>070B | 90.00 x 20.30             | 3.500 x 0.800 | 70.00 x 20.30          | 2.750 x 0.800 | 550       | 500  |
| HL253<color>1<format>025B | 45.00 x 25.30             | 1.800 x 1.000 | 25.00 x 25.30          | 1.000 x 1.000 | 300       | 250  |
| HL253<color>1<format>033B | 52.00 x 25.30             | 2.100 x 1.000 | 33.00 x 25.30          | 1.300 x 1.000 | 300       | 250  |
| HL253<color>1<format>038B | 58.00 x 25.30             | 2.300 x 1.000 | 38.00 x 25.30          | 1.500 x 1.000 | 300       | 250  |
| HL253<color>1<format>050B | 70.00 x 25.30             | 2.750 x 1.000 | 50.00 x 25.30          | 2.000 x 1.000 | 300       | 250  |
| HL253<color>1<format>070B | 90.00 x 25.30             | 3.500 x 1.000 | 70.00 x 25.30          | 2.750 x 1.000 | 300       | 250  |

Options

|                           |                                                            |              |        |
|---------------------------|------------------------------------------------------------|--------------|--------|
| Prescoring                | Not available on these products – this should always be 1. |              |        |
| Package sizes             | Standard                                                   | B            |        |
| Colors                    | Standard                                                   | White        | Yellow |
|                           | Code                                                       | WE           | YW     |
|                           | Nonstandard                                                | Red          | Blue   |
|                           | Code                                                       | RD           | BE     |
| Format                    | NF – Dot matrix printing (fanfold/single sided)            |              |        |
|                           | TS – Thermal transfer (reel/single sided)                  |              |        |
| Printable Width On Marker | 025                                                        | 25mm (1")    |        |
|                           | 033                                                        | 33mm (1.3")  |        |
|                           | 038                                                        | 38mm (1.5")  |        |
|                           | 050                                                        | 50mm (2")    |        |
|                           | 070                                                        | 70mm (2.75") |        |

Ordering information: Specify product name, marker height, color, scoring option (always 1), format, printable width, and pack size.

Ordering example: HL150YW1NF033B

## HT-SCE High temperature, low outgassing heat shrinkable wire identification sleeves

Tyco Electronics's HT-SCE wire markers are designed for use in high temperature applications or where extreme resistance to fuels, lubricants and cleaning solvents is required. They are also ideal for applications in which low-vacuum outgassing is of high importance. The marker sleeves are made of highly flame retarded, heat-shrinkable fluoropolymer tubing.

HT-SCE markers are supplied as a thin, flat "ladder" of sleeves held horizontally between two polyester strips. This configuration feeds directly from the storage box into standard Tyco Electronics recommended printers, with no modifications necessary. A strip of adhesive tape on each side of the sleeves holds them securely in place for printing and kitting, yet the sleeves pull easily from the carrier strips. A standard heat gun with reflector is used to shrink the sleeves onto the wire or cable to achieve a permanent mark.

After shrinking, HT-SCE markers meet the print performance requirements of SAE AS81531 4.6.2 and MIL-STD-202F. HT-SCE markers are supplied in boxes of 1000 sleeves and are available in nine diameter sizes. These cover substrates from 0.8 mm to 34.0 mm. Because of this versatility, customers need not carry a large inventory of markers.

### Features and benefits

- Permanent identification sleeves.
- High continuous operating temperature.
- Extreme fluid resistance.
- Low-vacuum outgassing.
- Wide range of sleeve sizes for several wire and bundle diameters.



### Temperature rating

|                              |                 |                 |
|------------------------------|-----------------|-----------------|
| Operating temperature range  | -55°C to +225°C | -67°F to +437°F |
| Minimum recovery temperature | +200°C          | +392°F          |
| Maximum storage temperature  | +40°C           | +104°F          |

### Specifications/approvals

|                  |                          |
|------------------|--------------------------|
| Tyco Electronics | RW2512                   |
| Military         | SAE AS 81531 4.6.2       |
|                  | MIL-STD-202F Method 215J |

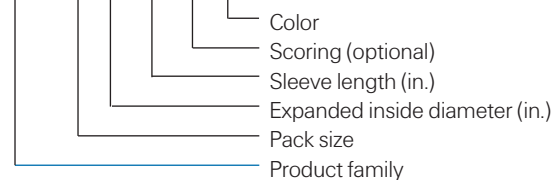
### Printer information

|                          |                                       |
|--------------------------|---------------------------------------|
| Tyco Electronics printer | T312M (thermal transfer)              |
| Tyco Electronics ribbon  | TMS-RJS-RIBBON-4HT (thermal transfer) |

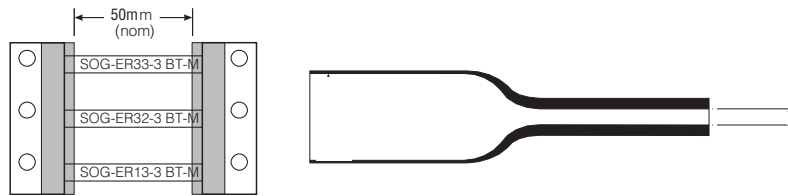


### Part numbering system

HT-SCE-1K<sup>1</sup>/4-2.0-S1-0



Ordering information



Available sizes and formats

| Ordering description                    | Inside diameter        |        |                           |        |                       |               |
|-----------------------------------------|------------------------|--------|---------------------------|--------|-----------------------|---------------|
|                                         | D (min)<br>As supplied |        | d (max)<br>After recovery |        | Recommended use range |               |
|                                         | mm                     | inches | mm                        | inches | mm                    | inches        |
| HT-SCE-1K- $\frac{3}{32}$ -2.0- <color> | 2.36                   | 0.093  | 0.79                      | 0.031  | 0.81 - 1.90           | 0.032 - 0.075 |
| HT-SCE-1K- $\frac{1}{8}$ -2.0- <color>  | 3.18                   | 0.125  | 1.58                      | 0.062  | 1.75 - 2.66           | 0.069 - 0.105 |
| HT-SCE-1K- $\frac{3}{16}$ -2.0- <color> | 4.75                   | 0.187  | 2.36                      | 0.093  | 2.54 - 4.06           | 0.100 - 0.160 |
| HT-SCE-1K- $\frac{1}{4}$ -2.0- <color>  | 6.35                   | 0.250  | 3.18                      | 0.125  | 3.40 - 6.00           | 0.134 - 0.236 |
| HT-SCE-1K- $\frac{3}{8}$ -2.0- <color>  | 9.53                   | 0.375  | 4.75                      | 0.187  | 5.30 - 8.10           | 0.209 - 0.319 |
| HT-SCE-1K- $\frac{1}{2}$ -2.0- <color>  | 12.70                  | 0.500  | 6.35                      | 0.250  | 6.60 - 11.40          | 0.260 - 0.449 |
| HT-SCE-1K- $\frac{3}{4}$ -2.0- <color>  | 18.00                  | 0.709  | 9.00                      | 0.354  | 9.90 - 15.30          | 0.390 - 0.602 |
| HT-SCE-1K-1-2.0- <color>                | 25.40                  | 1.000  | 12.70                     | 0.500  | 13.30 - 23.00         | 0.524 - 0.906 |
| HT-SCE-1K-1 $\frac{1}{2}$ -2.0- <color> | 38.10                  | 1.500  | 19.05                     | 0.750  | 20.95 - 34.00         | 0.825 - 1.339 |

Total width as supplied 90.18 mm (3.550 inches) including tape and carrier width.

Options

|              |                                                                             |                                                                   |             |             |  |
|--------------|-----------------------------------------------------------------------------|-------------------------------------------------------------------|-------------|-------------|--|
| Prescoring   | Perforated score to produce multiple marker sleeves from each HT-SCE sleeve |                                                                   |             |             |  |
|              | Number of prescores                                                         | 1 prescore                                                        | 2 prescores | 3 prescores |  |
|              | Code                                                                        | S1                                                                | S2          | S3          |  |
| Package size | Standard                                                                    | 1K - 1000 piece packs                                             |             |             |  |
|              | Nonstandard                                                                 | Larger pack sizes are available. Please contact Tyco Electronics. |             |             |  |
| Colors       | Standard                                                                    | White                                                             | Black       |             |  |
|              | Code                                                                        | 9                                                                 | 0           |             |  |
|              | Nonstandard                                                                 | Pink                                                              | Blue        | Yellow      |  |
|              | Code                                                                        | 2L                                                                | 6           | 4           |  |

Ordering information: Specify product name, pack size, sleeve size, prescore, format and color.

Ordering example: HT-SCE-1K- $\frac{1}{4}$ -2.0-S1-9

## HT-SCE High temperature, low outgassing heat shrinkable wire identification sleeves

Tyco Electronics's HT-SCE wire markers are designed for use in high temperature applications or where extreme resistance to fuels, lubricants and cleaning solvents is required. They are also ideal for applications in which low-vacuum outgassing is of high importance. The marker sleeves are made of highly flame retarded, heat-shrinkable fluoropolymer tubing.

HT-SCE markers are supplied as a thin, flat "ladder" of sleeves held horizontally between two polyester strips. This configuration feeds directly from the storage box into standard Tyco Electronics recommended printers, with no modifications necessary. A strip of adhesive tape on each side of the sleeves holds them securely in place for printing and kitting, yet the sleeves pull easily from the carrier strips. A standard heat gun with reflector is used to shrink the sleeves onto the wire or cable to achieve a permanent mark.

After shrinking, HT-SCE markers meet the print performance requirements of SAE AS81531 4.6.2 and MIL-STD-202F. HT-SCE markers are supplied in boxes of 1000 sleeves and are available in nine diameter sizes. These cover substrates from 0.8 mm to 34.0 mm. Because of this versatility, customers need not carry a large inventory of markers.

### Features and benefits

- Permanent identification sleeves.
- High continuous operating temperature.
- Extreme fluid resistance.
- Low-vacuum outgassing.
- Wide range of sleeve sizes for several wire and bundle diameters.



### Temperature rating

|                              |                 |                 |
|------------------------------|-----------------|-----------------|
| Operating temperature range  | -55°C to +225°C | -67°F to +437°F |
| Minimum recovery temperature | +200°C          | +392°F          |
| Maximum storage temperature  | +40°C           | +104°F          |

### Specifications/approvals

|                  |                          |
|------------------|--------------------------|
| Tyco Electronics | RW2512                   |
| Military         | SAE AS 81531 4.6.2       |
|                  | MIL-STD-202F Method 215J |

### Printer information

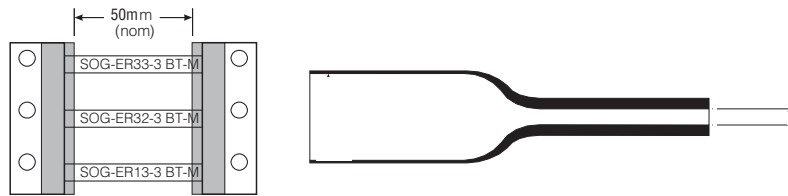
|                          |                                       |
|--------------------------|---------------------------------------|
| Tyco Electronics printer | T312M (thermal transfer)              |
| Tyco Electronics ribbon  | TMS-RJS-RIBBON-4HT (thermal transfer) |



### Part numbering system

|                        |                                |
|------------------------|--------------------------------|
| HT-SCE-1K-1/4-2.0-S1-0 |                                |
| HT-SCE                 | Product family                 |
| 1K                     | Pack size                      |
| 1/4                    | Expanded inside diameter (in.) |
| 2.0                    | Sleeve length (in.)            |
| S1                     | Scoring (optional)             |
| 0                      | Color                          |

Ordering information



Available sizes and formats

| Ordering description                    | Inside diameter        |        |                           |        |                       |               |
|-----------------------------------------|------------------------|--------|---------------------------|--------|-----------------------|---------------|
|                                         | D (min)<br>As supplied |        | d (max)<br>After recovery |        | Recommended use range |               |
|                                         | mm                     | inches | mm                        | inches | mm                    | inches        |
| HT-SCE-1K- $\frac{3}{32}$ -2.0- <color> | 2.36                   | 0.093  | 0.79                      | 0.031  | 0.81 - 1.90           | 0.032 - 0.075 |
| HT-SCE-1K- $\frac{1}{8}$ -2.0- <color>  | 3.18                   | 0.125  | 1.58                      | 0.062  | 1.75 - 2.66           | 0.069 - 0.105 |
| HT-SCE-1K- $\frac{3}{16}$ -2.0- <color> | 4.75                   | 0.187  | 2.36                      | 0.093  | 2.54 - 4.06           | 0.100 - 0.160 |
| HT-SCE-1K- $\frac{1}{4}$ -2.0- <color>  | 6.35                   | 0.250  | 3.18                      | 0.125  | 3.40 - 6.00           | 0.134 - 0.236 |
| HT-SCE-1K- $\frac{3}{8}$ -2.0- <color>  | 9.53                   | 0.375  | 4.75                      | 0.187  | 5.30 - 8.10           | 0.209 - 0.319 |
| HT-SCE-1K- $\frac{1}{2}$ -2.0- <color>  | 12.70                  | 0.500  | 6.35                      | 0.250  | 6.60 - 11.40          | 0.260 - 0.449 |
| HT-SCE-1K- $\frac{3}{4}$ -2.0- <color>  | 18.00                  | 0.709  | 9.00                      | 0.354  | 9.90 - 15.30          | 0.390 - 0.602 |
| HT-SCE-1K-1-2.0- <color>                | 25.40                  | 1.000  | 12.70                     | 0.500  | 13.30 - 23.00         | 0.524 - 0.906 |
| HT-SCE-1K-1 $\frac{1}{2}$ -2.0- <color> | 38.10                  | 1.500  | 19.05                     | 0.750  | 20.95 - 34.00         | 0.825 - 1.339 |

Total width as supplied 90.18 mm (3.550 inches) including tape and carrier width.

Options

|              |                                                                             |                                                                   |             |             |  |
|--------------|-----------------------------------------------------------------------------|-------------------------------------------------------------------|-------------|-------------|--|
| Prescoring   | Perforated score to produce multiple marker sleeves from each HT-SCE sleeve |                                                                   |             |             |  |
|              | Number of prescores                                                         | 1 prescore                                                        | 2 prescores | 3 prescores |  |
|              | Code                                                                        | S1                                                                | S2          | S3          |  |
| Package size | Standard                                                                    | 1K - 1000 piece packs                                             |             |             |  |
|              | Nonstandard                                                                 | Larger pack sizes are available. Please contact Tyco Electronics. |             |             |  |
| Colors       | Standard                                                                    | White                                                             | Black       |             |  |
|              | Code                                                                        | 9                                                                 | 0           |             |  |
|              | Nonstandard                                                                 | Pink                                                              | Blue        | Yellow      |  |
|              | Code                                                                        | 2L                                                                | 6           | 4           |  |

Ordering information: Specify product name, pack size, sleeve size, prescore, format and color.

Ordering example: HT-SCE-1K- $\frac{1}{4}$ -2.0-S1-9

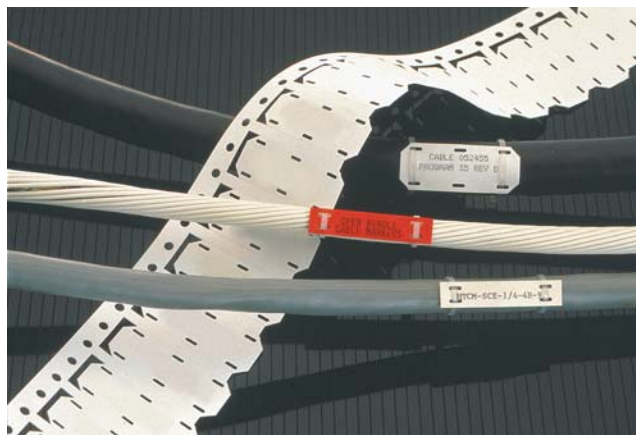
## HTCM-SCE High temperature tie-on-cable marker tags

HTCM-SCE markers are flat, rigid, non-adhesive labels that can be used to identify large cables and wire bundles in high temperature environments and outer space applications where low vacuum outgassing is required. Marker tags are applied to cables or wire bundles using cable ties.

Print performance meets or exceeds the requirements of SAE AS81531 4.6.2 and MIL-STD-202F.

## Features and benefits

- Side entry provides access to big size cables and wire bundles as well as retrofit and repair capability.
- High temperature use.
- Highly flame-retardant.
- Highly resistant to abrasion, mechanical abuses, fluids, lubricants and solvents.
- Low vacuum outgassing for outer space applications.
- Ease of use: markers can be easily removed from the carrier.
- Easy installation: only standard cable tie-wraps are needed to install markers. No extra steps required.
- Excellent print permanence when printing on the rough side of the marker.



## Temperature rating

Operating temperature range    -55°C to +225°C    -67°F to +437°F

## Specifications/approvals

|                  |                                    |
|------------------|------------------------------------|
| Tyco Electronics | RW25244                            |
| Military         | Mark permanence: SAE AS81531 4.6.2 |
|                  | Solvent resistance: MIL-STD-202F   |
|                  | Method 215J                        |

## Printer information

|                          |                                       |
|--------------------------|---------------------------------------|
| Tyco Electronics printer | T3 12M (thermal transfer)             |
| Tyco Electronics ribbon  | TMS-RJS-RIBBON-4HT (thermal transfer) |

## Part numbering system

HTM-SCE- 2.5K -<sup>1</sup>/<sub>4</sub>-4H-9

- Color
- Tie-wrap holes
- Markable height of marker (in.)
- Pack size
- Product family

Ordering information

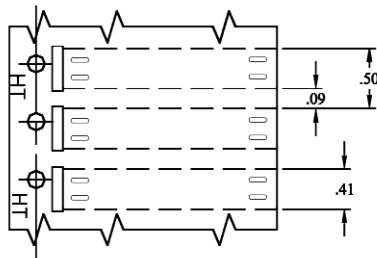


Figure 1  
HTCM-SCE-1/4 INCH

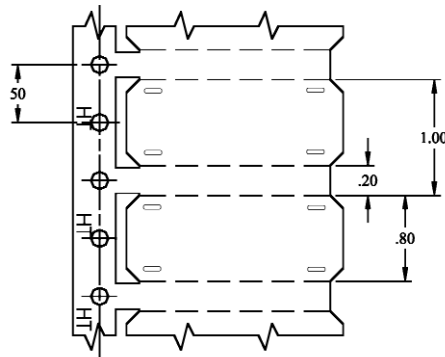


Figure 2

Available sizes and formats

| Ordering description        | Size | Markable height |        | Markable length |        | Recommended use range |               |
|-----------------------------|------|-----------------|--------|-----------------|--------|-----------------------|---------------|
|                             |      | mm              | inches | mm              | inches | mm                    | inches        |
| HTCM-SCE-TP-1/4-4H- <color> | 1/4  | 6.40            | 0.250  | 50.80           | 2.000  | 5.08 – 12.50          | 0.200 – 0.492 |
| HTCM-SCE-TP-1/2-4H- <color> | 1/2  | 12.70           | 0.500  | 50.80           | 2.000  | 12.50 and up          | 0.492 and up  |
| HTCM-SCE-TP-1/2-6H- <color> | 1/2  | 12.70           | 0.500  | 50.80           | 2.000  | 12.50 and up          | 0.492 and up  |

Options

|                |               |                                           |           |
|----------------|---------------|-------------------------------------------|-----------|
| Tie-wrap holes | 1/4-inch tags | Four holes standard                       |           |
|                | 1/2-inch tags | Four holes                                | Six holes |
|                | Code          | 4H                                        | 6H        |
| Fanfold        | Code          | Fx (substitute package size code for "x") |           |
| Package sizes  | Standard      | 250 pieces                                |           |
| Colors         | Standard      | White                                     |           |
|                | Code          | 9                                         |           |
|                | Nonstandard   | Yellow                                    |           |
|                | Code          | 4                                         |           |

Ordering information: Specify product name, markable height of marker, pack size, number of tie wraps and color.

Ordering example: HTCM-SCE - 2.5K-1/4-4H-9

## HX-SCE High Performance Low Fire Hazard Identification Solution

Thin wall, zero-halogen, low smoke, low toxicity, radiation cross-linked, UV stabilised polyolefin heat-shrinkable tubing, assembled as cut sleeves organized in a ladder format.

Identification of wires and cables by computer-based printing onto sleeves. Ideal for applications where limited fire hazard characteristics are necessary. The zero halogen material coupled with low smoke and low toxic fume emissions make this product is best used in enclosed spaces such as mass transit, marine and industrial installations.

This product is not recommended where strain relief properties are required..

## Features and benefits

- Low fire hazard properties, low smoke, low toxicity, low flammability:- meets industry standard BS 6853 (1999) Vehicle Category 1a.
- Superb print quality to give crisp clear identification marker sleeve.
- Excellent print permanence when tested in demanding industry related fluids.
- Choice of printer options.
- Sleeve diameters from 2.4mm to 38.1mm.
- Sleeve length from 12.7mm to 50.8mm.
- Sleeves are printable on both sides for ease of identification or inclusion of additional information to the marker sleeve.
- Shrink ratio of 2:1 - recovers to half of the original diameter.



## Temperature rating

|                              |                 |                 |
|------------------------------|-----------------|-----------------|
| Operating temperature range  | -30°C to +105°C | -22°F to +221°F |
| Minimum recovery temperature | +120°C          | +248°F          |
| Maximum storage temperature  | +40°C           | +104°F          |

## Specifications/approvals

|                  |                                                                                                                 |
|------------------|-----------------------------------------------------------------------------------------------------------------|
| Tyco Electronics | RW 2072                                                                                                         |
| Military         | SAE AS81531 4.6.2<br>MIL-STD-202F Method 215J                                                                   |
| Industry         | BS 6853 [1999] – Vehicle Category 1a<br>LUL toxic fume (LUL E1042:A6 [2002])<br>- No halogen, O, N or S sources |

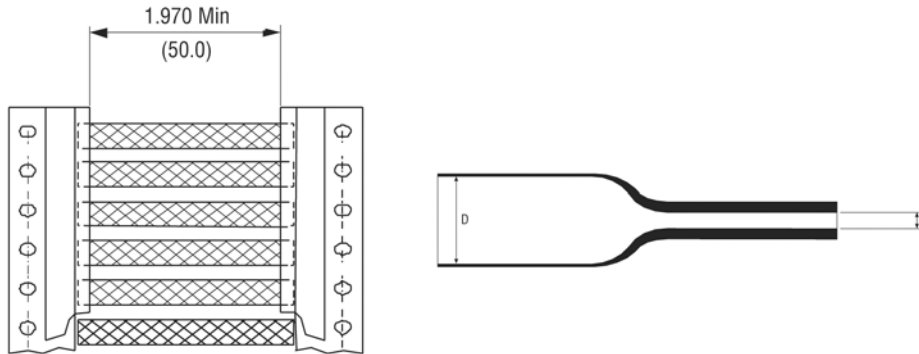
## Printer information

|                           |                                                     |
|---------------------------|-----------------------------------------------------|
| Tyco Electronics printers | T312M & T212M (thermal transfer)                    |
| Tyco Electronics ribbons  | 1966 - Ribbon (T312M)<br>T200 - Ribbon 1966 (T212M) |

## Part numbering system

|                       |                               |
|-----------------------|-------------------------------|
| HX-SCE-1K-4.8-50-S1-4 |                               |
| _____                 | Color                         |
| _____                 | Scoring (optional)            |
| _____                 | Sleeve length (mm)            |
| _____                 | Expanded inside diameter (in) |
| _____                 | Pack size                     |
| _____                 | Product family                |

Ordering information



Available sizes and formats

| Ordering description         | Inside diameter        |        |                           |        |                          |               |
|------------------------------|------------------------|--------|---------------------------|--------|--------------------------|---------------|
|                              | D (min)<br>as supplied |        | d (max)<br>after recovery |        | Recommended<br>use range |               |
|                              | mm                     | inches | mm                        | inches | mm                       | inches        |
| HX-SCE-1K-2.4 - 50- <color>  | 2.40                   | 0.094  | 1.19                      | 0.047  | 1.75 - 2.66              | 0.069 - 0.105 |
| HX-SCE-1K-3.2 - 50- <color>  | 3.20                   | 0.126  | 1.58                      | 0.060  | 2.54 - 4.06              | 0.100 - 0.160 |
| HX-SCE-1K-4.8 - 50- <color>  | 4.80                   | 0.189  | 2.36                      | 0.090  | 3.81 - 5.46              | 0.150 - 0.215 |
| HX-SCE-1K-6.4 - 50- <color>  | 6.40                   | 0.250  | 3.18                      | 0.125  | 5.59 - 8.12              | 0.220 - 0.320 |
| HX-SCE-1K-9.5 - 50- <color>  | 9.50                   | 0.375  | 4.75                      | 0.187  | 6.99 - 10.79             | 0.275 - 0.425 |
| HX-SCE-1K-12.7 - 50- <color> | 12.70                  | 0.500  | 6.35                      | 0.250  | 10.16 - 16.25            | 0.400 - 0.640 |
| HX-SCE-1K-19.0 - 50- <color> | 19.00                  | 0.730  | 9.53                      | 0.375  | 14.29 - 21.59            | 0.563 - 0.850 |
| HX-SCE-1K-25.4 - 50- <color> | 25.40                  | 1.000  | 12.70                     | 0.500  | 20.95 - 33.02            | 0.825 - 1.300 |
| HX-SCE-1K-38.1 - 50- <color> | 38.10                  | 1.500  | 19.05                     | 0.750  | 14.29 - 21.59            | 0.563 - 0.850 |

Options

|                     |                                                                              |                                                                    |             |        |             |
|---------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------|-------------|--------|-------------|
| Prescoring          | Perforated score to produce multiple marker sleeves from each HX-SCE sleeve. |                                                                    |             |        |             |
|                     | Standard                                                                     | Side scored                                                        |             |        |             |
| Number of prescores | 1 prescore                                                                   |                                                                    | 2 prescores |        | 3 prescores |
|                     | Code                                                                         | S1                                                                 | S2          | S3     |             |
| Package sizes       | Standard                                                                     | 1K - 1000 piece packages available for all HX-SCE sizes up to 25.4 |             |        |             |
|                     | Nonstandard                                                                  | 2.5K - 2500 pieces available for 4.8 and 6.4 HX-SCE sizes          |             |        |             |
|                     |                                                                              | 5K - 5000 pieces available for 2.4 and 3.2 HX-SCE sizes            |             |        |             |
|                     |                                                                              | 250 piece package available for all HX-SCE sizes                   |             |        |             |
| Colors              | Standard                                                                     | Yellow                                                             | White       |        |             |
|                     | Code                                                                         | 4                                                                  | 9           |        |             |
| Nonstandard         | Red                                                                          | Green                                                              | Blue        | Orange |             |
|                     | Code                                                                         | 2                                                                  | 5           | 6      | 3           |

Ordering information: Specify product name, pack size, sleeve size, prescore, format and color.

Ordering example: HX-SCE-1K-50-S1-4



## Electronics

### Heat Shrink/Cable Markers

#### HLX Low fire hazard cable marker tags

HLX cable markers are made from zero halogen, low smoke, low toxicity, radiation cross-linked, UV stabilized polyolefin sheet, formed into punched organized cable markers on a paper carrier.

They are used for identification of cables and wire bundles by computer-based printing onto markers. Markers are attached using cable ties. HLX markers are ideal for applications where limited fire hazard characteristics are necessary.

#### Features and benefits

- Recommended for use where combustion of products may endanger personnel or place delicate electronics at risk.
- Several printable heights and widths available.



#### Temperature rating

|                             |                 |                 |
|-----------------------------|-----------------|-----------------|
| Operating temperature range | -30°C to +105°C | -22°F to +221°F |
|-----------------------------|-----------------|-----------------|

#### Specifications/approvals

|                  |                                                       |
|------------------|-------------------------------------------------------|
| Tyco Electronics | RW 2523                                               |
| Military         | SAE AS81531 4.6.2<br>MIL-STD-202F Method 215J         |
| Industry         | UL 224 (clause 14)<br>BS 4G 198 Part 3<br>ASTM D 2671 |

#### Printer information

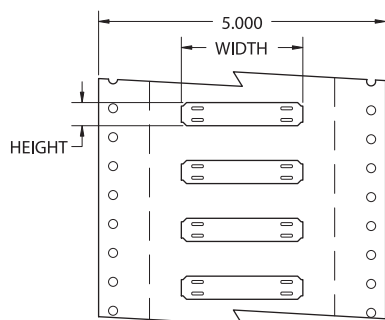
|                          |                          |
|--------------------------|--------------------------|
| Tyco Electronics printer | T312M (thermal transfer) |
| Tyco Electronics ribbon  | 1966-RIBBON              |

#### Part numbering system

|     |     |    |   |    |     |   |                      |
|-----|-----|----|---|----|-----|---|----------------------|
| HLX | 150 | YW | 1 | TS | 033 | B |                      |
|     |     |    |   |    |     |   | Pack size            |
|     |     |    |   |    |     |   | Printable width (mm) |
|     |     |    |   |    |     |   | Format               |
|     |     |    |   |    |     |   | Scoring              |
|     |     |    |   |    |     |   | Color                |
|     |     |    |   |    |     |   | Marker height        |
|     |     |    |   |    |     |   | Product family       |

## HLX Low fire hazard cable marker tags (Cont'd)

### Ordering information



### Available sizes and formats

| Ordering description       | Marker dimensions (W X H) |               | Printable area (W X H) |               | Pack size TS |
|----------------------------|---------------------------|---------------|------------------------|---------------|--------------|
|                            | mm                        | inches        | mm                     | inches        |              |
| HLX104<color>1<format>025B | 45.00 x 10.40             | 1.800 x 0.400 | 25.00 x 10.40          | 1.000 x 0.400 | 1000         |
| HLX104<color>1<format>033B | 52.00 x 10.40             | 2.100 x 0.400 | 33.00 x 10.40          | 1.300 x 0.400 | 1000         |
| HLX104<color>1<format>038B | 58.00 x 10.40             | 2.300 x 0.400 | 38.00 x 10.40          | 1.500 x 0.400 | 1000         |
| HLX104<color>1<format>050B | 70.00 x 10.40             | 2.750 x 0.400 | 50.00 x 10.40          | 2.000 x 0.400 | 1000         |
| HLX104<color>1<format>070B | 90.00 x 10.40             | 3.500 x 0.400 | 70.00 x 10.40          | 2.750 x 0.400 | 1000         |
| HLX150<color>1<format>025B | 45.00 x 15.00             | 1.800 x 0.600 | 25.00 x 15.00          | 1.000 x 0.600 | 500          |
| HLX150<color>1<format>033B | 52.00 x 15.00             | 2.100 x 0.600 | 33.00 x 15.00          | 1.300 x 0.600 | 500          |
| HLX150<color>1<format>038B | 58.00 x 15.00             | 2.300 x 0.600 | 38.00 x 15.00          | 1.500 x 0.600 | 500          |
| HLX150<color>1<format>050B | 70.00 x 15.00             | 2.750 x 0.600 | 50.00 x 15.00          | 2.000 x 0.600 | 500          |
| HLX150<color>1<format>070B | 90.00 x 15.00             | 3.500 x 0.600 | 70.00 x 15.00          | 2.750 x 0.600 | 500          |
| HLX203<color>1<format>025B | 45.00 x 20.30             | 1.800 x 0.800 | 25.00 x 20.30          | 1.000 x 0.800 | 500          |
| HLX203<color>1<format>033B | 52.00 x 20.30             | 2.100 x 0.800 | 33.00 x 20.30          | 1.300 x 0.800 | 500          |
| HLX203<color>1<format>038B | 58.00 x 20.30             | 2.300 x 0.800 | 38.00 x 20.30          | 1.500 x 0.800 | 500          |
| HLX203<color>1<format>050B | 70.00 x 20.30             | 2.750 x 0.800 | 50.00 x 20.30          | 2.000 x 0.800 | 500          |
| HLX203<color>1<format>070B | 90.00 x 20.30             | 3.500 x 0.800 | 70.00 x 20.30          | 2.750 x 0.800 | 500          |
| HLX253<color>1<format>025B | 45.00 x 25.30             | 1.800 x 1.000 | 25.00 x 25.30          | 1.000 x 1.000 | 250          |
| HLX253<color>1<format>033B | 52.00 x 25.30             | 2.100 x 1.000 | 33.00 x 25.30          | 1.300 x 1.000 | 250          |
| HLX253<color>1<format>038B | 58.00 x 25.30             | 2.300 x 1.000 | 38.00 x 25.30          | 1.500 x 1.000 | 250          |
| HLX253<color>1<format>050B | 70.00 x 25.30             | 2.750 x 1.000 | 50.00 x 25.30          | 2.000 x 1.000 | 250          |
| HLX253<color>1<format>070B | 90.00 x 25.30             | 3.500 x 1.000 | 70.00 x 25.30          | 2.750 x 1.000 | 250          |

### Options

|                           |                                                            |              |        |
|---------------------------|------------------------------------------------------------|--------------|--------|
| Prescoring                | Not available on these products – this should always be 1. |              |        |
| Package sizes             | Standard                                                   | B            |        |
| Colors                    | Standard                                                   | White        | Yellow |
|                           | Code                                                       | WE           | YW     |
|                           | Nonstandard                                                | Red          | Blue   |
|                           | Code                                                       | RD           | BE     |
| Format                    | TS – Thermal transfer (reel/single sided)                  |              |        |
| Printable width on marker | 025                                                        | 25mm (1")    |        |
|                           | 033                                                        | 33mm (1.3")  |        |
|                           | 038                                                        | 38mm (1.5")  |        |
|                           | 050                                                        | 50mm (2")    |        |
|                           | 070                                                        | 70mm (2.75") |        |

Ordering information: Specify product name, marker height, color, scoring option (always 1), format, printable width, and pack size.

Ordering example: HLX150YW1TS033B

## D-SCE Fluid resistant computer-printable permanent wire identification sleeves

D-SCE markers are used to identify wires and cables where exposure to organic fluids, especially oils, is required. D-SCE markers are designed to operate in these conditions at elevated temperatures for extended periods of time, making them ideal in aerospace, rail and construction industries. The D-SCE markers are suitable for use in environments with temperatures of  $-55^{\circ}\text{C}$  to  $+135^{\circ}\text{C}$  ( $-67^{\circ}\text{F}$  to  $+275^{\circ}\text{F}$ ), and will provide strain relief, insulation and protection from mechanical abuse. The 3:1 shrink ratio markers\* are assembled in a ladder format enabling sleeves to be printed on both sides for maximum data content and readability.

\*See ordering description.

## Features and benefits

- Resistance to organic fluids, common fuels, lubricants and solvents.
- 3:1 shrink ratio.
- Wide range of sizes for several wire and bundle diameters.
- Formulated for use in aerospace, rail and construction equipment.
- Dot matrix and thermal transfer printable — both print technologies meet all specifications and approvals listed.



## Temperature rating

|                              |                                                 |                                                 |
|------------------------------|-------------------------------------------------|-------------------------------------------------|
| Operating temperature range  | $-55^{\circ}\text{C}$ to $+135^{\circ}\text{C}$ | $-67^{\circ}\text{F}$ to $+275^{\circ}\text{F}$ |
| Minimum recovery temperature | $+135^{\circ}\text{C}$                          | $+275^{\circ}\text{F}$                          |
| Maximum storage temperature  | $+40^{\circ}\text{C}$                           | $+104^{\circ}\text{F}$                          |

## Specifications/approvals

|                  |                                                                                                                          |
|------------------|--------------------------------------------------------------------------------------------------------------------------|
| Tyco Electronics | RW 2519                                                                                                                  |
| Military         | SAE-AMS-DTL-23053/6, Class 1<br>(material and performance requirements)<br>SAE AS81531 4.6.2<br>MIL-STD-202F Method 215J |
| Industry         | NF F 00 608 Category A and H                                                                                             |

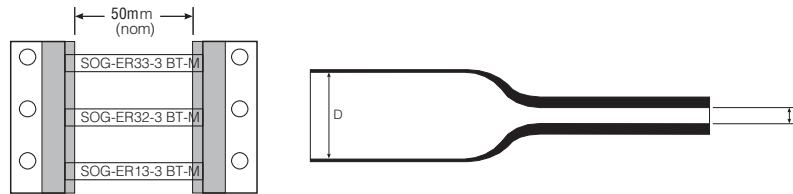
## Printer information

|                          |                                                 |
|--------------------------|-------------------------------------------------|
| Tyco Electronics printer | AM6310 (dot matrix)<br>T312M (thermal transfer) |
| Tyco Electronics ribbon  | 1892BK04-RIBBON (dot matrix)<br>1966-RIBBON     |

## Part numbering system

|                                |                               |
|--------------------------------|-------------------------------|
| D-SCE - 5K - 3.2 - 50 - S1 - 4 |                               |
|                                | Color                         |
|                                | Scoring (optional)            |
|                                | Sleeve length (mm)            |
|                                | Expanded inside diameter (mm) |
|                                | Large packaging (optional)    |
|                                | Product family                |

Ordering information



Available sizes and formats

| Ordering description    | Inside diameter        |               |                           |               | Recommended use range |               |
|-------------------------|------------------------|---------------|---------------------------|---------------|-----------------------|---------------|
|                         | D (min)<br>As supplied |               | d (max)<br>After recovery |               |                       |               |
|                         | mm                     | <i>inches</i> | mm                        | <i>inches</i> | mm                    | <i>inches</i> |
| D-SCE-1K-2.4-50-<color> | 2.39                   | 0.094         | 0.79                      | 0.031         | 0.81 - 1.90           | 0.032 - 0.075 |
| D-SCE-1K-3.2-50-<color> | 3.18                   | 0.125         | 1.07                      | 0.043         | 1.11 - 2.66           | 0.044 - 0.105 |
| D-SCE-1K-4.8-50-<color> | 4.75                   | 0.187         | 1.57                      | 0.063         | 1.75 - 4.06           | 0.069 - 0.160 |
| D-SCE-1K-6.4-50-<color> | 6.35                   | 0.250         | 2.11                      | 0.084         | 2.31 - 5.46           | 0.091 - 0.215 |
| D-SCE-1K-9.5-50-<color> | 9.53                   | 0.375         | 3.18                      | 0.125         | 3.47 - 8.12           | 0.137 - 0.320 |
| D-SCE-1K-12-50-<color>  | 12.70                  | 0.500         | 4.22                      | 0.167         | 4.64 - 10.79          | 0.183 - 0.425 |
| D-SCE-1K-18-50-<color>  | 19.05                  | 0.750         | 6.35                      | 0.250         | 6.99 - 16.25          | 0.275 - 0.640 |
| D-SCE-1K-25-50-<color>  | 25.40                  | 1.000         | 8.46                      | 0.333         | 9.29 - 21.59          | 0.366 - 0.850 |
| D-SCE-1K-38-50-<color>* | 38.10                  | 1.500         | 19.05                     | 0.750         | 20.95 - 33.02         | 0.825 - 1.300 |

\* 2:1 shrink ratio

Total width as supplied 90.18 mm (3.550 inches) including tape and carrier width.

Options

|               |                                                                             |                                                                   |             |             |
|---------------|-----------------------------------------------------------------------------|-------------------------------------------------------------------|-------------|-------------|
| Prescoring    | Perforated score to produce multiple marker sleeves from each D-SCE sleeve. |                                                                   |             |             |
|               | Standard                                                                    | Side scored                                                       |             |             |
|               | Number of prescores                                                         | 1 prescore                                                        | 2 prescores | 3 prescores |
|               | Code                                                                        | S1                                                                | S2          | S3          |
| Package sizes | Standard                                                                    | 1K - 1000 piece packages available for all D-SCE sizes            |             |             |
|               | Nonstandard                                                                 | Larger pack sizes are available. Please contact Tyco Electronics. |             |             |
| Colors        | Standard                                                                    | White                                                             | Yellow      |             |
|               | Code                                                                        | 9                                                                 | 4           |             |
|               | Nonstandard                                                                 | Pink                                                              | Blue        |             |
|               | Code                                                                        | 2L                                                                | 6           |             |

Ordering information: Specify product name, pack size, sleeve size, prescore, format and color.

Ordering example: D-SCE-1K-6.4-50-S2-4

## NMX Flame retarded polyaramid cable marker tags

NMX cable marker tags are used for identification of cables and wire bundles by computer-based printing onto markers. The markers are attached using cable ties. They are ideal for aerospace and other cases where resistance to harsh environments and light weight are important.

## Features and benefits

- Extremely light weight.
- Ultimate tensile strength and tear resistance.
- Flame retardant.
- Resistant to several avionics fluids, solvents and cleaners.
- Dot matrix printable.
- Available in white and yellow printable areas.



## Temperature rating

Operating temperature range     $-40^{\circ}\text{C}$  to  $+135^{\circ}\text{C}$      $-40^{\circ}\text{F}$  to  $+275^{\circ}\text{F}$

## Specifications/approvals

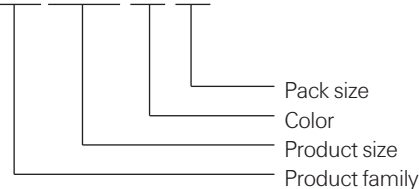
|                  |                                                |
|------------------|------------------------------------------------|
| Tyco Electronics | TTDS-030                                       |
| Military         | SAE AS81531 4.6.2,<br>MIL-STD-202F Method 215J |
| Industry         | DMS 2325, DMS 2409                             |

## Printer information

|                          |                        |
|--------------------------|------------------------|
| Tyco Electronics printer | AM6310 (dot matrix)    |
| Tyco Electronics ribbon  | 1892 BK01 (dot matrix) |

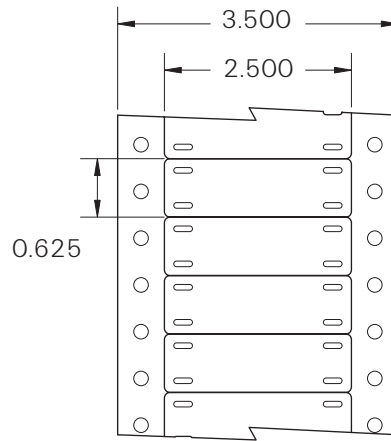
## Part numbering system

NMX 25625 WE 2.5



**NMX Flame retarded polyaramid cable marker tags** (Cont'd)

**Ordering information**



**Available sizes and formats**

| Ordering description | Label width |               | Label height |               | Printable width |               | Weight<br>(g/10 pcs.) |
|----------------------|-------------|---------------|--------------|---------------|-----------------|---------------|-----------------------|
|                      | mm          | <i>inches</i> | mm           | <i>inches</i> | mm              | <i>inches</i> |                       |
| NMX25625<color>2.5   | 63.50       | 2.500         | 15.87        | 0.625         | 50.80           | 2.000         | 2.5                   |

**Options**

|               |             |                                                                   |
|---------------|-------------|-------------------------------------------------------------------|
| Package sizes | Standard    | 2500 pieces per pack                                              |
|               | Nonstandard | Larger pack sizes are available. Please contact Tyco Electronics. |
| Colors        | White       | Yellow                                                            |
|               | WE          | YE                                                                |

Ordering information: Specify product name, product size, color and pack size.

Ordering example: NMX25625WE2.5

## RPS Commercial grade wire identification sleeves

RPS markers are heat shrinkable marking sleeves for wire and cable identification. When RPS is printed with Tyco Electronics recommended printers and ink ribbons, the marks remain legible, without any post printing process, even when exposed to abrasion, aggressive cleaning solvents, and industrial fluids.

RPS markers are designed to meet the wire identification needs of commercial and industrial customers.

## Features and benefits

- Permanent identification sleeves.
- Computer printable.
- Excellent print performance.
- Configured for ease of kitting.
- Good chemical and solvent resistance.
- 3:1 shrink ratio.
- CSA Certified, UL Recognized.



## Temperature rating

|                              |                 |                 |
|------------------------------|-----------------|-----------------|
| Operating temperature range  | -30°C to +105°C | -22°F to +221°F |
| Minimum recovery temperature | +85°C           | +185°F          |
| Maximum storage temperature  | +40°C           | +104°F          |

## Specifications/approvals

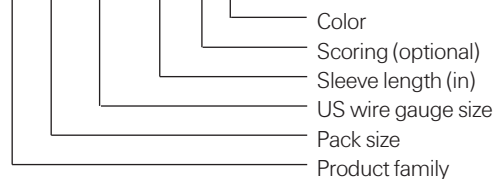
|                  |                                                                            |
|------------------|----------------------------------------------------------------------------|
| Tyco Electronics | RW 2510                                                                    |
| Military         | SAE AS81531 4.6.2<br>MIL-STD-202F Method 215J                              |
| Industry         | UL Recognized – standard 224,<br>file E35586<br>CSA Certified – file 31929 |

## Printer information

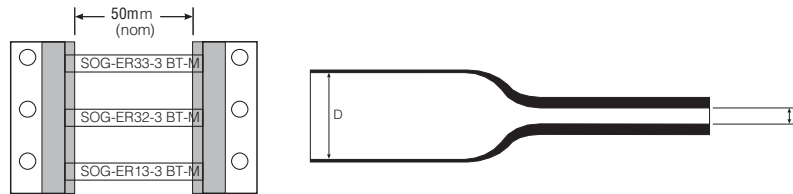
|                          |                                                                                                                                          |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Tyco Electronics printer | AM6310 (dot matrix)<br>T208M (thermal transfer – low volume)<br>T312M (thermal transfer)                                                 |
| Tyco Electronics ribbon  | 1892BK04-RIBBON (dot matrix)<br>TMS-101-RIBBON-4RPSCE (thermal transfer for T208M)<br>TMS-RJS-RIBBON-4RPSCE (thermal transfer for T312M) |

## Part numbering system

RPS-1K-22-18/2.0-S1-9



Ordering information



Available sizes and formats

| Ordering description         | Inside diameter        |               |                           |               |                          |               |
|------------------------------|------------------------|---------------|---------------------------|---------------|--------------------------|---------------|
|                              | D (min)<br>as supplied |               | d (max)<br>after recovery |               | Recommended<br>use range |               |
|                              | mm                     | <i>inches</i> | mm                        | <i>inches</i> | mm                       | <i>inches</i> |
| RPS-1K-22-18/2.0- <color>    | 3.18                   | 0.125         | 1.07                      | 0.042         | 1.17 - 2.66              | 0.046 - 0.105 |
| RPS-1K-18-12/2.0- <color>    | 4.75                   | 0.187         | 1.57                      | 0.062         | 1.75 - 4.06              | 0.069 - 0.160 |
| RPS-1K-16-10/2.0- <color>    | 6.35                   | 0.250         | 2.11                      | 0.083         | 2.31 - 5.46              | 0.091 - 0.215 |
| RPS-1K-8-4/2.0- <color>      | 9.53                   | 0.375         | 3.18                      | 0.125         | 3.47 - 8.12              | 0.137 - 0.320 |
| RPS-1K-10-2/2.0- <color>     | 12.70                  | 0.500         | 4.22                      | 0.166         | 4.64 - 10.79             | 0.183 - 0.425 |
| RPS-1K-6-250/2.0- <color>    | 19.05                  | 0.750         | 6.35                      | 0.250         | 6.99 - 16.25             | 0.275 - 0.640 |
| RPS-1K-1-400/2.0- <color>    | 25.40                  | 1.000         | 8.46                      | 0.333         | 9.29 - 21.59             | 0.366 - 0.850 |
| RPS-1K-400-1000/2.0- <color> | 38.10                  | 1.500         | 19.05                     | 0.750         | 20.95 - 33.02            | 0.825 - 1.300 |

Total width as supplied 90.18 mm (3.550 inches) including tape and carrier width.

Options

|               |                                                                           |                                                                               |             |             |
|---------------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------|-------------|
| Prescoring    | Perforated score to produce multiple marker sleeves from each RPS sleeve. |                                                                               |             |             |
|               | Number of prescores                                                       | 1 prescore                                                                    | 2 prescores | 3 prescores |
|               | Code                                                                      | S1                                                                            | S2          | S3          |
| Package sizes | Standard                                                                  | 1K-1000 piece packs                                                           |             |             |
|               | Nonstandard                                                               | Smaller and larger pack sizes are available. Please contact Tyco Electronics. |             |             |
| Colors        | Standard                                                                  | White                                                                         | Yellow      |             |
|               | Code                                                                      | 9                                                                             | 4           |             |

Ordering information: Specify product name, pack size, sleeve size, prescore, format and color.

Ordering example: RPS-1K-22-18/2.0-S2-9

## NBC-SCE Nuclear, biological &amp; chemical heat shrinkable wire identification sleeves

Tyco Electronics NBC-SCE is used to identify wire and cables where extreme resistance to cleaning solvents is needed. The markers are suitable for use in wire harness systems requiring high fluid resistance and resistance to the effects of nuclear, biological and chemical agent exposure and decontamination. The markers should be used with an appropriate transparent oversleeve whose ends are sealed with an appropriate epoxy adhesive.

NBC-SCE marker sleeves are suitable for use in environments with temperatures from  $-55^{\circ}\text{C}$  to  $+225^{\circ}\text{C}$  ( $-67^{\circ}\text{F}$  to  $+275^{\circ}\text{F}$ ).

## Features and benefits

- Permanent identification sleeves.
- Computer-printable.
- 2:1 shrink ratio.
- NBC application with the appropriate adhesive and oversleeve.



## Temperature rating

|                              |                                                 |                                                 |
|------------------------------|-------------------------------------------------|-------------------------------------------------|
| Operating temperature range  | $-55^{\circ}\text{C}$ to $+225^{\circ}\text{C}$ | $-67^{\circ}\text{F}$ to $+437^{\circ}\text{F}$ |
| Minimum recovery temperature | $+200^{\circ}\text{C}$                          | $+392^{\circ}\text{F}$                          |
| Maximum storage temperature  | $+40^{\circ}\text{C}$                           | $+104^{\circ}\text{F}$                          |

## Specifications/approvals

|                  |                          |
|------------------|--------------------------|
| Tyco Electronics | RW2514                   |
| Military         | SAE AS81531 4.6.2        |
|                  | MIL-STD-202F Method 215J |

## Printer information

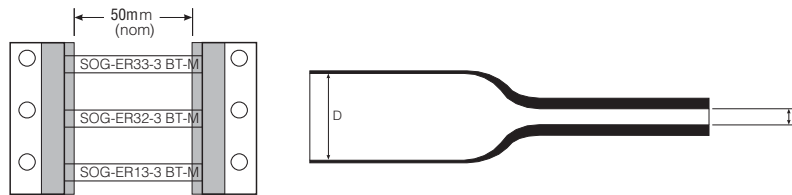
|                          |                                       |
|--------------------------|---------------------------------------|
| Tyco Electronics printer | T312M (thermal transfer)              |
| Tyco Electronics ribbon  | TMS-RJS-RIBBON-4HT (thermal transfer) |

## Part numbering system

NBC-SCE-1K<sup>1</sup>/4-2.0-S1-9

|                               |
|-------------------------------|
| Color                         |
| Scoring (optional)            |
| Sleeve length (in)            |
| Expanded inside diameter (in) |
| Large packaging (optional)    |
| Product family                |

Ordering information



Available sizes and formats

| Ordering description                     | Inside diameter      |               |                       |               | Recommended use range |               | Recovered wall thickness |               |
|------------------------------------------|----------------------|---------------|-----------------------|---------------|-----------------------|---------------|--------------------------|---------------|
|                                          | Expanded D (minimum) |               | Recovered d (maximum) |               |                       |               |                          |               |
|                                          | mm                   | <i>inches</i> | mm                    | <i>inches</i> | mm                    | <i>inches</i> | mm                       | <i>inches</i> |
| NBC-SCE-1K- $\frac{1}{8}$ - 2.0<color>   | 3.43                 | 0.135         | 1.59                  | 0.062         | 1.75-2.66             | 0.069-0.105   | 0.38 ± 0.08              | 0.015 ± 0.003 |
| NBC-SCE-1K- $\frac{1}{4}$ - 2.0<color>   | 6.35                 | 0.250         | 3.18                  | 0.125         | 3.81-5.46             | 0.150-0.215   | 0.38 ± 0.08              | 0.015 ± 0.003 |
| NBC-SCE-1K- $\frac{1}{2}$ - 2.0<color>   | 12.70                | 0.500         | 6.35                  | 0.250         | 6.99-10.79            | 0.275-0.425   | 0.38 ± 0.08              | 0.015 ± 0.003 |
| NBC-SCE-1K- $\frac{3}{4}$ - 2.0<color>   | 19.05                | 0.750         | 9.53                  | 0.375         | 10.16-16.25           | 0.400-0.640   | 0.38 ± 0.08              | 0.015 ± 0.003 |
| NBC-SCE-1K-1- 2.0<color>                 | 25.40                | 1.000         | 12.70                 | 0.500         | 14.70-21.50           | 0.578-0.846   | 0.43 ± 0.10              | 0.017 ± 0.004 |
| NBC-SCE-1K-1- $\frac{1}{2}$ - 2.0<color> | 38.10                | 1.500         | 19.05                 | 0.750         | 20.95-33.02           | 0.825-1.300   | 0.43 ± 0.10              | 0.017 ± 0.004 |

Total width as supplied 90.18 mm (3.550 inches) including tape and carrier width.

Options

|               |                                                                               |                                                     |             |
|---------------|-------------------------------------------------------------------------------|-----------------------------------------------------|-------------|
| Prescoring    | Perforated score to produce multiple marker sleeves from each NBC-SCE sleeve. |                                                     |             |
|               | Number of prescores                                                           | 1 prescore                                          | 2 prescores |
|               | Code                                                                          | S1                                                  | S2          |
|               |                                                                               |                                                     | 3 prescores |
|               | Code                                                                          | S3                                                  |             |
| Package sizes | Standard                                                                      | 1000 piece packages available for all NBC-SCE sizes |             |
| Colors        | Standard                                                                      | White                                               |             |
|               | Code                                                                          | 9                                                   |             |

Ordering information: Please specify product name, pack size, sleeve size, prescore, format and color.

Ordering example: NBC-SCE-1K-1/8-2.0-9

## TMS-CCUV Heat shrinkable UV protection sleeves

TMS-CCUV clear heat shrinkable sleeves are designed for over protection of TMS System Six identification products, to give increased protection for permanent, long-term environmental exposure. The clear CCUV heat-shrinkable sleeves are formulated to combine a long-term barrier to the effects of ultra-violet, with tough resistance to abrasion and industrial fluids. They are available in packs which match the product sizes and pack quantities of TMS System Six heat-shrinkable identification sleeves and cable markers.

The TMS CCUV sleeves are inherently low profile and use the action of heat-shrink to lock in place over the previously installed identification sleeves; except for cable markers which use a slide fitting CCUV sleeve which is held in place by the cable ties.

The action of heat-shrink locking of the CCUV sleeves means there is no reliance on the long term performance of adhesives to hold the outer protection layer in place, and also gives the ability to accommodate cables and wire bundles which may be bent or flexed during use.

## Features and benefits

- Exceptional clarity and stability.
- Added UV-resistant sleeves.
- Not printable.
- Tough resistance to abrasion and industrial fluids.
- Heat-shrink locking in place (no reliance on adhesives).
- Low profile.
- Accommodates bent or flexing cable/wire bundles.
- Can work as an NBC (nuclear, biological, chemical) System with NBC-SCE sleeves and appropriate adhesive.



## Temperature rating

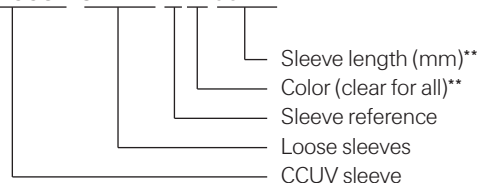
|                              |                 |                |
|------------------------------|-----------------|----------------|
| Operating temperature range  | -55°C to +150°C | -67°F to 302°F |
| Minimum recovery temperature | +150°C          | +302°F         |
| Maximum storage temperature  | +40°C           | +104°F         |

## Specifications/approvals

|                  |                                                |
|------------------|------------------------------------------------|
| Tyco Electronics | RW 2525                                        |
| Military         | UL VW-1 rated<br>SAE-AMS-DTL-23053/18, Class 2 |

## Part numbering system

TMS-CCUV-SLEEVE-1-X-65mm

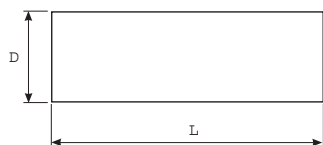


\*\* not used in NBC-SCE 76mm (3") length sleeve options

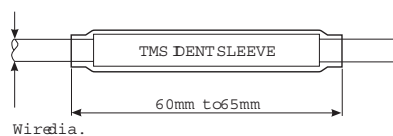


## Ordering information

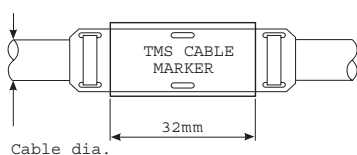
Before shrinking



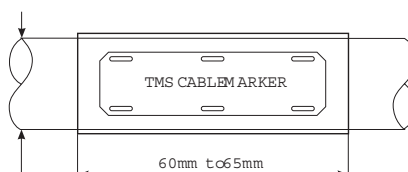
After shrinking over TMS cable sleeve



After sliding over TMS cable marker



After shrinking over TMS cable marker



**TMS-CCUV Heat shrinkable UV protection sleeves (Cont'd)**

**Available sizes and formats**

(For use with heat shrink sleeves)

| Ordering description     | Sleeve length |        | Inside diameter minimum |        | Recovered diameter maximum |             | Wire size diameter |        | Sleeve size expanded diameter |          |
|--------------------------|---------------|--------|-------------------------|--------|----------------------------|-------------|--------------------|--------|-------------------------------|----------|
|                          | mm            | inches | mm                      | inches | mm                         | inches      | mm                 | inches | TMS-SCE                       | RPS      |
| TMS-CCUV-SLEEVE-1-X-65mm | 65            | 3.20   | 0.125                   | 1.60   | 0.063                      | 1.80-2.80   | 0.071-0.110        | 2.40   | 0.094                         | N/A      |
| TMS-CCUV-SLEEVE-1-X-65mm | 65            | 3.20   | 0.125                   | 1.60   | 0.063                      | 1.80-2.80   | 0.071-0.110        | 3.20   | 0.125                         | 22-18    |
| TMS-CCUV-SLEEVE-2-X-65mm | 65            | 4.80   | 0.187                   | 2.40   | 0.094                      | 2.60-3.70   | 0.102-0.146        | 4.80   | 0.188                         | 18-12    |
| TMS-CCUV-SLEEVE-2-X-65mm | 65            | 4.80   | 0.187                   | 2.40   | 0.094                      | 2.60-3.70   | 0.102-0.146        | 6.40   | 0.250                         | 16-10    |
| TMS-CCUV-SLEEVE-3-X-65mm | 65            | 6.40   | 0.250                   | 3.20   | 0.126                      | 3.50-5.10   | 0.138-0.201        | 9.50   | 0.375                         | 8-4      |
| TMS-CCUV-SLEEVE-4-X-65mm | 65            | 9.50   | 0.375                   | 4.80   | 0.189                      | 5.00-7.00   | 0.197-0.275        | 12.70  | 0.500                         | 10-2     |
| TMS-CCUV-SLEEVE-5-X-65mm | 65            | 12.70  | 0.500                   | 6.40   | 0.252                      | 6.90-10.60  | 0.272-0.417        | 19.00  | 0.750                         | 6-250    |
| TMS-CCUV-SLEEVE-6-X-65mm | 65            | 19.00  | 0.750                   | 9.50   | 0.374                      | 10.00-14.00 | 0.394-0.551        | 25.40  | 1.000                         | 1-400    |
| TMS-CCUV-SLEEVE-7-X-65mm | 65            | 25.40  | 1.000                   | 12.70  | 0.500                      | 13.30-21.00 | 0.524-0.827        | 25.40  | 1.000                         | 1-400    |
| TMS-CCUV-SLEEVE-8-X-65mm | 65            | 38.10  | 1.500                   | 19.00  | 0.748                      | 21.00-33.80 | 0.827-1.331        | 38.10  | 1.500                         | 400-1000 |

Some TMS-SCE and RPS sleeve sizes may need to be recovered partially before CCUV sleeve is applied to protect them.

(For use with cable markers to secure / protect without cable ties)

| Ordering description     | Sleeve length |        | Inside diameter minimum |        | Recovered diameter maximum |             | Wire size diameter |        | Marker height |        |
|--------------------------|---------------|--------|-------------------------|--------|----------------------------|-------------|--------------------|--------|---------------|--------|
|                          | mm            | inches | mm                      | inches | mm                         | inches      | mm                 | inches | mm            | inches |
| TMS-CCUV-SLEEVE-4-X-65mm | 65            | 9.50   | 0.375                   | 4.80   | 0.189                      | 5.00-8.00   | 0.197-0.315        | 6.40   | 0.250         |        |
| TMS-CCUV-SLEEVE-5-X-65mm | 65            | 12.70  | 0.500                   | 6.40   | 0.252                      | 7.00-11.00  | 0.275-0.433        | 6.40   | 0.250         |        |
| TMS-CCUV-SLEEVE-6-X-65mm | 65            | 19.00  | 0.750                   | 9.50   | 0.374                      | 12.00-17.00 | 0.472-0.669        | 12.70  | 0.500         |        |
| TMS-CCUV-SLEEVE-7-X-65mm | 65            | 25.40  | 1.000                   | 12.70  | 0.500                      | 15.00-23.00 | 0.590-0.905        | 12.70  | 0.500         |        |

(For use with cable markers to protect with cable ties)

| Ordering description      | Sleeve length |        | Inside diameter minimum |        | Recovered diameter maximum |        | Wire size diameter |        | Marker height |        |
|---------------------------|---------------|--------|-------------------------|--------|----------------------------|--------|--------------------|--------|---------------|--------|
|                           | mm            | inches | mm                      | inches | mm                         | inches | mm                 | inches | mm            | inches |
| TMS-CCUV-SLEEVE-9-X-32mm  | 32            | 6.40   | 0.250                   | 3.20   | 0.126                      | N/A    |                    | 6.40   | 0.250         |        |
| TMS-CCUV-SLEEVE-10-X-32mm | 32            | 12.70  | 0.500                   | 6.40   | 0.252                      | N/A    |                    | 12.70  | 0.500         |        |

(For use with NBC-SCE sleeves and adhesives sealing\*)

| Ordering description | Sleeve length |        | Inside diameter minimum |        | Recovered diameter maximum |             | Wire size diameter NBC-SCE |        | Sleeve size expanded diameter NBC-SCE |        |
|----------------------|---------------|--------|-------------------------|--------|----------------------------|-------------|----------------------------|--------|---------------------------------------|--------|
|                      | mm            | inches | mm                      | inches | mm                         | inches      | mm                         | inches | mm                                    | inches |
| TMS-CCUV-SLEEVE-15   | 76            | 3.20   | 0.125                   | 1.60   | 0.063                      | 1.80-2.80   | 0.071-0.110                | 3.20   | 0.125                                 |        |
| TMS-CCUV-SLEEVE-16   | 76            | 4.80   | 0.187                   | 2.40   | 0.094                      | 2.60-3.70   | 0.102-0.146                | 4.80   | 0.188                                 |        |
| TMS-CCUV-SLEEVE-17   | 76            | 6.40   | 0.250                   | 3.20   | 0.126                      | 3.50-5.10   | 0.138-0.201                | 6.40   | 0.250                                 |        |
| TMS-CCUV-SLEEVE-18   | 76            | 9.50   | 0.375                   | 4.80   | 0.189                      | 5.00-7.00   | 0.197-0.275                | 9.50   | 0.375                                 |        |
| TMS-CCUV-SLEEVE-19   | 76            | 12.70  | 0.500                   | 6.40   | 0.252                      | 6.90-10.60  | 0.272-0.417                | 12.70  | 0.500                                 |        |
| TMS-CCUV-SLEEVE-20   | 76            | 19.00  | 0.750                   | 9.50   | 0.374                      | 10.00-14.00 | 0.394-0.551                | 19.00  | 0.750                                 |        |
| TMS-CCUV-SLEEVE-21   | 76            | 25.40  | 1.000                   | 12.70  | 0.500                      | 13.30-21.00 | 0.524-0.827                | 25.40  | 1.000                                 |        |
| TMS-CCUV-SLEEVE-22   | 76            | 38.10  | 1.500                   | 19.00  | 0.748                      | 21.00-33.80 | 0.827-1.331                | 38.10  | 1.500                                 |        |

\*For use with adhesives such as S-1255-04 and S-1264 please refer to RT1012 and RT1014 for specifications and adhesive details.

**Options**

|                       |                                                                                                              |                     |
|-----------------------|--------------------------------------------------------------------------------------------------------------|---------------------|
| Prescoring            | Not available — supplied as cut pieces.                                                                      |                     |
| Package Sizes         | Standard                                                                                                     | 250 piece bags only |
| Colors                | Standard                                                                                                     | Clear only          |
| Ordering information: | Specify product name, loose sleeve, sleeve reference, color and sleeve length.                               |                     |
| Ordering example:     | For all Heat Shrink sleeves except NBC-SCE<br>TMS-CCUV-SLEEVE-1-X- 65mm<br>For NBC-SCE<br>TMS-CCUV-SLEEVE-22 |                     |

## MultiMark Strip &amp; Carriers insert marker for post termination identification

MultiMark is comprised of a polyolefin printed strip, which is inserted into a protective PVC carrier. The carrier can be applied to wires or cables pre-termination to allow post termination printed strip insertion or the strips can be replaced post termination when re-labeling is required.

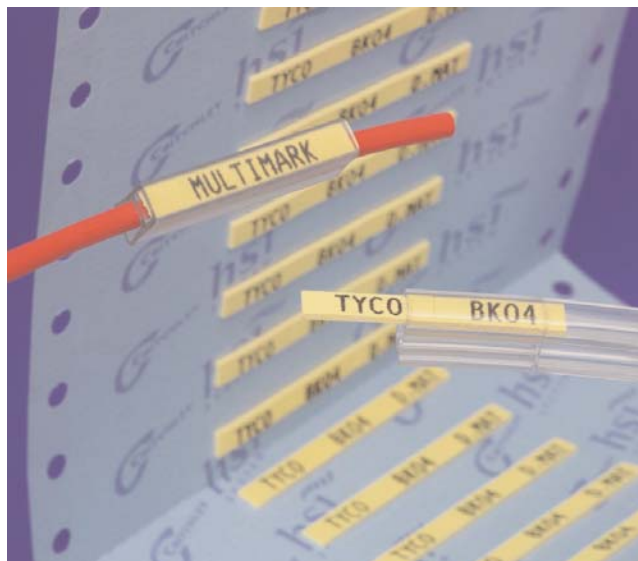
The PVC carrier protects the markers from dust and grime. These carriers are available in a number of sizes to cover a wide range of cable diameters.

The printable strips are presented as organized markers assembled onto fanfolded paper carrier for ease of selection and kitting. The strips are available in a variety of lengths.

Available for printing by dot matrix only.

## Features and benefits

- Suitable for post termination labeling and re-labeling
- Marker lengths 10mm to 30mm
- Clear carriers to fit cable diameters 1.8mm to 8.0mm



## Temperature rating

Operating temperature range      -45°C to +70°C      -49°F to 158°F

## Specifications/approvals

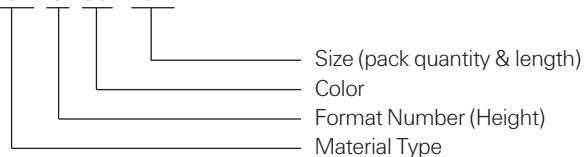
Military      MIL-STD 202F method 215J  
SAE-AS8153 1 4.6.2

## Printer information

Tyco Electronics Printer      AM6310 (dot matrix)  
Tyco Electronics Ribbon      1892BK04 (dot matrix)

## Part numbering system

082 - 5 - 99 - 19A



**MultiMark Strip & Carriers insert marker for post termination identification (Cont'd)**

**Ordering Information**

| Type                   | Format Number  | Color       | Size | Pack Qty  | Marker length |
|------------------------|----------------|-------------|------|-----------|---------------|
| 082 = Polyolefin Label | 5 = Height 4mm | 99 = White  | 01A  | 880 pcs.  | 15.0mm        |
| MultiMark              |                | 94 = Yellow | 03A  | 880 pcs.  | 30.0mm        |
|                        |                |             | 05A  | 792 pcs.  | 10.0mm        |
|                        |                |             | 02A  | 1760 pcs. | 15.0mm        |
|                        |                |             | 04A  | 1760 pcs. | 30.0mm        |
|                        |                |             | 06A  | 1848 pcs. | 10.0mm        |
|                        |                |             | 17A  | 1320 pcs. | 20.0mm        |
|                        |                |             | 18A  | 2640 pcs. | 20.0mm        |
|                        |                |             | 19A  | 3520 pcs. | 15.0mm        |

**Legends**

| Order Code | Marker<br>mm | Length<br><i>inches</i> | Marker<br>mm | Height<br><i>inches</i> | Pack | Quantity | Color  |
|------------|--------------|-------------------------|--------------|-------------------------|------|----------|--------|
| 08259905A  | 10.2         | <i>0.4</i>              | 4            | <i>0.16</i>             |      | 792      | White  |
| 08259906A  | 10.2         | <i>0.4</i>              | 4            | <i>0.16</i>             |      | 1848     | White  |
| 08259901A  | 15.2         | <i>0.6</i>              | 4            | <i>0.16</i>             |      | 880      | White  |
| 08259902A  | 15.2         | <i>0.6</i>              | 4            | <i>0.16</i>             |      | 1760     | White  |
| 08259919A  | 15.2         | <i>0.6</i>              | 4            | <i>0.16</i>             |      | 3520     | White  |
| 08259917A  | 20.2         | <i>0.8</i>              | 4            | <i>0.16</i>             |      | 1320     | White  |
| 08259918A  | 20.2         | <i>0.8</i>              | 4            | <i>0.16</i>             |      | 2640     | White  |
| 08259903A  | 30.2         | <i>1.2</i>              | 4            | <i>0.16</i>             |      | 880      | White  |
| 08259904A  | 30.2         | <i>1.2</i>              | 4            | <i>0.16</i>             |      | 1760     | White  |
| 08259405A  | 10.2         | <i>0.4</i>              | 4            | <i>0.16</i>             |      | 792      | Yellow |
| 08259406A  | 10.2         | <i>0.4</i>              | 4            | <i>0.16</i>             |      | 1848     | Yellow |
| 08259401A  | 15.2         | <i>0.6</i>              | 4            | <i>0.16</i>             |      | 880      | Yellow |
| 08259402A  | 15.2         | <i>0.6</i>              | 4            | <i>0.16</i>             |      | 1760     | Yellow |
| 08259419A  | 15.2         | <i>0.6</i>              | 4            | <i>0.16</i>             |      | 3520     | Yellow |
| 08259417A  | 20.2         | <i>0.8</i>              | 4            | <i>0.16</i>             |      | 1320     | Yellow |
| 08259418A  | 20.2         | <i>0.8</i>              | 4            | <i>0.16</i>             |      | 2640     | Yellow |
| 08259403A  | 30.2         | <i>1.2</i>              | 4            | <i>0.16</i>             |      | 880      | Yellow |
| 08259404A  | 30.2         | <i>1.2</i>              | 4            | <i>0.16</i>             |      | 1760     | Yellow |

**Carriers**

| Order Code | For Cable Diameter (mm) | For Cable Size (mm <sup>2</sup> ) | Carrier Size | Carrier Length | Pack Quantity |
|------------|-------------------------|-----------------------------------|--------------|----------------|---------------|
| 0825001    | 1.8 - 4.0               | 0.5 - 1.5                         | 0            | —              | 50m coil      |
| 0825016    | 1.8 - 4.0               | 0.5 - 1.5                         | 0            | 16             | 1200 pcs      |
| 0825032    | 1.8 - 4.0               | 0.5 - 1.5                         | 0            | 32             | 600 pcs       |
| 0825201    | 2.6 - 6.0               | 1.5 - 6.0                         | 2            | —              | 30m coil      |
| 0825216    | 2.6 - 6.0               | 1.5 - 6.0                         | 2            | 16             | 800 pcs       |
| 0825232    | 2.6 - 6.0               | 1.5 - 6.0                         | 2            | 32             | 400 pcs       |
| 0825416    | 5.2 - 8.0               | 4.0 - 16.0                        | 4            | 16             | 400 pcs       |
| 0825432    | 5.2 - 8.0               | 4.0 - 16.0                        | 4            | 32             | 200 pcs       |



Electronics

Heat Shrink/Cable Markers

## iMC Laser or hand writable marking clip

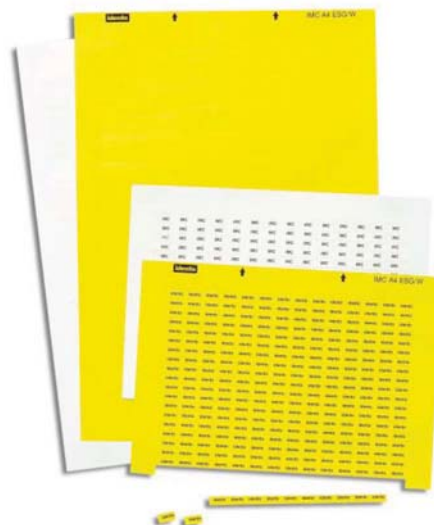
Tyco iMC are marking clips designed for the identification of wires and can be permanently attached to wires, post termination.

They can be quickly and simply clipped on the wire or cable. The polyester insert strip which can be printed using a laser printer or written by hand is then inserted in the clip.

The marking clips are fastened without the need of cable ties.

### Features and benefits

- Protects against damp, dust and dirt
- IMC polyester strip can be marked with a laser printer or by hand
- Quick and flexible
- iMC strip is a dual color label with white on one side and yellow on the other



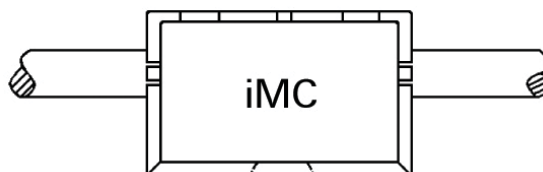
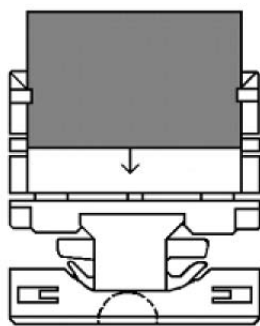
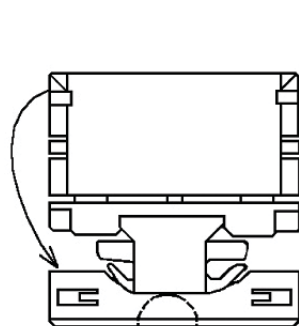
### Temperature rating

Operating temperature +80°C (+176°F)

### Printer Information

Standard laser printer with auto/manual sheet feed

Contact Tyco Electronics Electronics Identification for more information.



**Ordering Information**

*Marker Clips*

| Ordering Description | Clips per pack | Recommended Use Range mm ( <i>in</i> ) | Typical Cross Section mm <sup>2</sup> | Dimensions Length x Width mm ( <i>in</i> ) |
|----------------------|----------------|----------------------------------------|---------------------------------------|--------------------------------------------|
| iMC02                | 500            | 0.75 - 2.00<br>( <i>0.03 - 0.08</i> )  | 0.20 - 0.75                           | 15 x 7.8<br>( <i>0.59 - 0.31</i> )         |
| iMC04                | 500            | 1.75 - 3.25<br>( <i>0.07 - 0.13</i> )  | 0.50 - 1.50                           | 15 x 7.8<br>( <i>0.59 - 0.31</i> )         |
| iMC06                | 500            | 3.00 - 4.50<br>( <i>0.12 - 0.18</i> )  | 1.50 - 6.00                           | 15 x 9.5<br>( <i>0.59 - 0.37</i> )         |
| iMC08                | 500            | 4.25 - 6.00<br>( <i>0.17 - 0.24</i> )  | 6.00 - 10.00                          | 15 x 9.5<br>( <i>0.59 - 0.37</i> )         |

*Legend Strips (A4 Sheets)*

| Ordering Description | Labels per sheet | Color                         | Label Size Height x Width mm ( <i>in</i> ) |
|----------------------|------------------|-------------------------------|--------------------------------------------|
| iMCA4ES-4/9          | 560              | 1 side White<br>1 side Yellow | 6.4 x 12.2<br>( <i>0.25 x 0.48</i> )       |

**iKC/iKB Laser or hand writable cable clip**

Tyco iKC/iKB are cable clips designed for the identification of wires and cables in rough, damp and dusty environments.

The legend strip (iKB) with the printable information is embedded in the cable clip (iKC) and therefore has all-round protection.

The cable clips are fastened on using cable ties.

**Features and benefits**

- Protects against damp, dust and dirt
- iKB legend strip marked with a laser printer or by hand
- Universal application on various cable diameters
- iKB legend strip is a dual color label with white on one side and yellow on the other


**Temperature rating**

Operating temperature -26°C to +130°C (-15°F to +266°F)

**Printer Information**

Standard laser printer with auto/manual sheet feed

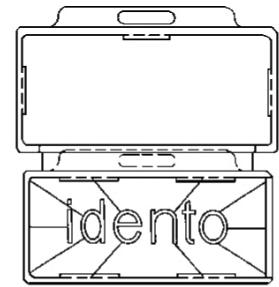
Contact Tyco Electronics Electronics Identification for more information.

**iKC/iKB Laser or hand writable cable clip (Cont'd)**

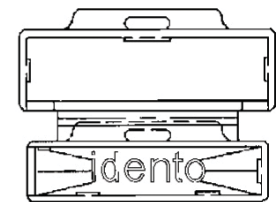
**Ordering Information**

*Cable Clips iKC*

| Ordering Description | Clips per pack | Dimensions<br>Length x Width mm ( <i>in</i> ) |
|----------------------|----------------|-----------------------------------------------|
| iKC01                | 25             | 44 x 21<br>( <i>1.73 - 0.83</i> )             |
| iKC02                | 25             | 34 x 10.5<br>( <i>1.34 - 0.41</i> )           |
| iKC03                | 25             | 68 x 10.5<br>( <i>2.68 x - 0.41</i> )         |



**iKC 01**



**iKC 02**



**iKC 03**

**Ordering Information**

*Legend Strips iKB (A4 Sheets)*

| Ordering Description | Labels per sheet | Color                         | Label Size<br>Height x Width mm ( <i>in</i> ) |
|----------------------|------------------|-------------------------------|-----------------------------------------------|
| iKB01P-9/4           | 60               | 1 side White<br>1 side Yellow | 16 x 40<br>( <i>0.63 x 1.57</i> )             |
| iKB02P-9/4           | 240              | 1 side White<br>1 side Yellow | 6.2 x 30<br>( <i>0.24 x 0.41</i> )            |
| iKB03P-9/4           | 120              | 1 side White<br>1 side Yellow | 6.2 x 64<br>( <i>0.24 x 0.41</i> )            |

