

## HX-SCE Low fire hazard heat-shrinkable wire identification sleeves

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 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

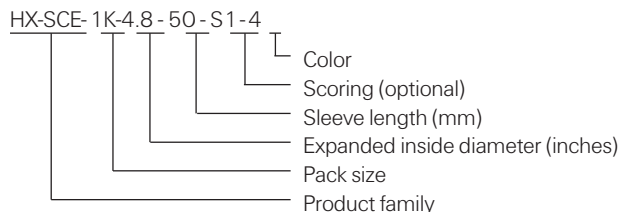
Tyco Electronics	RW 2072 TTDS-108
Military	SAE AS81531 4.6.2 MIL-STD-202 Method 215J
Industry	BS 6853 [1999] - Vehicle Category 1a LUL toxic fume (LUL E1042:A6 [2002]) -No halogen, O, N or S sources

### Printer information

Tyco Electronics printers	T3 12M and T2 12M (thermal transfer)
Tyco Electronics ribbons	1966 - RIBBON (T3 12M) T200 - RIBBON-1966 (T2 12M)



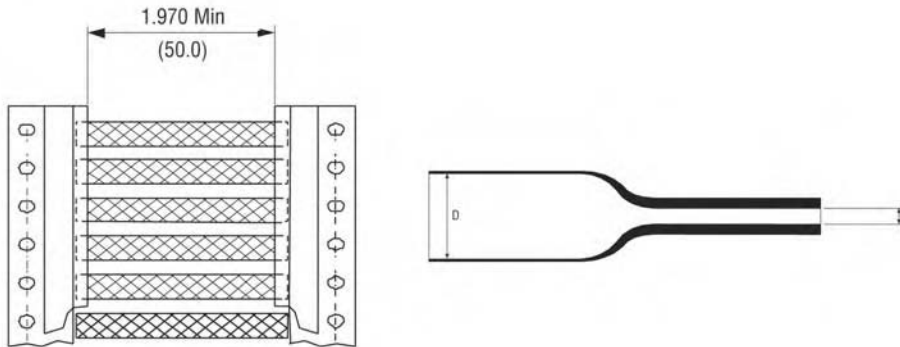
### Part numbering system



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### Ordering information



### Available sizes and formats

Ordering description	D (min) as supplied		Inside diameter		d (max) after recovery		Recommended use range	
	mm	<i>inches</i>	mm	<i>inches</i>	mm	<i>inches</i>	mm	<i>inches</i>
	HX-SCE-1K-2.4 - 50- <color>	2.40	<i>0.094</i>	1.19	<i>0.047</i>	1.27 - 1.90	<i>0.050 - 0.075</i>	
HX-SCE-1K-3.2 - 50- <color>	3.20	<i>0.126</i>	1.58	<i>0.060</i>	1.765 - 2.66	<i>0.069 - 0.105</i>		
HX-SCE-1K-4.8 - 50- <color>>	4.80	<i>0.189</i>	2.36	<i>0.090</i>	2.54 - 4.06	<i>0.100 - 0.160</i>		
HX-SCE-1K-6.4 - 50- <color>	6.40	<i>0.250</i>	3.18	<i>0.125</i>	3.81 - 5.46	<i>0.150 - 0.215</i>		
HX-SCE-1K-9.5 - 50- <color>	9.50	<i>0.375</i>	4.75	<i>0.187</i>	5.59 - 8.12	<i>0.220 - 0.320</i>		
HX-SCE-1K-12.7 - 50- <color>	12.70	<i>0.500</i>	6.35	<i>0.250</i>	6.99 - 10.79	<i>0.275 - 0.425</i>		
HX-SCE-1K-19.0 - 50- <color>	19.00	<i>0.730</i>	9.53	<i>0.375</i>	10.16 - 16.25	<i>0.400 - 0.640</i>		
HX-SCE-1K-25.4 - 50- <color>	25.40	<i>1.000</i>	12.70	<i>0.500</i>	14.29 - 21.59	<i>0.563 - 0.850</i>		
HX-SCE-1K-38.1 - 50- <color>	38.10	<i>1.500</i>	19.05	<i>0.750</i>	20.95 - 33.02	<i>0.825 - 1.300</i>		

### Options

Prescoring	Perforated score to produce multiple marker sleeves from each HX-SCE sleeve.				
	Nonstandard	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

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### Industry Standards

Standard	Title	Application
BS6853	Code of practice for fire precautions in the design and construction of passenger carrying trains.	Interior minor use materials of mass 100g to 500g. Vehicle category Ia.
<sup>1</sup> London Underground Limited Standard 2-01001-002	Fire Safety Performance of Materials	Limited, dispersed usage (abbreviation RS/EQ/I)
NF F 16-101	Railway Rolling Stock Fire behavior choice of materials	Rolling Stock Classification A 1
DIN 5510-2	Preventive fire protection in railway vehicles - Part 2: Fire behavior and fire side effects of materials and parts; Classification, Requirements and Test Methods.	Dripping Classification ST2
<sup>2</sup> EN50343	Railway Applications - Rolling Stock - Rules for installation of cabling.	Tests on marking when using heat-shrinkable sleeves

<sup>1</sup> This replaces LUL Engineering Standard E1042

<sup>2</sup> Not including resistance to liquid fuel - not recommended for use in areas where the sleeves may be subject to extended contact from diesel fuel - Tyco Electronics D-SCE product range is designed for use in these areas.

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### Technical Information

Print Method/Ribbon:	T312M-PRINTER with 1966-RIBBON or T212M-PRINTER with T200-1966-RIBBON
Service Temperature	-30°C to +105°C (-22°F to +221°F)
Minimum Shrink Temperature	136°C (275°F)
Colors:	White or yellow. Other colors available on request.
Flammability:	<b>Self-extinguishing -</b> (ASTM D2671 Procedure B). <b>Oxygen Index (BS6853: Pass 34% Min.) -</b> (BS EN ISO 4589-2 [1999]). (AFNOR NF F 16-101 Class 12). <b>Dripping Classification ST2 -</b> (DIN 5510-2)
Smoke:	<b>AO-0.017 Max.</b> (BS 6853 [1999] Annex D [D.8.3] Small scale test <b>Smoke Index Determination (IF)</b> <b>Maximum 0, Smoke Class F1 -</b> (AFNOR NF F 16-101-1988 Smoke Index)
Toxicity:	<b>R &lt; 1 -</b> (BS 6853 [1999] Annex B - AFNOR NF X 70-100 Determination of weighted summation of toxic fume, mass based method) <b>LUL Toxic Fume: No. Halogens, No. P, S or N sources above trace level -</b> (LUL E1042: A6 [2002]) - London Underground Standard 2-01001-002, section 5.2.3 Chemical composition/toxicity) <b>Toxicity Index = 0.34 -</b> (CEI 20-37-7-09-1997 Determination of toxicity index of gasses from combustion of organic material)
Dielectric Strength:	15V/mm minimum.
Water Absorption	11% maximum after 24 hours at 23C (73°F)
Copper Mirror Corrosion:	8% maximum after 16 hours of 150°C (302°F)
Longitudinal Change:	+5% to -10%.
Tensile Strength:	7MPa minimum.
Ultimate Elongation:	80% minimum.
Secant Modulus:	200MPa minimum at 2% elongation.
UL Resistance:	Tensile strength >90% & ultimate elongation >40% or original value after 1000 hours (ASTM G53: UVA [100% dry cycle]; UVB [8 hours dry/4 hours wet cycle]).
Print Permanence:	ADHERENCE - Meets the requirements of SE AS81531 4.6.2 (50 rubs). FLUID RESISTANCE - Meets the requirements of MIL-STD-202 method 215J.