



**WIRE AND HARNESS ID PRODUCTS**

**3**

- Heat Shrink/Cable Markers*
- Performance Labels*
- Self-Laminating Labels*
- Pre-Printed Wire and Cable Markers*



**LABEL ID PRODUCTS**

**86**

- Product Code Cross Reference*
- Thermal Transfer Labels*
- Dot Matrix Labels*
- Laser Labels*



**HARDWARE/SOFTWARE**

**134**

- Printers*
- Scanners and Imagers*
- Laser Marking Systems*
- Ribbons*
- Software*
- Application Systems*



**SPECIALTY PRODUCTS**

**164**

- RFID*
- Pre-Print Services*
- Permark®*
- Rail – Signal Products*
- Tube and Pipe ID Labels*

**REFERENCE**

- Printer/Material/Ribbon Cross Reference* **180**
- Master Material Specification Chart* **182**
- Industry Icon Key* **186**
- Part Number Index* **187**

---

**Engineering Notes**

---





### HEAT SHRINK/CABLE MARKERS

TMS-SCE Military Grade Sleeves . . . . .	4	HTCM-SCE High Temp Tie-on Tags . . . . .	22
HT-SCE High Temperature Sleeves . . . . .	6	HLX Low Fire Hazard Tie-on Tags . . . . .	24
HX-SCE Low Fire Hazard Sleeves . . . . .	8	HLX-NEL Low Fire Hazard Tie-On Tags . . . . .	26
D-SCE Fluid Resistant Sleeves . . . . .	12	HL Tie-On Tags . . . . .	28
NBC-SCE Nuclear, Biological and Chemical Resistant Sleeves . . . . .	14	NMX Flame Retardant Polyaramid Tags . . . . .	30
RPS Commercial Grade Sleeves . . . . .	16	MultiMark . . . . .	32
TMS-CCUV UV Resistant Oversleeves . . . . .	18	iMC Snap-on Cable Clip . . . . .	34
CM-SCE Polyolefin Tags . . . . .	20	iKC/iKB Tie-On Cable Clip . . . . .	36



### PERFORMANCE LABELS

VF/NPVF/VF-130 Polyvinyl Fluoride . . . . .	38	TTP Polyester . . . . .	44
RMK-6 Epoxy Coated Polyester . . . . .	40	HPK Polypropylene . . . . .	46
RMK Epoxy Coated Polyester . . . . .	42		



### SELF-LAMINATING LABELS

SB Thermal Transfer Vinyl . . . . .	48	CSL Polyester Laser Printable . . . . .	60
SP Self Laminating Polyester . . . . .	50	TKM Self-writable, Self-laminating Label Booklet . . . . .	62
PVF Thermal Transfer Polyvinyl Fluoride . . . . .	52	Label Dimensions . . . . .	64
TW Dot Matrix Vinyl . . . . .	54	TEK Vinyl Fabric Labels . . . . .	66
PV Dot Matrix Polyvinyl Fluoride . . . . .	56	CMD Label Dispenser . . . . .	68
LSR Polyester Laser Printable . . . . .	58	WCD Label Dispenser . . . . .	70



### PRE-PRINTED WIRE AND CABLE MARKERS

K-Type Cable Markers . . . . .	72	O-Type Cable Markers . . . . .	80
G-Type Cable Markers . . . . .	74	Snap On Markers . . . . .	82
Z-Type Push On Wire Markers . . . . .	76	CWM Wire Marker Cards . . . . .	84
V-Type Cable Markers . . . . .	78		

## 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 retardant, radiation-crosslinked heat-shrinkable polyolefin, TMS-SCE marker sleeves can be used in a wide variety of applications. All TMS-SCE meet the performance requirements of SAE-ASM-DTL-23053/5 class 1. TMS-SCE-2X meets all of the requirements of SAE-AMS-DTL-23053/5 classes 1 and 3. 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-202 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 25 11 TTDS-Q23
Military	SAE-AMS-DTL-23053/5 class 1 and 3 (TMS-SCE-2X) SAE-AMS-DTL-23053/5 class 1 (TMS-SCE) SAE AS81531 4.6.2, MIL-STD-202 Method 215J
Industry	UL Recognized – Standard 224, file E35586 (TMS-SCE-2X is UL224-VW1 rated. TMS-SCE is UL224-all tube flame test rated) CSA Certified – File 31929

### Printer information

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

### Part numbering system

TMS-SCE - 2X - 1K<sup>-1</sup>/s- 2.0-S1-9



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

**Ordering information**



**Available sizes and formats**

Ordering description	Expanded D (minimum)		Recovered d (maximum)		Recommended use range		Recovered wall thickness		Weight (g/10 pcs.)
	mm	inches	mm	inches	mm	inches	mm	inches	
	TMS-SCE-1K- <sup>3</sup> / <sub>32</sub> -2.0- <color>	2.36	0.093	0.79	0.031	0.81 - 1.90	0.032 - 0.075	0.53 ± 0.08	
TMS-SCE-2X-1K- <sup>3</sup> / <sub>32</sub> - <color>	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- <color>	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> - <color>	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- <color>	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> - <color>	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- <color>	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> - <color>	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- <color>	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> - <color>	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- <color>	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> - <color>	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- <color>	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> - <color>	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- <color>	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- <color>	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- <color>	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- <color>	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.							
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: 3:1 products yellow and white 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)

TMS-SCE-2X only available in white

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

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 retardant, heat-shrinkable fluoro-polymer 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 AS8153 1 4.6.2 and MIL-STD-202. HT-SCE markers are supplied in boxes of 1000 sleeves and are available in nine diameter sizes. These cover substrates from 0.8mm to 34.0mm. 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	RW 2512 TTDS-020
Military	SAE AS 81531 4.6.2 MIL-STD-202 Method 215J

### Printer information

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



### Part numbering system



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

**Ordering information**



**Available sizes and formats**

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

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

## 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





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

### 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

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

### 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.

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

### 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 Toxid 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.

## D-SCE Fluid resistant heat-shrinkable 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 25 19 TTDS-017
Military	SAE-AMS-DTL-23053/6, Class 1 (material and performance requirements) SAE AS8153 1 4.6.2 MIL-STD-202 Method 2 15J
Industry	NF F 00 608 Category A and H

### Printer information

Tyco Electronics printer	AM63 10 (dot matrix) T3 12M (thermal transfer)
Tyco Electronics ribbon	1892BK04-RIBBON (dot matrix) 1966-RIBBON

### Part numbering system



## D-SCE Fluid resistant heat-shrinkable wire identification sleeves

### Ordering information



### Available sizes and formats

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

\* 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

## NBC-SCE Nuclear, biological, chemical resistant 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°C to +225°C (-67°F to +437°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°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	RW 25 14
Military	SAE AS8153 1 4.6.2 MIL-STD-202 Method 215J

### Printer information

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

### Part numbering system

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



**NBC-SCE Nuclear, biological, chemical resistant heat-shrinkable wire identification sleeves**

**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-1/8- 2.0<color>	3.43	<i>0.135</i>	1.59	<i>0.062</i>	1.75-2.66	<i>0.069-0.105</i>	0.38 ± 0.08	<i>0.015 ± 0.003</i>
NBC-SCE-1K-1/4- 2.0<color>	6.35	<i>0.250</i>	3.18	<i>0.125</i>	3.81-5.46	<i>0.150-0.215</i>	0.38 ± 0.08	<i>0.015 ± 0.003</i>
NBC-SCE-1K-1/2- 2.0<color>	12.70	<i>0.500</i>	6.35	<i>0.250</i>	6.99-10.79	<i>0.275-0.425</i>	0.38 ± 0.08	<i>0.015 ± 0.003</i>
NBC-SCE-1K-3/4- 2.0<color>	19.05	<i>0.750</i>	9.53	<i>0.375</i>	10.16-16.25	<i>0.400-0.640</i>	0.38 ± 0.08	<i>0.015 ± 0.003</i>
NBC-SCE-1K-1- 2.0<color>	25.40	<i>1.000</i>	12.70	<i>0.500</i>	14.70-21.50	<i>0.578-0.846</i>	0.43 ± 0.10	<i>0.017 ± 0.004</i>
NBC-SCE-1K-1-1/2- 2.0<color>	38.10	<i>1.500</i>	19.05	<i>0.750</i>	20.95-33.02	<i>0.825-1.300</i>	0.43 ± 0.10	<i>0.017 ± 0.004</i>

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
			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

## RPS Commercial grade heat-shrinkable 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 25 10 TTDS-019
Military	SAE AS81531 4.6.2 MIL-STD-202 Method 215J
Industry	UL Recognized – standard 224, file E35586 CSA Certified – file 31929

### Printer information

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

### Part numbering system





**RPS Commercial grade heat-shrinkable wire identification sleeves**

**Ordering information**



**Available sizes and formats**

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

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

## 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



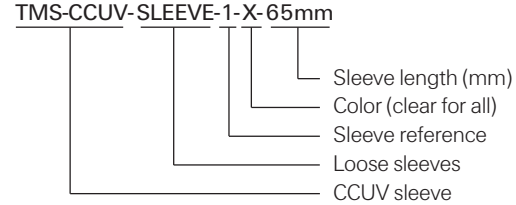
### Temperature rating

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

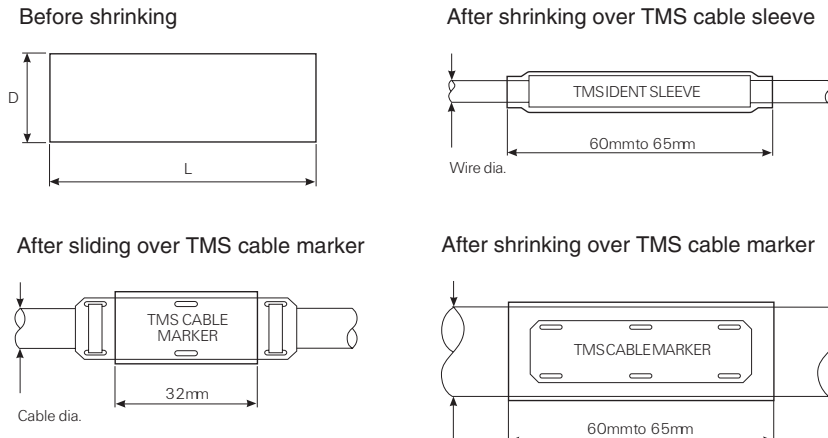
### Specifications/approvals

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

### Part numbering system



### Ordering information



### TMS-CCUV Heat-shrinkable UV protection sleeves

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

Some sleeve sizes may need to be recovered partially before CUV 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	<i>inches</i>	mm	<i>inches</i>	mm	<i>inches</i>	mm	<i>inches</i>
TMS-CCUV-SLEEVE-4-X-65mm	65	9.50	<i>0.375</i>	4.80	<i>0.189</i>	5.00-8.00	<i>0.197-0.315</i>	6.40	<i>0.250</i>
TMS-CCUV-SLEEVE-5-X-65mm	65	12.70	<i>0.500</i>	6.40	<i>0.252</i>	7.00-11.00	<i>0.275-0.433</i>	6.40	<i>0.250</i>
TMS-CCUV-SLEEVE-6-X-65mm	65	19.00	<i>0.750</i>	9.50	<i>0.374</i>	12.00-17.00	<i>0.472-0.669</i>	12.70	<i>0.500</i>
TMS-CCUV-SLEEVE-7-X-65mm	65	25.40	<i>1.000</i>	12.70	<i>0.500</i>	15.00-23.00	<i>0.590-0.905</i>	12.70	<i>0.500</i>

(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	<i>inches</i>	mm	<i>inches</i>	mm	<i>inches</i>	mm	<i>inches</i>
TMS-CCUV-SLEEVE-9-X-32mm	32	6.40	<i>0.250</i>	3.20	<i>0.126</i>	N/A		6.40	<i>0.250</i>
TMS-CCUV-SLEEVE-10-X-32mm	32	12.70	<i>0.500</i>	6.40	<i>0.252</i>	N/A		12.70	<i>0.500</i>

(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	<i>inches</i>	mm	<i>inches</i>	mm	<i>inches</i>	mm	<i>inches</i>
TMS-CCUV-SLEEVE-15	76	3.20	<i>0.125</i>	1.60	<i>0.063</i>	1.80-2.80	<i>0.071-0.110</i>	3.20	<i>0.125</i>
TMS-CCUV-SLEEVE-16	76	4.80	<i>0.187</i>	2.40	<i>0.094</i>	2.60-3.70	<i>0.102-0.146</i>	4.80	<i>0.188</i>
TMS-CCUV-SLEEVE-17	76	6.40	<i>0.250</i>	3.20	<i>0.126</i>	3.50-5.10	<i>0.138-0.201</i>	6.40	<i>0.250</i>
TMS-CCUV-SLEEVE-18	76	9.50	<i>0.375</i>	4.80	<i>0.189</i>	5.00-7.00	<i>0.197-0.275</i>	9.50	<i>0.375</i>
TMS-CCUV-SLEEVE-19	76	12.70	<i>0.500</i>	6.40	<i>0.252</i>	6.90-10.60	<i>0.272-0.417</i>	12.70	<i>0.500</i>
TMS-CCUV-SLEEVE-20	76	19.00	<i>0.750</i>	9.50	<i>0.374</i>	10.00-14.00	<i>0.394-0.551</i>	19.00	<i>0.750</i>
TMS-CCUV-SLEEVE-21	76	25.40	<i>1.000</i>	12.70	<i>0.500</i>	13.30-21.00	<i>0.524-0.827</i>	25.40	<i>1.000</i>
TMS-CCUV-SLEEVE-22	76	38.10	<i>1.500</i>	19.00	<i>0.748</i>	21.00-33.80	<i>0.827-1.331</i>	38.10	<i>1.500</i>

\*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 TMS-CCUV-SLEEVE-1-X- 65mm	
	For NBC-SCE TMS-CCUV-SLEEVE-22	

## CM-SCE Military grade 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-202.

### 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 TTDS-021
Military	Mark permanence: SAE AS81531 4.6.2 Solvent resistance: MIL-STD-202 Method 215J
Industry	UL MH26328 Group PG1S2

### 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



## CM-SCE Military grade tie-on cable marker tags

### Ordering information



Figure 1  
CM-SCE-1/4 INCH

### Available sizes and formats

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

\* 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

## HTCM-SCE High temperature, low outgassing 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-202.

### 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	RW 2524 TTDS-022
Military	Mark permanence: SAE AS81531 4.6.2 Solvent resistance: MIL-STD-202 Method 215J

### Printer information

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

### Part numbering system



**HTCM-SCE High temperature, low outgassing tie-on-cable marker tags**

**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	<i>inches</i>	mm	<i>inches</i>	mm	<i>inches</i>
HTCM-SCE-TP-1/4-4H- <color>	1/4	6.40	<i>0.250</i>	50.80	<i>2.000</i>	5.08 – 12.50	<i>0.200 – 0.492</i>
HTCM-SCE-TP-1/2-4H- <color>	1/2	12.70	<i>0.500</i>	50.80	<i>2.000</i>	12.50 and up	<i>0.492 and up</i>
HTCM-SCE-TP-1/2-6H- <color>	1/2	12.70	<i>0.500</i>	50.80	<i>2.000</i>	12.50 and up	<i>0.492 and up</i>

**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

### HLX Low fire hazard tie-on 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    -40°C to +105°C    -40°F to +221°F

#### Specifications/approvals

Tyco Electronics	RW 2523 TTDS-013
Military	SAE AS81531 4.6.2 MIL-STD-202 Method 215J
Industry	BS 4G 198 Part 3 ASTMD 2671

#### Printer information

Tyco Electronics printer	T3 12M (thermal transfer)
Tyco Electronics ribbon	1966-RIBBON

#### Part numbering system





## HLX Low fire hazard tie-on cable marker tags

### 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	<i>1.800 x 0.400</i>	25.00 x 10.40	<i>1.000 x 0.400</i>	1000
HLX104<color>1<format>033B	52.00 x 10.40	<i>2.100 x 0.400</i>	33.00 x 10.40	<i>1.300 x 0.400</i>	1000
HLX104<color>1<format>038B	58.00 x 10.40	<i>2.300 x 0.400</i>	38.00 x 10.40	<i>1.500 x 0.400</i>	1000
HLX104<color>1<format>050B	70.00 x 10.40	<i>2.750 x 0.400</i>	50.00 x 10.40	<i>2.000 x 0.400</i>	1000
HLX104<color>1<format>070B	90.00 x 10.40	<i>3.500 x 0.400</i>	70.00 x 10.40	<i>2.750 x 0.400</i>	1000
HLX150<color>1<format>025B	45.00 x 15.00	<i>1.800 x 0.600</i>	25.00 x 15.00	<i>1.000 x 0.600</i>	500
HLX150<color>1<format>033B	52.00 x 15.00	<i>2.100 x 0.600</i>	33.00 x 15.00	<i>1.300 x 0.600</i>	500
HLX150<color>1<format>038B	58.00 x 15.00	<i>2.300 x 0.600</i>	38.00 x 15.00	<i>1.500 x 0.600</i>	500
HLX150<color>1<format>050B	70.00 x 15.00	<i>2.750 x 0.600</i>	50.00 x 15.00	<i>2.000 x 0.600</i>	500
HLX150<color>1<format>070B	90.00 x 15.00	<i>3.500 x 0.600</i>	70.00 x 15.00	<i>2.750 x 0.600</i>	500
HLX203<color>1<format>025B	45.00 x 20.30	<i>1.800 x 0.800</i>	25.00 x 20.30	<i>1.000 x 0.800</i>	500
HLX203<color>1<format>033B	52.00 x 20.30	<i>2.100 x 0.800</i>	33.00 x 20.30	<i>1.300 x 0.800</i>	500
HLX203<color>1<format>038B	58.00 x 20.30	<i>2.300 x 0.800</i>	38.00 x 20.30	<i>1.500 x 0.800</i>	500
HLX203<color>1<format>050B	70.00 x 20.30	<i>2.750 x 0.800</i>	50.00 x 20.30	<i>2.000 x 0.800</i>	500
HLX203<color>1<format>070B	90.00 x 20.30	<i>3.500 x 0.800</i>	70.00 x 20.30	<i>2.750 x 0.800</i>	500
HLX253<color>1<format>025B	45.00 x 25.30	<i>1.800 x 1.000</i>	25.00 x 25.30	<i>1.000 x 1.000</i>	250
HLX253<color>1<format>033B	52.00 x 25.30	<i>2.100 x 1.000</i>	33.00 x 25.30	<i>1.300 x 1.000</i>	250
HLX253<color>1<format>038B	58.00 x 25.30	<i>2.300 x 1.000</i>	38.00 x 25.30	<i>1.500 x 1.000</i>	250
HLX253<color>1<format>050B	70.00 x 25.30	<i>2.750 x 1.000</i>	50.00 x 25.30	<i>2.000 x 1.000</i>	250
HLX253<color>1<format>070B	90.00 x 25.30	<i>3.500 x 1.000</i>	70.00 x 25.30	<i>2.750 x 1.000</i>	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

### HLX-NEL Narrow Edge Leading Low fire hazard tie-on cable marker tags

HLX cable markers assembled in a Narrow Edge Leading (NEL) format for use in the T2 12M printer. Ideal for use in applications where the volume is small or wiring complexity is simple.

These markers are manufactured from the same low fire hazard material as the standard HLX markers making them ideal in applications where low smoke, low toxicity and zero halogen are critical.

These markers are attached to cables, bundles, and larger wire by cable ties.

#### Features and benefits

- Recommended for use where combustion of products may endanger personnel or delicate electronics
- Ideal for low volume applications with T2 12M printer
- Two formats available
- Same material and approvals as standard HLX cable markers
- Ideal for pre or post termination assembly



#### Temperature rating

Operating temperature range    -40°C to +105°C    -40°F to +221°F

#### Specifications/approvals

Tyco Electronics	RW 2529
	TTDS-134
Industry	UL 224 (clause 14)
	BS 4G 198 Part 3
	ASTM D 2671
	SAE AS8 1531 4.6.2
	MIL-STD-202 Method 215K

#### Printer information

Tyco Electronics printer	T2 12M (thermal transfer only)
Tyco Electronics ribbon	1966-RIBBON-4T200

#### Part numbering system



**HLX-NEL Narrow Edge Leading Low fire hazard tie-on cable marker tags (Cont'd)**

**Ordering information**



**Available sizes and formats**

Ordering description	Marker dimensions (W x H)		Printable area (W x H)		Number of Markers Across
	mm	<i>inches</i>	mm	<i>inches</i>	
HLX125<color>4NEL60S	80.00 x 12.50	<i>3.15 x 0.49</i>	60.00 x 10.50	<i>12.35 x 0.40</i>	4
HLX125<color>2NEL60S	80.00 x 12.50	<i>3.15 x 0.49</i>	60.00 x 10.50	<i>12.35 x 0.40</i>	2

**Options**

Package sizes	Standard	S		
Colors	Standard	White	Yellow	
Colors		WE	YW	
Format	NEL - Narrow edge leading			

## HL Flame retardant tie-on cable marker tags

Used to identify large cables and bundles either pre or post-termination, these flame retardant 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  $+135^{\circ}\text{C}$   $-67^{\circ}\text{F}$  to  $+275^{\circ}\text{F}$

### Specifications/approvals

Tyco Electronics	TTDS-037
Military	SAE AS81531 4.6.2
	MIL-STD-202 Method 215J
Industry	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)
	TMS-RJS-RIBBON-4RPSCE

### Part numbering system



## HL Flame retardant tie-on cable marker tags

### 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	<i>1.800 x 0.400</i>	25.00 x 10.40	<i>1.000 x 0.400</i>	550	1000
HL104<color>1<format>033B	52.00 x 10.40	<i>2.100 x 0.400</i>	33.00 x 10.40	<i>1.300 x 0.400</i>	550	1000
HL104<color>1<format>038B	58.00 x 10.40	<i>2.300 x 0.400</i>	38.00 x 10.40	<i>1.500 x 0.400</i>	550	1000
HL104<color>1<format>050B	70.00 x 10.40	<i>2.750 x 0.400</i>	50.00 x 10.40	<i>2.000 x 0.400</i>	550	1000
<i>HL104&lt;color&gt;1&lt;format&gt;070B</i>	<i>90.00 x 10.40</i>	<i>3.500 x 0.400</i>	<i>70.00 x 10.40</i>	<i>2.750 x 0.400</i>	550	1000
HL150<color>1<format>025B	45.00 x 15.00	<i>1.800 x 0.600</i>	25.00 x 15.00	<i>1.000 x 0.600</i>	550	500
HL150<color>1<format>033B	52.00 x 15.00	<i>2.100 x 0.600</i>	33.00 x 15.00	<i>1.300 x 0.600</i>	550	500
HL150<color>1<format>038B	58.00 x 15.00	<i>2.300 x 0.600</i>	38.00 x 15.00	<i>1.500 x 0.600</i>	550	500
HL150<color>1<format>050B	70.00 x 15.00	<i>2.750 x 0.600</i>	50.00 x 15.00	<i>2.000 x 0.600</i>	550	500
HL150<color>1<format>070B	90.00 x 15.00	<i>3.500 x 0.600</i>	70.00 x 15.00	<i>2.750 x 0.600</i>	550	500
HL203<color>1<format>025B	45.00 x 20.30	<i>1.800 x 0.800</i>	25.00 x 20.30	<i>1.000 x 0.800</i>	550	500
HL203<color>1<format>033B	52.00 x 20.30	<i>2.100 x 0.800</i>	33.00 x 20.30	<i>1.300 x 0.800</i>	550	500
HL203<color>1<format>038B	58.00 x 20.30	<i>2.300 x 0.800</i>	38.00 x 20.30	<i>1.500 x 0.800</i>	550	500
HL203<color>1<format>050B	70.00 x 20.30	<i>2.750 x 0.800</i>	50.00 x 20.30	<i>2.000 x 0.800</i>	550	500
HL203<color>1<format>070B	90.00 x 20.30	<i>3.500 x 0.800</i>	70.00 x 20.30	<i>2.750 x 0.800</i>	550	500
HL253<color>1<format>025B	45.00 x 25.30	<i>1.800 x 1.000</i>	25.00 x 25.30	<i>1.000 x 1.000</i>	300	250
HL253<color>1<format>033B	52.00 x 25.30	<i>2.100 x 1.000</i>	33.00 x 25.30	<i>1.300 x 1.000</i>	300	250
HL253<color>1<format>038B	58.00 x 25.30	<i>2.300 x 1.000</i>	38.00 x 25.30	<i>1.500 x 1.000</i>	300	250
HL253<color>1<format>050B	70.00 x 25.30	<i>2.750 x 1.000</i>	50.00 x 25.30	<i>2.000 x 1.000</i>	300	250
HL253<color>1<format>070B	90.00 x 25.30	<i>3.500 x 1.000</i>	70.00 x 25.30	<i>2.750 x 1.000</i>	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

**NMX Flame retardant, light weight tie-on 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°C to +135°C     -40°F to +275°F

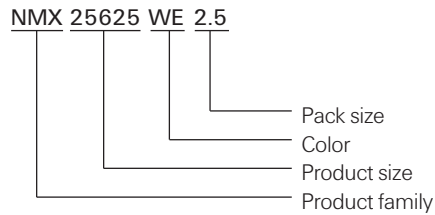
**Specifications/approvals**

Tyco Electronics	TTDS-030
Military	SAE AS8153 1 4.6.2, MIL-STD-202 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 Flame retardant, light weight tie on cable marker tags**

*Ordering information*



*Available sizes and formats*

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

## MultiMark Strip and 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

Tyco Electronics	TTDS-003
Military	MIL-STD 202 method 215J SAE-AS81531 4.6.2

### Printer information

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

### Part numbering system





**MultiMark Strip and Carriers insert marker for post termination identification**

**Ordering Information**

Type	Format Number	Color	Size	Pack Qty	Marker length
O82 = Polyolefin Label	5 = height 4mm	99 = White	O1A	880 pcs.	15.0mm
MultiMark		94 = Yellow	O3A	880 pcs.	30.0mm
			O5A	792 pcs.	10.0mm
			O2A	1760 pcs.	15.0mm
			O4A	1760 pcs.	30.0mm
			O6A	1848 pcs.	10.0mm
			17A	1320 pcs.	20.0mm
			18A	2640 pcs.	20.0mm
			19A	3520 pcs.	15.0mm

**Legends**

Order Code	Marker mm	Length inches	Marker mm	Height inches	Pack	Quantity	Color
O8259905A	10.2	<i>0.4</i>	4	<i>0.16</i>		792	White
O8259906A	10.2	<i>0.4</i>	4	<i>0.16</i>		1848	White
O8259901A	15.2	<i>0.6</i>	4	<i>0.16</i>		880	White
O8259902A	15.2	<i>0.6</i>	4	<i>0.16</i>		1760	White
O8259919A	15.2	<i>0.6</i>	4	<i>0.16</i>		3520	White
O8259917A	20.2	<i>0.8</i>	4	<i>0.16</i>		1320	White
O8259918A	20.2	<i>0.8</i>	4	<i>0.16</i>		2640	White
O8259903A	30.2	<i>1.2</i>	4	<i>0.16</i>		880	White
O8259904A	30.2	<i>1.2</i>	4	<i>0.16</i>		1760	White
O8259405A	10.2	<i>0.4</i>	4	<i>0.16</i>		792	Yellow
O8259406A	10.2	<i>0.4</i>	4	<i>0.16</i>		1848	Yellow
O8259401A	15.2	<i>0.6</i>	4	<i>0.16</i>		880	Yellow
O8259402A	15.2	<i>0.6</i>	4	<i>0.16</i>		1760	Yellow
O8259419A	15.2	<i>0.6</i>	4	<i>0.16</i>		3520	Yellow
O8259417A	20.2	<i>0.8</i>	4	<i>0.16</i>		1320	Yellow
O8259418A	20.2	<i>0.8</i>	4	<i>0.16</i>		2640	Yellow
O8259403A	30.2	<i>1.2</i>	4	<i>0.16</i>		880	Yellow
O8259404A	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
O825001	1.8 - 4.0	0.5 - 1.5	0	—	50m coil
O825016	1.8 - 4.0	0.5 - 1.5	0	16	1200 pcs
O825032	1.8 - 4.0	0.5 - 1.5	0	32	600 pcs
O825201	2.6 - 6.0	1.5 - 6.0	2	—	30m coil
O825216	2.6 - 6.0	1.5 - 6.0	2	16	800 pcs
O825232	2.6 - 6.0	1.5 - 6.0	2	32	400 pcs
O825416	5.2 - 8.0	4.0 - 16.0	4	16	400 pcs
O825432	5.2 - 8.0	4.0 - 16.0	4	32	200 pcs

**iMC Laser or hand writable marking clip**

Tyco Electronics 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 0° to +80°C (+32° to +176°F)

**Printer Information**

Standard laser printer with auto/manual sheet feed

Contact Tyco Electronics Electronics Identification for more information.



**iMC Laser or hand writable marking clip**

**Ordering Information**

*Marker Clips*

Ordering Description	Clips per pack	Recommended Use Range mm ( <i>inches</i> )	Typical Cross Section mm <sup>2</sup>	Dimensions Length x Width mm ( <i>inches</i> )
iMCO2	500	0.75 - 2.00 ( <i>0.03 - 0.08</i> )	0.20 - 0.75	15 x 7.8 ( <i>0.59 - 0.31</i> )
iMCO4	500	1.75 - 3.25 ( <i>0.07 - 0.13</i> )	0.50 - 1.50	15 x 7.8 ( <i>0.59 - 0.31</i> )
iMCO6	500	3.00 - 4.50 ( <i>0.12 - 0.18</i> )	1.50 - 6.00	15 x 9.5 ( <i>0.59 - 0.37</i> )
iMCO8	500	4.25 - 6.00 ( <i>0.17 - 0.24</i> )	6.00 - 10.00	15 x 9.5 ( <i>0.59 - 0.37</i> )

*Legend Strips (A4 Sheets)*

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

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

Tyco Electronics 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**

**Ordering Information**

*Cable Clips iKC*

Ordering Description	Clips per pack	Dimensions L x W mm ( <i>inches</i> )
iKC01	25	44 x 21 ( <i>1.73 - 0.83</i> )
iKC02	25	34 x 10.5 ( <i>1.34 - 0.41</i> )
iKC03	25	68 x 10.5 ( <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 H x W mm ( <i>inches</i> )
iKB01P-9/4	60	1 side White 1 side Yellow	16 x 40 ( <i>0.63 x 1.57</i> )
iKB02P-9/4	240	1 side White 1 side Yellow	6.2 x 30 ( <i>0.24 x 0.41</i> )
iKB03P-9/4	120	1 side White 1 side Yellow	6.2 x 64 ( <i>0.24 x 0.41</i> )



## VF/NPVF/VF-130 Tedlar® color coding tape and labels

This polyvinyl fluoride material is designed for use as a wire/cable marker, label and wrap-around in the general aviation industry. The product is ideal for a variety of harsh chemical environments and where non-igniting/self-extinguishing properties are a necessity. It is available in several application-defined types and sizes and can be used with various printing technologies.

### VF series

The VF series of Tedlar® products is specifically designed for wire/cable labeling. The product is dot matrix or thermal transfer printable and is available in several continuous and die-cut formats to fit a wide range of cables/cable bundles. The product meets all the requirements of the BMS 13-47, DMS 2359 and GAT100BA specifications, the benchmarks for pressure-sensitive wrap-around labels in the aerospace industry.

### NPVF Series

The NPVF Tedlar® is a non-printable, 12.7mm (0.5") wide and 30.48m (100') long continuous tape designed for use as a color-coded identifier for cables/cable bundles. Besides identifying the bundle this product is wrapped around, it also provides strength and rigidity to the bundle. The product has all the features of the VF series of Tedlar® products except for printability.

### VF-130 Series

The VF-130 series is a range of clear non-printable Tedlar® tapes designed for use as an over laminate on wires/bundle identifiers where additional UV protection is required. These tapes can be used over various types of identifiers like wrap around labels, heat-shrink labels, tie-on cable labels and pressure-sensitive markers.

### Features and benefits

- Resists water, oil, conventional cleaning agents, and oil based solvents
- Filters UV light
- Exhibits high degree of resistance to aging
- Meets the requirements of MIL-M-87958
- Available in several colors to facilitate color-coding and clear for over laminating



### Temperature rating

Operating temperature range		
VF and NPVF	-40°C to +130°C	-40°F to +266°F
VF-130	-40°C to +105°C	-40°F to +221°F
VF-130	-40°C to 105°C	-40°F to 221°F

### Specifications/approvals

Tyco Electronics	TTDS-005 (TTVF/DMVF)
	TTDS-004 (NPVF)
Military	MIL-M-87958 DMS 2359
Industry	BMS-13-47 BACT 19 GAT100BA

### Printer information

Tyco Electronics printer	AM6310 (dot matrix) T308S* (thermal transfer) *Size dependent. Contact Tyco Electronics.
Tyco Electronics ribbon	1892BK01 (dot matrix) 1330-3300-10* (thermal transfer) * Alternative printers and ribbons are available for special applications. Contact Tyco Electronics Electronics Identification for more information.

### Part numbering system (Continuous)



### Part numbering system (Die-Cut)



## VF/NPVF/VF-130 Tedlar® color coding tape and labels

### Ordering information



### Polyvinyl Fluoride VF Tedlar® – Continuous Labels

Ordering description	Printer type	Label width		Label length		Quantity per pack
		mm	<i>inches</i>	Meters	<i>Feet</i>	
<format>VF050<color> -180	DM/TT	12.70	<i>0.500</i>	54.86	<i>180</i>	Continuous
<format>VF075<color> -100	DM/TT	19.05	<i>0.750</i>	30.48	<i>100</i>	Continuous
<format>VF100<color> -100	DM/TT	25.40	<i>1.000</i>	30.48	<i>100</i>	Continuous
<format>VF150<color> -100	DM/TT	38.10	<i>1.500</i>	30.48	<i>100</i>	Continuous
<format>VF200<color> -100	DM/TT	50.80	<i>2.000</i>	30.48	<i>100</i>	Continuous
<format>VF300<color> -100	DM/TT	76.20	<i>3.000</i>	30.48	<i>100</i>	Continuous
<format>VF400<color> -100	DM/TT	101.60	<i>4.000</i>	30.48	<i>100</i>	Continuous

### Polyvinyl Fluoride VF Tedlar® – Die-Cut Labels

Ordering description	Printer type	Label width		Label height		Quantity per pack
		mm	<i>inches</i>	mm	<i>inches</i>	
<format>VF1029<color>2.5	DM/TT	25.40	<i>1.000</i>	73.66	<i>2.900</i>	2500
<format>VF1079<color>1	DM/TT	25.40	<i>1.000</i>	200.66	<i>7.900</i>	1000
<format>VF1529<color>2.5	DM/TT	38.10	<i>1.500</i>	73.66	<i>2.900</i>	2500
<format>VF1679<color>1	DM/TT	40.64	<i>1.600</i>	200.66	<i>7.900</i>	1000
<format>VF3015<color>1	DM/TT	76.20	<i>3.000</i>	38.10	<i>1.500</i>	1000
<format>VF3509<color>2.5	DM/TT	88.90	<i>3.500</i>	22.86	<i>0.900</i>	2500
<format>VF6004<color>2.5	DM/TT	152.40	<i>6.000</i>	10.16	<i>0.400</i>	2500

### Options

Format	(TT) Thermal transfer printable (DM) Dot matrix printable						
Colors	Yellow	White	Red	Blue	Green	Violet	Pink
Code	YW	WE	RD	BE	GN	VT	PK

### Polyvinyl Fluoride NPVF Tedlar® – Color coding tape

Ordering description	Printer type	Roll width		Label length		Quantity per pack
		mm	<i>inches</i>	Meters	<i>Feet</i>	
NPVF050XX-100	N/A	12.70	<i>0.500</i>	30.48	<i>100</i>	Continuous

### Options

Colors	Yellow	White	Red	Blue	Green	Violet	Pink	Black	Brown	Orange	Grey	Gold
Code	YW	WE	RD	BE	GN	VT	PK	BK	BN	OE	GY	GD

### Polyvinyl Fluoride VF-130 Tedlar® – Over laminate tapes

Ordering description	Printer type	Color	Label width		Label length		Quantity per pack
			mm	<i>inches</i>	Meters	<i>Feet</i>	
NPVF150CL-100	N/A	Clear	38.10	<i>1.500</i>	30.48	<i>100</i>	Continuous
NPVF200CL-100	N/A	Clear	50.80	<i>2.000</i>	30.48	<i>100</i>	Continuous
NPVF300CL-100	N/A	Clear	76.20	<i>3.000</i>	30.48	<i>100</i>	Continuous
NPVF400CL-100	N/A	Clear	101.60	<i>4.000</i>	30.48	<i>100</i>	Continuous

## RMK-6 Computer printable epoxy coated labels

RMK-6 is a computer printable labelstock with outstanding fluid and abrasion resistance, designed to be printed by impact dot matrix printers. When heat-cured after printing, its unique heat reactive epoxy surface "locks in" the image to combine the versatility and convenience of on-site printing with performance to meet the toughest conditions. A high performance acrylic adhesive ensures simple installation while maintaining excellent adhesion.

Typical applications are rating plate labels, component identification, and pipe and cable wraparound markers. Outdoor use is not recommended.

### Features and benefits

- Printable by dot matrix printers
- Excellent fluid and abrasion resistance without an overlay
- High performance acrylic adhesive
- Low fire hazard properties
- Indoor use only



### Temperature rating

Operating temperature range		
	Wiring marking	-40°C to +85°C -40°F to +185°F
	Panel marking	-40°C to +105°C -40°F to +221°F
Excursion temperature		+200°C for 2 hours
Storage conditions	Unopened	12 months at temperatures not exceeding +35°C (+95°F).
	Opened	6 months at temperatures not exceeding +25°C (+77°F) and 80% relative humidity
Curing		4 - 6 minutes at 160°C in an air circulating oven.

### Specifications/approvals

Tyco Electronics		RW 2520 TTDS-032
Industry	UL	MH17259 Group PGGU2

### Printer information

Tyco Electronics printer	AM63 10 (dot matrix)
Tyco Electronics ribbon	1892BK04 (dot matrix)

### Part numbering system





## RMK-6 Computer printable epoxy coated labels

### Ordering information



### Available sizes and formats

Ordering description	Label height mm	Label width mm	Package quantity Labels per pack
RMK6-4.2	4.20	50.80	10000
RMK6-8.5	8.50	50.80	5000
RMK6-12.7	12.70	50.80	3000
RMK6-17.0	17.00	50.80	2500
RMK6-25.4	25.40	50.80	1500
RMK6-55.0	55.00	50.80	750
RMK6-WM*	*	50.80	*

\*An uncut version for wraparound markers. Spool length = 40 meters.

### Options

Colors                      Standard                      White

## RMK Computer printable epoxy coated labels in a sheet form

RMK is a computer printable labelstock with outstanding fluid and abrasion resistance, designed to be printed by sheet fed inkjet printers. When heat-cured after printing its unique heat reactive epoxy surface "locks in" the image to combine the versatility and convenience of on-site printing with performance to meet the toughest conditions. A high performance acrylic adhesive ensures simple installation while maintaining excellent adhesion. A wide range of label sizes are available, supplied in A4 sheets for feeding through standard inkjet printers.

Typical applications are replacement of engraved metal or plastic labels, signs, rating plate labels, and color coding.

### Features and benefits

- High performance label material
- High performance acrylic adhesive
- A4 format sheet
- Printable by color inkjet printers with sheet feed
- Outstanding fluid and abrasion resistance without an overlay
- Low fire hazard properties
- Indoor use only



### Temperature rating

Operating temperature range			
	Wiring marking	-40°C to +85°C	-40°F to +185°F
	Panel marking	-40°C to +105°C	-40°F to +221°F
Excursion temperature			
		+200°C for 2 hours	
Storage conditions			
	Unopened	12 months at temperatures not exceeding +35°C (+95°F)	
	Opened	6 months at temperatures not exceeding +25°C (+77°F) and 80% relative humidity	
Curing			
		4-6 minutes at 160°C in an air circulating oven.	

### Specifications/approvals

Tyco Electronics		RW 2518
Industry	UL	MH17259 Group PGGU2

### Printer information

Various color inkjet printers can be used depending on the application, mainly HP800 or HP900 series if available.

Tyco Electronics recommended printer	Epson R340/R320
Tyco Electronics recommended inks	Standard Epson

For further advice on possible alternative printers, contact Tyco Electronics.

### Part numbering system

RMK-18x35-A4



## RMK Computer printable epoxy coated labels in a sheet form

### Ordering information



### Available sizes and formats

Ordering description	Label height mm	Label width mm	Labels per sheet
RMK-6x20-A4	6	20	224
RMK-9x25-A4	9	25	132
RMK-10x19-A4	10	19	160
RMK-11x40-A4	11	40	72
RMK-18x20-A4	18	20	96
RMK-18x25-A4	18	25	72
RMK-18x35-A4	18	35	48
RMK-18x50-A4	18	50	36
RMK-25x30-A4	25	30	45
RMK-25x35-A4	25	35	36
RMK-25x50-A4	25	50	27
RMK-25x70-A4	25	70	10
RMK-25x75-A4	25	75	18
RMK-25x100-A4	25	100	10
RMK-28x40-A4	28	40	32
RMK-30x13-A4	30	13	88
RMK-30x25-A4	30	25	48
RMK-30x70-A4	30	70	14
RMK-35x75-A4	35	75	12
RMK-50x13-A4	50	13	50
RMK-50x25-A4	50	25	30
RMK-50x100-A4	50	100	5
RMK-75x150-A4	75	150	3
RMK-87x13-A4	87	13	33
RMK-87x25-A4	87	25	18
RMK-150x150-A4	150	150	1
RMK-170x13-A4	170	13	11
RMK-170x25-A4	170	25	6
RMK-190x30-A4	190	30	5
RMK-200x13-A4	200	13	10
RMK-250x13-A4	250	13	11
RMK-250x25-A4	250	25	6
RMK-UNCUT-A4	Uncut		50 sheets

### TTP Continuous polyester for decals

The system is designed for applications that require a high-durability label with all the features of a "silk-screened" label, only without the cost, time and inflexibility involved in obtaining a silk-screened product. The product utilizes high performance polyester with permanent acrylic adhesive. It is thermal transfer printable with all the capabilities of graphics, barcodes, logos and several fonts. The product is available in several colors although white, clear and metalized silver are available as standard. Typical applications include panel labels, fascias, decalcomanias and asset identification and rating plates. Typical industry use includes aerospace, defense, electronics and infrastructure.

#### Features and benefits

- Efficient solution for expensive silk-screen printing
- Available in continuous format
- Several widths and colors available
- Interior and exterior aircraft use including flight entertainment and deck instrumentation
- Thermal transfer printable
- Printable in any combination of material and ribbon colors



#### Temperature rating

Operating temperature range

Clear, White      -40°C to +150°C    -40°F to +302°F  
Metalized, and colors

#### Specifications/approvals

Tyco Electronics	TTDS-031
Military	A-A-59485 (accelerated weather resistance and salt spray)
Industry	GAT 100BB UL 17292 Group PGJ12 (polywhite)

#### Printer information

Tyco Electronics printer	T3 12S (thermal transfer)
Tyco Electronics ribbon	1330-0607-10 (thermal transfer)

#### Part numbering system



## TTP Continuous polyester for decals

### Ordering information



### Available sizes and formats

Ordering description	Label width		Roll length		Quantity per pack
	mm	<i>inches</i>	meters	<i>feet</i>	
TTP200<color>-10	50.80	<i>2.000</i>	30.48	<i>100</i>	Continuous
TTP300<color>-10	76.20	<i>3.000</i>	30.48	<i>100</i>	Continuous
TTP400<color>-10	101.60	<i>4.000</i>	30.48	<i>100</i>	Continuous
TTP600<color>-10	152.40	<i>6.000</i>	30.48	<i>100</i>	Continuous

Note: Use TTPA prefix for high tack adhesive

### Options

Colors	Standard	Clear	White	Metalized silver	
	Code	CL	WE	MP	
Colors	Non Standard	Red	Green	Blue	Orange
	Code	RD	GN	BE	OE
Colors	Non Standard	Black	Yellow		
	Code	BK	YW		

Ordering example: TTP400WE-10 or TTPA400WE (for the high tack adhesive variant)

## HPK Thermal transfer printable panel labels

Tyco Electronics HPK is a semi-rigid, heavy gauge polypropylene film with a permanent acrylic adhesive, designed to permanently identify control panel components and racks, as well as general labeling applications that require a high performance heavy gauge material. They offer excellent abrasion resistance, and adhere to most smooth surfaces including bare and painted metal.

For reliable print performance and durability, use with Tyco Electronics 1330-0607 ribbon.

### Features and benefits

- Self-adhesive backing for quick and easy fixing
- Thermal transfer printable
- Recommended for indoor use
- Resistant to common fluids, lubricants and solvents



### Temperature rating

Operating temperature range	-29°C to +80°C	-20°F to +176°F
Minimum recovery temperature	10°C	+50°F

### Specifications/approvals

Tyco Electronics	TTDS-008
------------------	----------

### Printer information

Tyco Electronics printer	T308S (thermal transfer)
Tyco Electronics ribbon	1330-0607-10 (thermal transfer)

### Part numbering system



## HPK Thermal transfer printable panel labels

### Ordering information



### Available sizes and formats

Ordering description	Labels across	(A) Label width		(B) Label height		(C) Vertical repeat		(D) Web width	
		mm	<i>inches</i>	mm	<i>inches</i>	mm	<i>inches</i>	mm	<i>inches</i>
HPK02WE1050	1	50.80	<i>2.000</i>	5.10	<i>0.200</i>	8.30	<i>0.325</i>	57.20	<i>2.250</i>
HPK04WE1050	1	50.80	<i>2.000</i>	10.20	<i>0.400</i>	13.30	<i>0.525</i>	57.20	<i>2.250</i>
HPK06WE1050	1	50.80	<i>2.000</i>	15.20	<i>0.600</i>	18.40	<i>0.725</i>	57.20	<i>2.250</i>
HPK08WE1050	1	50.80	<i>2.000</i>	20.30	<i>0.800</i>	23.50	<i>0.925</i>	57.20	<i>2.250</i>
HPK10WE1050	1	50.80	<i>2.000</i>	25.40	<i>1.000</i>	28.60	<i>1.125</i>	57.20	<i>2.250</i>

### Options

Prescoring	Perforated score to produce multiple labels from each HPK label.		
	Number of prescores	0 prescores	1 prescore
	Code	1	2
Package size	Standard	1000 piece pack	
Color	Standard	White	

Ordering information: Specify product name, product size and prescores.

Ordering example: HPK02WE1050

**SB Thermal transfer printable self-laminating labels**

Tyco Electronics SB is a thermal transfer printable, translucent vinyl film with a permanent acrylic adhesive, supplied with a white printable area, which is over-laminated upon application with the translucent portion of the label. This 'self-laminating' feature protects the printed area from exposure to oil, solvents, water and abrasion. SB labels offer excellent conformability to round, irregular or flexible surfaces. Ideal for wire and cable identification, including flat ribbon cables that are subject to repeated bending, they are UL Listed. For reliable print performance and durability, use with Tyco Electronics TMS-RJS-RIBBON-4RPSCE series ribbon.



**Features and benefits**

- Manufactured with a white coated area for printing, and with a clear tail to wind around a wire or cable over the printed surface to seal out impurities that would cause the label to become illegible
- Protects printed information from chemicals and frequent handling
- Designed to withstand exposure to oil, solvents, and water



**Temperature rating**

Operating temperature range    -40°C to +80°C    -40°F to +176°F

**Specifications/approvals**

Tyco Electronics	TTDS-052
Industry	UL MH17001 (Group PGDQ2) MH17292 (Group PGJ12)

**Printer information**

Tyco Electronics printer	T308S* (thermal transfer)
Tyco Electronics ribbon	TMS-RJS-RIBBON-4RPSCE* (thermal transfer)

*\* Alternative printers and ribbons are available for special applications. Contact Tyco Electronics Identification for more information.*

**Part numbering system**





**SB Thermal transfer printable self-laminating labels**

*Ordering information*



**Available sizes and formats**

Ordering description	Package quantity	Labels across	Max. Cable OD		(A) Label height		(B) Label		(C) Printable repeat		(D) Horizontal repeat		(E) Vertical width		(F) Web	
			mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
SB050100WE10	10,000	5	5.1	.20	12.70	0.500	25.40	1.000	8.50	0.330	16.80	0.600	31.00	1.222	86.00	3.384
SB050143WE10	10,000	5	7.6	.30	12.70	0.500	36.50	1.437	12.70	0.500	16.80	0.662	42.20	1.661	86.00	3.384
SB075094WE10	10,000	4	7.6	.30	19.10	0.750	23.90	0.940	9.50	0.375	20.30	0.800	28.60	1.125	85.10	3.350
SB080150WE10	10,000	4	7.6	.30	20.30	0.800	38.10	1.500	12.70	0.500	22.90	0.900	44.50	1.750	94.90	3.736
SB100143WE5	5,000	3	7.6	.30	25.40	1.000	36.50	1.437	12.70	0.500	27.90	1.100	42.20	1.661	87.30	3.436
SB100225WE5	5,000	3	12.2	.48	25.40	1.000	57.20	2.250	19.10	0.750	27.90	1.100	66.70	2.625	87.30	3.436
SB100375WE2.5	2,500	3	22.4	.88	25.40	1.000	95.30	3.750	25.40	1.000	27.90	1.100	101.60	4.000	87.30	3.436
SBH100375WE2.5	2,500	1*	22.4	.88	25.40	1.000	95.30	3.750	25.40	1.000	N/A	N/A	28.60	1.125	100.30	3.950
SB100594WE1	1,000	3	35.6	1.4	25.40	1.000	151.00	5.940	38.10	1.500	27.90	1.100	158.80	6.250	87.30	3.436
SB100743WE1	1,000	3	35.6	1.4	25.40	1.000	188.90	7.437	38.10	1.500	27.90	1.100	195.30	7.688	87.30	3.436
SB190319WE2.5	2,500	2	12.2	.48	48.30	1.900	81.00	3.190	19.10	0.750	50.80	2.000	87.40	3.440	105.10	4.138
SB190594WE1	1,000	2	35.6	1.4	48.30	1.900	151.00	5.940	38.10	1.500	50.80	2.000	158.80	6.250	105.10	4.138
SB200143WE2.5	2,500	2	7.6	.30	50.80	2.000	36.50	1.437	12.70	0.500	50.80	2.000	42.20	1.661	107.60	4.236
SB200225WE2.5	2,500	2	12.2	.48	50.80	2.000	57.20	2.250	19.10	0.750	50.80	2.000	66.70	2.625	107.60	4.236
SB200375WE2.5	2,500	2	22.4	.88	50.80	2.000	95.30	3.750	25.40	1.000	53.30	2.100	101.60	4.000	111.40	4.386
SB200743WE1	1,000	2	48.3	1.9	50.80	2.000	188.90	7.437	38.10	1.500	53.30	2.100	195.30	7.688	110.10	4.336

\*One label across rotated format.

**Options**

Colors	Standard	White with clear tail
	Non-Standard	Red, Orange, Yellow, Green, Blue, Violet, with clear tail

## SP Self-laminating polyester labels

Tyco Electronics "SP" is a thermal transfer printable, low profile translucent polyester film with a permanent acrylic adhesive. Supplied with a white printable area, which is over-laminated upon application with the translucent portion of the label. This 'self-laminating' feature better protects the printed area from exposure to oil, solvents, water and abrasion. Excellent conformability to round, irregular or flexible surfaces. Ideal for wire & cable identification, including flat ribbon cables that are subject to repeated bending. For reliable print performance and durability, use with Tyco Electronics 1330-0607 ribbon.



### Features and benefits

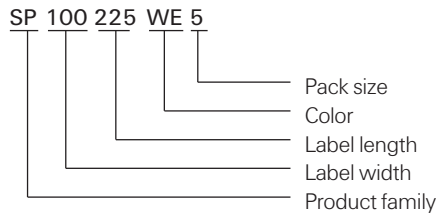
- Self laminating feature for protection and mark permanence of the printed area of the label
- Designed to better withstand exposure to oil, solvents, and water
- Low profile design for conformability to wires and cables
- High tack adhesive makes SP suitable for flagging and wrapping around thin gauge wires



<b>Adhesive</b>	Permanent rubber-based
<b>Service temperature</b>	-40°C to +150°C    -40°F to +302°F
<b>Recommended printer</b>	T308S*
<b>Recommended ribbon</b>	1330-0607-10*

*\*Alternative printers and ribbons are available for special applications. Contact Tyco Electronics Identification for more information.*

### Part numbering system



**SP Self-laminating polyester labels**

*Ordering information*



**Available sizes and formats**

Ordering description	Package quantity	Labels across	Max. Cable OD		(A) Label width		(B) Label height		(C) Printable height		(D) Horizontal repeat		(E) Vertical repeat		(F) Web width	
			mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
SP050100WE10	10,000	5	5.1	.20	12.70	0.500	25.40	1.000	8.50	0.330	16.80	0.600	31.00	1.222	86.00	3.384
SP050143WE10	10,000	5	7.6	.30	12.70	0.500	36.50	1.437	12.70	0.500	16.80	0.662	42.20	1.661	86.00	3.384
SP075094WE10	10,000	4	7.6	.30	19.10	0.750	23.90	0.940	9.50	0.375	20.30	0.800	28.60	1.125	85.10	3.350
SP080150WE10	10,000	4	7.6	.30	20.30	0.800	38.10	1.500	12.70	0.500	22.90	0.900	44.50	1.750	94.90	3.736
SP100143WE5	5,000	3	7.6	.30	25.40	1.000	36.50	1.437	12.70	0.500	27.90	1.100	42.20	1.661	87.30	3.436
SP100225WE5	5,000	3	12.2	.48	25.40	1.000	57.20	2.250	19.10	0.750	27.90	1.100	66.70	2.625	87.30	3.436
SP100375WE2.5	2,500	3	22.4	.88	25.40	1.000	95.30	3.750	25.40	1.000	27.90	1.100	101.60	4.000	87.30	3.436
SP100594WE1	1,000	3	35.6	1.4	25.40	1.000	151.00	5.940	38.10	1.500	27.90	1.100	158.80	6.250	87.30	3.436
SP200225WE2.5	2,500	2	12.2	.48	50.80	2.000	57.20	2.250	19.10	0.750	50.80	2.000	66.70	2.625	107.60	4.236
SP200375WE2.5	2,500	2	22.4	.88	50.80	2.000	95.30	3.750	25.40	1.000	53.30	2.100	101.60	4.000	111.40	4.386

**Options**

Colors                      Standard                      White with clear tail

## PVF Polyvinyl fluoride thermal transfer printable self-laminating labels

Tyco Electronics PVF is a thermal transfer printable, translucent polyvinyl fluoride (Tedlar®) film with a permanent acrylic adhesive, designed for wire and cable marking applications that require the 'self-extinguishing' properties of Tedlar®. PVF labels are supplied with a white printable area, which is over-laminated upon application with the translucent portion of the label. This 'self-laminating' feature protects the printed area from exposure to oil, solvents, water and abrasion. The low-profile design makes PVF suitable for wrapping onto thin wire gauges. For reliable print performance and durability use with Tyco Electronics 1330-3300 series ribbon.



### Features and benefits

- Resists water, oils, and conventional cleaning agents
- Filters UV light
- Exhibits high degree of resistance to aging
- Thermal transfer printable



### Temperature rating

Operating temperature range    -53°C to +135°C    -65°F to +275°F

### Specifications/approvals

Tyco Electronics    TTDS-111

### Printer information

Tyco Electronics printer    T308S\* (thermal transfer)  
 Tyco Electronics ribbon    1330-3300-10\* (thermal transfer)

*\*Alternative printers and ribbons are available for special applications. Contact Tyco Electronics Identification for more information.*

### Part numbering system



**PVF Polyvinyl fluoride thermal transfer printable self-laminating labels**

*Ordering information*



*Available sizes and formats*

Ordering description	Package quantity	Labels across	Max. Cable OD		(A) Label width		(B) Label height		(C) Printable height		(D) Horizontal repeat		(E) Vertical repeat		(F) Web width	
			mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
PVF050100WE10	10,000	5	5.1	.20	12.70	0.500	25.40	1.000	8.50	0.330	16.80	0.600	31.00	1.222	86.00	3.384
PVF050143WE10	10,000	5	7.6	.30	12.70	0.500	36.50	1.437	12.70	0.500	16.80	0.662	42.20	1.661	86.00	3.384
PVF080150WE10	10,000	4	7.6	.30	20.30	0.800	38.10	1.500	12.70	0.500	22.90	0.900	44.50	1.750	94.90	3.736
PVF100143WE5	5,000	3	7.6	.30	25.40	1.000	36.50	1.437	12.70	0.500	27.90	1.100	42.20	1.661	87.30	3.436
PVF100225WE5	5,000	3	12.2	.48	25.40	1.000	57.20	2.250	19.10	0.750	27.90	1.100	66.70	2.625	87.30	3.436
PVF100375WE2.5	2,500	3	22.4	.88	25.40	1.000	95.30	3.750	25.40	1.000	27.90	1.100	101.60	4.000	87.30	3.436
PVF100594WE1	1,000	3	35.6	1.4	25.40	1.000	151.0	5.940	38.10	1.500	27.90	1.100	158.80	6.250	87.30	3.436
PVF100743WE1	1,000	3	35.6	1.4	25.40	1.000	188.9	7.437	38.10	1.500	27.90	1.100	195.30	7.688	87.30	3.436
PVF190319WE2.5	2,500	2	12.2	.48	48.30	1.900	81.00	3.190	19.10	0.750	50.80	2.000	87.40	3.440	105.10	4.138
PVF190594WE1	1,000	2	35.6	1.4	48.30	1.900	151.00	5.940	38.10	1.500	50.80	2.000	158.80	6.250	105.10	4.138
PVF200143WE2.5	2,500	2	7.6	.30	50.80	2.000	36.50	1.437	12.70	0.500	50.80	2.000	42.20	1.661	107.60	4.236
PVF200225WE2.5	2,500	2	12.2	.48	50.80	2.000	57.20	2.250	19.10	0.750	50.80	2.000	66.70	2.625	107.60	4.236
PVF200375WE2.5	2,500	2	22.4	.88	50.80	2.000	95.30	3.750	25.40	1.000	53.30	2.100	101.60	4.000	111.40	4.386
PVF200743WE1	1,000	2	48.3	1.9	50.80	2.000	188.90	7.437	38.10	1.500	53.30	2.100	195.30	7.688	110.10	4.336

*Options*

Colors	Standard	White with clear tail
	Non-Standard	Red, Orange, Yellow, Green, Blue, Violet, with clear tail

## TW Dot matrix printable self-laminating labels

Tyco Electronics TW is a dot matrix printable, translucent vinyl film with a permanent acrylic adhesive, supplied with a white printable area, which is over-laminated upon application with the translucent portion of the label. This 'self-laminating' feature protects the printed area from exposure to oil, solvents, water and abrasion. TW labels offer excellent conformability to round, irregular or flexible surfaces, and are ideal for wire and cable identification, including flat ribbon cables that are subject to repeated bending. They are UL Listed, with reliable print performance and durability, when used with Tyco Electronics 1892BK01 ribbon.

### Features and benefits

- Manufactured with a white coated area for printing or writing on, and with a clear wrap to wind around a wire or cable over the printed surface to seal out impurities that would cause the label to become illegible
- Protects printed information from chemicals and frequent handling
- Designed to withstand exposure to oil, solvents, and water



### Temperature rating

Operating temperature range     $-40^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$      $-40^{\circ}\text{F}$  to  $+176^{\circ}\text{F}$

### Specifications/approvals

Industry    UL MH17292 Group PGJ12

### Printer information

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

### Part numbering system



**TW Dot matrix printable self-laminating labels**

*Ordering information*



*Available sizes and formats*

Ordering description	Package quantity	Labels across	Max. Cable OD		(A) Label width		(B) Label height		(C) Printable height		(D) Horizontal repeat		(E) Vertical repeat		(F) Web width	
			mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
J-TW10	10,000	12	5.1	0.20	12.70	0.500	19.10	0.750	9.50	0.375	15.20	0.600	25.40	1.000	205.70	8.100
N-TW10	10,000	16	7.6	0.30	12.70	0.500	36.50	1.437	12.70	0.500	12.70	0.500	38.10	1.500	228.60	9.000
Q-TW10	10,000	9	7.6	0.30	19.10	0.750	44.50	1.750	12.70	0.500	22.90	0.900	50.80	2.000	227.30	8.950
A-TW10	10,000	6	7.6	0.30	20.30	0.800	36.50	1.437	12.70	0.500	22.90	0.900	38.10	1.500	160.00	6.300
O-TW10	10,000	8	7.6	0.30	25.40	1.000	36.50	1.437	12.70	0.500	25.40	1.000	38.10	1.500	228.60	9.000
R-TW5	5,000	8	12.2	0.48	25.40	1.000	57.20	2.250	19.10	0.750	25.40	1.000	63.50	2.500	228.60	9.000
T-TW2.5	2,500	8	22.4	0.88	25.40	1.000	95.30	3.750	25.40	1.000	25.40	1.000	101.60	4.000	228.60	9.000
W1-TW1	1,000	8	35.6	1.40	25.40	1.000	150.90	5.940	38.10	1.500	25.40	1.000	152.40	6.000	228.60	9.000
D1-TW1	1,000	7	35.6	1.40	25.40	1.000	188.90	7.437	38.10	1.500	27.90	1.100	190.50	7.500	218.40	8.600
C1-TW2.5	2,500	3	12.2	0.48	48.30	1.900	81.00	3.190	19.10	0.750	50.80	2.000	88.90	3.500	175.30	6.900
P-TW5	5,000	4	7.6	0.30	50.80	2.000	36.50	1.437	12.70	0.500	50.80	2.000	38.10	1.500	228.60	9.000
S-TW2.5	2,500	4	12.2	0.48	50.80	2.000	57.20	2.250	19.10	0.750	50.80	2.000	63.50	2.500	228.60	9.000
U-TW2.5	2,500	4	22.4	0.88	50.80	2.000	95.30	3.750	25.40	1.000	50.80	2.000	101.60	4.000	228.60	9.000
W2-TW1	1,000	3	48.3	1.90	50.80	2.000	150.90	5.940	38.10	1.500	53.30	2.100	152.40	6.000	182.90	7.200
D3-TW1	1,000	3	48.3	1.90	50.80	2.000	188.90	7.437	38.10	1.500	55.90	2.200	190.50	7.500	188.00	7.400

*Options*

Colors	Standard	White with clear tail
--------	----------	-----------------------

**PV Polyvinyl fluoride dot matrix printable self-laminating labels**

Tyco Electronics PV is a dot matrix printable, translucent polyvinyl fluoride (Tedlar®) film with a permanent acrylic adhesive, designed for wire and cable marking applications that require the 'self-extinguishing' properties of Tedlar®. PV labels are supplied with a white printable area, which is over-laminated upon application with the translucent portion of the label. This 'self-laminating' feature protects the printed area from exposure to oil, solvents, water and abrasion. The low-profile design makes PV suitable for wrapping onto thin wire gauges. For reliable print performance and durability, use with Tyco Electronics 1892BK01 ribbon.



**Features and benefits**

- Resists water, oils, and conventional cleaning agents
- Filters UV light
- Exhibits high degree of resistance to ageing
- Self-laminating feature for protection and mark permanence of the printed area of the label



**Temperature rating**

Operating temperature range    -53°C to +135°C    -65°F to +275°F

**Specifications/approvals**

Tyco Electronics    TTDS-092

**Printer information**

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

**Part numbering system**





**PV Polyvinyl fluoride dot matrix printable self-laminating labels**

*Ordering information*



*Available sizes and formats*

Ordering description	Package quantity	Labels across	Max. Cable OD		(A) Label width		(B) Label height		(C) Printable height		(D) Horizontal repeat		(E) Vertical repeat		(F) Web width	
			mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
J-PV10	10,000	12	5.1	<i>0.20</i>	12.70	<i>0.500</i>	19.10	<i>0.750</i>	9.50	<i>0.375</i>	15.20	<i>0.600</i>	25.40	<i>1.000</i>	205.70	<i>8.100</i>
N-PV10	10,000	16	7.6	<i>0.30</i>	12.70	<i>0.500</i>	36.50	<i>1.437</i>	12.70	<i>0.500</i>	12.70	<i>0.500</i>	38.10	<i>1.500</i>	228.60	<i>9.000</i>
Q-PV10	10,000	9	7.6	<i>0.30</i>	19.10	<i>0.750</i>	44.50	<i>1.750</i>	12.70	<i>0.500</i>	22.90	<i>0.900</i>	50.80	<i>2.000</i>	227.30	<i>8.950</i>
A-PV10	10,000	6	7.6	<i>0.30</i>	20.30	<i>0.800</i>	36.50	<i>1.437</i>	12.70	<i>0.500</i>	22.90	<i>0.900</i>	38.10	<i>1.500</i>	160.00	<i>6.300</i>
O-PV10	10,000	8	7.6	<i>0.30</i>	25.40	<i>1.000</i>	36.50	<i>1.437</i>	12.70	<i>0.500</i>	25.40	<i>1.000</i>	38.10	<i>1.500</i>	228.60	<i>9.000</i>
R-PV5	5,000	8	12.2	<i>0.48</i>	25.40	<i>1.000</i>	57.20	<i>2.250</i>	19.10	<i>0.750</i>	25.40	<i>1.000</i>	63.50	<i>2.500</i>	228.60	<i>9.000</i>
T-PV2.5	2,500	8	22.4	<i>0.88</i>	25.40	<i>1.000</i>	95.30	<i>3.750</i>	25.40	<i>1.000</i>	25.40	<i>1.000</i>	101.60	<i>4.000</i>	228.60	<i>9.000</i>
W1-PV1	1,000	8	35.6	<i>1.40</i>	25.40	<i>1.000</i>	150.90	<i>5.940</i>	38.10	<i>1.500</i>	25.40	<i>1.000</i>	152.40	<i>6.000</i>	228.60	<i>9.000</i>
D1-PV1	1,000	7	35.6	<i>1.40</i>	25.40	<i>1.000</i>	188.90	<i>7.437</i>	38.10	<i>1.500</i>	27.90	<i>1.100</i>	190.50	<i>7.500</i>	218.40	<i>8.600</i>
C1-PV2.5	2,500	3	12.2	<i>0.48</i>	48.30	<i>1.900</i>	81.00	<i>3.190</i>	19.10	<i>0.750</i>	50.80	<i>2.000</i>	88.90	<i>3.500</i>	175.30	<i>6.900</i>
P-PV5	5,000	4	7.6	<i>0.30</i>	50.80	<i>2.000</i>	36.50	<i>1.437</i>	12.70	<i>0.500</i>	50.80	<i>2.000</i>	38.10	<i>1.500</i>	228.60	<i>9.000</i>
S-PV2.5	2,500	4	12.2	<i>0.48</i>	50.80	<i>2.000</i>	57.20	<i>2.250</i>	19.10	<i>0.750</i>	50.80	<i>2.000</i>	63.50	<i>2.500</i>	228.60	<i>9.000</i>
U-PV2.5	2,500	4	22.4	<i>0.88</i>	50.80	<i>2.000</i>	95.30	<i>3.750</i>	25.40	<i>1.000</i>	50.80	<i>2.000</i>	101.60	<i>4.000</i>	228.60	<i>9.000</i>
W2-PV1	1,000	3	48.3	<i>1.90</i>	50.80	<i>2.000</i>	150.90	<i>5.940</i>	38.10	<i>1.500</i>	53.30	<i>2.100</i>	152.40	<i>6.000</i>	182.90	<i>7.200</i>
D3-PV1	1,000	3	48.3	<i>1.90</i>	50.80	<i>2.000</i>	188.90	<i>7.437</i>	38.10	<i>1.500</i>	55.90	<i>2.200</i>	190.50	<i>7.500</i>	188.00	<i>7.400</i>

*Options*

Colors	Standard	White with clear tail
--------	----------	-----------------------

**LSR Laser printable self-laminating labels**

Tyco Electronics LSR is a laser printable, translucent polyester film with a permanent acrylic adhesive, supplied with a white printable area, which is over-laminated upon application with the translucent portion of the label. This 'self-laminating' feature protects the printed area from exposure to oil, solvents, water and abrasion with good conformability to round surfaces. LSR is ideal for wire and cable marking including flat ribbon cable. The low-profile design makes LSR suitable for wrapping onto thin wire gauges.

**Features and benefits**

- Manufactured with a white coated area for printing or writing on, and with a clear wrap to wind around a wire or cable over the printed surface to seal out impurities that would cause the label to become illegible
- Protects printed information from chemicals and frequent handling
- Designed to withstand exposure to oil, solvents, and water
- Can also be flagged around a wire rather than wrapped



**Temperature rating**

Operating temperature range    -40°C to +150°C    -40°F to +302°F

**Printer information**

Standard laser printer with auto/manual sheet feed.  
Contact Tyco Electronics Identification for more information.

**LSR Laser printable self-laminating labels**

*Ordering information*



*Available sizes and formats*

Ordering description	Package quantity	Labels across	Labels per sheet	(A) Label width		(B) Label height		(C) Printable height		(D) Horizontal repeat		(E) Vertical repeat	
				mm	<i>inches</i>	mm	<i>inches</i>	mm	<i>inches</i>	mm	<i>inches</i>	mm	<i>inches</i>
CR-100-LSR	4,992	13	156	12.70	<i>0.500</i>	19.10	<i>0.750</i>	9.40	<i>0.370</i>	15.20	<i>0.600</i>	20.60	<i>0.810</i>
CR-101-LSR	4,992	13	78	12.70	<i>0.500</i>	38.10	<i>1.500</i>	12.70	<i>0.500</i>	15.20	<i>0.600</i>	40.60	<i>1.600</i>
CR-105-LSR	5,040	7	84	25.40	<i>1.000</i>	19.10	<i>0.750</i>	8.60	<i>0.340</i>	27.90	<i>1.100</i>	20.60	<i>0.810</i>
CR-106-LSR	2,520	7	63	25.40	<i>1.000</i>	25.40	<i>1.000</i>	8.60	<i>0.340</i>	27.90	<i>1.100</i>	27.90	<i>1.100</i>
CR-107-LSR	2,499	7	49	25.40	<i>1.000</i>	33.80	<i>1.330</i>	12.70	<i>0.500</i>	27.90	<i>1.100</i>	36.60	<i>1.440</i>
CR-108-LSR	1,008	7	21	25.40	<i>1.000</i>	80.50	<i>3.170</i>	24.60	<i>0.970</i>	27.90	<i>1.100</i>	84.10	<i>3.310</i>
CR-110-LSR	1,008	4	12	47.80	<i>1.880</i>	80.50	<i>3.170</i>	24.60	<i>0.970</i>	50.80	<i>2.000</i>	83.30	<i>3.280</i>

### CSL A4 Laser printable self-laminating labels

Tyco Electronics CSL is a laser printable, clear polyester film with a permanent acrylic adhesive, supplied with a white or yellow printable area, which is over-laminated upon application with the clear section of the label.

Using the over-lamination process protects the printed area against exposure to oil, solvents, water and abrasion.

#### Features and benefits

- Manufactured with a white or yellow coated area for writing on, and with a clear wrap to wind around a wire or cable to cover the written legend and to protect it against impurities that would cause the label to become illegible
- Protects printed information from chemicals and frequent handling
- Designed to withstand exposure to Solvents, salts, alkalis and water
- Can also be flagged around a wire rather than wrapped



#### Temperature rating

Operating temperature range    -30°C to +120°C    -22°F to +248°F



#### Part numbering system



**CSL A4 Laser printable self-laminating labels**

*Ordering information*



*Available sizes and formats*

Ordering description	Markers/ pack	A height		B height		C width		Max. cable diameter	
		mm	<i>inches</i>	mm	<i>inches</i>	mm	<i>inches</i>	mm	<i>inches</i>
CSL-02713P- <i>&lt;color&gt;</i>	160	26.70	<i>1.05</i>	6.00	<i>0.24</i>	12.50	<i>0.49</i>	3.00	<i>0.12</i>
CSL-03418P- <i>&lt;color&gt;</i>	88	33.90	<i>1.33</i>	8.50	<i>0.33</i>	18.18	<i>0.72</i>	5.00	<i>0.20</i>
CSL-03425P- <i>&lt;color&gt;</i>	64	33.90	<i>1.33</i>	12.70	<i>0.50</i>	25.00	<i>0.98</i>	5.00	<i>0.20</i>
CSL-05525P- <i>&lt;color&gt;</i>	40	55.00	<i>2.17</i>	12.70	<i>0.50</i>	25.00	<i>0.98</i>	11.00	<i>0.43</i>
CSL-06925P- <i>&lt;color&gt;</i>	32	69.00	<i>2.72</i>	17.00	<i>0.67</i>	25.00	<i>0.98</i>	14.00	<i>0.55</i>
CSL-06933P- <i>&lt;color&gt;</i>	24	69.00	<i>2.72</i>	22.00	<i>0.87</i>	33.33	<i>1.31</i>	13.00	<i>0.51</i>
CSL-09333P- <i>&lt;color&gt;</i>	18	93.00	<i>3.66</i>	25.40	<i>1.00</i>	33.33	<i>1.31</i>	19.00	<i>0.75</i>
CSL-14033P- <i>&lt;color&gt;</i>	12	140.00	<i>5.51</i>	25.40	<i>1.00</i>	33.33	<i>1.31</i>	34.00	<i>1.34</i>

*Options*

Colors	Yellow	White
Code	4	9

**TKM Hand writable booklet self-laminating labels**

Tyco Electronics TKM is a self writable, clear vinyl film with a permanent acrylic adhesive, supplied with a white writable area, which is over-laminated upon application with the clear portion of the label.

TKM labels are a quick, simple and durable form of wire, cable and pipe identification.

**Features and benefits**

- Manufactured with a white coated area for writing on, and with a clear wrap to wind around a wire or cable to cover the written legend and to protect it against impurities that would cause the label to become illegible
- Protects printed information from chemicals and frequent handling
- Supplied in a handy pocket size booklet
- Designed to withstand exposure to Solvents, salts, alkalis and water



<b>Temperature rating</b>		
Operating temperature range	-54°C to +82°C	-65°F to +180°F
<b>Specifications/Approvals</b>		
Tyco Electronics	TTDS-056	



**Part numbering system**



**TKM Hand writable booklet self-laminating labels**

*Ordering information*



*Available sizes and formats*

Ordering description	Markers/ pack	A height		B height		C width		Max. cable diameter	
		mm	<i>inches</i>	mm	<i>inches</i>	mm	<i>inches</i>	mm	<i>inches</i>
TKM75WE-N	60	75.00	<i>3.0</i>	25.00	<i>1.00</i>	25.00	<i>1.00</i>	14.00	<i>0.60</i>
TKM150WE-N	30	150.00	<i>6.0</i>	25.00	<i>1.00</i>	25.00	<i>1.00</i>	38.00	<i>1.50</i>
TKM230WE-N	30	230.00	<i>9.0</i>	25.00	<i>1.00</i>	25.00	<i>1.00</i>	63.00	<i>2.50</i>

*Accessories for manual marking*

Ordering description	Description	Quantity per pack
ZUB-01	Felt-tip pen, fine	1
ZUB-03	Pencil for UV-resistant labelling	1

**Self-Laminating Label Dimensions**



Note: Drawing is not to scale



**Self-Laminating Label Dimensions**



Note: Drawing is not to scale

## TEK Hand writeable vinyl fabric labels

Tyco Electronics TEK vinyl fabric pocket packs are suitable for on-the-spot labeling. Thanks to their handy size they fit in the pocket or the technician's toolbox.

The packs are available in the most common label sizes. They can be written on using the pencil (ZUB-03) or the felt-tip pen (ZUB-01).

### Features and benefits

- Portability
- On the spot labeling



### Temperature rating

Operating temperature range     -29°C to +80°C     -20°F to +176°F

### Properties

Adhesive removal without residue (approx. 1 year). Very pliable film.  
Age resistant. Fabric materials silicone free.

### Resistant against

Water, sea water, alcohol, engine oils, methanol, petrol (gasoline)

### Part numbering system



**TEK Hand writeable vinyl fabric labels**

*Ordering information*



*Available sizes and formats*

Ordering description	Markers/ pack	(A) height		(B) width		Black Border	
		mm	<i>inches</i>	mm	<i>inches</i>	with	without
TEK 821-N	640	8.00	<i>2.0</i>	21.00	<i>0.60</i>	-	X
TEK 914-N	840	9.00	<i>3.0</i>	14.00	<i>1.00</i>	-	X
TEK 1119-N	440	11.00	<i>6.0</i>	19.00	<i>1.00</i>	X	-
TEK 1138-N	220	11.00	<i>9.0</i>	38.00	<i>1.00</i>	X	-

*Accessories for manual marking*

Ordering description	Description	Quantity per pack
ZUB-01	Felt-tip pen, fine	1
ZUB-03	Pencil for UV-resistant labelling	1

### CMD Cable and wire marker dispenser

Tyco Electronics CMD is one of the most user friendly portable wire marker systems available. Each dispenser contains 10 rolls of individually numbered marker tape. Each roll of markers contains 76 individual markers which are a convenient length that accommodates most commonly identified wire sizes.

Manufactured from DuPont Tyvek® material to ensure durability and minimize the potential of tearing.

#### Features and benefits

- Supplied with a pre-determined length of 32mm and a width of 6.4mm
- Supplied in a handy pocket size reusable dispenser
- Aggressive acrylic adhesive impervious to oil and water



#### Temperature rating

Operating temperature range    -40°C to +80°C    -40°F to +176°F

#### Specifications/approvals

Tyco Electronics    TTDS-141



#### Part numbering system



## CMD Cable and wire marker dispenser

### Ordering information



### Available sizes and formats

Ordering description	Markers/ pack	(A) height		(B) width		Comments
		mm	inches	mm	inches	
CMD-0-9	10 x 76	32.0	1.25	6.4	0.25	Loaded dispenser contains markers pre-marked 0 to 9
CMD-CC	10 x 76	32.0	1.25	6.4	0.25	Loaded dispenser contains colour coded markers

### Extra Items

CMD-0-9-REFILL	10 x 76	32.0	1.25	6.4	0.25	Refill box pre-marked 0 to 9
CMD-CC-REFILL	10 x 76	32.0	1.25	6.4	0.25	Refill box colour coded
CMD-EMPTY	N/A	N/A	N/A			Empty dispenser
CMD-A-REFILL	10 x 76	32.0	1.25	6.4	0.25	Refill box pre-marked A
CMD-B-REFILL	10 x 76	32.0	1.25	6.4	0.25	Refill box pre-marked B
CMD-C-REFILL	10 x 76	32.0	1.25	6.4	0.25	Refill box pre-marked C
CMD-D-REFILL	10 x 76	32.0	1.25	6.4	0.25	Refill box pre-marked D
CMD-E-REFILL	10 x 76	32.0	1.25	6.4	0.25	Refill box pre-marked E
CMD-F-REFILL	10 x 76	32.0	1.25	6.4	0.25	Refill box pre-marked F
CMD-G-REFILL	10 x 76	32.0	1.25	6.4	0.25	Refill box pre-marked G
CMD-H-REFILL	10 x 76	32.0	1.25	6.4	0.25	Refill box pre-marked H
CMD-L-REFILL	10 x 76	32.0	1.25	6.4	0.25	Refill box pre-marked L
CMD-N-REFILL	10 x 76	32.0	1.25	6.4	0.25	Refill box pre-marked N
CMD-R-REFILL	10 x 76	32.0	1.25	6.4	0.25	Refill box pre-marked R
CMD-S-REFILL	10 x 76	32.0	1.25	6.4	0.25	Refill box pre-marked S
CMD-T-REFILL	10 x 76	32.0	1.25	6.4	0.25	Refill box pre-marked T
CMD-U-REFILL	10 x 76	32.0	1.25	6.4	0.25	Refill box pre-marked U
CMD-V-REFILL	10 x 76	32.0	1.25	6.4	0.25	Refill box pre-marked V
CMD-W-REFILL	10 x 76	32.0	1.25	6.4	0.25	Refill box pre-marked W
CMD-MINUS-REFILL	10 x 76	32.0	1.25	6.4	0.25	Refill box pre-marked -
CMD-PLUS-REFILL	10 x 76	32.0	1.25	6.4	0.25	Refill box pre-marked +

**WCD Write-on self-laminating label dispensers**

Tyco Electronics WCD is a pocket sized label dispenser containing a roll of pre-cut self-laminating cable markers. Each marker has a white markable area for legend inscription using the specified marker pen (ZUB-01).

Manufactured with a white coated area for writing on, and with a clear wrap to wind around a wire or cable to cover the written legend and to protect it against impurities that would cause the label to become illegible.

**Features and benefits**

- Protects printed information from chemicals and frequent handling
- Supplied in a handy pocket size disposable dispenser
- Aggressive acrylic adhesive impervious to oil and water



**Temperature rating**

Operating temperature range      -40°C to +80°C      -40°F to +176°F

**Specifications/approvals**

Tyco Electronics      TTDS-140



**Part numbering system**



**WCD Write-on self-laminating label dispensers**

*Ordering information*



**Available sizes and formats**

Ordering description	Markers/ pack	(A) height		(B) height		(C) width		Max. Cable diameter	
		mm	inches	mm	inches	mm	inches	mm	inches
WCD-318	300	31.8	1.25	7.95	0.31	19.0	0.75	7.62	0.30
WCD-476	150	47.6	1.87	12.7	0.50	19.0	0.75	10.16	0.40
WCD-762	90	76.2	3.0	19.0	0.75	19.0	0.75	17.78	0.70
WCD-1520	40	152.0	5.98	25.4	1.00	19.0	0.75	40.64	1.60

**Accessories for manual marking**

Ordering description	Description	Quantity per pack
ZUB-01	Felt-tip pen, fine	1
ZUB-03	Pencil for UV-resistant labelling	1

### K-Type® cable markers

K-Type® markers are used to identify wire bundles, cables, pipes and conduits using specially designed oval shaped, individual characters that slide on to a PVC carrier, which is then attached to the substrate using cable ties. K-Type® markers are ideal for post termination applications or where retrofit is anticipated.

These markers are supplied yellow with black legends and in the standard International colour code option and are supplied on reels. K-Type® markers come in one standard size to fit carrier strips that can hold from 7 to 18 markers and are made from a plasticized PVC material.



#### Features and benefits

- Versatile marking system for cables, cable bundles and conduit
- Elliptical marker profile allows easy fitting to carrier strips



#### Temperature rating

Operating temperature range      -40°C to +70°C      -40°F to +158°F

#### Specifications/approvals

Tyco Electronics      TTDS-025

#### Part numbering system





## K-Type® cable markers

### Ordering information

#### Markers

Size code	Marker size	Marker Length (mm)	Cable diameter (mm)	Reel quantity
1361	65	60	4.2 – 7.0	500

### Packaging Code

1 Reel

### Color Code (Available for All Legends)

4 Yellow                      9 White

### International color code

Legend	Marker Color	Ink Color	Legend	Marker Color	Ink Color	Legend	Marker Color	Ink Color
0	Black	White	1	Brown	White	2	Red	Black
3	Orange	Black	4	Yellow	Black	5	Green	Black
6	Blue	Black	7	Violet	Black	8	Gray	Black
9	White	Black						

### Legend code

Legend	Code	Legend	Code	Legend	Code
0	00	J	19	/	38
1	01	K	20	~	39
2	02	L	21	Earth	40
3	03	M	22	)	41
4	04	N	23	Blank	42
5	05	O	24	:	43
6	06	P	25	.	44
7	07	Q	26	<	45
8	08	R	27	>	46
9	09	S	28	=	47
A	10	T	29	.	48
B	11	U	30		
C	12	V	31		
D	13	W	32		
E	14	X	33		
F	15	Y	34		
G	16	Z	35		
H	17	+	36		
I	18	-	37		

### Carrier Strips

Order code	Capacity	Quantity
11320000	7 markers	500
11310000	12 markers	500
11300000	18 markers	250
11330000 *	12 markers	100

\* This carrier can be used to flag

### G-Type® push-on wire markers

G-Type® markers are individual push-on characters used to identify wires and small cables. They are designed with an expanding profile, enabling each marker to accommodate a wide range of wire/cable sizes. The markers are supplied chevron cut to ensure the legend remains aligned.

G-Type® markers are yellow with black legends and are supplied as loose pieces packed in boxes.

G-Type® markers are particularly suitable for applications requiring low fire hazard properties. They are made from a self-extinguishing modified thermoplastic polymer and are halogen, silicone and cadmium free.

#### Features and benefits

- Low Fire Hazard
- Zero halogen, self extinguishing material
- Gusseted design allows marker to fit over a wide range of cable diameters
- Chevron cut ensures markers stay aligned



#### Specifications/approvals

Tyco Electronics TTDS-024

#### Temperature rating

Operating temperature range -45°C to +70°C -50°F to +158°F

#### Flammability

LOI 40%, FTI > 300°C

#### Part numbering system



### G-Type® push-on wire markers

#### Ordering information

Size code	Marker size	Cable diameter (mm)	Box quantity
0719	G3/10	1.4 – 2.5	1000
0720	G3/20	2.0 – 3.5	1000
0721	G4/10	3.0 – 6.0	500
0722	G6/10	5.0 – 9.5	250
0723	G6/20	8.0 – 12.5	250

#### Packaging Code

1 Box

#### Color Code (Available for All Legends)

4 Yellow

#### Legend code

Legend	Code	Legend	Code	Legend	Code
0	00	J	19	/	38
1	01	K	20	~	39
2	02	L	21	Earth	40
3	03	M	22	)	41
4	04	N	23	Blank	42
5	05	O	24	:	43
6	06	P	25	,	44
7	07	Q	26	<	45
8	08	R	27	>	46
9	09	S	28	=	47
A	10	T	29	.	48
B	11	U	30	L1	51
C	12	V	31	L2	52
D	13	W	32	L3	53
E	14	X	33	Serd	54
F	15	Y	34	PE	55
G	16	Z	35	PEN	56
H	17	+	36	(	62
I	18	-	37		

### Z-Type® push-on wire markers

Z-Type® markers are individual push-on characters used to identify wires and small cables permanently. They are designed with an expanding profile, enabling each marker to accommodate a wide range of wire/cable sizes.

Z-Type® markers are a simple, cost-effective solution for many commercial wire identification applications. The markers are supplied either straight cut or chevron cut: the chevron cut option ensures the legends remain aligned. Standard Z-Type® markers are yellow or white with black legends and can be supplied as loose pieces packed in boxes or on reels. Color coded markers are also available.

#### Features and benefits

- Resistant to sea water, fuels and oils
- 9 sizes covering wire diameters from 1.5mm to 12.7mm (0.06 inches to 0.5 inches)
- Applicator wands available for easy marker installation



#### Specifications/approvals

Tyco Electronics                      TTDS-026

#### Temperature rating

Operating temperature range      -45°C to +70°C                      -50°F to +158°F

#### Part numbering system



## Z-Type® push-on wire markers

### Ordering information

Size code (straight cut)	Size code (chevron cut)	Marker size	Marker Length (mm)	Pack quantity	Cable diameter	
					mm	inches
0580	1151	5	4.5	1000	1.5 - 2.0	0.06 - 0.08
0581	1152	7	4.5	1000	2.0 - 3.2	0.08 - 0.13
0615	1153	9	4.5	1000	2.5 - 4.0	0.10 - 0.16
0616	1154	11	4.5	1000	2.9 - 4.7	0.11 - 0.19
0617	1155	13	4.5	1000	3.4 - 5.7	0.13 - 0.22
0618	1156	15	4.5	1000	3.8 - 6.3	0.15 - 0.25
0620	1157	18	4.5	500	4.3 - 6.9	0.17 - 0.27
0622	1158	23	6.0	500	5.5 - 8.9	0.22 - 0.35
0624	1159	35	6.0	250	7.9 - 12.7	0.31 - 0.50

### Packaging Code

1 Box                                      3 Reel

### Color Code (Available for All Legends)

4 Yellow                                      9 White

### Packaging Options available

Straight Cut		Chevron cut	
White marker with black legend:	Boxes, reels	White marker with black legend:	Boxes
Yellow marker with black legend:	Reels	Yellow marker with black legend:	Reels
Color coded	Boxes	Color coded	Boxes, reels

### Color Code

Legend	Marker Color	Ink Color	Legend	Marker Color	Ink Color
0	Black	White	1	Brown	White
2	Red	Black	3	Orange	Black
4	Yellow	Black	5	Green	Black
6	Blue	Black	7	Violet	Black
8	Gray	Black	9	White	Black

Order example: 06 16 1400 (Z-Type® markers, size 11, yellow marker with black legend 0, boxed)

### Legend code

Legend	Code	Legend	Code	Legend	Code
0	00	J	19	/	38
1	01	K	20	~	39
2	02	L	21	Earth	40
3	03	M	22	)	41
4	04	N	23	Blank	42
5	05	O	24	:	43
6	06	P	25	.	44
7	07	Q	26	<	45
8	08	R	27	>	46
9	09	S	28	=	47
A	10	T	29	.	48
B	11	U	30		
C	12	V	31		
D	13	W	32		
E	14	X	33		
F	15	Y	34		
G	16	Z	35		
H	17	+	36		
I	18	-	37		

### Applicators

Order Code	Marker Size	Pack Quantity	Order Code	Marker Size	Pack Quantity
12510000	7	1	12520000	9	1
12530000	11	1	12540000	13	1
12550000	15	1	12560000	18	1

## V-Type™ Manual wire and cable markers

V-Type™ markers are individual push-on characters used to identify wires and small cables permanently. They are designed with an expanding profile, enabling each marker to accommodate a wide range of wire/cable sizes.

V-Type™ markers are a simple, cost-effective solution for many commercial wire identification applications. The markers are supplied chevron cut and this ensures the legends remain aligned. Standard V-Type™ markers are yellow or white with black legends and can be supplied as loose pieces packed in boxes, on reels or flat disc reels. Color coded markers are also available.

### Features and benefits

- Resistant to sea water, fuels and oils
- 4 sizes covering wire diameters from 1.4mm to 16.0mm (0.06 inches to 0.63 inches)



### Specifications/approvals

Tyco Electronics                      TTDS-096

### Temperature rating

Operating temperature range      -45°C to +70°C                      -50°F to +158°F

### Part numbering system



### V-Type™ Manual wire and cable markers

**Ordering information**

Size code	Marker size	Cable diameter		Packed
		mm	<i>inches</i>	
0761	3	1.4-2.8	<i>0.06-0.11</i>	1000
0762	5	2.8-5.0	<i>0.11-0.20</i>	1000
0763	10	4.0-10.0	<i>0.16-0.39</i>	500
0764	15	8.0-16.0	<i>0.31-0.63</i>	250

**Packaging Code**

1 Box 3 Reel

**Color Code (Available for All Legends)**

4 Yellow 9 White

**Color code (for numbers 0-9 only)**

Legend	Marker Color	Ink Color	Legend	Marker Color	Ink Color	Legend	Marker Color	Ink Color
0	Black	White	1	Brown	White	2	Red	White
3	Orange	Black	4	Yellow	Black	5	Green	White
6	Blue	White	7	Violet	White	8	Gray	Black
9	White	Black						

**Mark/Legend code**

Legend	Code	Legend	Code	Legend	Code
0	00	J	19	/	38
1	01	K	20	~	39
2	02	L	21	Earth	40
3	03	M	22	)	41
4	04	N	23	Blank	42
5	05	O	24	:	43
6	06	P	25	,	44
7	07	Q	26	<	45
8	08	R	27	>	46
9	09	S	28	=	47
A	10	T	29	.	48
B	11	U	30		
C	12	V	31		
D	13	W	32		
E	14	X	33		
F	15	Y	34		
G	16	Z	35		
H	17	+	36		
I	18	-	37		

**O-Type™ Manual wire and cable markers**

The O-Type™ marker is a thin walled plasticised PVC marker which is particularly suited to high density wiring applications where space saving is paramount.

They are color coded to BS3858: 1992 which includes repeated printing of the individual digit three times around the circumference of the marker.

Letters and symbols are printed on a pink background.

**Features and benefits**

- Conforms to BS3858: 192 Type 3
- Color coding enables identification when mark is obscured
- Thin wall for densely packed wiring
- Nine sizes of marker cover cable sizes up to 16mm<sup>2</sup>



**Temperature rating**

Operating temperature range      -65°C to +95°C      -85°F to +203°F

**Part numbering system**





## O-Type™ Manual wire and cable markers

### Ordering information

Size Code Part Cut	Cable Diameter mm	Cable Size mm <sup>2</sup>	Marker Size	Marker Length mm	Packed
1106	0.6 - 1.0	-	0.75	3.0	1000
1107	0.9 - 1.3	-	10	4.0	1000
1108	1.1 - 1.6	-	12	3.0	1000
1109	1.4 - 2.1	-	15	3.0	1000
1110	1.9 - 2.8	-	20	5.0	1000
1111	2.4 - 3.5	1.0	25	5.0	1000
1112	2.9 - 4.8	1.5	30	5.0	1000
1113	3.9 - 5.8	2.5 & 4.0	40	5.0	1000
1114	5.3 - 8.0	6.0 & 10.0	55	5.0	1000

### Color Code (Available for All Legends)

99 Pink

### Color code (for numbers 0-9 only)

Legend	Marker Color	Ink Color	Legend	Marker Color	Ink Color	Legend	Marker Color	Ink Color
0	Black	White	1	Brown	White	2	Red	Black
3	Orange	Black	4	Yellow	Black	5	Green	Black
6	Blue	Black	7	Violet	Black	8	Gray	Black
9	White	Black						

### Legend code

Legend	Code	Legend	Code	Legend	Code	Legend	Code
0	00	J	19	/	38	SO	57
1	01	K	20	~	39	-10	58
2	02	L	21	Earth	40	-1	59
3	03	M	22	)	41	-2	60
4	04	N	23	Blank	42		
5	05	O	24	:	43		
6	06	P	25	,	44		
7	07	Q	26	<	45		
8	08	R	27	>	46		
9	09	S	28	=	47		
A	10	T	29	Fullstop	48		
B	11	U	30	Ä	49		
C	12	V	31	Ö	50		
D	13	W	32	L1	51		
E	14	X	33	L2	52		
F	15	Y	34	L3	53		
G	16	Z	35	SERD	54		
H	17	+	36	PE	55		
I	18	-	37	PEN	56		

### Snap-On wire markers

Tyco Electronics snap-on markers are convenient and easy to use. These markers are supplied on a 'wand' applicator that simplifies and reduces installation time, and saves on the cost of marking.

Snap-on wire markers are designed to stand the test of time, preventing costly re-work before the life of the equipment ends. This is why Tyco Electronics snap-on markers are found today in power stations, oil refineries, offshore platforms, and other major projects around the world.

#### Features and benefits

- Snap-on markers are the perfect way to permanently and rapidly mark cables, wires, leads, and cores after termination and installation
- Easy to alter identification on cables that are already marked
- Secure grip for positive fixing to cable
- The high elasticity of the marker enables all types of installation and conduction material to be permanently marked without damage
- Applicator has a patented slit to prevent over-expansion of the marker during application
- Made from polyoxymethylene which guarantees strength, dimensional stability, low moisture absorption, and resistance to chemicals
- Resistant against oils, cleaning agents, fuels, and alkaline solutions
- Zero-halogen material
- Ten sizes for cable diameters 0.04" to 0.75" (1.0mm to 19.0mm)
- Color-coded option



#### Specifications/approvals

Tyco Electronics TTDS-094

#### Temperature rating

Operating temperature range -40°C to +106°C -40°F to +223°F

#### Part numbering system



### Snap-On wire markers

#### Ordering information

Size Code	mm	Cable Diameter <i>inches</i>	Color of Applicator Wand	Packed Box
STD 01	1.00 - 1.40	<i>0.040 - 0.055</i>	Brown	10 mounting wands with 30 identical markers
STD 02	1.40 - 1.80	<i>0.055 - 0.071</i>	Gray	10 mounting wands with 30 identical markers
STD 03	1.90 - 2.65	<i>0.075 - 0.104</i>	Green	10 mounting wands with 30 identical markers
STD 05	2.30 - 3.00	<i>0.091 - 0.118</i>	Natural	10 mounting wands with 30 identical markers
STD 06	2.60 - 3.50	<i>0.102 - 0.138</i>	Red	10 mounting wands with 30 identical markers
STD 09	3.25 - 4.50	<i>0.128 - 0.177</i>	Blue	10 mounting wands with 30 identical markers
STD 12	4.50 - 6.00	<i>0.177 - 0.236</i>	Yellow	10 mounting wands with 30 identical markers
STD 15	5.80 - 8.50	<i>0.228 - 0.335</i>	Orange*	50 identical markers; applicator available on request
STD 17	8.50 - 11.50	<i>0.335 - 0.452</i>	Orange*	50 identical markers; applicator available on request
STD 21	11.00 - 15.50	<i>0.433 - 0.610</i>	Gray*	50 identical markers; applicator available on request
STD 24	15.00 - 19.00	<i>0.590 - 0.750</i>	Gray*	50 identical markers; applicator available on request

#### Color Code (Available for All Legends)

Y Yellow                                  W White

#### Legend code

Legend	Code	Legend	Code	Legend	Code
0	0	J	J	/	Slash
1	1	K	K	Earth	Earth
2	2	L	L	Blank	Blank
3	3	M	M	:	Colon
4	4	N	N	=	Equals
5	5	O	O	.	Dot
6	6	P	P		
7	7	Q	Q		
8	8	R	R		
9	9	S	S		
A	A	T	T		
B	B	U	U		
C	C	V	V		
D	D	W	W		
E	E	X	X		
F	F	Y	Y		
G	G	Z	Z		
H	H	+	Plus		
I	I	-	Minus		

#### Applicators

Order Code	Marker Size	Color of Applicator	Number of Applications Per Pack
STD 15 - Applicator	15	Orange	5
STD 17 - Applicator	17	Orange	5
STD 21 - Applicator	21	Gray	2
STD 24 - Applicator	24	Gray	2

**CWM Wire marker cards**

Tyco Electronics CWM are pre-printed wire markers made with our white vinyl coated cloth tape material, supplied on a thick, easy to handle card stock, with a permanent, rubber based, pressure sensitive adhesive for easy application. Ideal for basic wire marking applications where pre-printed single or double-digit legends and some resistance to a variety of solvents, water, oil, dirt and heat is required.

**Features and benefits**

- Convenient and easy to use
- Pre-printed for on-site wire marking
- Available in colors for color coding applications
- Available in single and multiple digit legends



**Specifications/approvals**

Tyco Electronics TTDS- 100

**Temperature rating**

Operating temperature range -40°C to +82°C -40°F to +180°F

### CWM Wire marker cards

#### Ordering information

Product Order Code	Legend Option	Package Quantity	Label Width		Label Height		Card Width		Card Height	
			mm	<i>inches</i>	mm	<i>inches</i>	mm	<i>inches</i>	mm	<i>inches</i>
CWM-SL-# *	Solid Numbers 0-99	25 Cards (825 labels)	6.4	<i>0.250</i>	38.1	<i>1.500</i>	235.0	<i>9.250</i>	50.8	<i>2.000</i>
CWM-SL-letter *	Solid Letters A - Z	25 Cards (825 labels)	6.4	<i>0.250</i>	38.1	<i>1.500</i>	235.0	<i>9.250</i>	50.8	<i>2.000</i>
CWM-SL-color *	Solid Colors	25 Cards (825 labels)	6.4	<i>0.250</i>	38.1	<i>1.500</i>	235.0	<i>9.250</i>	50.8	<i>2.000</i>
CWM-SL-legend *	Solid 2+ Digits	25 Cards (825 labels)	6.4	<i>0.250</i>	38.1	<i>1.500</i>	235.0	<i>9.250</i>	50.8	<i>2.000</i>
CWM-SQ-1-33	Sequential 1 - 33	25 Cards (825 labels)	6.4	<i>0.250</i>	38.1	<i>1.500</i>	235.0	<i>9.250</i>	50.8	<i>2.000</i>
CWM-SQ-34-66	Sequential 34 - 66	25 Cards (825 labels)	6.4	<i>0.250</i>	38.1	<i>1.500</i>	235.0	<i>9.250</i>	50.8	<i>2.000</i>
CWM-SQ-67-99	Sequential 67 - 99	25 Cards (825 labels)	6.4	<i>0.250</i>	38.1	<i>1.500</i>	235.0	<i>9.250</i>	50.8	<i>2.000</i>
CWM-SQ-A-Z	Sequential A - Z	25 Cards (825 labels)	6.4	<i>0.250</i>	38.1	<i>1.500</i>	235.0	<i>9.250</i>	50.8	<i>2.000</i>
CWM-SQ-AA-ZZ	Sequential AA - ZZ	25 Cards (825 labels)	6.4	<i>0.250</i>	38.1	<i>1.500</i>	235.0	<i>9.250</i>	50.8	<i>2.000</i>
CWM-SQ-a-z	Sequential a - z	25 Cards (825 labels)	6.4	<i>0.250</i>	38.1	<i>1.500</i>	235.0	<i>9.250</i>	50.8	<i>2.000</i>
CWM-SQ-1-6	Sequential 1 - 6	25 Cards (825 labels)	6.4	<i>0.250</i>	38.1	<i>1.500</i>	235.0	<i>9.250</i>	50.8	<i>2.000</i>
CWM-SQ-1-18	Sequential 1 - 18	25 Cards (825 labels)	6.4	<i>0.250</i>	38.1	<i>1.500</i>	235.0	<i>9.250</i>	50.8	<i>2.000</i>

\*Solid cards (SL) = 1 legend on each card. Select a single legend and add to the suffix of the product order code.  
 Sequential cards (SQ) = a consecutive range of alpha or numeric legends on each card, as specified in the suffix of the product order code.  
 Available options on product order code CWM-SL-legends are: T1, T2, T3, L1, L2, L3, GND, P1, A1, XS, PTO. Add legend suffix of order code.

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «**JONHON**», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «**FORSTAR**».



## JONHON

«**JONHON**» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«**FORSTAR**» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: [ocean@oceanchips.ru](mailto:ocean@oceanchips.ru)

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А