TTMS (-MP) and TTMS-2X

HEAT SHRINK IDENTIFICATION SYSTEM

Technical Datasheet

TTDS-050 Revision 5 - February 2019

TTMS Military Grade, Heat Shrink Identification tubing, for the identification of wire and cables.

Made from durable, flame retarded, radiation cross linked heat shrinkable polyolefin. Supplied in 'Continuous', format for ease of printing and kitting.

TTMS and TTMS-MP is a thin wall, light weight, fast recovery 3:1 shrink ratio sleeve, allowing the customer to cover a wide range of cable diameters. –MP tube has a more open profile to aid insulation, "**M**ore **P**uffy".

TTMS-2X is a thicker, rugged wall, 2:1 shrink ratio sleeve, which can aid with handling and installation.

Suitable for a wide variety of applications, including aerospace, military, industrial and energy. Marker sleeves meet the mark permanence requirements of AS5942 and MIL 202 Method 215

TTMS and TTMS-MP meets the material performance requirements of the AMS SAE DTL 23053/5 specification. TTMS-2X is fabricated from AMS SAE DTL 23053/5 class 1 and 3 tubing.

TTMS and TMS-SCE Heat Shrink Identification products are available as part of a complete identification system. The system comprises specific printers, thermal transfer ribbons and WINTOTAL software.

Features

- Self-extinguishing, non-flame propagating
- Resistant to key Military and Aerospace fluids (defined by RW-2511)
- Military grade performance
- Can be laser marked for superior performance
- Pre-termination Cable Identification
- Sleeve diameters from 2.4mm to 50.8mm (3/32 to 2inch)
- TTMS (3:1 Shrink ratio except 38.1 and 50.8mm)
- TTMS-2X (2:1 shrink ratio)

Product Compliance

TTMS Fully complies with 2011/65/EU RoHS II directive, and Regulation (EC) number 1907/2006 (REACH)

Further information and a downloadable declaration covering RoHS and REACH compliance can be found at the TE Product Compliance Support Centre:

http://www.te.com/usa-en/utilities/product-compliance.html

Temperature Rating

- –55°C to 135°C (-67°F to 275°F)

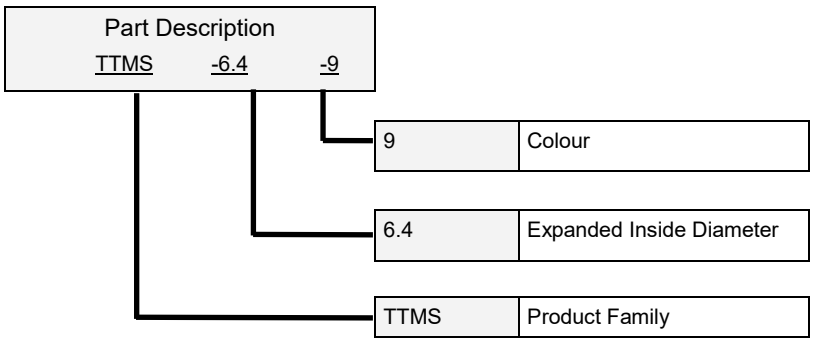
Shelf Life

- Refer to TE document 408-121006
  Cable Identification Shelf Life Document

Industry

Specifications / Approvals

TE Connectivity Standard	RW-2511 Specification for TTMS products
Rail	EN45545-2, Railway applications - Fire protection on railway vehicles, Part 2: Requirements for fire behaviour of materials and components Fire Hazard Classification 1, 2 and 3, in accordance with requirement set R24 NFPA 130 Standard for Fixed Guideway Transit and Passenger Rail Systems, Fire protection requirements, Interior Fire Propagation Resistance Federal Railroad Administration, DOT, Appendix B to Part 238, Test Methods and Performance Criteria for the Flammability and Smoke Emission Characteristics of Materials used in Passenger Cars and Locomotive Cabs SHAZAINENNSHI, Japan Railway Rolling Stock & Machinery Association 2003 Classification 'Flame Retardant' Serial number 2015-163K
Military	SAE-AMS-23053/5 Insulation Sleeving, Electrical, Heat Shrinkable, Polyolefin, Semi-Rigid, Crosslinked. • TTMS Class 1 Material performance • TTMS-2X fabricated from Class 1 and 3 tubing
Industrial	CSA Standard C22.2 No 198.1 Class Number 9032-01 INSULATING DEVICES AND MATERIALS-Insulating Tubing and Sleeving, File reference 31929 UL Certification, Tubing, Extruded Insulating Component File reference YDPU2.E35586



Available Options

Spool Size	Spool does not fit inside printers, recommend TE Connectivity PRINTER-UNIVERSAL-REEL-HOLDER, Part Number EC9926-000, reference TTDS-259
Colors	Standard: Yellow, White Code: 4, 9 Other colours available on request

Brown	Red	Orange	Green	Blue	Violet	Grey	Black
1	2	3	5	6	7	8	0

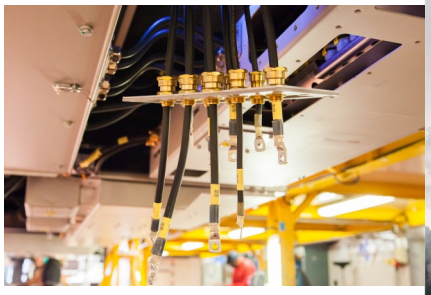
To maximise print contrast, colours are based on pastel shades.

Ordering Example: TTMS-6.4-9

i.e. Product Family, Expanded Inside Diameter, Colour

Ordering Information

Ordering description	Inside diameter				Cable Diameter Recommended use range					
	As supplied (minimum)		After recovery (Maximum)							
	mm	inches	mm	inches	mm			inches		
TTMS-(MP) - 2.4 – <colour>	2.4	0.093	0.8	0.031	0.8	to	1.9	0.032	to	0.075
TTMS-(MP) - 3.2 – <colour>	3.2	0.125	1.1	0.042	1.1	to	2.6	0.044	to	0.105
TTMS-(MP) - 4.8 – <colour>	4.8	0.187	1.6	0.062	1.7	to	4.0	0.069	to	0.160
TTMS-(MP) - 6.4 – <colour>	6.4	0.250	2.1	0.083	2.3	to	5.4	0.091	to	0.215
TTMS-(MP) - 9.5 – <colour>	9.5	0.375	3.2	0.125	3.4	to	8.1	0.137	to	0.320
TTMS-(MP) - 12.7 – <colour>	12.7	0.500	4.2	0.166	4.6	to	10.7	0.183	to	0.425
TTMS-(MP) - 19.0 – <colour>	19.0	0.750	6.4	0.250	6.9	to	16.2	0.275	to	0.640
TTMS-(MP) - 25.4 – <colour>	25.4	1.000	8.4	0.333	9.2	to	21.5	0.366	to	0.850
TTMS-(MP) - 38.1 – <colour>	38.1	1.500	19.0	0.750	20.9	to	33.0	0.825	to	1.300
TTMS-(MP) - 50.8 – <colour>	50.8	2.000	25.4	1.000	27.9	to	44.9	1.100	to	1.750
TTMS -2X - 2.4 – <colour>	2.4	0.093	1.2	0.046	1.2	to	1.90	0.050	to	0.075
TTMS -2X - 3.2 – <colour>	3.2	0.125	1.6	0.062	1.1	to	2.60	0.044	to	0.105
TTMS -2X - 4.8 – <colour>	4.8	0.187	2.4	0.093	1.7	to	4.0	0.069	to	0.160
TTMS -2X - 6.4 – <colour>	6.4	0.250	3.2	0.125	2.3	to	5.4	0.091	to	0.215
TTMS -2X - 9.5 – <colour>	9.5	0.375	4.7	0.187	3.4	to	8.1	0.137	to	0.320
TTMS -2X - 12.7 – <colour>	12.7	0.500	6.3	0.25	4.6	to	10.7	0.183	to	0.425
TTMS -2X - 19.1 – <colour>	19.0	0.750	9.5	0.375	6.9	to	16.2	0.275	to	0.640
TTMS -2X - 25.4 – <colour>	25.4	1.000	12.7	0.500	13.3	to	23.0	0.524	to	0.906

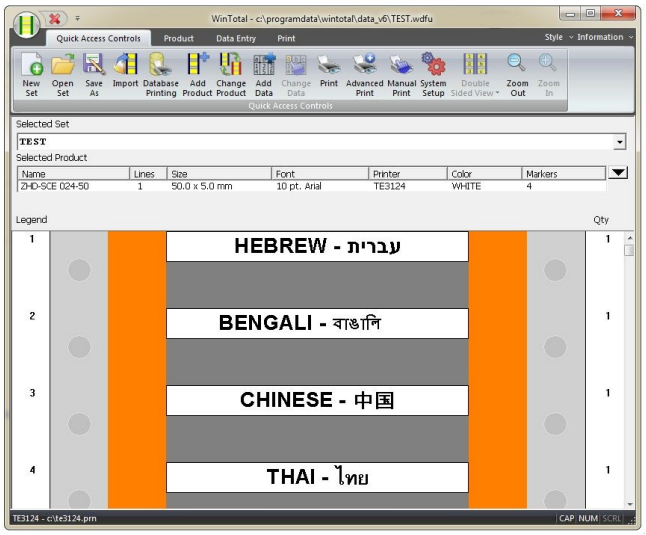


Printer Information

Print quality and print performance can only be guaranteed when specific TE printer and ribbons are used.

The current list of printers and ribbons can be found in TE document 411-121005 'Identification Printer Product Ribbon Matrix'. This document can be found on Printer, Software & Accessories page:

https://www.te.com/usa-en/products/identification-labeling/printers-software-and-accessories/printer-ribbons.html

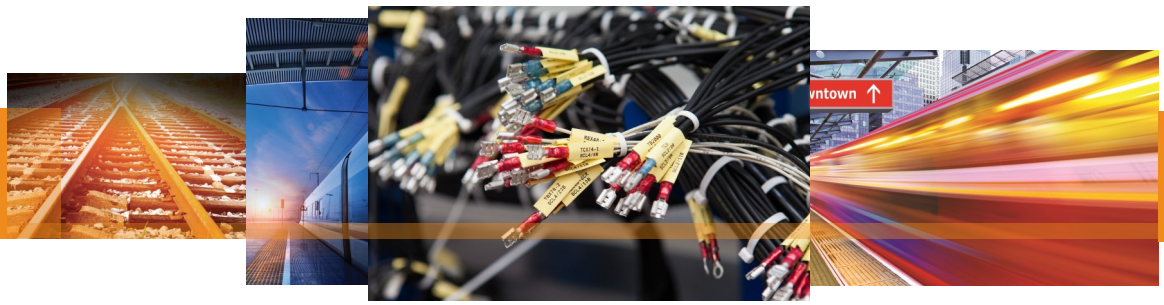


Software

WINTOTAL software, available to download for a 14 day evaluation period from the Identification Printer Software page:

http://www.te.com/usa-en/products/identification-labeling/printers-software.html

Contact a TE representative for further information



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