



# TTMS (-MP) and TTMS-2X

## HEAT SHRINK IDENTIFICATION SYSTEM

### Technical Datasheet

TTDS-050 Revision 6 - June 2021

#### **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 (**M**ore **P**uffy) tube has a more open profile to aid installation.

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)

### Temperature Rating

- -55°C to 135°C (-67°F to 275°F)

### Product Compliance

TTMS fully complies with Directive (EU) 2015/863 (amendment to Annex II of EU RoHS 2 Directive 2011/65/EU), 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>

### 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 Hazard Level 1 and 2, 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

SHAZAINENSHI, Japan Railway Rolling Stock & Machinery Association 2003 Classification 'Flame Retardant' Serial number 2015-163K

#### Military

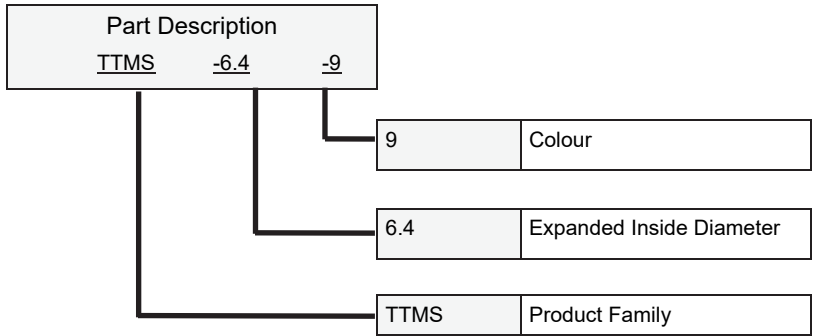
SAE-AMS-23053/5 Insulation Sleeving, Electrical, Heat Shrinkable, Polyolefin, Semi-Rigid, Crosslinked.

- TTMS Class 1 Material performance
- TTMS-2X Class 1 and 3 Material performance

#### 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**

<b>Spool Size</b>	Spool does not fit inside printers, recommend TE Connectivity PRINTER-UNIVERSAL-REEL-HOLDER, Part Number EC9926-000, reference TTDS-259							
<b>Colors</b>	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



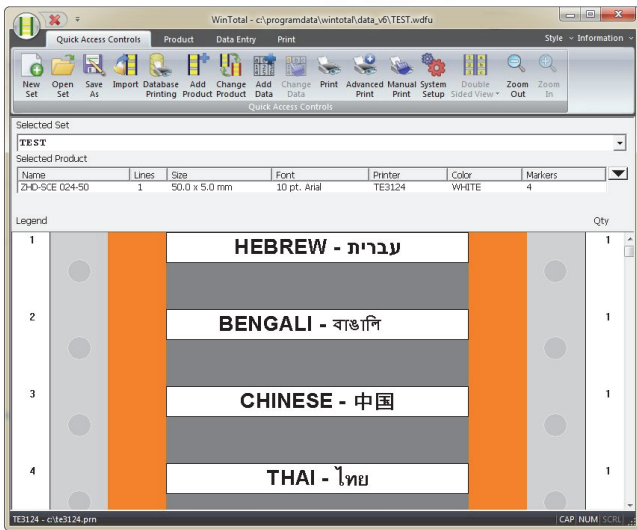


**Printer Information**

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 the 'Printers, Software & Accessories' webpage:

<https://www.te.com/usa-en/products/identification-labeling/printers-software-and-accessories/printers.html?tab=pgp-story>

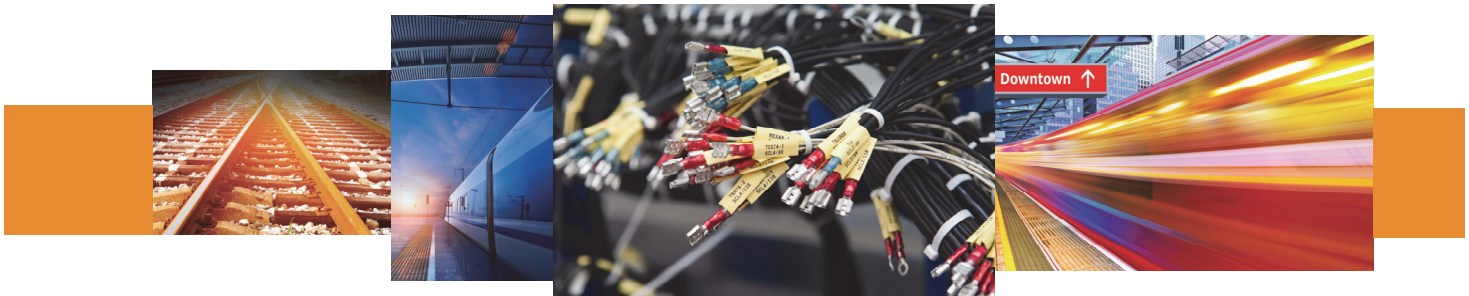


**Software**

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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