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Panduct® Type TNC – Low-Smoke, Halogen-Free, Slotted Wall Wiring Duct

PANDUIT®

SPECIFICATION SHEET

specifications

Type TNC wiring duct shall be a flush cover, slotted wiring duct and be made from low-smoke and halogen-free (LSHF) material that meets the regulatory requirements of the mass transit industry and other regulated environments. The low-smoke and halogen-free material will have a UL flammability rating of UL94 V-0 and will meet the National Fire Protection Association Standard NFPA 130[1] and Federal Rail Administration Guidelines[2] for rail transit vehicles. Type TNC wiring duct shall be compliant with DIN 5510-2[3] preventative fire protection in railway vehicles, with S-4 burning class, SR-2 smoke class, and ST-2 dripping class ratings.



technical information

Low-smoke, halogen-free material:	Non-toxic, lead-free, and environmentally safe; will not exhibit a high rate of smoke generation or release toxic, corrosive gases in the event of a fire that could endanger public safety or damage sensitive electronics in enclosed environments (passenger rail, oil and gas platforms)
UL94 V-0 material flame rating:	Self-extinguishing and provides a greater flame resistance when compared to other halogen-free wiring duct, enabling its use in more electrical applications
Temperature range:	Continuous use up to a maximum of 105°C (221°F)[4]; shipping, handling, and installation to -70°C (-94°F)
Rail standard compliance/rating:	NFPA 130[1] DIN 5510-2[3] BSS 7239[5] AFNOR NF F 16 101 and NF F 16 102[6] UNIFER EN UNI 11925-2 (EN ISO 11925-2)[7] EN 455545-2[8]
Compliance:	RoHS REACH compliant; UL recognized.

key features and benefits

Wide-finger/ slot design	Provides greater sidewall rigidity and allows use with a wide range of wire and bundle sizes
Flush cover design	Base sidewall is even with cover for superior aesthetics and greater wiring capacity when compared to non-flush cover wiring duct
Non-slip cover liner	Halogen-free liner ensures that the cover does not slide during shipment, vibration, and when in a vertical orientation, eliminating rework and repositioning
Base and finger score lines	Score lines allow for easy breakouts, saving installation time, when compared to other halogen-free duct
Low-smoke, halogen-free divider wall	Used to create multiple channels within a single duct to separate cabling types (power communication/signal); installed with DB-C mounting discs

applications

Type TNC wiring duct routes, protects, and manages electrical and communication cabling in control panels and wire routing applications that require enhanced material performance for fire safety (flame, smoke, and toxicity) such as in light rail and transit systems, commuter buses, data centers, offshore oil and gas platforms, and other environments.

[1]NFPA 130 Standard for Fixed Guideway Transit and Passenger Rail Systems, 2000 edition.
[2]Per Code of Federal Regulation 49 C.F.R. Part 223, 238.
[3]German Standard DIN 5510-2; DIN 54837 (test method).
[4]Maximum temperature based on material Heat Deflection Temperature (HDT) data.
[5]Boeing Standard 7239 -- test method for toxic gas generation by materials on combustion.
[6]French Standard AFNOR NF F 16 101 Railway Rolling Stock Fire Behaviour and Choice of Materials, NF F 16 102 Railway Rolling Stock Fire Behaviour: Material choosing, application for electric system.
[7]UNIFER Italian Railway Standard EN UNI 11925-2 (EN ISO 11925-2).
[8]EN 45545-2 (EU Standard: Railway applications - Fire protection on railway vehicles - Part 2: Requirements for fire behavior of materials and components.

TNC Wiring Duct (Base and Cover)

Size – mm (in.)

25.0 (1.00) x 37.0 (1.50): TNC25X37LG2
25.0 (1.00) x 75.0 (3.00): TNC25X75LG2
37.0 (1.50) x 37.0 (1.50): TNC37X37LG2
37.0 (1.50) x 75.0 (3.00): TNC37X75LG2
50.0 (2.00) x 50.0 (2.00): TNC50X50LG2
75.0 (3.00) x 75.0 (3.00): TNC75X75LG2
100.0 (4.00) x 50.0 (2.00) TNC100X50LG2
100.0 (4.00) x 75.0 (3.00): TNC100X75LG2

Replacement Covers

Size – mm (in.)	
25.0 (1.00):	TNC25LG2
37.0 (1.50):	TNC37LG2
50.0 (2.00):	TNC50LG2
50.0 (2.00):	TNC75LG2
100.0 (4.00):	TNC100LG2

Divider Wall

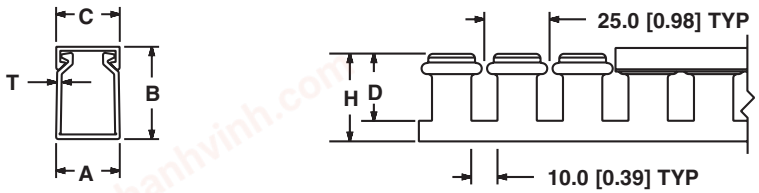
LSHF 50mm (2") solid divider wall:	TNC50D2
LSHF 75mm (3") solid divider wall:	TNC75D2
Divider wall mounting disc:	DB-C

Tools and Accessories

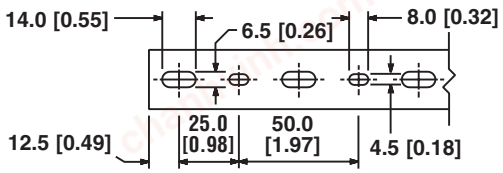
Duct cutting tool:	DCT
Notching tool:	DNT-100
Nylon rivet installation tool:	TNR
Nylon rivet:	NR1
Duct finger cutting tool:	DFCT

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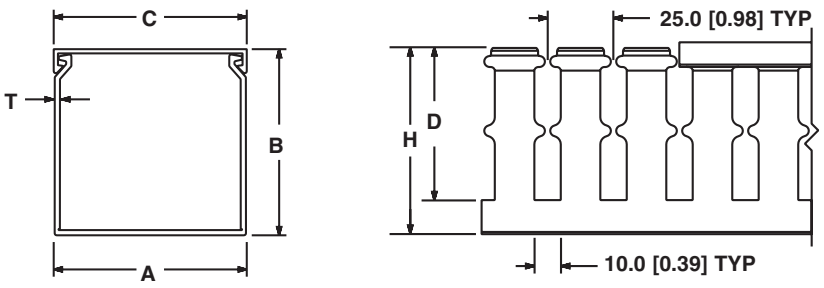
Panduct® Type TNC – Low-Smoke, Halogen-Free, Slotted Wall Wiring Duct



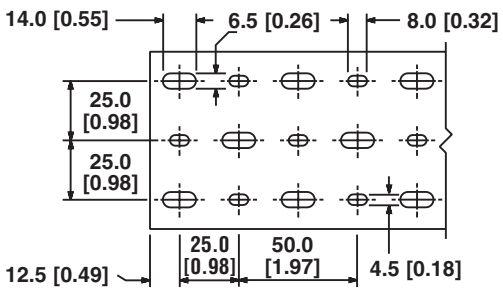
For 37mm and 50mm height duct



For 25mm, 37mm and 50mm width duct*



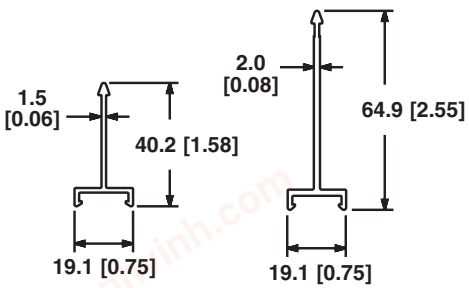
For 75mm and 100mm height duct



For 75mm and 100mm width duct*

Duct Part Number	Nominal Size W x H mm (in.)	Dimensions - mm (In.)					
		A	B	C	D	H	T
TNC25X37LG2	25 x 37 (1 x 1.5)	24.6 (0.97)	35.8 (1.41)	24.6 (0.97)	24.7 (0.97)	33.0 (1.30)	1.7 (0.07)
TNC25X75LG2	25 x 75 (1 x 3)	24.6 (0.97)	72.4 (2.85)	24.6 (0.97)	57.6 (2.27)	70.5 (2.78)	2.0 (0.08)
TNC37X37LG2	37 x 37 (1.5 x 1.5)	37.1 (1.46)	35.8 (1.41)	37.1 (1.46)	24.7 (0.97)	33.0 (1.30)	1.8 (0.07)
TNC37X75LG2	37 x 75 (1.5 x 3)	37.1 (1.46)	72.4 (2.85)	37.1 (1.46)	57.6 (2.27)	70.5 (2.78)	2.0 (0.08)
TNC50X50LG2	50 x 50 (2 x 2)	49.6 (1.95)	47.8 (1.88)	49.6 (1.95)	34.8 (1.37)	45.5 (1.79)	2.0 (0.08)
TNC75X75LG2	75 x 75 (3 x 3)	74.6 (2.94)	72.4 (2.85)	74.6 (2.94)	57.6 (2.27)	70.5 (2.78)	2.0 (0.08)
TNC100X50LG2	100 x 50 (4 x 2)	99.6 (3.92)	47.8 (1.88)	99.6 (3.92)	34.8 (1.37)	45.5 (1.79)	2.0 (0.08)
TNC100X75LG2	100 x 75 (4 x 3)	99.6 (3.92)	72.4 (2.85)	99.6 (3.92)	57.6 (2.27)	70.5 (2.78)	2.5 (0.10)

Dimensions shown are for reference only. Dimensions above are mm (inches). Duct and divider wall supplied in two meter length.
*Mounting hole pattern according to DIN 43659.



Divider wall for 50mm and 75mm height duct

TNC Wiring Duct Material (PPE+HIPS)		
Properties	**General**	**Test Method**
Specific Gravity	1.11 g/cc	ASTM D 792
Heat Deflection Temperature @264 psi	106°C 223°F	ASTM D 648
Flame/Smoke/Toxicity		
Smoke Density (Flaming) @ 1.5 and 4 min.	Ds @ 1.5 min = 16 Ds @ 4.0 min = 66	ASTM E 662
Flammability Class	V-0	UL94
Flame Spread Index	Is =15	ASTM E 162
Total Heat Release	66.21 MJ/m²	ASTM E1354
Low Toxicity	Yes	BSS 7239

PPE + HIPS (Polyphenylene Ether + High Impact Polystyrene)

TNC Wiring Duct Material (PPE+HIPS)		
Properties	**Mechanical**	**Test Method**
Tensile Strength at Yield	8,100 psi	ASTM D 638
Tensile Modulus	355,000 psi	ASTM D 638
Flexural Strength at Yield	11,500 psi	ASTM D 790
Flexural Modulus	340,000 psi	ASTM D 790
Notched Izod Impact Strength @ 23°C (73°F)	3.7 ft-lb/in.	ASTM D 256
Regional Standards		
NFPA 130 (U.S. Standard for Fixed Guideway Transit and Passenger Rail Systems)	Pass (Is<35, Ds1.5<100, Ds4<200)	ASTM E 162; ASTM E 662
DIN 5510 (Preventative fire protection in railway vehicles)	Burning class: S-4 Smoke class: SR-2 Dripping class: ST-2	DIN 5510-2; DIN 54837
NF F16 101, NF F 16 102 (smoke density, toxicity, glowing filament, oxygen index)	F1/I4	NF X 1-702 NF X 70-100 NF EN 60695-2 NF EN ISO 4589-2
UNIFER Italian Railway Standard	Pass	EN UNI 11925-2 (EN ISO 11925-2)

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WDSP29--SA-ENG
Replaces WDSP25--WW-ENG
1/2018