

Tray & VFD Cables

Applications

■ Application of flexible power and control tray cable, Type TC, MTW and WTTC

These special multi-conductor cables shall be permitted for use in power, lighting, control and signal circuits in accordance with the National Electrical Code (NEC), NFPA 70 Article 336. They are also approved for use in cable trays, in raceways and in outdoor locations supported by a messenger wire in accordance with Underwriters Laboratories Inc. (UL) Standard of Safety UL 1277 and for class I division 2 circuits as permitted in NEC article 501.10 (B) and for class II division 2 circuits as permitted in NEC article 502.10 (B) and in industrial establishments where the conditions of maintenance and supervision ensure that only qualified persons service the installation, and where the cables are continuously supported and protected against physical damage using mechanical protection, such as struts, angles or channels. These tray cables comply with the crush and impact requirements of Type TC and are identified for such use with the ER marking on the jacket.

Tray cables are for use as exposed runs between a cable tray and the utilization device where the cables are continuously supported and protected against physical damage and are secured at intervals not exceeding 1.8 m (6 feet). Grounding for the utilization equipment shall be provided by an equipment grounding conductor within the cables. These tray cables shall also be permitted to be used in wet locations and are resistant to moisture and corrosive agents. Cables that are surface marked "oil resistant I" have a jacket that is for exposure to mineral oil at temperature not in excess of 60°C (140°F). Marked with "oil resistant II" they have a jacket that is for exposure to mineral oil at temperatures not in excess of 75°C (167°C). The cables are flame retardant and self-extinguishing and sunlight resistant depending on the jacket color. The cables listed as UR AWM or UL MTW can be applied in the NFPA 79 machinery area. These cables are specified for use acc. to National Electrical Code (NFPA 70) and acc. to the National Fire Protection Association Electrical Standard for industrial machinery (NFPA 79). Wind turbine power and control cables are intended to be installed in cable trays or raceways within a wind turbine generator.

E
4

Exemplary applications:

DC 105
DC 105 C
DC 105 C TP

Type PLTC, ITC, & CMG
Type PLTC, ITC, & CMG
Type PLTC, ITC, & CMG

Recommended for use with computers, data transmission, office equipment, process control equipment and instrumentation, and all other signal and data communications

Exemplary applications:

TR 600 S
TR 600 S CY
TR 600 Plus
TR 600 CY Plus
TR 850 S

Type TC-ER, MTW & WTTC
Type TC-ER, MTW & WTTC
Type TC-ER, MTW & WTTC
Type TC-ER, MTW & WTTC
Type TC-ER & STOOW

Recommended applications are machine tools, control systems assembly lines, CNC machining, grinding machines, bottling equipment, data processing equipment and connections between control panels and machines

Exemplary applications:

TRAY HD TPE
TR 600 HD
TR 600 C HD
TR 600 Auto HD
TR 600 Auto C HD
TR 600 Auto Combo C HD

Type TC-ER
Type TC-ER
Type TC-ER
Type TC-ER
Type TC-ER
Type TC-ER and MTW

In hazardous (classified) areas Class I, Division 2 per NEC Article 501.4 (B), UL Type TC is in accordance with UL standard 1277 and NEC Article 336

Exemplary applications:

VFD XLPE TR
VFD XLPE TR D
VFD XLPE TR Lean
VFD Combo XLPE
VFD XLPE Auto TR
VFD Symmetrical XLPE TR
VFD XLPE 2KV TR

Type TC-ER
Type TC-ER
Type TC-ER
Type TC-ER
Type TC-ER
Type TC-ER
Type TC-ER



Can be used to connect alternating current variable frequency drives to alternating current variable frequency motors

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Selection Chart



		E/7	E/8	E/9	E/10	E/11	E/12	E/13	E/14	E/15	E/16	E/17	E/18	E/19	E/20	E/21	E/22
		DC 105	DC 105 C	DC 105 C TP	TR 600 S	TR 600 S Gray	TR 600 S CY	TR 600 S CY Gray	TR 600 Plus	TR 600 CY Plus	TR 850 S	TRAY HD TPE	TR 600 HD	TR 600 C HD	TR 600 Auto HD	TR 600 Auto C HD	TR 600 Auto Combo C HD
Conductors	Numbered conductors				•	•	•	•	•	•		•	•	•	•	•	•
	Color code chart 2, 4, and 6	•	•														
	Color code chart 3			•													
	Colored										•						
Insulation	Semi-rigid PVC (26-20 AWG)	•	•	•													
	PVC										•						
	PVC/Nylon	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•
Shielding	Tinned Copper Braid						•	•						•		•	
	Foil & Tinned Copper Braid		•	•						•							•
	Inner jacket												•				
Jacket	Gray jacket	PVC	PVC	PVC		PVC		PVC				TPE					
	Black jacket				PVC		PVC		PVC	PVC	TPE				TPE	TPE	TPE
	Orange jacket												TPE	TPE			
Temperature range static*	+105°C	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	+90°C	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	-25°C	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	-40°C	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Voltage	300 V	•	•	•													
	600 V				•	•	•	•	•	•	•	•	•	•	•	•	•
	1000 V CSA AWM				•	•	•	•			•						
	1000 V (UL) WTTTC				•	•	•	•			•						
	Test voltage: 2000 V	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Characteristics	Burning characteristics: FT1, FT4				•	•	•	•	•	•	•	•	•	•	•	•	•
	Cold bend test -25°C	•	•	•													
	Cold bend test -40°C				•	•	•	•	•	•	•	•	•	•	•	•	•
	Oil resistance																•
	Oil resistance I								•	•							
	Oil resistance I & II				•	•	•	•			•	•	•	•	•	•	•
	Sunlight resistance				•	•	•	•			•	•	•	•	•	•	•
	Exposed runs	•1	•1	•1	•	•	•	•	•	•	•	•	•	•	•	•	•
	Direct burial				•	•	•	•	•	•	•	•	•	•	•	•	•
	Machinery area	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Continuous Flex														•	•		

 from 18-16 AWG only
 to

*The temperature range for flexible application is mentioned on the corresponding catalog page

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Selection Chart



E
6

		Cable Type							
		E/23	E/24	E/25	E/26	E/27	E/28	E/29	
		VFD XLPE TR	VFD XLPE TR D (with drain wire)	VFD XLPE TR Lean	VFD Combo XLPE (available with drain wire)	VFD XLPE Auto TR	VFD Symmetrical XLPE TR	VFD XLPE 2KV TR	
Construction	Numbered conductors	●	●	●	●	●	●	●	
	Black conductors with green/yellow ground	●	●	●	●	●	●	●	
	Pair: PVC/Nylon				●				
	Insulation: Special formulated crosslinked PE, PVC ground	●	●	●	●				
	Insulation: Special formulated crosslinked PE					●	●	●	
	Drain wire		●		● ¹				
	Stranding: in layers	●	●	●	●	●			
	Stranding: in layers with 3 ground wires						●	●	
	Double shield: foil and tinned copper braiding	●	●	●	●	●	●		
	Uncoated 5 mil copper tape shield with 50% overlap							●	
Jacket	Special sunlight and oil resistant copolymer	●	●	●	●	●	●		
	Special sunlight resistant & flame retardant PVC							●	
Temperature range static*	+105°C	●	●	●	●	●	●		
	+90°C	●	●	●	●	●	●	●	
	-25°C	●	●	●	●	●	●	●	
	-40°C	●	●	●	●	●	●	●	
Voltage	600 V	●	●	●	●	●	●		
	1000 V CSA AWM	●	●	●	●	●	●		
	1000 V (UL) WTC	●	●	●	●	●	●		
	2000 V (UL)							●	
	Test voltage: 3000 V	●	●	●	●	●	●		
	Test voltage: 7500 V							●	
Standards & Approvals	Burning characteristics: FT1, FT2, FT4	●	●	●	●	●	●	●	
	Cold bend test -40°C	●	●	●	●	●	●		
	Oil resistance I & II	●	●	●	●	●	●		
	Sunlight resistance	●	●	●	●	●	●	●	
	Exposed runs	●	●	●	●	●	●	●	
	Direct burial	●	●	●	●	●	●	●	
	Machinery area	●	●	●	●	●	●	●	
	Long installations (over 100 ft)	●	●		●	●	●	●	



¹ Drain wire with 16 AWG pair configuration only.
Available with the other sized upon special request.

**The temperature range for flexible application is mentioned on the corresponding catalog page