



# TRAY CABLES



## VFD symmetrical Lean TR

Type  
MTW and  
WTTC

Variable frequency drive  
shielded tray cable  
and machine-tool cable  
with three tinned ground wires

**NFPA 79  
for Industrial  
Machinery**

FT2, FT4 CSA AWM I/II A/B 90°C 1000V FT1 FT2 CE



Marking for VFD symmetrical Lean TR 08641403: SAB BRÖCKSKES · D-VIERSEN · VFD symmetrical Lean TR 14 AWG/3c THHN (UL) Type TC-ER 90°C 600V, Oil I, Sunlight Resistant, Direct Burial, FT4 (UL) WTTC 90°C 1000V (UL) MTW 14 AWG/3c 600V AWM Style 21179 1000V c(UL) Type CIC SHIELDED 14 AWG/3c 90°C dry 600V FT1, FT2, FT4 CSA AWM I/II A/B 90°C 1000V FT1 FT2 CE

VFD symmetrical Lean TR is a flexible shielded motor supply cable designed for automated servo systems. The VFD symmetrical Lean TR contains a symmetrical arrangement of three phase leads and three tinned copper (PE) earth wires. The symmetrical placement of three phase leads and three earth wires insures proper earthing paths and minimizes the risk of motor failure from common-mode current. Also machine-tool cable for use as specified in the National Electrical Code (NFPA 70) and in the National Fire Protection Association Electrical Standard for Industrial Machinery (NFPA 79). This cable can be used without conduit (exposed runs). Its unique flame retardant jacket makes the VFD symmetrical Lean TR rated for 600V suitable for tray cable application and also as Control and Instrumentation Cable, UL and CSA AWM approved for 1000 Volt. The VFD symmetrical Lean TR has an outer PVC jacket and both a foil and a braid shield which helps with problems related to voltage spikes, harmonics, and power distortions frequently associated with variable frequency drives. The VFD symmetrical Lean TR can be used to connect alternating current variable frequency drives to alternating current variable frequency motors and is approved for up to 50' of open wiring to make installations less cumbersome. This motor supply cable is also suitable for installation in wet or dry locations and is UV resistant. The VFD symmetrical Lean TR can be used in indoor or outdoor applications and is rated for direct burial. The combination of the braid and foil shield makes the VFD symmetrical Lean TR 100% shielded from excessive interference. VFD symmetrical Lean TR is permitted to be used in hazardous (classified) locations class I, Division 2 per NEC Article 501.4 (B), UL Type TC is in acc. to UL standard 1277 and NEC Article 336 (392, 501). Wind turbine power and control cable is intended to be installed in cable trays or raceways within a wind turbine generator. MTW listed cables can be used in NFPA 79 Machine areas.

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to DIN VDE 0295 class 5 + IEC 60228 class 5 + HD 383 class 5 from 18 AWG - 14 AWG, from 10 AWG - 2 AWG class k in acc. to ASTM B 172
<b>Insulation:</b>	special formulated PVC/Nylon
<b>Color code:</b>	black conductors with consecutive white numbers
<b>Stranding:</b>	in layers with three tinned ground wires
<b>Screen:</b>	double shield, alu foil and tinned copper braiding
<b>Jacket material:</b>	special sunlight and oil resistant PVC
<b>Jacket color:</b>	black

### Outstanding features:

- Interconnection of variable frequency drive control device to variable frequency motors
- NFPA 79 for Industrial Machinery
- New improved with WTTC
- WTTC: UL Subject 2277
- TC: UL Standard 1277
- Three tinned ground wires for optimal performance

### Technical data:

<b>Voltage:</b>	(UL) / c(UL): 600 V UL-AWM/CSA-AWM: 1000 V (UL) WTTC: 1000 V
<b>Testing voltage U:</b>	conductor/conductor 7500 V conductor/screen 3000 V
<b>Min. bending radius:</b>	12 x O.D.
<b>Temperature:</b>	<b>UL-AWM:</b> up to +105°C <b>(UL) / c(UL) / CSA-AWM:</b> up to +90°C <i>static:</i> -25°C
<b>Burning characteristics:</b>	(UL) / c(UL) FT4, c(UL) / CSA-AWM FT1, FT2
<b>Oil resistant:</b>	yes
<b>Sunlight resistance:</b>	yes
<b>Exposed Runs:</b>	yes
<b>Direct Burial:</b>	yes
<b>Machinery Area:</b>	yes
<b>Absence of harmful substances:</b>	acc. to RoHS-guideline 2002/95/EG as well as GefStoffV appendix IV-no. 24, see page N/26

item no.	AWG	ground wire n x AWG	nominal inch	outer-ø mm	cable weight ≈ lbs/mft
▶ 08641603	16/3c	3 x 20	0.350	8.9	87
▶ 08641403	14/3c	3 x 18	0.390	9.9	118
▶ 08641203	12/3c	3 x 16	0.457	11.6	169
▶ 08641003	10/3c	3 x 14	0.567	14.4	260
▶ 08640803	8/3c	3 x 14	0.701	17.8	385
▶ 08640603	6/3c	3 x 12	0.866	22.0	555
▶ 08640403	4/3c	3 x 12	1.024	26.0	801
▶ 08640203	2/3c	3 x 6	1.185	30.1	1292
▶ 08640103	1/3c	3 x 6	1.350	34.3	1761

Other dimensions and colors are possible on request.

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Web site: [www.sabcable.com](http://www.sabcable.com)