Southwire® Machine Flex® TCU 600/1000V XLPE Insulation Shielded Signal Pair TPE Jacket. RHH/RHW-2 Flexible Variable Frequency Drive (VFD). Silicone-Free

Southwire® Machine Flex® Type TC-ER Variable Frequency Drive Cable, 600 Volts or 1000 Volts , Tinned Copper Conductors, Cross Linked Insulation Type RHH/RHW-2 With Shielded Pair, Thermoplastic Elastomer Jacket, Rated 90°C Dry or Wet, -40°C Cold Impact, Identification Method 4. 1000 Volts Flexible Motor Supply. CSA CIC/TC FT4 Flame. Sunlight Resistant, Direct Burial, Silicone Free.

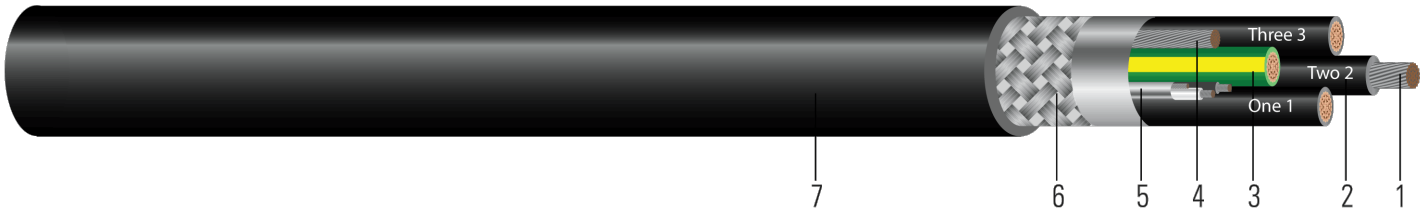


Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Class K, flexible stranded tinned annealed copper per ASTM B33, B172, and B174
2. **Insulation:** Cross linked insulation (Type RHH/RHW-2 on 14 AWG and larger)
3. **Ground:** One green ground with yellow stripe cross linked insulation (size equal to phase conductor)
4. **Drain Wire:** Tinned copper drain wire
5. **Twisted Shielded Pair:** 100% coverage aluminum/Mylar foil shield (color code: black, white)
6. **Overall Shielding:** 100% coverage aluminum/Mylar/aluminum foil, overall 85% coverage tinned copper braid
7. **Jacket:** Black Thermoplastic Elastomer (TPE) jacket

APPLICATIONS AND FEATURES:

Applications and Features: Power supply cable for VFDs and motors, suitable for cable tray, conduit, raceways, (TC-ER) and machine tool wiring conforming to NFPA 79. Suitable for free air and direct burial. Its flexible design is ideal for use on operation processes in accordance with NEC® Articles 336, 501 and 502 including, but not limited to: fans, pumps, conveyors, compressors, elevators and lifts, extruders, crushers and presses, assembly lines, food and beverage, wind energy and data centers. Cable is rated for -40C Cold Bend and Impact. Multiple approvals for multiple applications. The additional shielded pair can be used for signal, temperature sensors or brake.

SPECIFICATIONS:

- ASTM B33 Standard Specification for Tin-Coated Soft or Annealed Copper Wire
- ASTM B172 Standard Specification for Rope-Lay-Stranded Copper Conductors Having Bunch-Stranded Copper Conductors
- ASTM B174 Standard Specification for Bunch-Stranded Copper
- UL 44 Thermoset-Insulated Wires and Cables
- UL 758 Standard for Appliance Wiring Material Style 20886
- UL 1277 Type TC-ER Standard Power and Control Cables (1000V 14AWG and Larger)
- UL 2277 Flexible Motor Supply & Type WTTC
- CSA C22.2 No. 210 Appliance wiring material products I/II A/B
- CSA C22.2 No.230 Tray Cables - Rated TC

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- CSA C22.2 No. 239 Control and instrumentation cables
- ICEA S-58-679 Control Cable Conductor Identification Method 4
- Exceeds Ecolab PM-40-1 Material Resistance Test With 30-day Exposure, UL Verified V747862
- **CE/RoHS-2 – The CE Marking has been applied solely to express the conformance to the material restrictions identified in the RoHS-2 (2011/65/EU) Directive**
- NFPA 79 Electrical Standard for Industrial Machinery
- Made in America: Compliant with both Buy American and Buy America Act (BAA) requirements per 49 U.S.C. § 5323(j) and the Federal Transit Administration Buy America requirements per 49 C.F.R. part 661

SAMPLE PRINT LEGEND:

SOUTHWIRE XXAWG (XXmm2) XX/C VFD RHH/RHW-2 CDRS PLUS 16 AWG 1 PR TYPE TC-ER E75755 (UL) 600V 90°C DRY 90°C WET SUN RES OIL RES I/II DIR BUR -40°C OR WTTC 1000V OR AWM 20886 105°C 1000V OR FLEXIBLE MOTOR SUPPLY CABLE 1000V OR SUBMERSIBLE PUMP CABLE 600V -- LL90458 CSA CIC/TC FT4 OR AWM I/II A/B 1000V 105C FT4 -40°C -- CE ROHS-2 MADE IN USA

Table 1 – Weights and Measurements

Cond. Size	Cond. Number	Strand Count	Diameter Over Conductor	Insul. Thickness	Ground	Drain Wire	Dia. Over Shield	Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	Jacket Color
AWG/ Kcmil		No. of Strands	inch	mil	No. x AWG	No. x AWG	inch	mil	inch	lb/1000ft	lb/1000ft	
12	3	65	0.094	45	1 x 12	1x12	0.595	60	0.705	169	324	BK

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
***** Ampacities based upon 2023 NEC Table 310.16. See NEC sections 310.15 and 110.14(C) for additional requirements.
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

Table 2 – Electrical and Engineering Data

Cond. Size	Cond. Number	Min Bending Radius	Max Pull Tension	DC Resistance @ 25°C	AC Resistance @ 75°C	Inductive Reactance @ 60Hz	Allowable Ampacity At 75°C	Allowable Ampacity At 90°C
AWG/ Kcmil		inch	lb	Ω/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp
12	3	4.9	156	1.774	2.137	0.054	25	30

Table 3 - Twisted Shielded Pair Construction

Stock Number	Signal Pair Conductor Size	Drain Conductor Size
No	AWG	AWG
646241	16	18
646242	16	18
646243	16	18
646244	16	18
677156	14	14
677158	14	14

VFD Sizing Calculator

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