Southwire® Machine Flex® TCU 600V XLPE Insulation Shielded TPE jacket. XHHW-2 Reduced Diameter Flexible Variable Frequency Drive (VFD). Silicone-Free

Reduced Diameter Type TC-ER Variable Frequency Drive Cable, 600 Volts or 1000 Volts, Tinned Copper Conductors, Cross-linked Insulation Type XHHW-2, 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. Silicone-Free



Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Class K, flexible stranded tinned annealed copper per ASTM B3, B172, and B174
2. **Insulation:** Cross linked insulation on all conductors (Type XHHW-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. **Shielding:** 100% coverage aluminum/Mylar/aluminum foil, overall 85% coverage tinned copper braid
6. **Jacket:** Black Thermoplastic Elastomer (TPE)

APPLICATIONS AND FEATURES:

Applications and Features: Power supply cable for VFDs and motors, suitable for cable tray, conduit, raceways, exposed run (TC-ER) and conforming to NFPA 79 2018. 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.

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 Cable and Wind Turbine Tray Cable
- CSA C22.2 No. 210 Appliance wiring material products I/II A/B
- CSA C22.2 No.230 Tray Cables - Rated TC
- CSA C22.2 No. 239 Control and instrumentation cables
- 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**

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- 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® XX AWG (XX{mm2}) 4/C VFD TYPE TC-ER E75755 {UL} 600V 90C DRY 90C WET SUN RES OIL RES I/II DIR BUR -40C OR WTTC 1000V OR AWM 20886 105C 1000V OR FLEXIBLE MOTOR SUPPLY CABLE 1000V OR SUBMERSIBLE PUMP CABLE 600V -- LL90458 {CSA} CIC/TC 600V FT4 OR AWM I/II A/B 105C 1000V -40C FT4 -- {CE} ROHS-2 MADE IN USA

Table 1 – Weights and Measurements

Stock Number	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	
645824◊	16	3	26	0.059	30	1 x 16	1x16	0.314	45	0.408	58	113	BK
645825◊	14	3	41	0.073	30	1 x 14	1x14	0.35	45	0.449	84	148	BK
645826◊	12	3	65	0.094	30	1 x 12	1x12	0.396	45	0.495	124	199	BK
645827◊	10	3	105	0.117	30	1 x 10	1x10	0.467	60	0.591	189	292	BK
677299◊	8	3	168	0.153	45	1 x 8	4x14	0.65	60	0.779	302	470	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

Stock Number	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
645824◊	16	3	2.9	61	4.487	5.406	0.033	-	18
645825◊	14	3	3.1	98	2.814	3.391	0.058	20	25
645826◊	12	3	3.5	156	1.774	2.137	0.054	25	30
645827◊	10	3	4.1	249	1.111	1.339	0.05	35	40
677299◊	8	3	5.5	396	0.715	0.861	0.052	50	55

VFD Sizing Calculator

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