Southwire® Machine Flex® TCU 1000V XLPE Insulation Three Symmetrical Grounds Shielded TPE Jacket. XHHW-2 Flexible Variable Frequency Drive (VFD). Silicone-Free

Reduced Diameter Type TC-ER Variable Frequency Drive Cable 600 Volt Tinned Copper Conductors, Crosslinked Insulation Type XHHW-2. Thermoplastic Elastomer Jacket. Rated 90C Dry or Wet, -40C Cold Impact, Identification Method 4, 1000 Volt 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 B33 and B172 or B174
2. **Insulation:** Cross Linked Insulation Type XHHW-2
3. **Ground:** Three tinned grounds laid within insulated phase conductor interstices
4. **Filler:** Filler as needed to make round.
5. **Shielding:** 100% coverage aluminum/mylar/aluminum foil laminate under 85% coverage tinned copper braid
6. **Jacket:** Black Thermoplastic Elastomer (TPE)

APPLICATIONS AND FEATURES:

Power supply cable for VFDs and motors, suitable for cable tray (TC-ER rated), conduit, raceways, and machine tool wiring conforming to NFPA 79 2018. Suitable for free air and direct burial. It's flexible design is ideal or use on operation processes in accordance with he 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 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
- ICEA S-138-738 Power Cables Rated 2000 Volts or Less for use Between Variable Frequency Drives and Motors
- **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**

We've got it MADE IN AMERICA

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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 3/C VFD XHHW-2 CDRS TYPE TC-ER E75755 {UL} 600V 90C DRY 90C WET SUN RES OIL RES I/II DIR BUR -40C OR WTTC 1000V OR FLEXIBLE MOTOR SUPPLY CABLE 1000V OR SUBMERSIBLE PUMP CABLE 600V --LL90458 {CSA} CIC/TC FT4 OR AWM I/II A/B 105C 1000V -40C FT4 -- {CE} ROHS-2 MADE IN USA SEQ FEET

Table 1 – Weights and Measurements

Stock Number	Cond. Size	Cond. Number	Strand Count	Diameter Over Conductor	Insul. Thickness	Ground	Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	Jacket Color
	AWG/ Kcmil		No. of Strands	inch	mil	No. x AWG	mil	inch	lb/1000ft	lb/1000ft	
TBA	14	3	41	0.073	30	3 x 18	45	0.423	66	122	Black
670957	12	3	65	0.094	30	3 x 16	45	0.470	112	173	Black
TBA	10	3	105	0.117	30	3 x 14	60	0.560	133	228	Black
TBA	8	3	168	0.153	45	3 x 14	60	0.711	202	376	Black
TBA	6	3	266	0.198	45	3 x 12	60	0.754	323	480	Black
TBA	4	3	420	0.235	45	3 x 12	80	0.874	454	668	Black
TBA	2	3	651	0.302	45	3 x 10	80	1.018	708	973	Black
TBA	1	3	836	0.397	55	3 x 10	80	1.267	899	1275	Black

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
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
TBA	14	3	5.1	98	2.814	3.391	0.058	20	25
670957	12	3	5.6	156	1.774	2.137	0.054	25	30
TBA	10	3	6.7	249	1.111	1.339	0.050	35	40
TBA	8	3	8.5	396	0.715	0.861	0.052	50	55
TBA	6	3	9.0	629	0.450	0.541	0.051	65	75
TBA	4	3	10.5	1001	0.282	0.340	0.048	85	95
TBA	2	3	12.2	1592	0.179	0.216	0.045	115	130
TBA	1	3	15.2	2008	0.143	0.172	0.046	130	145

***** Ampacities based upon 2023 NEC Table 310.16. See NEC sections 310.15 and 110.14(C) for additional requirements.

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Additional Infromation

Cable Size	Max Motor Size			Dia Over Shield
(AWG/Kcmil)	230V (HP)	460V (HP)	475V (HP)	(mils)
16	-	5	5	0.535
14	5	7.5	10	0.567
12	5	10	10	0.608
10	7.5	15	20	0.671
8	7.5	30	30	0.837
6	15	40	50	0.898
4	20	50	60	0.995
2	30	60	75	1.135
1	40	75	100	1.22

VFD Sizing Calculator

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