600V PVC/NYLON SHIELDED PAIRS, CPE JACKET SPOS Halo-Flex™, TYPE TC-ER-HL

Type TC-ER-HL Instrumentation Cable 600 Volt Copper Conductors PVC/Nylon Insulated Singles Shielded Pairs with Overall Shield SPOS. Thermoplastic CPE Jacket Heat, Moisture, Oil and Sunlight Resistant RoHS rated for -40°C to 90°C



Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Class B 7-strands bare copper per ASTM B3 and B8
2. **Insulation:** Premium Grade Polyvinyl Chloride (PVC) plus nylon. Black/White alpha-numeric print alternate and inverted. 1-ONE, 2-TWO
3. **Drain Wire:** #18 AWG tinned copper
4. **Twisted Shielded Pair:** 100% coverage aluminum/polyester foil shield with an individual drain wire shown in step 3
5. **Binder:** Mylar binder
6. **Overall Drain Wire:** #16 AWG tinned copper
7. **Overall Shielded:** 100% coverage aluminum/polyester foil shield with a drain wire as shown in step 6
8. **Rip Cord:** Rip cord under jacket for ease of removal
9. **Extruded Polymeric Layer:** Extruded Polymeric Barrier Layer
10. **Jacket:** Low-Friction SIM Technology® -40°C Thermoplastic Chlorinated Polyethylene (CPE) Jacket

APPLICATIONS AND FEATURES:

Southwire's Halo-Flex™ 600 Volt Type TC-ER-HL instrumentation cables are suitable for installation as outlined in NEC Article 336 for process control and instrumentation, control circuits for operation and interconnection of protective and signaling devices and for general use in manufacturing, industrial and commercial distribution systems. Cables are constructed with 7-strand copper conductors insulated with nylon covered PVC. The paired conductors are colored black, white, and alpha-numeric printed. Each pair has an aluminum polyester foil with 100% coverage and a tinned drain wire. The overall assembly is covered with an aluminum polyester foil with 100% coverage and a tinned drain wire. A gas/vapor-tight polymeric sheath is extruded over the assembly. The cable is suited for use in cable trays, raceways, conduit, aerial (when supported with a messenger). The cable is rated for -40°C to 90°C and rated for use in Class I, II, or III, Division 1 & 2, Zone 1 & 2, hazardous locations per NEC Article 501, 502, and 503. Listed for exposed runs (TC-ER-HL) per NEC 336.10. HALO-FLEX ™ CPE jacket is made with patented SIM Technology. Cable can be installed in conduit without the aid of lubrication. PATENT www.patentsw.com

SPECIFICATIONS:

- ASTM B8 Concentric-Lay-Stranded Copper Conductors
- ASTM B33 Standard Specification for Tin-Coated Soft or Annealed Copper Wire
- UL 66 Fixture Wire
- UL 83 Thermoplastic Insulated Wires and Cables

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- UL 1277 Electrical Power and Control Tray Cables
- UL 1685 FT4 Vertical-Tray Fire Propagation and Smoke Release Test
- UL 2225 Cables and Cable-Fittings For Use In Hazardous (Classified) Locations
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test
- RoHS-3 Complies with European Directive 2015/863
- ABS American Bureau of Shipping Approved
- MSHA Mine Safety Health Administration Approved

SAMPLE PRINT LEGEND:

HALO-FLEX{TM} TC-ER-HL E75755 {UL} XX AWG SHIELDED X PAIRS 90°C DRY and 75°C WET PVCN/CPE TYPE TC-ER-HL 600V 90°C DRY OIL RES I FT4 -40°C SUN. RES. ABS ROHS-3 2015/863 COMPLIANT {YYYY} 07-KA180012-MSHA

Table 1 – Weights and Measurements

Stock Number	Cond. Size	Number of Pairs	Diameter Over Conductor	Insul. Thickness	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	DC Resistance @ 25°C
	AWG/ Kcmil	pair	inch	mil	mil	inch	lb/1000ft	inch	Ω/1000ft
679953◊†	16	1	0.056	15	45	0.412	126	2.4	4.181
679955◊	16	2	0.056	15	60	0.515	161	3.0	4.181
679957◊	16	4	0.056	15	60	0.661	310	3.9	4.181
679959◊	16	8	0.056	15	60	0.794	471	4.7	4.181
678168	16	12	0.056	15	80	0.980	673	5.8	4.181
678171	16	24	0.056	15	80	1.288	1138	7.7	4.181

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
† 1 Pair is TC only

Table 2 – Weights and Measurements (Metric)

Stock Number	Cond. Size	Number of Pairs	Diameter Over Conductor	Insul. Thickness	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	DC Resistance @ 25°C
	AWG/ Kcmil	pair	inch	mm	mm	mm	lb/km	mm	Ω/km
679953◊†	16	1	0.056	0.38	1.14	10.46	188	60.96	13.72
679955◊	16	2	0.056	0.38	1.52	13.08	240	76.20	13.72
679957◊	16	4	0.056	0.38	1.52	16.79	461	99.06	13.72
679959◊	16	8	0.056	0.38	1.52	20.17	701	119.38	13.72
678168	16	12	0.056	0.38	2.03	24.89	1002	147.32	13.72
678171	16	24	0.056	0.38	2.03	32.72	1694	195.58	13.72

Typical Electrical Specifications for Each Pair

Size	Capacitance	Inductance
16	48.51	0.0895