MachineFLEX™ Tray Control Cable Cu 600/1000V PVC THHN TPE Jacket

Type TC-ER Machine Tray Control Cable 600/1000 Volt Copper Conductors, Polyvinyl Chloride (PVC) with nylon layer Insulation Thermoplastic Elastomer Jacket, 90°C Dry 75°C Wet -40°C Cold Impact Identification Method 4

Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Class K, Flexible stranded bare annealed copper per ASTM B3, B172, and B174
2. **Insulation:** Polyvinyl Chloride (PVC) with nylon layer THHN
3. **Ground:** One Green Ground with Yellow Stripe THHN
4. **Jacket:** Sunlight Resistant Gray Thermoplastic Elastomer TPE: Other jacket colors available upon request

APPLICATIONS AND FEATURES:

Southwire's MachineFLEX™ control tray cables 600/1000 Volt conform to NFPA 79 and are suited for use in wet and dry areas, conduits, ducts, troughs, trays, direct burial and where superior electrical properties are desired. These cables are capable of operating continuously at the conductor temperature not in excess of 75°C in wet locations and 90°C in dry locations, 130°C for emergency overload, and 150°C for short circuit conditions. For uses in Class I, II, Division 2 hazardous locations per NEC® Article 501 and 502. Constructions with 3 or more conductors are listed for exposed runs (TC-ER) per NEC® 336.10. Southwire's machine tray cable is ideal for use in CNC machines, grinding, cutting, metal forming, buffing, bottling equipment, conveyors, processing & packaging equipment, assembly lines, control panels, food and beverage, oil sands, plant expansion, wind ener- gy and data centers. Multiple approvals for multiple applications. Cable is rated for -40°C cold impact. Two conductor cables contain no green/yellow ground.

SPECIFICATIONS:

- ASTM B172 Standard Specification for Rope-Lay-Stranded Copper Conductors Having Bunch-Stranded Copper Conductors
- ASTM B174 Standard Specification for Bunch-Stranded Copper
- UL 83 Thermoplastic Insulated Wires and Cables
- UL 758 AWM Style 2587
- UL 1063 Machine Tool Wiring (MTW)
- UL 1277 TC-ER
- UL 1690 Data Processing Cable (DP-1)
- UL 2277 Type WTTC
- UL 13 Type PLTC-ER sizes 18-12AWG
- UL 2250 Type ITC-ER on sizes 18-12 AWG
- CSA C22.2 No. 210 Appliance wiring material products I/II A/B (Sizes 16 - 8AWG)
- ICEA S-95-658 (NEMA WC70) Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test
- **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

SAMPLE PRINT LEGEND:

Print Legend 1:
Southwire XXAWG (XXmm2) XX/C PVC/Nylon Type TC-ER EXXXXX (UL) 600V 90°C Dry 75C Wet Sun Res Oil Res I/II DIR BUR - 40°C OR MTW Flexing OR DP-1 OR WTTC 1000V OR AWM 2587 -- LLXXXXXX CSA AWM I/II A/B 105°C 1000V -40°C FT4 -- CSA FT4 CE RoHS -2 Made in USA

Print Legend 2:
SOUTHWIRE{R} XX AWG (XXmm2) 9/C PVC/NYLON TYPE TC-ER EXXXXX (UL) 600V 90{D}C DRY 75{D}C WET SUN RES OIL RES I/II DIR BUR -40{D}C OR MTW FLEXING OR DP-1 OR WTTC 1000V OR PLTC-ER OR ITC-ER OR AWM 2587 -- LLXXXXX CSA CIC/TC FT4 OR AWM I/II A/B 105{D}C 1000V -40{D}C FT4 -- {NOM}-ANCE PLTC -- {CE} RoHS-2 MADE IN USA

Table 1 – Physical and Electrical Data

Stock Number	Cond. Size	Cond. Number	Cond. Strands	Insul. Thickness	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	Allowable Ampacity At 60° C *	Allowable Ampacity 75°C *	Allowable Ampacity 90°C *
	AWG	No.	strands	mil	mil	inch	lb /1000ft	inch	Amp	Amp	Amp
18 AWG											
677071	18	2	16	20	45	0.266	35	1.10	7	7	7
581511◊	18	3	16	20	45	0.281	47	1.12	7	7	7
582642◊	18	4	16	20	45	0.306	59	1.22	7	7	7
582644◊	18	5	16	20	45	0.332	68	1.33	7	7	7
581513◊	18	7	16	20	45	0.358	85	1.43	7	7	7
582645◊	18	9	16	20	45	0.411	107	1.64	7	7	7
582646◊	18	12	16	20	45	0.456	135	1.82	7	7	7
582647◊	18	18	16	20	45	0.554	207	2.22	7	7	7
646262◊	18	19	16	20	45	0.563	212	2.25	7	7	7
581514◊	18	25	16	20	60	0.635	245	2.54	7	7	7
16 AWG											
677072◊	16	2	26	20	50	0.294	45	1.18	10	10	10
581515◊	16	3	26	20	50	0.311	60	1.24	10	10	10
582648◊	16	4	26	20	50	0.339	76	1.36	10	10	10
582649◊	16	5	26	20	50	0.370	89	1.48	10	10	10
581516◊	16	7	26	20	50	0.400	113	1.60	10	10	10
582651◊	16	9	26	20	50	0.462	144	1.85	10	10	10
582652◊	16	12	26	20	50	0.509	199	2.04	9	9	9
582653◊	16	18	26	20	65	0.623	280	2.49	9	9	9
646263◊	16	19	26	20	65	0.663	310	2.65	9	9	9
581517◊	16	25	26	20	65	0.717	348	2.87	8	8	8
14 AWG											
677073	14	2	41	20	50	0.324	59	1.29	15	15	15
581519◊	14	3	41	20	50	0.342	82	1.37	15	15	15
582654◊	14	4	41	20	50	0.375	106	1.50	15	15	15
582655◊	14	5	41	20	50	0.411	125	1.64	15	15	15
581521◊	14	7	41	20	50	0.445	160	1.78	14	14	14
673795◊	14	8	41	20	50	0.480	168	1.92	14	14	14
582656◊	14	9	41	20	50	0.516	205	2.06	14	14	14
582657◊	14	12	41	20	65	0.600	282	2.40	10	10	10
582658◊	14	18	41	20	65	0.697	402	2.79	10	10	10
581522◊	14	25	41	20	65	0.806	565	3.22	9	9	9
12 AWG											
677074	12	2	65	20	50	0.362	80	1.45	20	20	20
677188	12	3	65	20	50	0.389	108	1.56	20	20	20
582659◊	12	4	65	20	50	0.420	147	1.68	20	20	20
582660◊	12	5	65	20	50	0.462	176	1.85	20	20	20
582661	12	7	65	20	50	0.502	227	2.01	17	17	17
10 AWG											

Stock Number	Cond. Size	Cond. Number	Cond. Strands	Insul. Thickness	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	Allowable Ampacity At 60° C *	Allowable Ampacity 75°C *	Allowable Ampacity 90°C *
	AWG	No.	strands	mil	mil	inch	lb /1000ft	inch	Amp	Amp	Amp
677075	10	2	105	25	50	0.430	119	1.72	28	28	28
677189	10	3	105	25	50	0.462	160	1.85	28	28	28
581523◊	10	4	105	25	50	0.502	206	2.01	28	28	28
582662	10	5	105	25	50	0.530	255	2.01	28	28	28
582663	10	7	105	25	65	0.608	364	2.43	24	24	24
677190	8	3	168	36	68	0.626	296	2.5	40	50	55
643367	8	4	168	36	60	0.680	329	2.72	32	40	44
673797	8	5	168	36	70	0.748	440	3.0	32	40	44
677191	6	3	273	36	70	0.725	441	3.04	55	65	75
643369◊	6	4	273	36	60	0.760	466	3.04	40	65	75
677192	4	3	427	46	80	0.898	649	3.59	68	68	68
643371◊	4	4	427	46	80	0.969	738	3.88	68	68	68
677193	2	3	651	46	100	1.070	988	5.35	92	92	92
643373◊	2	4	651	46	80	1.162	1130	5.81	92	92	92

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

† Ampacities are based on Table 310.16 of the NEC 2020 Edition. Ampacities of insulated conductors rated up to and including 2000 Volts with not more than three current-carrying conductors in raceway, cable or direct buried based on ambient temperature of 30ºC (86ºF). Ampacities have been adjusted for more than three current-carrying conductors based on Table 310.15(C) 1.

Notes: