

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:** 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 energy 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 Standard for Appliance Wiring Material Style 2463 (80C, 600V)
- UL 1063 Machine Tool Wiring (MTW)
- UL 1277 TC-ER
- UL 1690 Data Processing Cable (DP-1)
- UL 2277 Type WTTTC
- CSA C22.2 No. 210 Appliance wiring material products I/II A/B (Sizes 16 - 8AWG)
- CSA C22.2 No.230 Tray Cables - Rated TC-ER
- CSA C22.2 No. 239 Control and instrumentation cables
- 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



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- NFPA 79 Electrical Standard for Industrial Machinery

SAMPLE PRINT LEGEND:

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 20886 105°C 1000V OR c(UL) CIC/TC FT4 -- LLXXXXXX CSA AWM I/II A/B 105°C 1000V -40°C FT4 -- 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
5815110	18	3	16	20	45	0.281	47	1.12	7	7	7
5826420	18	4	16	20	45	0.306	59	1.22	7	7	7
5826440	18	5	16	20	45	0.332	68	1.33	7	7	7
5815130	18	7	16	20	45	0.358	85	1.43	7	7	7
5826450	18	9	16	20	45	0.411	107	1.64	7	7	7
5826460	18	12	16	20	45	0.456	135	1.82	7	7	7
5826470	18	18	16	20	45	0.554	207	2.22	7	7	7
6462620	18	19	16	20	45	0.563	212	2.25	7	7	7
5815140	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
5815150	16	3	26	20	50	0.311	60	1.24	10	10	10
5826480	16	4	26	20	50	0.339	76	1.36	10	10	10
5826490	16	5	26	20	50	0.370	89	1.48	10	10	10
5815160	16	7	26	20	50	0.400	113	1.60	10	10	10
5826510	16	9	26	20	50	0.462	144	1.85	10	10	10
5826520	16	12	26	20	50	0.509	199	2.04	9	9	9
5826530	16	18	26	20	65	0.623	280	2.49	9	9	9
6462630	16	19	26	20	65	0.663	310	2.65	9	9	9
5815170	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
5815190	14	3	41	20	50	0.342	82	1.37	15	15	15
5826540	14	4	41	20	50	0.375	106	1.50	15	15	15
5826550	14	5	41	20	50	0.411	125	1.64	15	15	15
5815210	14	7	41	20	50	0.445	160	1.78	14	14	14
6737950	14	8	41	20	50	0.480	168	1.92	14	14	14
5826560	14	9	41	20	50	0.516	205	2.06	14	14	14
5826570	14	12	41	20	65	0.600	282	2.40	10	10	10
5826580	14	18	41	20	65	0.697	402	2.79	10	10	10
5815220	14	25	41	20	65	0.806	565	3.22	9	9	9



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	AWG	No.	strands	mil	mil	inch	lb /1000ft	inch	Amp	Amp	Amp
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											
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 310.15 (B)(16) of the NEC, 2017 Edition. Ampacities of insulated conductors rated up to and including 2000 Volts, based on ambient temperature of 30°C (86°F)

TC-ER on 3 conductors and more

Notes:



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