

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

Type TC-ER Machine Tray Power 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:

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

APPLICATIONS AND FEATURES:

Southwire's MachineFLEX™ tray power 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. Constructions with 3 or more conductors are listed for exposed runs (TC-ER) per NEC® 336.10. 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. Southwire's machine tray cable is ideal to power 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 13 Standard for Power-Limited Circuit Cables
- UL 83 Thermoplastic Insulated Wires and Cables
- UL 758 AWM Style 2587
- 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)
- CSA C22.2 No.230 Tray Cables - Rated TC
- 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



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- 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:

SOUTHWIRE{R} XX AWG (X.XXmm²) X/C PVC/NYLON TYPE TC-ER E75755 MASTER-DESIGN (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 -- LL90458 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



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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											
6773150	18	3	16	20	45	0.281	43	1.12	7	7	7
677530	18	4	16	20	45	0.306	59	1.22	7	7	7
6773160	18	5	16	20	45	0.322	63	1.33	7	7	7
665090	18	6	16	20	45	0.348	85	1.40	7	7	7
677531	18	7	16	20	45	0.358	85	1.43	7	7	7
665089	18	8	16	20	45	0.401	111	1.60	7	7	7
677532	18	9	16	20	45	0.411	107	1.64	7	7	7
665091	18	10	16	20	45	0.438	1137	1.75	7	7	7
6775330	18	12	16	20	45	0.456	135	1.82	7	7	7
665092	18	14	16	20	45	0.469	140	1.88	7	7	7
665093	18	16	16	20	45	0.495	165	1.98	7	7	7
665094	18	19	16	20	65	0.560	237	2.24	7	7	7
677317	18	25	16	20	65	0.635	254	1.33	6	6	6
665095	18	37	16	20	65	0.732	423	2.93	7	7	7
16 AWG											
677536	16	2	26	20	50	0.311	48	1.24	10	10	10
6775350	16	3	26	20	50	0.311	60	1.24	10	10	10
6775360	16	4	26	20	50	0.339	76	1.36	10	10	10
6773180	16	5	26	20	45	0.370	86	1.48	10	10	10
665098	16	7	26	20	50	0.400	123	1.60	10	10	10
665099	16	8	26	20	50	0.431	143	1.72	7	7	7
665097	16	6	26	20	50	0.462	140	1.85	7	7	7
6773200	16	9	26	20	50	0.462	138	1.85	10	10	10
665100	16	10	26	20	50	0.509	154	2.04	7	7	7
6773210	16	12	26	20	50	0.509	175	2.04	9	9	9
665101	16	16	26	20	65	0.601	242	2.40	7	7	7
665102	16	19	26	20	65	0.630	316	2.52	7	7	7
665103	16	24	26	20	65	0.717	340	2.87	7	7	7
665104	16	30	26	20	85	0.811	439	3.24	7	7	7
665105	16	37	26	20	85	0.870	528	3.48	7	7	7
14 AWG											
677258	14	3	41	20	50	0.342	82	1.37	15	15	15
677259	14	4	41	20	50	0.375	106	1.50	15	15	15
665106	14	6	41	20	50	0.445	134	1.78	12	16	20
653005	14	8	41	20	50	0.481	161	1.92	14	14	14
677261	14	9	41	20	50	0.516	205	2.06	14	14	14
665107	14	10	41	20	65	0.602	227	2.41	15	15	15
677322	14	12	41	20	65	0.616	261	2.46	14	14	14
665108	14	16	41	20	65	0.666	332	2.66	15	15	15



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	AWG	No.	strands	mil	mil	inch	lb /1000ft	inch	Amp	Amp	Amp
677262	14	18	41	20	65	0.697	402	2.79	10	10	10
677263	14	25	41	20	65	0.806	565	3.22	9	9	9
12 AWG											
677256	12	3	65	20	50	0.389	108	1.56	20	20	20
677537	12	4	65	20	50	0.420	147	1.68	20	20	20
677538	12	5	65	20	50	0.462	176	1.85	20	20	20
665109	12	6	65	20	50	0.502	194	2.01	20	20	20
677257	12	7	65	20	50	0.502	227	2.01	17	17	17
665109	12	8	65	20	65	0.574	261	2.01	20	20	20
665111	12	12	65	20	65	0.687	426	2.75	20	20	20
10 AWG											
653009	10	3	105	25	50	0.462	161	2.01	30	30	30
677539	10	4	105	25	50	0.502	206	2.01	28	28	28
677254	10	5	105	25	50	0.530	255	2.01	28	28	28
677255	10	7	105	25	60	0.608	364	2.43	24	24	24

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 30°C (86°F). Ampacities have been adjusted for more than three current-carrying conductors based on Table 310.15(C) 1.



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