

MACHINE 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. **Conductors:** 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 machine 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.

SPECIFICATIONS:

- ASTM B172, B174 Rope-Lay-Stranded, Bunch-Stranded Copper Conductors UL 83 - Thermoplastic
- Insulated Wires and Cables Type THHN UL 1063 - Machine Tool Wiring (MTW) UL 1277 - Type TC-ER
- UL 2277 - Type WTTC UL 1690 - Data Processing Cable (DP-1) UL 758 - AWM Style 20886 NFPA 79 -
- Electrical Standard for Industrial Machinery IEEE 1202/FT4 - Vertical Tray Flame Test (70,000
- Btu/hr) ICEA S-95-658 NEMA WC 70 - Power Cables Rated 2000 Volts or Less CSA22.2 Listing: No.
- 230 - c(UL) Type TC, No. 239 - c(UL) Type CIC, No. 210 - CSA AWM I/II A/B

- **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.**

SAMPLE PRINT LEGEND:

Southwire XXAWG (XXmm²) XX/C PVC/Nylon Type TC-ER EXXXXX (UL) 600V 90C Dry 75C Wet Sun Res Oil Res I/II DIR BUR - 40C °
 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 – Measurements and Electrical

Stock Code	Conductor Size	Cond. OD inches	Number of Conductors (Include Full Size Grd)	Insulation Thickness	Outer Jacket Thickness	Nominal OD (4) inches	Nominal Weight Lbs/MFT	*Ampacity NEC 310.15 (B) (16) amps			Min Bend Radius Inches
	AWG (strds)			mils	mils			60°C	75°C	90°C	
677071	18 (16)	0.044	2*	20	45	0.266	35	7	7	7	1.10
581511◇	18 (16)	0.044	3	20	45	0.281	47	7	7	7	1.12
582642◇	18 (16)	0.044	4	20	45	0.306	59	7	7	7	1.22
582644◇	18 (16)	0.044	5	20	45	0.332	68	7	7	7	1.33
581513◇	18 (16)	0.044	7	20	45	0.358	85	7	7	7	1.43
582645◇	18 (16)	0.044	9	20	45	0.411	107	7	7	7	1.64
582646◇	18 (16)	0.044	12	20	45	0.456	135	7	7	7	1.82
582647◇	18 (16)	0.044	18	20	45	0.554	207	7	7	7	2.22
646262◇	18 (16)	0.044	19	20	45	0.563	212	7	7	7	2.25
581514◇	18 (16)	0.044	25	20	45	0.635	245	7	7	7	2.54
677072	16 (26)	0.058	2*	20	50	0.294	45	10	10	10	1.18
581515◇	16 (26)	0.058	3	20	50	0.311	60	10	10	10	1.24
582648◇	16 (26)	0.058	4	20	50	0.339	76	10	10	10	1.36
582649◇	16 (26)	0.058	5	20	50	0.370	89	10	10	10	1.48
581516◇	16 (26)	0.058	7	20	50	0.400	113	10	10	10	1.60
582651◇	16 (26)	0.058	9	20	50	0.462	144	10	10	10	1.85
582652◇	16 (26)	0.058	12	20	50	0.509	199	9	9	9	2.04
582653◇	16 (26)	0.058	18	20	50	0.623	280	9	9	9	2.49
646263◇	16 (26)	0.058	19	20	65	0.663	310	9	9	9	2.65
581517◇	16 (26)	0.058	25	20	65	0.717	348	8	8	8	2.87
677073	14 (41)	0.074	2*	20	50	0.324	59	15	15	15	1.29
581519◇	14 (41)	0.074	3	20	50	0.342	82	15	15	15	1.37
582654◇	14 (41)	0.074	4	20	50	0.375	106	15	15	15	1.50
582655◇	14 (41)	0.074	5	20	50	0.411	125	15	15	15	1.64
581521◇	14 (41)	0.074	7	20	50	0.445	160	14	14	14	1.78
582656◇	14 (41)	0.074	9	20	50	0.516	205	14	14	14	2.06
582657	14 (41)	0.074	12	20	65	0.600	282	10	10	10	2.40
582658◇	14 (41)	0.074	18	20	65	0.697	402	10	10	10	2.79
581522◇	14 (41)	0.074	25	20	65	0.806	565	9	9	9	3.22
677074	12 (65)	0.092	2*	20	50	0.362	80	20	20	20	1.45
677188◇	12 (65)	0.092	3	20	50	0.389	108	20	20	20	1.56
582659◇	12 (65)	0.092	4	20	50	0.420	147	20	20	20	1.68
582660	12 (65)	0.092	5	20	50	0.462	176	20	20	20	1.85
582661◇	12 (65)	0.092	7	20	50	0.502	227	17	17	17	2.01
677075	10 (105)	0.116	2*	25	50	0.430	119	28	28	28	1.72
677189◇	10 (105)	0.116	3	25	50	0.462	160	28	28	28	1.85
581523◇	10 (105)	0.116	4	25	50	0.502	206	28	28	28	2.01
582662	10 (105)	0.116	5	25	50	0.530	255	28	28	28	2.12
582663	10 (105)	0.116	7	25	60	0.628	364	24	24	24	2.51

*2 conductor cables contain no green/yellow ground
 *2 conductor cables are Type TC only. Not TC-ER rated



Table 1 – Measurements and Electrical

Stock Code	Conductor Size	Cond. OD	Number of Conductors (Include Full Size Grd)	Insulation Thickness	Outer Jacket Thickness	Nominal OD (4)	Nominal Weight Lbs/MFT	*Ampacity NEC 310.15 (B) (16) amps			Min Bend Radius Inches
	AWG (strds)	inches		mils	mils			inches	60°C	75°C	
677190	8 (168)	0.153	3	36	68	0.626	296	40	40	40	2.50
643367◇	8 (168)	0.153	4	36	68	0.680	372	40	40	40	2.72
677191	6 (273)	0.202	3	36	70	0.725	441	55	55	55	3.04
643369◇	6 (273)	0.202	4	36	70	0.760	555	55	55	55	3.04
677192	4 (427)	0.254	3	46	80	0.898	649	68	68	68	3.59
643371◇	4 (427)	0.254	4	46	80	0.969	826	68	68	68	3.88
677193	2 (651)	0.302	3	46	100	1.070	988	92	92	92	5.35
643373◇	2 (651)	0.302	4	46	100	1.162	1255	92	92	92	5.81

*Ampacity based on 310.15 (B) (16) up to and including 2000 volts, not more than 3 current-carrying conductors, ambient 30°C (86°F)

All dimensions are nominal and subject to normal manufacturing tolerances

◇Standard stock item

