

## MACHINE TRAY CONTROL CABLE CU 600/1000V PVC THHN SHIELDED

Type TC-ER Shielded 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

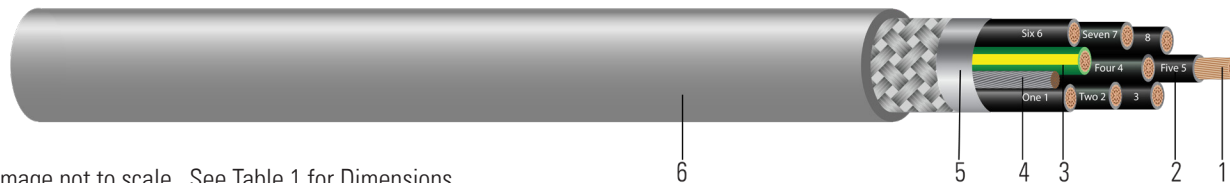


Image not to scale. See Table 1 for Dimensions

### 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. Drain Wire:** Tinned copper
- 5. Shielding:** 100% coverage Alum/Mylar/Alum Foil, overall 85% coverage tinned copper braid
- 6. Jacket:** Gray Thermoplastic Elastomer TPE: Other jacket colors available upon request.

### APPLICATIONS AND FEATURES:

Southwire's shielded flexible machine tray control 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 shielded flexible machine tray cable is ideal for use in 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.**



Southwire Company, LLC | One Southwire Drive, Carrollton, GA 30119 | www.southwire.com



## SAMPLE PRINT LEGEND:

Southwire XXAWG (XXmm2) XX/C PVC/Nylon SHLD Type TC-ER EXXXXX (UL) 600V 90°C Dry 75°C 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 – Measurements and Electrical**

Stock Code	Conductor Size	Cond. OD	Number of Conductors (Include Full Size Grd)	Insulation Thickness	Drain Wire Size	Outer Jacket Thickness	Nominal OD (6)	Nominal Weight	*Ampacity NEC 310.15 (B) (16) amps			Min Bend Radius
	AWG (strds)	inches		mils	AWG	mils	inches	Lbs/MFT	60°C	75°C	90°C	Inches
677081	18 (16)	0.044	2*	20	20	47	0.239	53	7	7	7	3.52
588460 <sup>o</sup>	18 (16)	0.044	3	20	20	47	0.301	62	7	7	7	3.61
588461 <sup>o</sup>	18 (16)	0.044	4	20	20	47	0.326	73	7	7	7	3.91
588462 <sup>o</sup>	18 (16)	0.044	5	20	20	47	0.353	84	7	7	7	4.24
588463 <sup>o</sup>	18 (16)	0.044	7	20	20	47	0.378	102	7	7	7	4.54
630837 <sup>o</sup>	18 (16)	0.044	9	20	20	47	0.436	135	7	7	7	5.23
588464 <sup>o</sup>	18 (16)	0.044	12	20	29	47	0.472	162	7	7	7	5.66
598625	18 (16)	0.044	18	20	20	62	0.576	239	7	7	7	6.91
598626 <sup>o</sup>	18 (16)	0.044	25	20	20	62	0.658	306	7	7	7	7.90
677082	16 (26)	0.058	2*	20	18	47	0.331	80	10	10	10	3.97
588465 <sup>o</sup>	16 (26)	0.058	3	20	18	47	0.331	80	10	10	10	3.97
588466 <sup>o</sup>	16 (26)	0.058	4	20	18	47	0.360	95	10	10	10	4.32
588467 <sup>o</sup>	16 (26)	0.058	5	20	18	47	0.391	113	10	10	10	4.69
588468 <sup>o</sup>	16 (26)	0.058	7	20	18	47	0.421	137	10	10	10	5.05
630836 <sup>o</sup>	16 (26)	0.058	9	20	18	47	0.485	179	10	10	10	5.82
588469 <sup>o</sup>	16 (26)	0.058	12	20	18	73	0.562	280	9	9	9	6.74
598627	16 (26)	0.058	18	20	18	62	0.646	313	9	9	9	7.75
598628 <sup>o</sup>	16 (26)	0.058	25	20	18	76	0.746	407	8	8	8	8.95
677083	14 (41)	0.074	2*	20	16	47	0.349	84	15	15	15	4.19
588470 <sup>o</sup>	14 (41)	0.074	3	20	16	47	0.363	103	15	15	15	4.36
588471 <sup>o</sup>	14 (41)	0.074	4	20	16	47	0.396	126	15	15	15	4.75
588472	14 (41)	0.074	5	20	16	47	0.431	147	15	15	15	5.17
588473 <sup>o</sup>	14 (41)	0.074	7	20	16	47	0.466	199	14	14	14	5.59
598629 <sup>o</sup>	14 (41)	0.074	12	20	16	62	0.623	310	10	10	10	7.48
598630	14 (41)	0.074	18	20	16	62	0.720	422	10	10	10	8.64
598631	14 (41)	0.074	25	20	16	82	0.875	670	9	9	9	10.50
677084	12 (65)	0.092	2*	25	14	47	0.387	112	20	20	20	4.64
677194 <sup>o</sup>	12 (65)	0.092	3	25	14	47	0.416	143	20	20	20	4.99
588474 <sup>o</sup>	12 (65)	0.092	4	25	14	47	0.442	176	20	20	20	5.30
588476	12 (65)	0.092	5	25	14	47	0.483	210	20	20	20	5.80
588477	12 (65)	0.092	7	25	14	62	0.555	323	17	17	17	6.66

\* 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	Drain Wire Size	Outer Jacket Thickness	Nominal OD (6)	Nominal Weight	*Ampacity NEC 310.15 (B) (16) amps			Min Bend Radius
	AWG (strds)	inches		mils	AWG	mils	inches	Lbs/MFT	60°C	75°C	90°C	Inches
677085	10 (105)	0.116	2*	25	12	62	0.455	159	28	28	28	5.46
677196 <sup>◇</sup>	10 (105)	0.116	3	25	12	62	0.556	223	28	28	28	6.67
588478 <sup>◇</sup>	10 (105)	0.116	4	25	12	62	0.556	265	28	28	28	6.67
588479	10 (105)	0.116	5	25	12	62	0.608	372	28	28	28	7.30
588480	10 (105)	0.116	7	25	12	62	0.658	447	24	24	24	7.90
643354 <sup>◇</sup>	8 (168)	0.153	4	36	10	60	0.717	413	40	40	40	8.60
643356 <sup>◇</sup>	6 (273)	0.202	4	36	8	60	0.817	578	55	55	55	9.80
643358 <sup>◇</sup>	4 (427)	0.254	4	46	6	80	1.017	888	68	68	68	12.20
643360 <sup>◇</sup>	2 (651)	0.302	4	46	4	80	1.237	1349	92	92	92	14.84

\*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

\* 2 conductor cables contain no green/yellow ground

\* 2 conductor cables are Type TC only. Not TC-ER rated

