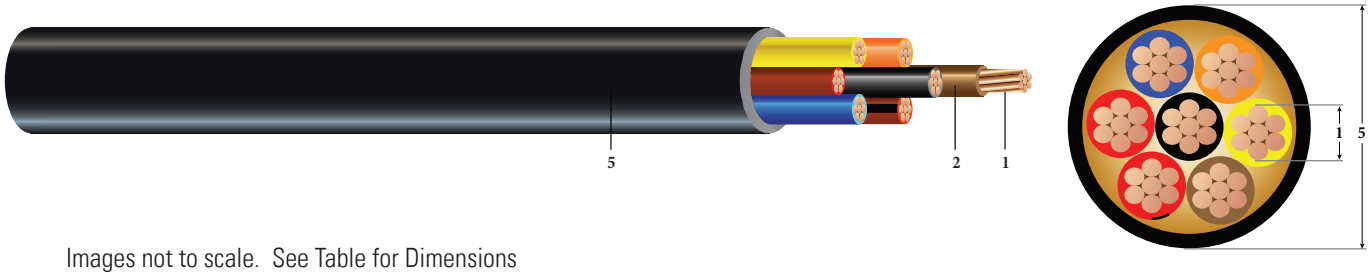
CU 600V PVC THHN PVC Control Cable Type TC-ER

Type TC-ER Control Cable 600Volt Copper Conductors, Polyvinyl Chloride (PVC) with nylon layer Insulation THHN Polyvinyl Chloride (PVC) Jacket, Control Cable Conductor Identification Method 1 Table 2



Images not to scale. See Table for Dimensions

CONSTRUCTION:

1. **Conductor**: 7 strands class B compressed bare copper per ASTM B3 and ASTM B8 for 14, 12, and 10 AWG cables. 26 strands class K bare copper per ASTM B3 and B174 for 16 AWG cables
2. **Insulation**: Polyvinyl Chloride (PVC) with nylon layer THHN, 19 Mils thick for 16, 14, 12 AWG cables and 24 Mils for 10 AWG cables, Type TFFH for 16 AWG cable and Type THHN or THWN for 14, 12 , 10 AWG cables
3. **Filler**: Polypropylene filler on cables with 5 or less conductors
4. **Binder**: Polyester flat thread binder tape applied for cables with more than 5 conductors
5. **Overall Jacket**: Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 600 Volt Type TC-ER control cables are suited for use in wet and dry areas, conduits, ducts, troughs, trays, direct burial, aerial supported by a messenger, 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, and III, 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.

SPECIFICATIONS:

- ASTM B3 - Soft or annealed copper
- ASTM B8 - Concentric-lay-standard copper
- UL 83 - Thermoplastic Insulated wires and cables
- UL 1277 - Electrical Power and Control Cable
- UL 1685 - Flame Test
- UL 1581 - Electrical Wires, Cables and Flexible Cords
- IEEE 1202/FT4 - Vertical Tray Flame Test (70,000 Btu/hr) and ICEA T-29-520 - (210,000 Btu/hr)
- ICEA S-73-532 - Standard for Control, Thermocouple Extension and Instrumentation Cables
- ICEA S-58-679 - Control Cable Conductor Identification Method 1 Table 2
- ICEA S-95-658 NEMA WC70 - Power cables rated 2000 volts or less for the distribution of electrical energy

SAMPLE PRINT LEGEND:

SOUTHWIRE EXXXXX #P# (UL) [#AWG Or #kcmil] CU THHN PVC/PVC 600V Type TC-ER For CT USE SUN. RES. For DIRECT BURIAL FT4 YEAR (NESC) [SEQUENTIAL FEET MARKS]

Copyright © 2017 Southwire Company, LLC. All Rights Reserved

Measurements and Electrical Data #16 AWG

Stock Code	Cond. Number	Dia. Over Cond. (1)	Jacket Thickness	Approx. OD (5)	Copper Weight	Approx. Weight	Min Bending Radius	DC Resis. @ 25°C	AC Resis @ 90°C	Allowable Ampacities* 60/75/90°C
		inches	mils	inches	lbs./MFT	lbs./MFT	inches	Ω/MFT	Ω/MFT	Amps
604843 ◊	2	0.056	45	0.279	16	44	1.1	4.180	5.226	10/10/10
604850 ◊	3	0.056	45	0.294	24	56	1.2	4.180	5.226	10/10/10
604868 ◊	4	0.056	45	0.318	32	69	1.3	4.180	5.226	10/10/10
604876 ◊	5	0.056	45	0.345	40	82	1.4	4.180	5.226	10/10/10
TBA	6	0.056	45	0.373	48	97	1.5	4.180	5.226	10/10/10
604892 ◊	7	0.056	45	0.373	56	106	1.5	4.180	5.226	9/10/10
TBA	8	0.056	45	0.402	64	121	1.6	4.180	5.226	9/10/10
604918 ◊	9	0.056	45	0.430	72	135	1.7	4.180	5.226	9/10/10
TBA	10	0.056	45	0.467	81	152	1.9	4.180	5.226	6/7/9
604942 ◊	12	0.056	45	0.482	97	174	1.9	4.180	5.226	6/7/9
604975	15	0.056	60	0.564	121	229	2.3	4.180	5.226	6/7/9
605014 ◊	19	0.056	60	0.592	153	273	2.4	4.180	5.226	6/7/9
TBA	20	0.056	60	0.621	161	291	2.5	4.180	5.226	6/7/9
605071	25	0.056	60	0.686	201	356	2.7	4.180	5.226	6/7/8
605121	30	0.056	60	0.724	242	415	2.9	4.180	5.226	6/7/8
605196 ◊	37	0.056	60	0.780	298	498	3.1	4.180	5.226	5/6/7

Measurements and Electrical Data #14 AWG

Stock Code	Cond. Number	Dia. Over Cond. (1)	Jacket Thickness	Approx. OD (5)	Copper Weight	Approx. Weight	Min Bending Radius	DC Resis. @ 25°C	AC Resis @ 90°C	Allowable Ampacities* 60/75/90°C
		inches	mils	inches	lbs./MFT	lbs./MFT	inches	Ω/MFT	Ω/MFT	Amps
408484 ◊	2	0.070	45	0.305	26	58	1.2	2.630	3.288	15/15/15
408518 ◊	3	0.070	45	0.322	38	75	1.3	2.630	3.288	15/15/15
408542 ◊	4	0.070	45	0.350	51	93	1.4	2.630	3.288	14/15/15
408575 ◊	5	0.070	45	0.380	64	113	1.5	2.630	3.288	14/15/15
608836	6	0.070	45	0.413	77	133	1.7	2.630	3.288	14/15/15
408633 ◊	7	0.070	45	0.413	90	147	1.7	2.630	3.288	12/15/15
608703	8	0.070	45	0.446	102	168	1.8	2.630	3.288	12/15/15
408740 ◊	9	0.070	45	0.478	115	189	1.9	2.630	3.288	12/15/15
605477	10	0.070	45	0.520	128	212	2.1	2.630	3.288	9/11/12
408807 ◊	12	0.070	60	0.568	154	260	2.3	2.630	3.288	9/11/12
412874	15	0.070	60	0.627	192	318	2.5	2.630	3.288	9/11/12
412908 ◊	19	0.070	60	0.658	243	383	2.6	2.630	3.288	9/11/12
608729	20	0.070	60	0.691	256	408	2.8	2.630	3.288	9/11/12
552133 ◊	25	0.070	60	0.765	320	502	3.1	2.630	3.288	8/9/11
557553	30	0.070	60	0.810	384	587	3.2	2.630	3.288	8/9/11
552190 ◊	37	0.070	80	0.913	474	741	3.7	2.630	3.288	7/8/10

All dimensions are nominal and subject to normal manufacturing tolerance.
* Ampacities are based on Table 310.15 (B)(16) of the NEC, 2014 Edition. Ampacities of insulated conductors rated up to and including 2000 Volts, based on ambient temperature of 30°C (86°F)
◊ Standard stock item

Copyright © 2017 Southwire Company, LLC. All Rights Reserved

Measurements and Electrical Data #12 AWG

Stock Code	Cond. Number	Dia. Over Cond. (1)	Jacket Thickness	Approx. OD (5)	Copper Weight	Approx. Weight	Min Bending Radius	DC Resis. @ 25°C	AC Resis @ 90°C	Allowable Ampacities* 60/75/90°C
		inches	mils	inches	lbs./MFT	lbs./MFT	inches	Ω/MFT	Ω/MFT	Amps
408468 ◊	2	0.087	45	0.340	41	79	1.4	1.660	2.075	20/20/20
408526 ◊	3	0.087	45	0.360	61	104	1.4	1.660	2.075	20/20/20
408559 ◊	4	0.087	45	0.392	81	131	1.6	1.660	2.075	16/20/20
408583 ◊	5	0.087	45	0.428	102	160	1.7	1.660	2.075	16/20/20
608737	6	0.087	45	0.466	122	189	1.9	1.660	2.075	16/20/20
408641 ◊	7	0.087	45	0.466	143	211	1.9	1.660	2.075	14/17/20
608745	8	0.087	45	0.504	163	241	2.0	1.660	2.075	14/17/20
408757 ◊	9	0.087	60	0.572	183	287	2.3	1.660	2.075	14/17/20
608752	10	0.087	60	0.621	204	322	2.5	1.660	2.075	10/12/15
408815 ◊	12	0.087	60	0.641	244	371	2.6	1.660	2.075	10/12/15
412882	15	0.087	60	0.710	305	457	2.8	1.660	2.075	10/12/15
412916	19	0.087	60	0.746	387	555	3.0	1.660	2.075	10/12/15
TBA	20	0.087	60	0.785	407	590	3.1	1.660	2.075	10/12/15
552166	25	0.087	80	0.911	509	761	3.6	1.660	2.075	9/11/13
609180	30	0.087	80	0.963	611	891	3.9	1.660	2.075	9/11/13
552224	37	0.087	80	1.037	753	1075	5.2	1.660	2.075	8/10/12

Measurements and Electrical Data #10 AWG

Stock Code	Cond. Number	Dia. Over Cond. (1)	Jacket Thickness	Approx. OD (5)	Copper Weight	Approx. Weight	Min Bending Radius	DC Resis. @ 25°C	AC Resis @ 90°C	Allowable Ampacities* 60/75/90°C
		inches	mils	inches	lbs./MFT	lbs./MFT	inches	Ω/MFT	Ω/MFT	Amps
408492 ◊	2	0.111	45	0.407	65	117	1.6	1.040	1.300	30/30/30
408534 ◊	3	0.111	45	0.433	97	156	1.7	1.040	1.300	30/30/30
408567 ◊	4	0.111	45	0.473	130	199	1.9	1.040	1.300	24/28/30
408591 ◊	5	0.111	45	0.519	162	244	2.1	1.040	1.300	24/28/30
608778	6	0.111	60	0.596	194	306	2.4	1.040	1.300	24/28/30
408658 ◊	7	0.111	60	0.596	227	340	2.4	1.040	1.300	21/24/28
608786	8	0.111	60	0.645	259	389	2.6	1.040	1.300	21/24/28
408765 ◊	9	0.111	60	0.693	291	438	2.8	1.040	1.300	21/24/28
608794	10	0.111	60	0.755	324	492	3.0	1.040	1.300	15/17/20
408823 ◊	12	0.111	60	0.780	389	570	3.1	1.040	1.300	15/17/20
601658	15	0.111	80	0.908	486	737	3.6	1.040	1.300	15/17/20
601666	19	0.111	80	0.954	615	894	3.8	1.040	1.300	15/17/20
608802	20	0.111	80	1.003	648	950	5.0	1.040	1.300	15/17/20
608810	25	0.111	80	1.112	810	1173	5.6	1.040	1.300	13/15/18
608828	30	0.111	80	1.178	971	1377	5.9	1.040	1.300	13/15/18
TBA	37	0.111	80	1.271	1198	1667	6.4	1.040	1.300	12/14/16

All dimensions are nominal and subject to normal manufacturing tolerance.
* Ampacities are based on Table 310.15 (B)(16) of the NEC, 2014 Edition. Ampacities of insulated conductors rated up to and including 2000 Volts, based on ambient temperature of 30°C (86°F)
◊ Standard stock item

Southwire®

Copyright © 2017 Southwire Company, LLC. All Rights Reserved