

Mobile Substation Power Cable • Type SH Single Conductor • 5000 to 35000 Volts • 90°C

Conductor

Flexible tin-coated soft annealed bunch stranded copper meeting ASTM B-33

Conductor Shield

Combination semi-conducting tape and/or extruded semiconductive thermosetting material

Insulation

Heat, moisture and ozone resisting 90°C Ethylene-Propylene rubber (EPR) meeting ICEA S-75-381/NEMA WC58

Insulation Shield

Tin-coated copper braid applied over a semiconductive tape (5-15kV). Extruded semi-conductive thermosetting material (25-35kV)

Jacket

CPE meeting ICEA S-75-381/NEMA WC58. Consult factory for availability of other jacket materials.

Identification

Cable shall be surface printed showing manufacturer, size, voltage rating, type and temperature rating



Application

These single conductor portable power cables are extremely flexible and specifically designed for use on mobile substation equipment. The Type SH cable is often necessary for supplying power while replacing damaged utility poles or during routine maintenance of substations.

Features

- Extremely flexible stranding for ease of bending
- The conductor shield is bonded to the insulation – providing easy, clean stripping
- Jacket is heat, oil, flame and chemical resistant
- Continuous conductor temperature 90°C
- Jackets available in voltage colors, yellow (5 & 8kV), orange (15kV), red (25 & 35kV). Consult factory for availability of other colors.

Ratings & Approvals

- ASTM B-33: Standard Specification for Tinned Soft or Annealed Copper Wire for Electrical Purposes
- ICEA S-75-381/NEMA WC-58: Portable and Power Feeder Cables for Use in Mines and Similar Applications
- UL 1072 Medium Voltage Cable MV-105 (pending)

CSA approval available by special order



5kV Single Conductor Portable Power Cable – Type SH

Part No. 37-550-	Size AWG/kcmil	Minimum Wires per Conductor	Nominal Insulation Thickness in.	Nominal Jacket Thickness in.	Nominal Outside Diameter in.	Approx. Weight lbs. per 1,000 ft.	Ampacity 90°C
002	2	259	.110	.125	0.975	674	190
004	1/0	266	.110	.140	1.058	825	260
005	2/0	323	.110	.140	1.170	1039	300
007	4/0	532	.110	.155	1.300	1393	400
008	250	627	.120	.155	1.330	1477	445
022	350	888	.120	.170	1.484	1926	550
010	500	1221	.120	.190	1.700	2662	695



15kV Single Conductor Portable Power Cable – Type SH

Part No. 37-550-	Size AWG/kcmil	Minimum Wires per Conductor	Nominal Insulation Thickness in.	Nominal Jacket Thickness in.	Nominal Outside Diameter in.	Approx. Weight lbs. per 1,000 ft.	Ampacity 90°C
016	2	259	.210	.155	1.203	881	195
017	1/0	266	.210	.155	1.320	1147	260
018	2/0	323	.210	.155	1.350	1226	300
020	4/0	532	.210	.170	1.497	1594	400
021	250	627	.210	.170	1.547	1758	445
009	350	888	.210	.190	1.765	2364	550
024	500	1221	.210	.190	1.900	2937	685

25kV Single Conductor Portable Power Cable – Type SH

Part No. 37-550-	Size AWG/kcmil	Minimum Wires per Conductor	Nominal Insulation Thickness in.	Nominal Jacket Thickness in.	Nominal Outside Diameter in.	Approx. Weight lbs. per 1,000 ft.	Ampacity 90°C
030	1/0	266	.295	.170	1.500	1350	260
031	2/0	323	.295	.170	1.555	1507	300
033	4/0	532	.295	.190	1.713	1909	395
034	250	627	.295	.190	1.763	2085	440
035	350	888	.295	.190	1.886	2517	545
037	500	1221	.295	.205	2.048	3168	680

35kV Single Conductor Portable Power Cable – Type SH

Part No. 37-550-	Size AWG/kcmil	Minimum Wires per Conductor	Nominal Insulation Thickness in.	Nominal Jacket Thickness in.	Nominal Outside Diameter in.	Approx. Weight lbs. per 1,000 ft.	Ampacity 90°C
050	1/0	266	.380	.170	1.175	1632	260
051	2/0	342	.380	.205	1.840	1898	300
053	4/0	532	.380	.205	1.915	2235	395
054	250	627	.380	.205	1.975	2509	440
055	350	888	.380	.205	2.100	2901	545
057	500	1221	.380	.205	2.280	3396	680

- Cable diameters and weights are subject to +/- 5% manufacturing tolerance
- Ampacity is calculated with a 90°C conductor temperature and 40°C ambient air, per 2008 NEC, Table 310.69

INSULATE
SEAL
PROTECT

HEAT SHRINK MEDIUM VOLTAGE CABLE TERMINATIONS

HEAT SHRINK CABLE TERMINATIONS FOR SINGLE CORE, 5 kV TO 35 kV, COPPER TAPE, DRAIN WIRE, UNISHIELD® OR LEAD SHEATHED XLPE AND EPR POWER CABLES FOR THE ELECTRICAL CONSTRUCTION MARKET

FEATURES AND BENEFITS

- Fast, consistent installation means lower installed costs
- Heat activated seals ensure maximum protection against moisture ingress
- Installation environment: use of torch adds flexibility to cable preparation in any climate
- Light weight construction requires no additional support
- UV resistant, non-tracking outer tube for long life, even under adverse conditions
- Slim profile allows installation in confined switch gear cubicles

STANDARDS

- Rated to IEEE 48-1996, Class 1

TEST REPORTS

The CT 080 series through CT 350 series terminations were tested to the requirements of IEEE 48-1996 Class 1 at an independent laboratory.

Test reports are available as follows:

- CT 080 series: HVS020075
- CT 150 series: HVS 020076
- CT 250 series: HVS020077 and HVS020083
- CT 350 series: HVS020078



HEAT SHRINK MEDIUM VOLTAGE CABLE

CT G SERIES

DIMENSIONS

INDOOR KIT ORDER NUMBER	OUTDOOR KIT ORDER NUMBER	CONDUCTOR SIZE RANGE	INSULATION DIAMETER MIN. - MAX.		JACKET DIAMETER MAX.	
			IN	MM	IN	MM
5 kV						
CT 081(G)	CT 081E(G)	#4 - #1 AWG	0.40 - 0.60	11 - 16	0.95	24
CT 082 (G)	CT 082E(G)	1/0 - 250 kcmil	0.60 - 0.95	16 - 24	1.20	30
CT 083(G)	CT 083E(G)	300 - 500 kcmil	0.80 - 1.25	21 - 35	1.50	38
CT 084(G)	CT 084E(G)	600 - 1750 kcmil	1.10 - 1.75	28 - 45	2.10	55
CT 085(G)	CT 085E(G)	1500 - 2500 kcmil	1.60 - 2.45	41 - 62	2.75	70
8 kV						
CT 081(G)	CT 081E(G)	#6 - #2 AWG	0.40 - 0.60	11 - 16	0.95	24
CT 082(G)	CT 082E(G)	#1 - 4/0 AWG	0.60 - 0.95	16 - 24	1.20	30
CT 083(G)	CT 083E(G)	250 - 500 kcmil	0.80 - 1.25	21 - 35	1.50	38
CT 084(G)	CT 084E(G)	600 -- 1750 kcmil	1.10 - 1.75	28 - 45	2.10	55
CT 085(G)	CT 085E(G)	1500 - 2500 kcmil	1.60 - 2.45	41 - 62	2.75	70
15 kV						
CT 151(G)	CT 151E(G)	#4 - 4/0 AWG	0.60 - 1.05	16 - 27	1.45	37
CT 152(G)	CT 152E(G)	3/0 - 350 kcmil	0.80 - 1.25	21 - 35	1.75	45
CT 153(G)	CT 153E(G)	400 - 1000 kcmil	1.10 - 1.65	28 - 42	2.10	55
CT 154(G)	CT 154E(G)	1250 - 2500 kcmil	1.60 - 2.45	41 - 63	2.75	70
25 - 28 kV						
CT 251(G)	CT 251E(G)	#2 - 350 kcmil	0.80 - 1.40	21 - 35	1.80	46
CT 252(G)	CT 252E(G)	350 - 1000 kcmil	1.10 - 1.80	28 - 46	2.50	64
CT 253(G)	CT 253E(G)	1000 - 1750 kcmil	1.60 - 2.45	41 - 63	2.75	70
35 kV						
CT 351(G)	CT 351E(G)	#1 - 250 kcmil	0.95 - 1.40	24 - 35	1.90	48
CT 352(G)	CT 352E(G)	250 - 1000 kcmil	1.25 - 2.10	32 - 53	2.60	66

ORDERING

- Select the termination kit size for the copper tape, drain wire, lead sheathed or UniShield® shielded power cable to be terminated.
- Confirm the cable dimensions. At the high end of the conductor range it may be necessary to select the next larger size kit. Dimensions are based on cable information from AEIC CS5 and CS6 cable standards.
- For terminations that will be exposed to direct precipitation select the outdoor termination by adding the suffix “E” to the part number. To add an external grounding kit for tape shielded cables add “G” to the part number. To include a cable preparation kit add the suffix “P” to the end of the part number. FOR EXAMPLE: a 15 kV outdoor termination for 2/0 cable with an external ground kit and cable preparation kit would be CT 151EGP.

All information contained in this data sheet is believed to be reliable. We advise, however, that customers should separately evaluate the suitability of our products for their particular application. DSG-Canusa and ShawCor give no guarantees in respect of the accuracy or sufficiency of the information presented and disclaim any liability regarding its use. Our responsibilities are only those listed in our Standard Terms and Conditions of Sale for these products. In no instance will we be liable for any eventual, indirect or consequential damage or damages arising from the sale, resale, transfer, use or misuse of the product.

15 kV, 200A Loadbreak Elbow with Integral Seal



Ratings	
Description	15 kV
Minimum Partial Discharge	11
Max Rating Phase-to-Ground	8.3
Max Rating Phase-to-Phase	14.4
AC 60 Hz 1 Minute Withstand (rms)	34
DC 15 Minute Withstand	53
BIL and Full Wave (Crest)	95

Production Tests:

- AC 1 Minute Withstand 34 kV
- Minimum Corona Level 11 kV (3pC)
- Test Point Voltage Test

Ratings	
Description	A rms
Continuous Current	200
Switching Current	200
Fault-closure Current for 0.17s after 10 Switching Operations	10,000 symmetrical
Short-time Current for 0.17s	10,000 symmetrical
Short-time Current for 3.00s	3,500 symmetrical

15 kV, 200A Loadbreak Elbow Size Reference Chart

Cable Size (AWG/kcmil)		Insulation Diameter	175 mil (100%) Insulation		220 mil (133%) Insulation	
STR/COMPR	COMPT/SOL	in (mm)	No Jacket Seal	Integral Jacket Seal	No Jacket Seal	Integral Jacket Seal
#2	#1	0.64-0.905 (16.2-23.0)	ELB-15-210B2	ELB-15-210B2-ES	ELB-15-210B2	ELB-15-210B2-ES
#1	1/0	0.64-0.905 (16.2-23.0)	ELB-15-210B1	ELB-15-210B1-ES	ELB-15-210B1	ELB-15-210B1-ES
1/0	2/0	0.64-0.905 (16.2-23.0)	ELB-15-210B10	ELB-15-210B10-ES	ELB-15-210B10	ELB-15-210B10-ES
2/0	3/0	0.64-0.905 (16.2-23.0)	ELB-15-210B20	ELB-15-210B20-ES	ELB-15-210C20	ELB-15-210C20-ES
3/0	4/0	0.83-1.06 (21.1-26.9)	ELB-15-210C30	ELB-15-210C30-ES	ELB-15-210C30	ELB-15-210C30-ES
4/0	250	0.83-1.06 (21.1-26.9)	ELB-15-210C40	ELB-15-210C40-ES	ELB-15-210C40	ELB-15-210C40-ES

Related Test Report:

EDR-5574

Elbow Kit Contents:

Elbow body
 Copper top terminal
 Loadbreak probe
 Probe installation tool
 Silicone lubricant
 Sealing mastic (integral seal only)
 Installation instructions sheet

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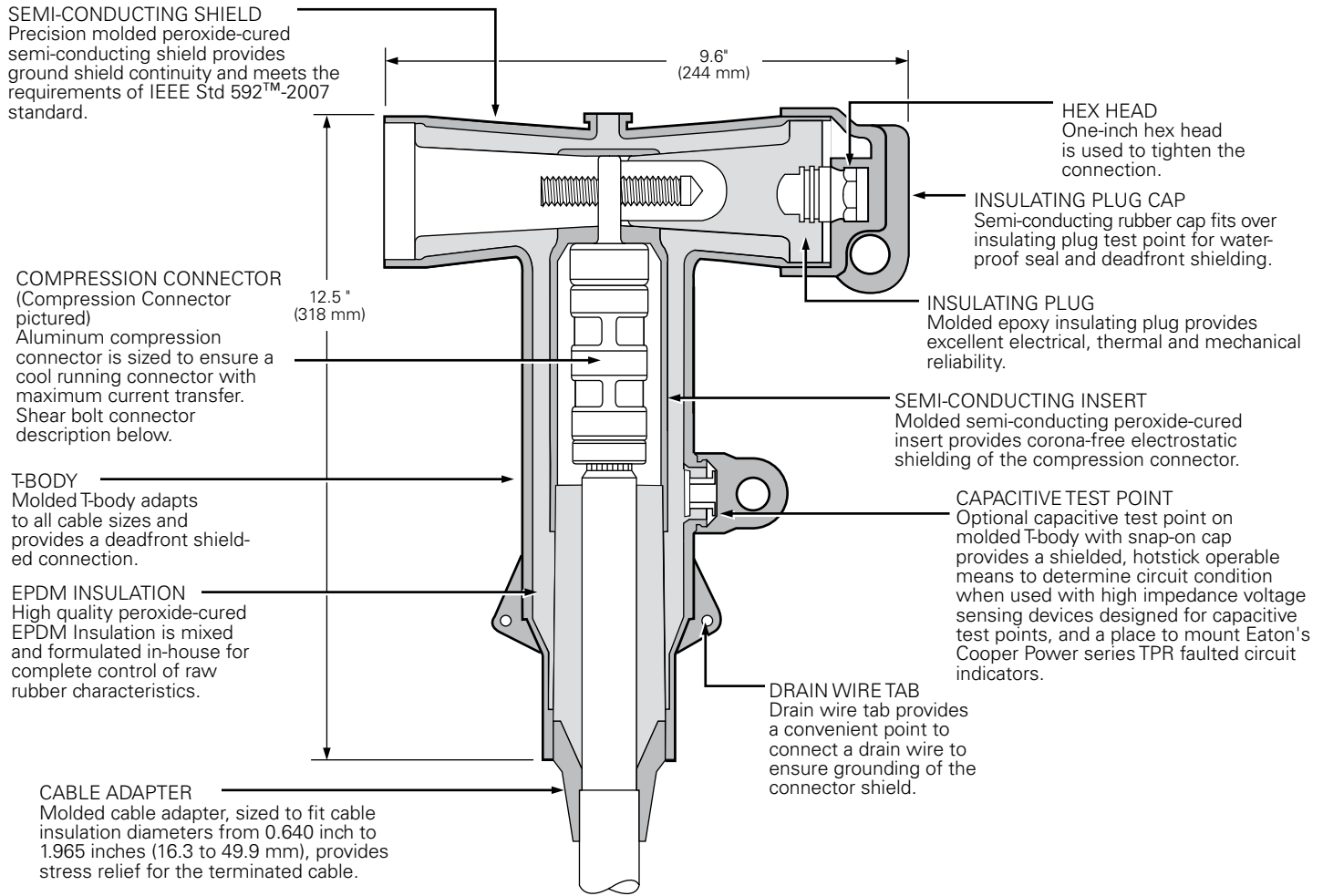


Figure 1. BOL-T Cutaway illustrates design features.

Note: Dimensions given are for reference only.

Optional features

Coppertop compression connectors

Coppertop compression connectors (aluminum sleeve welded to a copper spade) provide a high conductivity material in a bolted connection and are compatible with aluminum or copper conductors.

All copper current path

Full copper current carrying path and 900 A rating can be obtained by specifying a coppertop compression connector, copper stud and copper insulating plug.

Shear bolt connector (optional)

Bolted cable lug is fitted with stepless bolts, which shear off when optimum contact force has been reached. Provides electrical continuity for copper and aluminum conductors while eliminating need for dies and compression tools.



Figure 2. Shear bolt connector.

Table 1. Voltage Ratings and Characteristics

Description	kV
Standard Voltage Class	25
Maximum Rating Phase-to-Ground	15.2
ac 60 Hz 1 Minute Withstand	40
dc 15 Minute Withstand	78
BIL and Full Wave Crest	125
Minimum Partial Discharge Extinction Voltage	19

Voltage ratings and characteristics are in accordance with IEEE Std 386™-2006 standard.

Table 2. Current Ratings and Characteristics

Description	Amperes
Continuous	600 A rms
4 Hour Overload	900 A rms
Short Time	40,000 A rms symmetrical for 0.17 s 27,000 A rms symmetrical for 4.0 s

Current ratings and characteristics are in accordance with IEEE Std 386™-2006 standard.



SureCrimp® Copper Compression Lugs

Long Barrel

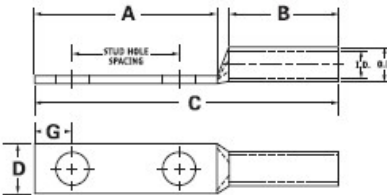
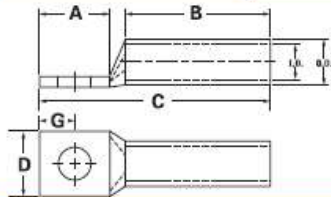


Features

- Manufactured from high strength seamless copper tubing
- Electro-Tin plated
- Chamfered entry
- Color coded
- Suitable for use in circuits rated 35KV or less, proper high voltage spacing and insulation techniques must be used
- UL Listed and CSA Certified with ILSCO and major competitor's compression tools
- UL467 Listed 500 kcmil - 8 AWG , #8 - #2 SOL
- Rated to 90° C

Benefits

- Offers maximum conductivity and excellent crimping characteristics
- Provides low contact resistance
- For easy conductor insertion
- Identifies the proper compression die
- Application versatility
- Reduces inventory requirements
- For grounding and bonding applications



Catalog Number	Wire Size	Alt Wire Size	Expanded Wire Range	Bolt Size	Stud Hole Dia.	Stud Hole Spacing	Dimensions					Die Color Code	Die Index	O.D.	I.D.
							A	B	C	D	G				
CLNS-1-12	#1 AWG	#2 FLEX	1-6 AWG	1/2	0.562	-	1.25	1.375	2.955	0.75	0.546	GREEN	I-37	0.468	0.359
CLND-1-12-134	#1 AWG	#2 FLEX	1-6 AWG	1/2	0.562	1.75	3	1.375	4.705	0.75	0.546	GREEN	I-37	0.468	0.359
CLNS-2/0-12	2/0 AWG	1/0 FLEX	2/0-4 AWG	1/2	0.562	-	1.25	1.5	3.146	0.811	0.546	BLACK	I-45	0.562	0.437
CLND-2/0-12-134	2/0 AWG	1/0 FLEX	2/0-4 AWG	1/2	0.562	1.75	3	0.5	4.896	0.811	0.546	BLACK	I-45	0.562	0.437
CLNS-3/0-12	3/0 AWG	2/0 FLEX	3/0-2 AWG	1/2	0.562	-	1.25	1.5	3.189	0.885	0.546	ORANGE	I-50	0.609	0.484
CLND-3/0-12-134	3/0 AWG	2/0 FLEX	3/0-2 AWG	1/2	0.562	1.75	3	1.5	4.939	0.885	0.546	ORANGE	I-50	0.609	0.484
CLNS-250-12	250KCMIL	4/0 FLEX	250KCMIL - 1/0 AWG	1/2	0.562	-	1.25	1.688	3.469	1.088	0.546	YELLOW	I-62	0.75	0.593
CLND-250-12-134	250KCMIL	4/0 FLEX	250KCMIL - 1/0 AWG	1/2	0.562	1.75	3	1.688	5.219	1.088	0.546	YELLOW	I-62	0.75	0.593