



# Cold Shrink Medium Voltage Cable Accessories

For extruded dielectric power cable from 8.7kV through 35kV and up to 630mm<sup>2</sup>

**G&W Electric**  
Engineered to order. Built to last.

## Pre-Molded (PM) Series Cold Shrink Accessories

As a cable accessories manufacturer with more than 100 years of history, G&W Electric offers a range of cable accessories to meet medium voltage, high voltage, ultra high voltage and extra high voltage requirements.

The G&W Electric Pre-Molded (PM) series of cold shrink medium voltage cable accessories are high-end products available for extruded dielectric power cables from 8.7kV through 35kV and up to 630mm<sup>2</sup>. State-of-the-art software is employed to perform electric stress analysis and optimization which ensures the electric stress of these cable accessories is distributed in the most rational way. Liquid silicone rubber is used as the raw material, which greatly improves the mechanical and electrical properties of this product. This allows installation in various kinds of complicated environments, resulting in simple, reliable installation and excellent product performance.

### Features and Benefits

- Liquid silicone rubber (LSR) is used for outstanding electrical insulation
- Employs design concepts used for high voltage stress control
- Hydrophobic and highly UV resistant for excellent performance in outdoor applications
- Superior flexibility ensures that the product holds the cable firmly, eliminating air gaps produced by thermal expansion and contraction during operation
- With 300% expansion allowance, a single product can be used with a variety of cable sizes
- Does not require special skills when installing
- Eliminates uneven heating that may occur when installing heat shrink accessories
- Single piece pre-molded design eliminates errors that could occur with multiple piece accessories

### Applications and Standards

- Standard and non-standard cables with extruded solid insulation (XLPE and EPR)
- Copper and aluminum conductors
- Metal shielding (Copper Wire, Copper Tape, Aluminum Foil, etc.)
- Armored or non-armored jackets (Steel wire armor, etc.)
- GB/T 12706
- GB/T 18889
- IEC 60502

## Three-core Power Cable with Extruded Insulation

### Indoor/Outdoor Terminations

#### Dimensions

Type	H(mm)	Creepage(mm)	A(mm)	B(mm)
PMN15	190	300	320	760
PMT15	323	498	450	850
PMN20	330	437	460	860
PMT20	400	620	530	930
PMN35	380	760	510	950
PMT35	460	1085	590	1400
PMTL35 High-altitude applications	580	1600	710	1500



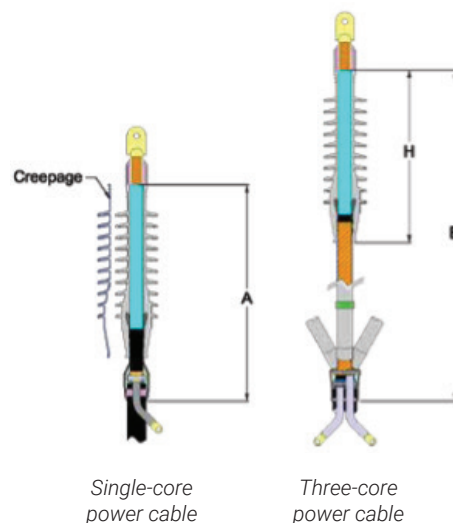
Three-core Power Cable with Extruded Insulation

## Three-core Power Cable with Extruded Insulation

### 15kV Cold Shrink Termination Selection Guide

Product	Type Chart		Insulation Diameter(mm)	Conductor Cross Section(mm <sup>2</sup> )	
	Single-Core Kits	Three-Core Kits		6.35/11(12)kV	8.7/15(17.5)kV
Indoor Termination	PMN15-1.1	PMN15-3.1	17~21	70~95	25~50
	PMN15-1.2	PMN15-3.2	21~25	120~150	70~120
	PMN15-1.3	PMN15-3.3	25~30	185~300	150~240
	PMN15-1.4	PMN15-3.4	30~35	400	300~400
	PMN15-1.5	PMN15-3.5	35~41	500~630	500~630
Outdoor Termination	PMT15-1.1	PMT15-3.1	17~21	70~95	25~50
	PMT15-1.2	PMT15-3.2	21~25	120~150	70~120
	PMT15-1.3	PMT15-3.3	25~30	185~300	150~240
	PMT15-1.4	PMT15-3.4	30~35	400	300~400
	PMT15-1.5	PMT15-3.5	35~41	500~630	500~630

Main Parameters	8.7/15kV	12/20kV	18/30kV	26/35kV
AC power frequency withstand voltage (5 min.)	39kV	54kV	81kV	117kV
Power frequency withstand voltage (1 min., wet, outdoor terminals only)	35kV	48kV	72kV	104kV
DC withstand voltage (15 min.)	35kV	48kV	72kV	104kV
Impulse voltage test (+/-10 times)	95kV	125kV	170kV	200kV
Partial discharge test	≤10 pC at 15kV	≤10 pC at 20kV	≤10 pC at 35kV	≤10 pC at 45kV
Combined cycling test with AC voltage, 60 cycles (In air)	23kV	30kV	45kV	65kV
Salt spray test (Outdoor)	11kV	15kV	22.5kV	33kV
Wet aging test (Indoor)	11kV	15kV	22.5kV	33kV



## Three-core Power Cable with Extruded Insulation

Voltage Class, kV	Conductor Cross Section, mm <sup>2</sup> reference	Insulation OD Application Range, mm	Indoor Termination Type Chart		Outdoor Termination Type Chart	
			Single-Core Kits	Three-Core Kits	Single-Core Kits	Indoor Termination Type Chart
8.7/15kV	25 - 50	17 - 21	PMN15-1.1	PMN15-3.1	PMT15-1.1	PMT15-3.1
	70 - 120	21 - 25	PMN15-1.2	PMN15-3.2	PMT15-1.2	PMT15-3.2
	150 - 240	25 - 30	PMN15-1.3	PMN15-3.3	PMT15-1.3	PMT15-3.3
	300 - 400	30 - 37	PMN15-1.4	PMN15-3.4	PMT15-1.4	PMT15-3.4
	500 - 630	37 - 42	PMN15-1.5	PMN15-3.5	PMT15-1.5	PMT15-3.5
12/20kV	30 - 50	20 - 22	PMN20-1.1	PMN20-3.1	PMT20-1.1	PMT20-3.1
	70 - 150	22 - 29	PMN20-1.2	PMN20-3.2	PMT20-1.2	PMT20-3.2
	185 - 400	29 - 38	PMN20-1.3	PMN20-3.3	PMT20-1.3	PMT20-3.3
	500 - 630	38 - 44	PMN20-1.4	PMN20-3.4	PMT20-1.4	PMT20-3.4
18/30kV	35 - 70	22 - 29	PMN18-1.1	PMN18-3.1	PMT18-1.1	PMT18-3.1
	95 - 240	29 - 38	PMN18-1.2	PMN18-3.2	PMT18-1.2	PMT18-3.2
	300 - 630	38 - 44	PMN18-1.3	PMN18-3.3	PMT18-1.3	PMT18-3.3
26/35kV	50 - 95	31 - 35	PMN35-1.1	PMN35-3.1	PMT35-1.1	PMT35-3.1
	120 - 185	35 - 40	PMN35-1.2	PMN35-3.2	PMT35-1.2	PMT35-3.2
	240 - 400	40 - 47	PMN35-1.3	PMN35-3.3	PMT35-1.3	PMT35-3.3
	500 - 630	47 - 57	PMN35-1.4	PMN35-3.4	PMT35-1.4	PMT35-3.4

- Cable information is required to provide correct termination kit
- Optional cable preparation kit (including cable jacket seal kit and grounding kit) available
- Compression lugs and shear bolt lugs are available – must be ordered separately

### Three-core Indoor and Outdoor kits

1. Cold shrinkable indoor termination body
2. Finger spreader/Trifurcate
3. Long cold shrink tubes to rebuild insulation
4. PVC tape
5. Insulation tape
6. Filling and Sealing strip
7. Gloves-two types
8. Silicone grease
9. Triangle cone
10. Scale ruler
11. Cold shrinkable sealing tube
12. Cleaning cloth
13. Grounding braid



- Basic Product Kit (BKT): Items 1 to 16
- Cable Preparation Kit (CPT): Items 17 to 24

## Straight Joints

Voltage Class, kV	Conductor Cross Section, mm <sup>2</sup> reference	Insulation OD Application Range, mm	Straight Through Joint Type Chart	
			Single-Core Kits	Three-Core Kits
8.7/15kV	25 - 50	17 - 21	PMJ15-1.1	PMJ15-3.1
	70 - 120	21 - 25	PMJ15-1.2	PMJ15-3.2
	150 - 240	25 - 30	PMJ15-1.3	PMJ15-3.3
	300 - 400	30 - 37	PMJ15-1.4	PMJ15-3.4
	500 - 630	37 - 42	PMJ15-1.5	PMJ15-3.5
12/20kV	30 - 50	20 - 22	PMJ20-1.1	PMJ20-3.1
	70 - 150	22 - 29	PMJ20-1.2	PMJ20-3.2
	185 - 400	29 - 38	PMJ20-1.3	PMJ20-3.3
	500 - 630	38 - 44	PMJ20-1.4	PMJ20-3.4
18/30kV	35 - 70	22 - 29	PMJ18-1.1	PMJ18-3.1
	95 - 240	29 - 38	PMJ18-1.2	PMJ18-3.2
	300 - 630	38 - 44	PMJ18-1.3	PMJ18-3.3
26/35kV	50 - 95	31 - 35	PMJ35-1.1	PMJ35-3.1
	120 - 185	35 - 40	PMJ35-1.2	PMJ35-3.2
	240 - 400	40 - 47	PMJ35-1.3	PMJ35-3.3
	500 - 630	47 - 57	PMJ35-1.4	PMJ35-3.4

Main Parameters	8.7/15kV	12/20kV	18/30kV	26/35kV
AC power frequency withstand voltage (5 min.)	39kV	54kV	81kV	117kV
DC withstand voltage (15 min.)	35kV	48kV	72kV	104kV
Impulse voltage test (+/-10 times)	95kV	125kV	170kV	200kV
Partial discharge test	≤10 pC at 15kV	≤10 pC at 20kV	≤10 pC at 30kV	≤10 pC at 45kV
Combined cycling test with AC voltage (30 cycles in air and 30 cycles in water)	23kV	30kV	45kV	65kV

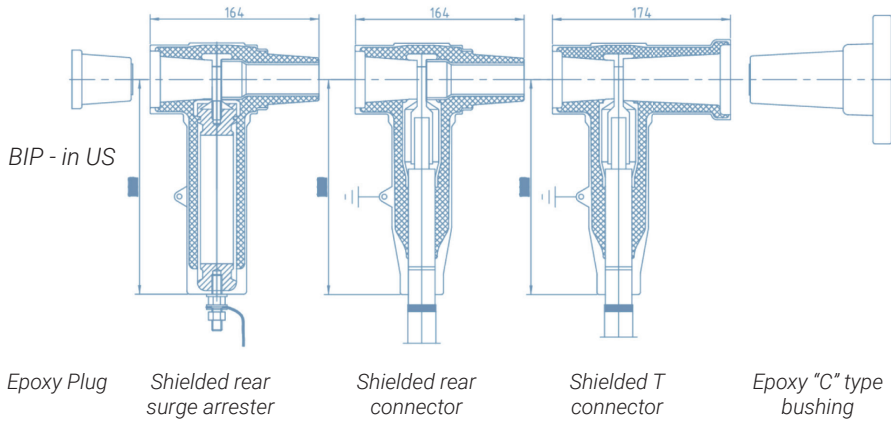
### Straight Joint Kit

1. Joint body
2. Filling tapes
3. Spring Roll
4. Grounding braid
5. Silicone grease
6. Copper mesh
7. PVC tapes
8. Sandpaper
9. Armor tapes
10. Gloves
11. Cleaning Cloth
12. Waterproof tapes
13. Semi-con tapes
14. Measuring tape
15. Conductor connector





## Shielded Separable Connectors



## Shielded T and Shielded Rear Connectors Kits

### Shielded Separable Connectors, Main Features

- High temperature vulcanized liquid silicone rubber is used for:
  - High temperature vulcanized Ethylene Propylene Diene Monomer (EPDM)
  - High weather resistance
  - High aging resistance
  - Flame retardant
- Integrated design with built-in stress cone
- Extruded outer shield with a considerable thickness
- Attractive and lightweight, easy to install
- Insulation plug with built-in voltage detector
- Scalable connections allowing combinations

Main Parameters	8.7/15kV
AC power frequency withstand voltage (5 min.)	35kV
DC withstand voltage (15 min.)	39kV
Impulse voltage test (+/-10 times)	95kV
Partial discharge test	≤10 pC at 15kV
Combined cycling test with AC voltage, 63 cycles (33 in air + 30 in water)	23kV
Shield resistance	≤5 k Ω
Leakage current (at Um)	≤0.5mA

### Applicable Standards

- GB/T 12706
- GB/T 18889
- IEC 60502
- EN 50180
- EN 50181

### Shielded T connectors

- T Connector Body
- Screw Bolt & Nut
- Lug
- Epoxy Plug
- Cleaning Cloth
- Gloves
- PVC Tapes
- Sand Paper
- Silicone Grease
- Wlre
- Assembly Tooling



- Cable information is required to provide the correct kit.
- BOM shown is the basic product kit (BKT).
- Additional materials can be purchased in the cable preparation kit (CPT).

### Shielded rear connectors

- Rear Connector Body
- Screw Bolt & Nut
- Lug
- Connecting Rod
- Cleaning Cloth
- Gloves
- PVC Tapes
- Sand Paper
- Silicone Grease
- Grounding Wlre
- Assembly Tooling



## Shielded Separable Connectors

Voltage Class, kV	Conductor Cross Section, mm <sup>2</sup> , reference	Cable Insulation range (mm)	Shielded T Connector Type Chart		Shielded Rear Connector Type Chart	
			Single-core Models	Three-Core Models	Single-core Models	Three-Core Models
8.7/15kV	25 - 50	17 - 21	PMTC15-1.1	PMTC15-3.1	PMBC15-1.1	PMBC15-3.1
	70 - 120	21 - 25	PMTC15-1.2	PMTC15-3.2	PMBC15-1.2	PMBC15-3.2
	150 - 240	25 - 30	PMTC15-1.3	PMTC15-3.3	PMBC15-1.3	PMBC15-3.3
	300 - 400	30 - 37	PMTC15-1.4	PMTC15-3.4	PMBC15-1.4	PMBC15-3.4
	500 - 630	37 - 42	PMTC15-1.5	PMTC15-3.5	PMBC15-1.5	PMBC15-3.5

## Shielded Separable Connectors

Name	Units	12/20kV
<b>Product Model</b>	-	<b>PMBA15 (17/45)</b>
System nominal voltage	kV	10
Surge protector rated voltage	kV	17
Continuous operating voltage	kV	13.6
Nominal discharge current, I <sub>n</sub>	kA	5
Reference voltage, DC, 1 mA	kV	≥24
Leakage current, 0.75U, 1 mA	μ A	≤10
Steep current impulse residual voltage	kV	≤51.8
Lightning impulse residual voltage	kV	≤45
Switching impulse residual voltage	kV	≤35
Resistive current (Peak value)	μ A	≤200
Full current (Peak value)	μ A	≤700
Partial discharge at 14.3 kV	pC	≤10
2ms square wave current impulse withstand	A	200
High current impulse withstand	kA	65

Item	Description	
1	T Body Connector	Rear Connector Body
2	Plug	Connecting Rod
3	Stress Cone	
4	Semi-Con Tape	
5	Lug	
6	Hardware	
7	PVC Tape	
8	Silicone Grease	
9	Sand Paper	
10	Installation Instruction	
11	Assembling Tool	
12	Rubber Glove	
13	Nylon Glove	
14	Cleaning Cloth	
15	Scale Ruler	
16	Certificate of Qualification to meet China market requirement	
17	Cold Shrink Sheath Tube	
18	Cold Shrink Trident Tube	
19	Insulation Tape	
20	Constant Force Spring	
21	Copper Braid	
22	Sealing Strip	
23	Filling Strip	
24	Triangular Cone	

- Cable information is required to provide the correct termination kit
- Optional cable preparation kit (including cable jacket seal kit and grounding kit) available
- Default external protection is a multi-layer aqua-seal tape and armor tape
- Fiberglass/copper/steel housing can be ordered separately

### Three-core T Body Connector Kits



### Three-core Rear Connector Kits



- Cable information is required to provide the correct termination kit.
- Basic Product Kit (BKT): Item 1 to 16.
- Cable Preparation Kit (CPT): Item 17 to 24.

### 250A Euro Style Shielded Load break Elbow Connector

Voltage Class, kV	Conductor Cross Section mm <sup>2</sup>	Cable Insulation range (mm)	Shielded Elbow Connector	
			Single-core Models	Three-Core Models
8.7/15kV	25 - 50	17 - 21	PMEC15250-1.1	PMEC 15200-3.1
	70 - 95	21 - 23	PMEC15250-1.2	PMEC 15200-3.2
	120	23 - 25	PMEC15250-1.3	PMEC 15200-3.3



Item	Description
1	Elbow Connector Body
2	Lug
3	Connecting Bar
4	Hexagon Wrench
5	Clamping Plate
6	Clamping Hook
7	Rubber Glove
8	Nylon Glove
9	PVC Tape
10	Semi-Con Tape
11	Silicone Grease
12	Sand Paper
13	Cleaning Cloth
14	Certificate of Qualification to meet China market requirement
15	Installation Instruction
16	Scale Ruler
17	Cold Shrink Trident Tube
18	Cold Shrink Sheath Tube
19	Sealing Strip
20	Filling Strip
21	Spring Roll
22	Insulation Tape
23	Copper Braid
24	Triangular Cone

- BOM shown is the basic product kit (BKT).
- Additional materials can be purchased in the cable preparation kit (CPT).

### Three-core Elbow Connector Kits



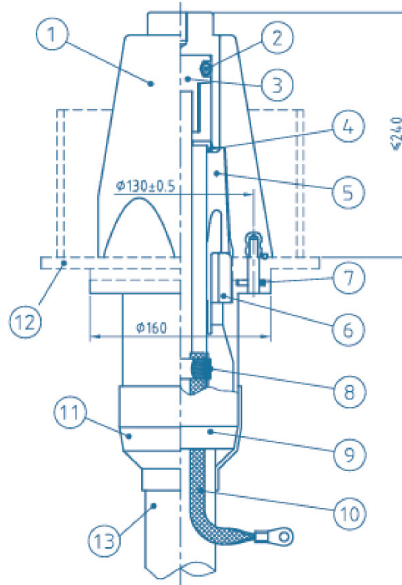
- Cable information is required to provide the correct termination kit.
- Optional cable preparation kit (including cable jacket seal kit and grounding kit) available
- Compression lugs and shear bolt lugs are available and must be ordered separately. Mechanical lugs are NOT available.
- Basic Production Kit (BKT): Item 1 to 16.
- Cable Preparation Kit (CPT): Item 17 to 24.

## Inner Cone Plug-in

### Separable Connectors

Main Parameters	26/35kV
AC power frequency withstand voltage (5 min.)	117kV
DC withstand voltage (15 min.)	104kV
Impulse voltage test (+/-10 times)	200kV
Partial discharge test	≤10 pC at 45 kV
Combined cycling test at constant pressure, 63 cycles (33 in air + 30 in water)	65kV

1. Epoxy insulator
2. Spring contact
3. Conductor connector
4. Stress cone stop ring
5. Stress cone
6. Stress cone support ring
7. Sealing gasket
8. Roll spring
9. Entrance housing
10. Grounding braid
11. Heat shrink tube
12. Housing flange
13. Cable



## Inner Cone Plug-in Separable

### Connector Type Chart

Voltage Class, kV	Conductor Cross Section, mm <sup>2</sup>	Single-Core Models	Three-Core Models
26/35kV	150	GIS 35-1.7	GIS 35-3.7
	185	GIS 35-1.8	GIS 35-3.8
	240	GIS 35-1.9	GIS 35-3.9
	300	GIS 35-1.10	GIS 35-3.10
	400	GIS 35-1.11	GIS 35-3.11
	500	GIS 35-1.12	GIS 35-3.12
	630	GIS 35-1.13	GIS 35-3.13

Item	Description
1	Lug
2	Stress Cone Stopper
3	Stress Cone
4	Cable Entrance Housing
5	Housing Sealing Tube
6	Hardware
7	Sand Paper
8	PVC Tape
9	Spring Roll
10	Cleaning Cloth
11	Semi-Con Tape
12	Insulation Tape
13	Rubber Glove
14	Nylon Glove
15	Triangular Cone
16	Silicone Grease
17	Copper Braid
18	Sheath Tube
19	Trident Tube
20	Installation Instruction
21	Certificate of Qualification to meet China market requirement
22	Tapeline
23	Sealing Strip
24	Filling Strip

### Three-core Inner Cone Plug-in Separable Connector Kits



- Cable information is required to provide the correct termination kit.
- Insulator should be ordered separately.

**Contact us today:**

708.388.5010 or [info@gwelec.com](mailto:info@gwelec.com)

**G&W Electric**

Engineered to order. Built to last.

Since 1905, G&W Electric has been a leading provider of innovative power grid solutions including the latest in load and fault interrupting switches; reclosers; sensors; system protection equipment; power grid automation; transmission and distribution cable terminations; and joints and other cable accessories. G&W Electric is headquartered in Bolingbrook, Illinois, U.S.A., with manufacturing facilities and sales support in more than 100 countries, including Canada, Italy, China, Mexico, Brazil, India, UAE and Singapore. We help our customers meet their challenges and gain a competitive edge through a suite of advanced products and technical services.

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GW28-2024 10/24