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## **SMS Office Locations**

To place an order for SMS Connectors, please contact the following:

# Electrical Connector Sales & Service

## **USA & International Sales**

## **Marshall Girtman**

P: +1 (618) 932-2151 • F: +1 (618) 937-2715 E: marshall.girtman@specialmineservices.com

## USA & Canada, Sales, Technical Support 24 Hrs 7 days a week

P: +1 (647) 808-0965 C: +1 (618) 937-8333 E: smsconnectors@aol.com

## Mining Products · Sales & Service

## Illinois

Lisa Smith

P: 618-932-2151• F: 618-937-2715 E: lisa.smith@specialmineservices.com

### Indiana

Kaleb Riecken

P: 812-354-9104 • F: 812-354-2176

E: Kaleb.Riecken@specialmineservices.com

## Kentucky

Ernie Bullock

P: 270-754-9911 • F: 270-754-9894

E: ernie.bullock@specialmineservices.com

## **SMS Standard Terms & Conditions**

https://specialmineservices.com/standard-terms-and-conditions/





# **Molded Electrical Connectors** for the Mining, Tunneling, and Industry

## **UNI-LOCK**

#8 through 500 MCM Up to 1000V/625 Amps



## **OVAL**

Two through Five Contacts #14 to #2/0 AWG Up to 600V/95 Amps



## **PUSH LOCK**

Single Contact #2 through 750 MCM 600V to 5000V/540 Amps





## **CHANGE OUT**

Two through Nine Contacts #18 to #10 AWG Up to 600V/25 Amps



## **ROUND**

One to 24 Contacts #18 to #4/0 AWG Up to 5000V/235 Amps



## **RAMP POWER**

#4 to #4/0 AWG Up to 600V/180 Amps





## **Uni-Lock Lever-Action Connectors** for Mining, Tunneling, and Industry

### **UNI-LOCK LEVER-ACTION CONNECTORS**

### STANDARD FEATURES

- Unique Connector Back and D-style Pins Prevent Arcing
- Larger and Longer Set Screws Prevent Barrel Fall-Through
- · All Rubber Connector Will Not Go Out of Round
- Engages Mechanically Eliminates Couplers Seizing Together
- · Single-Barrel Pilot Pins with Two Set Screws
- · Two Grommets with O-ring Seals
- Six-fingered Female Contact Pin for Positive Contact with Male Pin
- The connectors and cable are CSA certified The complete assembly is NOT certified
- · Rough Interior Surface Secures Wire
- · Connectors are Water and Dust Tight when Engaged

(The above features are available only on SMS Connectors)





## **UNI-LOCK LEVER ACTION JUMPER ASSEMBLY**

Lever Action Jumper Assembly Provides Both Old Style and New Style Connectors

Thus Eliminating Costly Change-Over from Brass Connector to New, All Rubber Connector.

### STANDARD FEATURES

- · Unique Molded Assembly Maintenance Free
- · Connectors are Water and Dust Tight when Engaged
- Engages Mechanically Eliminates Couplers Seizing Together
- Two O-ring Seals in Manganese Bronze Casting
- · All Rubber Connector Will Not Go Out of Round
- Six-Fingered Female Contact Pin for Positive Contact with Male Pin
- The connectors and cable are CSA certified The complete assembly is NOT certified

(The above features are available only on SMS Connectors)







Certified 600 Volts



8340 Series Uni-Lock Lever-Action Connectors

## **STANDARD FEATURES**

- Available only on SMS Connectors
- Unique connector back and D-style pins prevent arcing
- Longer set screws prevent barrel fall-through
- All-rubber connector wall not go out-of-round
- Engages mechanically eliminates couplers seizing together
- Single-barrel pilot pins with two set screws
- Two grommets with O-ring seals
- Six-fingered female contact pin for positive contact
- Connectors are water and dust tight when engaged

## **APPLICATIONS**

## Mining

## Shuttle cars

Drills

- Cutting machines
- Distribution boxes

## Industry

- · Large motors/test stands for checking motors
- Lockable hookup to large portable equipment
- Steel mills/power for locomotion equipment

## Military

· Ship-to-shore power

### Railroad

· Car-to-car power

## **Uni-Lock Lever-Action Connector**

## 3 Power / 1 Ground: 1 or 2 Pilots: 1000V 4 RATED

Maximum	Connector	Cable At	tachment	Panel	Mount				
Cable AWG	Rating AMPS	Male	Female	Male	Female	Color	Male	Female	
8	75	8343-501 or 2	8343-401 or 2	8343-1601 or 2	8343-1201 or 2	Blue	3325656-201	3325656-101	
4	125	8344-501 or 2	8344-401 or 2	8344-201 or 2	8344-101 or 2	Red	3325656-401	3325656-301	
2	160	8345-501 or 2	8345-601 or 2	8345-1501 or 2	8345-1001 or 2	Black	3325656-601	3325656-501	
2/0	225	8346-201 or 2	8346-101 or 2	8346-1301 or 2	8346-801 or 2	Black	3325656-801	3325656-701	
4/0	325	8347-201 or 2	8347-101 or 2	8347-1301 or 2	8347-801 or 2	Black	3325656-1001	3325656-901	

Dt N	Maximum Connector Rating	D. a suitable as	0-1		
Part No.	Cable AWG	Volts	Amps	Description	Colors
8348-301	500MCM	1000	500	Male Cable Attachable	
8348-201	500MCM	1000	500	Female Cable	Black / Blue
8348-1001	500MCM	1000	500	Male Panel Mount	Green / Orange
8348-701	500MCM	1000	500	Female Panel Mount	Red / White Yellow

8348 SERIES - SPECIAL MINES SERVICES RECOMMENDED RATINGS

Protective Caps: Part No. Description

Female Cap to fit a Male Connector 3325656-1201 Male Cap to fit a Female Connector 8348-8 Pilot Short Circuiting Cap - for Female Panel Mount

Select grommet that adapts I.D. of sleeve (supplied on plug) to O.D. of cable being used

When ordering grommets for Level-Action Connectors, identify the part prefix LA (e.g. 313305-1LA)

## Identify grommets for SHD-GC 2kV cable highlighted below in red:

Connector Sleeve No.	O.D. Cable Range (no grommet)	O.D. Cable Range Grommet No.				
<b>8343</b> No. 325298	1.500 → 1.250	1.250 → 1.000 No. 313305-1	1.000 → .750 No. 313305-2	.750 → .562 No. 313305-3	-	-
<b>8344</b> No. 325292	1.813 - 1.562	1.562 → 1.312 No. 313327-1	1.312 → 1.062 No. 313327-2	1.062 → .812 No. 313327-3	.812625 No. 313327-4	-
<b>8345</b> No. 325286	2.000 - 1.812	1.812 → 1.625 No. 324044-1	1.625 → 1.437 No. 32 4044-2	1.437 -> 1.250 No. 324044-3	1.250 → 1.062 No. 324044-4	-
<b>8346</b> No. 325245	2.375 - 2.125	2.125 → 1.937 No. 324153-1	1.937 → 1.750 No. 324153-2	1.750 → 1.562 No. 324153-3	1.562 → 1.375 No. 324153-4	-
<b>8347</b> No. 325271	2.937 → 2.625	2.625 → 2.312 No. 324089-1	2.312 → 2.000 No. 324089-2	2.000 → 1.812 No. 324089-3	-	-
<b>8348</b> No. 325305	3.281 → 3.000	3.000 - 2.812 No. 324024-4	2.812 → 2.625 No. 324024-5	2.625 → 2.531 No. 324024-6	2.531 - 2.312 No. 324024-2	2.312 - 2.125 No. 324024-3



## **Uni-Lock Lever-Action Connectors Parts List**

## Part No. (Large Carton) Description

LEVER ACTIO	ON CONNECTOR PARTS LIST
8343-1994M	Clamps Male Set
8343-1994F	Clamps Female Set
8343-1995L	Handle Cable Mount Connector
8343-1995R	Handle Panel Mount Connector
8343-1996L	Draw Bar Cable Mount Connector
8343-1996R	Draw Bar Panel Mount Connector
8343-1997F	Female Recept. Eye Bolt
8343-1997M	Male Recept. Eye Bolt
4543S	Stainless 45 deg Box
8344-1994M	Clamps Male Set
8344-1994F	Clamps Female Set
8344-1995L	Handle Cable Inline Connector
8344-1995R	Handle Receptable
8344-1996L	Draw Bar Cable Inline Connector
8344-1996R	Draw Bar Receptable
8344-1997M	Male Recept. Eye Bolt
8344-1997F	Female Recept. Eye Bolt
4544S	Stainless 45 deg Box
8345-1994M	Clamps Male Set
8345-1994F	Clamps Female Set
8345-1995L	Handel Cable Inline Connector
8345-1995R	Handle Receptable
8345-1996L	Draw Bar Cable Inline Connector
8345-1996R	Draw Bar Receptable
8345-1997M	Male Recept. Eye Bolt
8345-1997F	Female Recept. Eye Bolt
4545S	Stainless 45 deg Box
8346-1994M	Clamps Male Set
8346-1994F	Clamps Female Set
8346-1995L	Handle Cable Inline Connector
8346-1995R	Handle Receptable
8346-1996L	Draw Bar Cable Inline Connector
8346-1996R	Draw Bar Receptable
8346-1997M	Male Recept. Eye Bolt
8346-1997F	Female Recept. Eye Bolt
4546S	Stainless 45 deg Box
8347-1994M	Clamps Male Set
8347-1994F	Clamps Female Set
8347-1995L	Handle Cable Inline Connector
8347-1995R	Handle Receptable
8347-1996L	Draw Bar Cable Inline Connector
8347-1996R	Draw Bar Receptable
8347-1990N 8347-1997M	Male Recept. Eye Bolt
8347-1997W	Female Recept. Eye Bolt
8348-1994M	Clamps Male Set
8348-1994F	Clamps Female Set
8348-1994F 8348-1995L	Handle Cable Inline Connector
8348-1995L 8348-1995R	Handle Receptable
8348-1995H 8348-1996L	Draw Bar Cable Inline Connector
8348-1996L 8348-1996R	Draw Bar Cable Inline Connector  Draw Bar Receptable
8348-1996H 8348-1997FCA	Female Cable Inline Eye Bolt
	Male Panel Mount Eye Bolt
8348-1997FPM	,
8348-1997MPM	Female Cable Attachment Wire Retailer
8348-1998FCA	Female Cable Attachment Wire Retanier
8348-1998FPM	Female Panel Mount Wire Retanier
HC	Hose Clamp

## Part No. Description

i ait ito.	Description
<b>CLEANING T</b>	OOLS
43FCT	8343 Female Contacts
43FPCT	8343 Female Pilot Contacts
43MCT	8343 Male Contacts Length 3"
43MPCT	8343 Male Pilot Contacts
44FCT	8344 Female Contacts
44FPCT	8344 Female Pilot Contacts
44MCT	8344 Male Contacts Length 3"
44MPCT	8344 Male Pilot Contacts
45FCT	8345 Female Contacts
45FPCT	8345 Female Pilot Contacts
45MCT	8345 Male Contacts Length 3"
45MPCT	8345 Male Pilot Contacts
46FCT	8346 Female Contacts
46FPCT	8346 Female Pilot Contacts
46MCT	8346 Male Contacts Length 3"
46MPCT	8346 Male Pilot Contacts
<b>BRASS MOU</b>	NTING SHELLS for Panel Mounts
324059	Mounting Shell 8346 Female Panel Mount
324059LA	Mounting Shell 8346 Lever Action Female Panel Mount
324063	Mounting Shell 8344 Female Panel Mount
324063LA	Mounting Shell Lever Action 8344 Female Panel Mount
324063LAMAG	Mounting Shell Lever Action Mag30 Female Panel Mount
324065	8348 Female Mounting Shell
324065LA	8348 Lever Action Female Mounting Shell
324088	8343 Female Panel Mount Mounting Shell
324088LA	8343 Lever Action Female Mounting Shell
324093	Mounting Shell 8345 Female Panel Mount
324093LA	8345 Lever Action Female Mounting Shell
324094	8347 Mounting Shell Female Panel Mount
324094LA	8347 Lever Action Female Mounting Shell
324095	8347 Male Panel Mount Mounting Shell
324095LA	8347 Male Panel Mount Lever Action Mounting Shell
A324119	Mounting Shell 8345 Male Panel Mount
A324119LA	Mounting Shell Lever Action 8345 Male Panel Mount
A324166	Mounting Shell 8347 MPM
A324166LA	8347 Mounting Shell Lever Action
A324232	Mounting Shell 8346 MPM
A324232LA	8346 Mounting Shell Lever Action
A324289	Mounting Shell 8343 MPM
A324289LA	8343 Mounting Shell Lever Action
A324357	Mounting Shell 8344 MPM
A324357LA	Mounting Shell Lever Action 8344 MPM
A324357LAMAG	Mounting Shell Lever Action MAG30 MPM

Certified



# **Mag Series Electrical Connectors**

With pride we introduce a new series of electrical connectors to the mining and industrial markets.

### **FEATURES**

Made of high-density rubber resulting in a more durable, longer lasting, and "user-friendly" connector. Amps designated by different colors.

## **Specifications**

- 1000 volts
- 30/60/100 amps (color coded)
- · Complete with two grommets
- 3 phase
- 1 ground
- 1 pilot



## Virtually Indestructible!

Part No.	Cable	Amps	Description	Color	Protective Caps
Mag30-1501 Mag30-1601	#8 3C/GGC #8 3C/GGC	30 30	Female Panel Mount Insert Male Panel Mount Insert	7	
Mag30-101	#8 3C/GGC	30	Female Panel Mount	Blue	MAG30F-CAP
Mag30-201	#8 3C/GGC	30	Male Panel Mount		MAG30M-CAP
Mag30-401	#8 3C/GGC	30	Female Cable Attachable	J	MAG30F-CAP
Mag30-501	#8 3C/GGC	30	Male Cable Attachable		MAG30M-CAP
Mag60-1501 Mag60-1601	#4 3C/GGC #4 3C/GGC	60 60	Female Panel Mount Insert Male Panel Mount Insert		
Mag60-101	#4 3C/GGC	60	Female Panel Mount	Red	MAG60F-CAP
Mag60-201	#4 3C/GGC	60	Male Panel Mount		MAG60M-CAP
Mag60-401	#4 3C/GGC	60	Female Cable Attachable	J	MAG60F-CAP
Mag60-501	#4 3C/GGC	60	Male Cable Attachable		MAG60M-CAP
Mag100-1501 Mag100-1601	#1 3C/GGC #1 3C/GGC	100 100	Female Panel Mount Insert Male Panel Mount Insert	7	
Mag100-101 Mag100-201	#1 3C/GGC #1 3C/GGC	100 100	Female Panel Mount Male Panel Mount	Black	MAG100F-CAP MAG100M-CAP Black
Mag100-401	#1 3C/GGC	100	Female Cable Attachable	J	MAG100F-CAP
Mag100-501	#1 3C/GGC	100	Male Cable Attachable		MAG100M-CAP

## **MAG Grommets For SHD-GC 2kV Cable**

Mag Connector	#4 SHD-GC Grommet	#6 SHD-GC Grommet
MAG60-401	MAG-60G-4S	-
MAG60-501	MAG-60G-4S	-
MAG100-401	MAG-60G-4S	-
MAG100-501	MAG-60G-4S	-
MAG30-401	MAG-60G-4S	MAG-60G
MAG30-501	MAG-60G-4S	MAG-60G
MAG60-401	-	MAG-60G
MAG60-501	-	MAG-60G
MAG100-401	-	MAG-60G
MAG100-501	-	MAG-60G



# **Lever Action Jumper Assembly**

Lever action jumper assembly provides both old style and new style connectors thus eliminating costly change-over from brass connector to new, all-rubber connector.

## **Standard Features**

- Unique molded assembly free of maintenance
- Connectors are water and dust-tight when engaged
- Engages mechanically eliminates couplers seizing together
- Manganese bronze connector provides immediate connect
- · Two O-ring seals in manganese bronze casting
- · All rubber connector will not go out of round
- · Six-fingered female contact pin for positive contact with male pin
- · The connectors and cable are CSA certified The complete assembly is NOT certified

(The above features are available only on SMS Connectors)



## **PART NUMBERS**

Maximum Cable AWG	Connector Rating (600V) AMP	Unilock/Quicklock Male Series (old style)	SMS Jumper Assembly (connects)	Lever Action Female Series (new style)
8	75	8343-5M or 16M	<b>◆</b> A43-FM <b>→</b>	8343-401F or 1201F
4	125	8344-5M or 2M	<b>←</b> A44-FM <b>→</b>	8344-401F or 101F
2	160	8345-5M or 15M	← A45-FM →	8345-601F or 1001F
2/0	225	8346-2M or 13M	<b>←</b> A46-FM <b>→</b>	8346-101F or 801F
4/0	325	8347-2M or 13M	<b>←</b> A47-FM <b>→</b>	8347-101F or 801F
400MCM	500	8348-3M or 10M	<b>←</b> A48-FM <b>→</b>	8348-201F or 701F
	Connector	Unilock/Quicklock	SMS	Lever Action
Maximum Cable AWG	Rating (600V) AMP	Feale Series (old style)	Jumper Assembly (connects)	Male Series (new style)
	Rating (600V)	Feale Series	Jumper Assembly	Male Series
AWG	Rating (600V) AMP	Feale Series (old style)	Jumper Assembly (connects)	Male Series (new style)
AWG 8	Rating (600V) AMP	Feale Series (old style) 8343-4F or 12F	Jumper Assembly (connects)	Male Series (new style) 8343-501M or 1601M
<b>AWG</b> 8 4	Rating (600V) AMP 75 125	<b>Feale Series</b> (old style)  8343-4F or 12F  8344-4F or 1F	Jumper Assembly (connects)  A43-MF  A44-MF	Male Series (new style) 8343-501M or 1601M 8344-501M or 201M
8 4 2	Rating (600V) AMP 75 125 160	Feale Series (old style) 8343-4F or 12F 8344-4F or 1F 8345-6F or 10F	Jumper Assembly (connects)  ← A43-MF ← A44-MF ← A45-MF ← A45-MF	Male Series (new style) 8343-501M or 1601M 8344-501M or 201M 8345-501F or 1501M



## **Products for the Mining, Tunneling, and Industrial Markets**

#### **Electrical Products**

Cable Hangers J-Hooks

Cable Cutters (H.K. Porter)
Cable Fault Locator and Tracers

High Voltage Gloves

Testing Plugs and Plug Repair

Cable Grips (Kellems) Trolley Hardware (Phoenix)

Ground Check and Fault Monitors:

(AMR/Pemco/MCI) String-A-Lights Tie Wire

Belt Monitoring (Ensign/AMR) Belt Switches (Conkie/Hawkeye)

Limit Switches (Cutter-Hammer) Lighting Systems (SMC)

Coax Connectors

Vacuum Load Break Switches (SMC)

Connectors:

Woodhead/Burndy/T&B/3M/Amp/

Panduit

Low Voltage Connectors:

MCI/SMS Uni-Lock/P.D.P./Ensign

Victor

### **Electrical Cable**

Bare Copper and Aluminum

Trolley Wire

Blasting Wire and Shot

S.O. Cords Bore Hole Cable Armoured Cable

Monitor and Sensor Cables

Computer Cables

Shuttle Car

Continuous Miner Cable

Shovel Cable
Pump Cable
Remote Drill Cord
Jumper Cable
Welding Cable
Loaders-Cutters-Drills

Locomotive Cable Longwall Cable Military Specifications Mine Power Feeder

Traffic Signal Communication Building Wire

Portable Control Cables

Power Cable

#### **Electrical Cable Manufacturers**

BICC Cablec Laribee Powerflex

Essex Royal Carol A.I.W. General Prestolite Service Wire

## **Cable Services**

High and Low Voltage Reconditioned Coupler Installation Molded Pot Heads Stress Cones Jacket Patches Reinsulation Railbonds Cable Splicing

## **Splice Kits**

Plymouth AMP 3M RMS MPI RAYCHEM

## **Cable Repair Supplies**

Plymouth - Tapes/Shielding Braid Okonite - Tape/Splicing Cement 3M - Tape/Braid/Lugs Rice Shielding Braid Cable Jigs Molds Vulcanizers

### **Other Fine Products And Services**

Exide Batteries
Douglas Batteries
Sounding Rods
Mine Sealant
Mine Ventilation Products
Mine Battery Repair
Battery Chargers
Pumps
Cable Guards



# **Uni-Lock Lever-Action Protective Caps, Panel Mounts & 45° Mounts**



Male 3 Power and 1 Gro	Female							
3 Power and 1 Gro		Male	Female	Male	Female	Male	Female	
	ound with singl	e pilot conta	ct					
3325656-201	3325656-101	8343-1601	8343-1201	A-324289LA	324088LA	8343-601	8343-101	4543
3325656-401	3325656-301	8344-201	8344-101	A-324063LA	324063LA	8344-1601	8344-1501	4544
3325656-601	3325656-501	8345-1501	8345-1001	A-324119LA	324093LA	8345-201	8345-101	4545
3325656-801	3325656-701	8346-1301	8346-801	A-324232LA	324059LA	8346-1601	8346-1501	4546
3325656-1001	3325656-901	8347-1301	8347-801	A-324166LA	324094LA	8347-1601	8347-1501	N/A
3325656-1201	3325656-1101	8348-1001	8348-701	324095LA	324065LA	8348-401	8348-501	N/A
3 Power and 1 Gro	ound with 2 pilo	ot contacts						
3325656-201	3325656-101	8343-1602	8343-1202	A-324289LA	324088LA	8343-602	8343-102	4543
3325656-401	3325656-301	8344-202	8344-102	A-324063LA	324063LA	8344-1602	8344-1502	4544
3325656-601	3325656-501	8345-1502	8345-1002	A-324119LA	324093LA	8345-202	8345-1502	4545
3325656-801	3325656-701	8346-1302	8346-802	A-324232LA	324059LA	8346-1602	8346-1502	4546
3325656-1001	3325656-901	8347-1306	8347-802	A-324166LA	324094LA	8347-1602	8347-1502	N/A
3325656-1201	3325656-1101	8348-1002	8348-702	324095LA	324065LA	8348-402	8348-502	N/A
3 Power and 1 Gro	ound with 3 pilo	ot contacts						
3325656-201	3325656-101	8343-1603	8343-1203	A-324289LA	324088LA	8343-603	8343-103	4543
3325656-401	3325656-301	8344-203	8344-103	A-324063LA	324063LA	8344-1603	8344-1503	4544
3325656-601	3325656-501	8345-1503	8345-1003	A-324119LA	324093LA	8345-203	8345-103	4545
3325656-801	3325656-701	8346-1303	8346-803	A-324232LA	324059LA	8346-1603	8346-1503	4546
3325656-1001	3325656-901	8347-1303	8347-803	A-324166LA	324094LA	8347-1603	8347-1503	N/A
3325656-1201	3325656-1101	8348-1003	8348-703	324095LA	324065LA	8348-403	8348-503	N/A
Cap-Mag-30-60-1	00					Protec	ctive Caps	
Mag30F-Cap-Blue						Caps for	r Female Mag30	connectors
Mag30M-Cap-Blue						Caps for	r Male Mag30 co	onnectors
Mag60F-Cap-Red						Caps for	r Female Mag60	connectors
Mag60M-Cap-Red						Caps for	r Male Mag60 co	onnectors
Mag100F-Cap-Black						Caps for	r Female Mag10	0 connectors



## **Uni-Lock Connectors 3/4 Turn Lock**



## **STANDARD FEATURES**

- Attachable to customer's cable
- · Available with/without pilot pins
- · Full line of plugs and receptacles
- · All parts thoroughly insulated and/or grounded
- · Lockable against accidental disconnect
- · Water-tight
- · Meet mine Health and Safety Standards

## **PARAMETERS**

- · Three or four pins with/without pilot contacts
- Number 8 through 500 MCM
- Up to 500 volts/500 amps





#### **MINING**

- Shuttle Cars
- Cutting Machines
- Drills
- · Distribution boxes

## **INDUSTRY**

- · Large motors-test stands for checking motors
- · Locable hookup for large portable equipment
- Steel Mills-provide power for locomotion equipment

## **MILITARY**

Provide ship-to-shore power

## **RAILROAD**

· Carry power from car-to-car







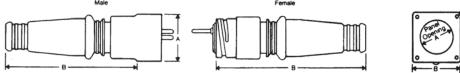
Male Cable Attachable



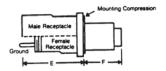
Female Cable Attachable



# **Uni-Lock Connectors**







Max.	Rating				nsions	s Panel Mount			Dimensions				
Cable AWG	(750V) AMP	Male	Female	A	В	Male	Female	Α	В	С	D	E	F
2 Power	2 Power and 1 Ground with pilot contacts												
8	75	8329-2	8329-1	3 5/8	11 11/16	8329-15	8329-10	2 3/8	3 3/8	2 3/4	9/32	5	4
4	125	8330-3	8330-4	3 5/8	11 13/16	8330-16	8330-12	2 3/8	3 3/8	2 3/4	9/32	5	4
2	160	8331-1	8331-4	3 5/8	13 1/16	8331-15	8331-11	2 5/8	3 5/8	2 7/8	9/32	5	4 1/2
2/0	225	8332-1	8332-8	4 1/16	14 1/16	8332-16	8332-13	2 15/16	4	3 5/16	9/32	5 1/8	4 15/16
4/0	325	8333-4	8333-3	4 5/8	13 15/16	8333-15	8333-1	3 3/8	4 1/2	3 9/16	11/32	5 5/16	5 1/16
3 Power	r and 1 Grou	ınd with n	o pilot co	ntacts									
8	75	8336-3	8336-2	3 5/8	11 13/16	8336-13	8336-8	2 3/8	3 3/8	2 3/4	9/32	5	4
4	125	8337-3	8337-4	3 5/8	11 13/16	8337-14	8337-11	2 3/8	3 3/8	2 3/4	9/32	5	4
2	160	8338-2	8338-3	3 7/8	13 1/16	8338-13	8338-8	2 5/8	3 5/8	2 7/8	9/32	5	4 1/2
2/0	225	8339-1	8339-2	4 1/16	14 1/16	8339-13	8339-3	2 15/16	4	3 5/16	9/32	5 1/8	4 15/16
4/0	325	8340-5	8340-4	4 5/8	13 13/16	8340-2	8340-10	3 3/8	4 1/2	3 9/16	11/32	5 5/15	5 1/16
300MCM	425	8341-2	8341-1	6	19 7/16	8341-13	8341-9	4 1/2	6	4 13/16	13/32	6 1/4	6
3 Power	r and 1 Grou	ınd with 2	pilot con	tacts									
8	75	8343-5	8343-4	3 5/8	11 13/16	8343-16	8343-12	2 3/8	3 3/8	2 3/4	9/32	5	4
4	125	8344-5	8344-4	3 7/8	13	8344-2	8344-1	2 3/8	3 5/8	2 7/8	9/32	5	4 1/2
2	160	8345-5	8345-6	4 3/16	14 1/16	8345-15	8345-10	2 15/16	4	3 5/16	9/32	5 1/8	4 15/16
2/0	225	8346-2	8346-1	4 5/8	13 13/16	8346-13	8346-8	3 3/8	4 1/2	3 9/16	11/32	5 5/16	5 1/16
4/0	325	8347-2	8347-1	6	19 9/16	8347-13	8347-8	4 1/2	6	4 13/16	13/32	6 1/4	6
400MCM	500	8348-3	8348-2	6 3/4	22 3/8	8348-10	8348-7	5	7 1/4	5 7/8	17/32	8 5/8	6 1/2



# **Uni-Lock Protective Caps & Panel Mounts**











Protect	ive Cap	Panel Mo	Iount Shells Panel Mount Inserts			Pilot Short Circuiting Cap For
Male	Female	Male	Female	Male Female		Female Receptacle
2 power ar						
3325656-2	3325656-1	A-324289	324088	8329-4	8329-5	8329-3
3325656-2	3325656-1	A-324289	324088	8330-5	8330-6	8330-7
3325656-4	3325656-3	A-324289	324063	8331-5	8331-3	8331-6
3325656-6	3325656-5	A-324119	324093	8332-7	8332-5	8332-9
3325656-8	3325656-7	A-324232	324088	8333-6	8333-5	8333-12
3325656-10	3325656-9	A-324166	324094	8334-3	8334-4	8334-5
3325656-12	3325656-11	A-324095	324065	8355-11	8355-10	8335-6
3 power ar	nd 1 ground	with no p	ilot conta	cts		
3325656-2	3325656-1	A-324289	324088	8336-4	8336-1	-
3325656-2	3325656-1	A-324289	324088	8337-6	8337-7	-
3325656-4	3325656-3	A-324289	324063	8338-4	8338-1	-
3325656-6	3325656-5	A-324119	324093	8339-6	8339-5	-
3325656-8	3325656-7	A-324232	324088	8340-3	8340-6	-
3325656-10	3325656-9	A-324166	324094	8341-3	8341-4	-
3 conducto	or and 1 gro	und with	2 pilot cor	ntacts		
3325656-2	3325656-1	A-324289	324088	8343-6	8343-1	8343-7
3325656-4	3325656-3	A-324357	324063	8344-16	8344-15	8344-6
3325656-6	3325656-5	A-324119	324093	8345-2	8345-1	8345-3
3325656-8	3325656-7	A-324232	324059	8346-16	8346-15	8346-3
3325656-10	3325656-9	A-324116	324094	8347-16	8347-15	8347-3
3325656-12	3325656-11	324095	324065	8348-4	8348-5	8348-8





## **Uni-Lock Connectors • Grommets / Sleeves**





## **SLEEVES & GROMMETS**

Listed below are the Sleeve and Grommet Part Numbers which are supplied with each Plug.

Plug	Sleeve	Grommet #1	Grommet #2	Grommet #3	Plug	Sleeve	Grommet #1	Grommet #2	Grommet #3
8323	325298	313305-1	313305-2	313305-5	8336	325298	313305-2	_	_
8324	325298	313305-1	313305-2	313305-5	8337	325298	313305-1	313305-2	-
8325	325292	313327-1	313327-2	313327-7	8338	325292	313327-1	313327-2	-
8326	325245	324153-1	324153-2	324153-6	8339	325286	324044-1	324044-2	-
8327	325271	324089-1	324089-2	-	8340	325245	324153-1	324153-2	-
8329	325298	313305-2	-	-	8341	325271	313089-1	313089-2	-
8330	325298	313305-1	313305-2	313305-5	8343	325298	313305-2	-	-
8331	325292	313327-2	313327-3	313327-6	8344	325292	313327-2	313327-3	-
8332	325286	324044-1	324044-2	324044-5	8345	325286	324044-3	324044-4	-
8333	325245	324153-1	324153-2	324153-6	8346	325245	324153-2	324153-3	-
8334	325271	324089-1	324089-2	-	8347	325271	324089-2	324089-3	-
8335	325305	324024-4	324024-5	-	8348	325305	324024-4	324024-5	-

## FOR ROUND CABLE

Select Gromme that adapts I.D. of sleeve (supplied on plug) to O.D. of cable being used.

Sleeve	Fits C	able		Exte	ension Ran	ge Of "Ad	laptor Gror	nmets" F	or Sleeves	Listed At	Left	
Part Number	(w/o Gro	mmet) To	Grommet Number	Range								
325298	1.500	1.250	313305-1	1.250 1.000	313305-2	1.000 .750	313305-3	.750 .562	-	-	-	- -
325292	1.813	1.562	313327-1	1.562 1.312	313327-2	1.312 1.062	313327-3	1.062 .812	313327-4	.812 .625	-	- -
325286	2.000	1.812	324044-1	1.812 1.625	324044-2	1.625 1.437	324044-3	1.437 1.250	324044-4	1.250 1.062	-	-
325245	2.375	2.125	324153-1	2.125 1.937	324153-2	1.937 1.750	324153-3	1.750 1.562	324153-4	1.562 1.375	-	-
325271	2.937	2.625	324089-1	2.625 2.312	324089-2	2.312 2.000	324089-3	2.000 1.812	-	-	-	-
325305	3.281	3.000	324024-4	3.000 2.812	324024-5	2.812 2.625	324024-6	2.625 2.531	324024-2	2.531 2.312	324024-3	2.312 2.125

## FOR TWIN & TWIN "G" CABLE

Select Grommet that adapts I.D. of sleeve (supplied on plug) to O.D. of cable being used.

(**) Wire Size	#	8	#	6	#	4	#	3	#	2	#	1	#1	/0	#2	/0	#3	/0	#4	I/O
Cable Dimensions	.51 x .84	.51 x .92	.56 x .93	.56 x 1.02	.61 x 1.05	.61 x 1.15	.68 x 1.14	.68 x 1.26	.73 x 1.24	.73 x 1.35	.81 x 1.40	.81 x 1.55	.93 x 1.51	.93 x 1.67	.99 x 1.63	.99 x 1.85	1.03 x 1.77	1.03 x 2.00	1.10 x 1.89	1.10 x 2.10
Sleeve											Part I	Nos. Or	n Grom	mets						
325298		3133	805-4				3133	05-5												
325292							3133	27-6			3	13327-	7							
325286														3	24044-	5				
325245																	324	153-5	32415	3-6



## **STANDARD FEATURES**

- · Wide Range of Styles
- · Various Type of Polarization
- · Can be Supplied with any Cable Length
- · Easy to Handle and Install
- · Will Not Distort or Shatter
- · Full Line of Plugs and Receptacles
- · Non-interchangeable outside of its own series
- · Easy Connectin and Disconnection
- Spring-loaded Covered Receptacles

## **PARAMETERS**

- Number 18 through 4/0 AWG
- Up to 5000 volts/235 amps

### **APPLICATIONS**

## **LIGHTING OPERATIONS**

- · Camera Equipment, Monitoring Equipment
- · Lighting on Cranes and Shovels, etc.
- · Lighting, Industrial Buildings
- Studio Lighting
- Railroad Car Connectors
- Military Vehicles



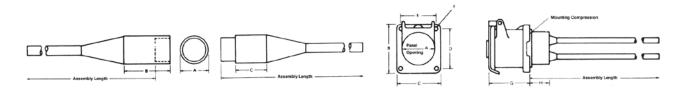
## **INDUSTRIAL**

- Mining Machinery Used for Control Circuitry on Power Centres and Distribution Boxes
- · Mining Control Circuits on Distribution Panels
- Barges Ballast Controls
- Post Office Sorting Machines
- · Run-Out Tables Steel Mills and Foundries
- · Small Boiler Equipment
- · Pumps & Paper Mills

Cable Size	Amp Rating	Lead Length	Male	Female	Male Chainlock	Female Chainlock
Single Conduct	or Connectors (60	00 VOLT)				
10	25	15	8000-1	8000-2	8000-7	8000-6
8	45	15	8001-1	8001-2	8001-11	8001-6
6	60	15	8002-1	8002-2	8002-3	8002-4
2	95	15	8003-1	8003-2	8003-14	8003-9
2	110	18	8004-3	8004-4	8004-1	8004-2
1	130	18	8005-2	8005-1	8005-11	8005-5
2/0	175	18	8006-1	8006-2	8006-17	8006-6
4/0	235	18	8007-2	8007-1	8007-14	8007-11

### 5KV and 8KV connectors available on request.





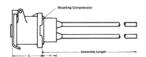
		D	AT	Α				PL	UG					REC	EPTA	CLE										
	E		TRICA	AL DA		Desc	ription	PART NU	JMBERS	£		MENSIO orox. Incl		Without		UMBERS	Covers	£					NSIONS			
	No. of Cont.	AWG.	TYPE	AMP	NOLTS	Polarized By	Type of Seal	Male	Female	Assembly Length	A	В	C	Male	Female	Male	Female	Assembly Length	Α	В	С	D	E	F	G	н
2 POLE	2	12	SO	20	600	Pin Size	Female Shround	8437-33 8437-50	8437-32 8437-51	28" 10"	1 1/4	2 5/8	3 1/4	-	-	-	-	-	-	-	-	-	-	-	-	-
3	3	14	so	15	600	Pin Size	Full Male Shround	8108-3 8108-107	8108-1 8108-109	28" 10"	1 1/4	2 3/16	1 5/8	-	-	-	-	-	-	-	-	-	-	-	-	-
POLE	3	12	so	20	600	Central Key	Full Male Shround	8118-1 8118-63	8118-4 8118-65	28" 10"	1 5/8	2 3/4	2	-	-	8118-11	8118-22	14"	1 3/4	2 1/2	2 1/4	2	1 3/4	7/32	2 3/16	1











	0	)A	TΑ					PLUC	à				F	RECEF	PTACL	E.										
	E		TRIC	AL DA		Desc	ription	PART NU	JMBERS	gth		IMENSION		Without	PART N	NUMBERS With	Covers	gth					NSIONS x. Inches			
	No. of Cont.	AWG	TYPE	AMP	VOLTS	Polarized By	Type of Seal	Male	Female	Assembly Length	Α	В	С	Male	Female	Male	Female	Assembly Length	Α	В	С	D	E	F	G	н
	4	12	so	16	600	Pin Size	Fem. Shroud	8510-1 8510-99	8510-2 8510-101	28" 10"	1 5/8	1 15/16	2 7/8	-	-	8510-15	8510-12	14"	1 3/4	2 1/2	2 1/4	2	1 3/4	7/32	2 3/16	1 3/16
4 POLE	4	12	so	16	600	Central Key	Full Male Shround	8121-25 8121-32 8121-74	8121-24 8121-31 8121-76	28" 6" 10"	1 5/8	2 3/4	1 3/4	-	-	8121-11	8121-7	14"	1 3/4	2 1/2	2 1/4	2	1 3/4	7/32	2 3/16	5/8
	4	2	w	75	600	Pin Size	Full Male Shroud	8728-4 8728-20	8728-3 8728-22	24" 10"	2 7/8	6 1/2	4	-	-	8728-24	8728-26	20"	2 15/16	4	4	3 1/8	3 1/8	3/8	4 1/4	1 7/16
	4	2	w	75	600	Pilots (Short)	Full Male Shround	8131-22* 8131-36	8131-21* 8131-39	30" 30"	2 7/8	6 1/2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
	4	4/0	so	100 180	600	Pilots	Full Male Shround	X1806-71	X1806-70	Field Attach	4 3/8	13	4 7/16	-	-	(1/0 1806-387	1806-91 (AWG) 1806-331 (AWG)	20" 24"	3 3/8 3 3/8	4 1/2 4 1/2	4 1/2 4 1/2	3 1/2 3 1/2	3 1/2 3 1/2	7/16 7/16	4 5/8 4 5/8	1 13/16 1 13/16

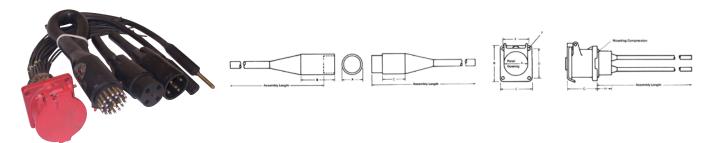
<sup>\*</sup> Type PCG Cable-Pilots carried through

These are connector ratings only. Operating ratings must be based on cable capacity

		ELEC	TRICAL	L DAT	A	Desc	cription	PART NU	JMBERS	_	D	IMENSIC	NS		PART N	JMBERS		_				IMENS	SIONS			
			#8	#	8					ng#	(App	roxiate Ir	nches)	Without	Covers	With 0	Covers	ngt			(A	pprox.	Inches)			
	No. of Cont.	AWG	TYPE	AMP	VOLTS	Polarized By	Type of Seal	Male	Female	Assembly Le	Α	В	С	Male	Female	Male	Female	Assembly Le	A	В	С	D	E	F	G	н
<b>5</b> POLE	5	12	so	16	600	Central Key	Full Male Shround	8125-3 8125-44	8125-6 8125-72	28" 10"	1 5/8	2 3/4	1 3/4	-	-	-	-	-	-	-	-	-	-	-	-	-
6 POLE	6	12	SO	16	600	Central Key	Full Male Shround	8127-12 8127-84	8127-9 8127-79	28" 10"	1 5/8	2 3/4	1 3/4	-	-	8127-6	8127-7	14"	1 3/4	2 1/2	2 1/4	2	1 3/4	7/32	2 3/16	5/8

<sup>\*</sup> Type PCG Cable-Pilots carried through





	D	ΙA	ELECTRICAL DATA Description				PLUG						RECE	PTAC	CLE											
		ELEC	#8		<b>'A</b> #8	Desci	ription	PART NU	JMBERS	ath		MENSION prox. Inch		Without	PART t Covers	NUMBERS With C	Covers	gth					NSION x. Inche			
	No. of Cont.	AWG	TYPE	AMP	VOLTS	Polarized By	Type of Seal	Male	Female	Assembly Length	A	В	С	Male	Female	Male	Female	Assembly Length	A	В	С	D	E	F	G	н
8 POLE	8	10	SO	18	600	Central Key	Fem. Shroud	8094-8 8094-63	8094-10 8094-65	28" 10'	2 3/8	3 1/16	4 7/16	-	-	8094-6	8094-4	14"	2 3/8	3 1/4	3 1/4	2 5/8	2 5/8	9/32	2 1/2	1
9 POLE	9	10	Control	18	600	Pin Size	Fem. Shroud	8091-15 8091-31	8091-14 8091-33	28" 10'	2 3/8	1 11/16	3 1/8	-	-	8091-19	8091-18	14"	2 3/8	3 1/4	3 1/4	2 5/8	2 5/8	9/32	2 1/2	1
10 POLE	10	10	Control	15	600	Central Key	Fem. Shroud	8097-13 8097-74	8097-12 8097-76	28" 10'	2 3/8	2 15/16	4 7/16	-	-	8097-17	8097-16	14"	2 3/8	3 1/4	3 1/4	2 5/8	2 5/8	9/32	2 1/2	1
12	12	12	Control	20	600	Central Key	Fem. Shroud	-	8402-31 8402-2 8402-32	28" 6' 10'	2 3/8	-	4	-	-	8402-14	8402-13	14"	2 3/8	3 1/4	3 1/4	2 5/8	2 5/8	9/32	2 1/2	1/2
POLE	12	10	Control	15	600	Central Key	Fem. Shroud	8101-12 8101-127	8101-27 8101-129	28" 10'	2 3/8	1 5/8	3 1/8	-	-	8101-28	8101-11	14"	2 3/8	3 1/4	3 1/4	2 5/8	2 5/8	9/32	2 1/2	3/4
16 POLE	16	12	Control	10	600	Central Key	Fem. Shroud	8431-29 8431-115	8431-8 8431-117	30" 6'	3	2 29/32	3	-	-	8431-12	8431-12	20"	2 3/8	3 1/4	3 1/4	2 5/8	2 5/8	9/32	2 1/2	1/2



# **Oval Connectors For Mining, Tunneling and Industry**

## **STANDARD FEATURES**

- Water-Tight
- Various Types of Polarization (pin size, reverse ground, pin configuration)
- Various Types of Seal (face seal)
- Wide Range of Size and Styles
- Full Line of Covered Receptacles

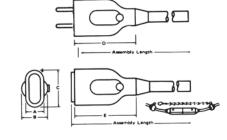
## **PARAMETERS**

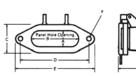
- Two through five contacts
- Number 14 AWG through 2/0 AWG
- Up to 600 volts/95 amps

## **APPLICATIONS**

- · Electromagnets
- Steel Mills
- · Electromagnet Manufacturers
- Low Voltage Lighting
- · Crane Manufacturers
- Shipbuilders
- Contractors
- Run Out Tables
- Motor Connections
- Railroads Communication Systems
- Mining Applications
- · Power Distribution Box Manufacturers









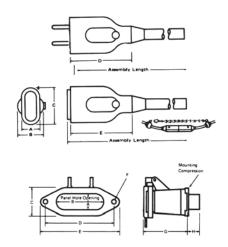






# **Oval Connectors TWO POLE**





## DATA PLUG RECEPTACLE

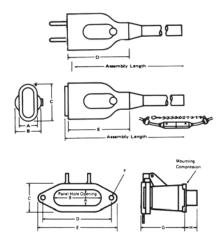
Е	LECT	RIC	AL D	ATA	Desc	ription		PART N	JMBERS								PART N	JMBERS									
뉟		ble	Ca	ax. able iting	By	la Sal	With Safety		W Safety		Length		(Appro	MENSIC oxiate I			With 0	Covers						ISIONS te Inche	es)		
No. of Cont.	AWG	TYPE	AMP	VOLTS	Polarized By	Type of Seal	Male	Female	Male	Female	Assembly Length	A	В	С	D	E	Male	Female		A	В	С	D	E	F	G	н
2	14	so	15	600	Pin Size	Short Male Shroud	8020-3	8020-4	8020-8 8020-134	8020-9 8020-136	16" 10"	7/8	1 1/4	1 3/4	3 1/8	3 1/16	8020-38	8020-34	Term. Back	7/8	1 3/4	1 5/8	3	3 5/8	9/32	2 1/2	3/4
2	14	so	15	600	Not Pol.	Short Male Shroud	8015-1 8015-135	8015-5	8015-20	8015-21	16" 6'	7/8	1 1/4	1 3/4	3 1/8	3 1/16	8015-32	8015-33	Term. Back	7/8	1 3/4	1 5/8	3	3 5/8	9/32	2 1/2	3/4
2	12	so	20	600	Pin Size	Short Male Shroud	8021-2	8021-3	8021-122	8021-124	16" 10'	1	1 1/2	2 1/8	4 1/8	4 3/8	8021-32	8021-31	Term. Back	1	2 1/8	1 3/4	3 3/8	4	9/32	3 3/8	5/8
2	10	so	25	600	Not Pol.	Short Male Shroud	8016-16	8016-17	8016-23 8016-126	8016-6 8016-128	16" 10'	1	1 1/2	2 1/8	4 1/8	4 3/8	8016-44	8016-43	Term. Back	1	2 1/8	1 3/4	3 3/8	4	9/32	3 3/8	5/8
2	6	w	50	600	Pin Size	Short Male Shroud	8024-6	8024-7	8024-5	8024-4	24"	1 1/4	1 3/4	2 5/8	5 1/4	5 7/8	-	-	-	-	-	-	-	-	-	-	-
2	6	w	50	600	Not Pol.	Short Male Shroud	8017-17 8017-143	8017-18 X8017-144	8017-8 8017-142	8017-3 8017-145	24" 10'	1 1/8	1 1/2	2 1/2	4 7/16	4 7/8	8017-27	8017-28	Term. Back	1 1/8	2 1/2	1 3/4	3 7/8	4 5/8	9/32	3 7/8	1 1/16
2	2	w	95	600	Pin Size	Short Male Shroud	8026-26 8026-93	8026-45 8026-95	8026-45 8026-97	8026-2 8026-99	24" 10'	1 3/8	1 7/8	2 7/8	5 1/4	6 1/4	-	-	-	-	-	-	-	-	-	-	-
2	2	W	95	600	Not Pol.	Short Male Shroud	8018-9	8018-10	8018-19 8018-117	8018-20 8018-119	24" 6'	1 1/4	1 3/4	2 5/8	5 1/8	5 7/8	-	-	-	-	-	-	-	-	-	-	-
2	2	w	95	600	Not Pol.	Short Male Shroud	8019-2	8019-13	8019-16 8019-96	8019-3 8019-98	24" 6'	1 3/8	1 7/8	2 7/8	5 1/4	6 1/4	8019-27	8019-28	Term. Back	1 5/8	3 1/8	2 3/8	5	6	3/8	5 7/16	1 3/8



# **Oval Connectors THREE POLE**







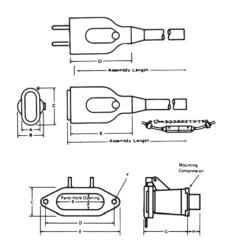
DATA	PLUG	RECEPTACLE

EL	ECT	rric/	AL DA	ATA	Desc	ription		PART N								PART N	JMBERS										
뉟	Ca	able	Ca	ax. ble ting	3y	<u> </u>	With Safety		W Safety	ith Chain	-ength			MENSIO oxiate Ir			With 0	Covers					<b>DIMEN</b> oproxia				
No. of Cont.	AWG	TYPE	AMP	VOLTS	Polarized By	Type of Seal	Male	Female	Male	Female	Assembly Length	A	В	С	D	E	Male	Female		A	В	С	D	E	F	G	н
3	14	so	15	600	Pin Size	Short Male Shroud	8041-2	8041-3	8041-11 8041-164	8041-12 8041-166	16" 6"	7/8	1 1/8	2 1/8	2 13/16	3 1/8	8041-56	8041-55	Term. Back	1	2 1/8	1 3/4	3 3/8	4	9/32	3 3/8	5/16
3	14	so	15	600	Not Pol.	Short Male Shroud	8036-5 8036-109	8026-13 8036-111			16" 6'	7/8	1 1/8	2 1/8	2 13/16	3 1/8	8036-38	8036-37	Term. Back	1	2 1/8	1 3/4	3 3/8	4	9/32	3 3/8	5/8
3	12	so	20	600	Pin Size	Short Male Shroud	8042-3 8042-82	8042-5 8042-83	8042-95	8042-96	16" 6'	1	1 3/8	2 3/4	4	4 3/8	8042-8	8042-25	Term. Back	1	2 3/4	1 5/8	4	4 5/8	9/32	3 3/16	13/16
3	12	so	20	600	Pin Size	Full Male Shroud	8053-20	8053-21	8053-14	8053-12	16"	1 3/8	1 3/8	2 7/8	4 5/16	2 3/8	-	-	-	-	-	-	-	-	-	-	-
3	10	so	25	600	Pin Size	Short Male Shroud	8043-2 8043-116	8043-1 8043-127	8043-12	8043-11	16" 6'	1	1 3/8	2 3/4	4	4 3/8	8043-50	8043-10	Term. Back	1	2 3/4	1 5/8	4	4 5/8	9/32	3 3/16	9/16
3	10	so	25	600	Not Pol.	Short Male Shroud	8037-12	8037-7	8037-94	8037-96	16" 10'	1	1 3/8	2 3/4	4	4 3/8	8037-25	8037-26	Term. Back	1	2 3/4	1 5/8	4	4 5/8	9/32	3 5/16	3/4
3	8	W	35	600	Pin Size	Short Male Shroud	8044-10	8044-16	8044-12	8044-13	16" 10'	1 1/8	1 1/2	3 1/8	4 5/8	5 1/8	-	-	-	-	-	-	-	-	-	-	-
3	6	w	50	600	Pin Size	Short Male Shroud	8045-2 8045-103	8045-3 8045-100	8045-8 8045-104	8045-9 8045-106	24" 10'	1 1/4	1 5/8	3 1/2	5 3/8	6 1/2	-		-				-			-	-



# **Oval Connectors FOUR POLE**





## DATA PLUG RECEPTACLE

E	LECT	RIC	AL D	ATA	Desc	cription		PART N	JMBERS								PART N	JMBERS									
¥	Ca	ble	Ca	ax. ible ting	3y	<u> </u>	With Safety		W Safety	ith Chain	-ength			MENSIC oxiate Ir			With 0	Covers				(A	<b>DIMEN</b> Approxia		s)		
No. of Cont.	AWG	TYPE	AMP	VOLTS	Polarized By	Type of Seal	Male	Female	Male	Female	Assembly Length	A	В	С	D	E	Male	Female		A	В	С	D	E	F	G	н
4	14	so	12	600	Pin Arr ange ment	Short Female Shroud	8059-11	8059-15	8059-56 8059-114	8059-51 8059-116	16" 10'	1	1 1/4	2 3/4	3 11/16	4 7/16	8059-25	8059-25	Term. Back	1	2 3/4	1 5/8	4	4 5/8	9/32	2 7/8	5/8
4	14	so	12	600	Pin Size	Full Male Shroud	8064-4	8064-1	8064-5	8064-2	30"	1 5/8	1 5/8	3 1/4	5 3/8	3 5/16	-	-	-							-	-
4	10	so	20	600	Pin Size	Short Male Shroud	8060-15	8060-2	8060-22 8060-197	8060-26 8060-199	24" 10'	1 1/8	1 5/8	3 3/4	5	5 1/2	8060-31	8060-33	Term. Back	1 1/8	3 3/4	2	5 1/4	6	9/32	3 5/16	13/16
4	10	so	20	600	Grnd Pin Rev.	Short Male Shroud	8401-6	8401-5	-	-	-	1 1/8	1 5/8	3 3/4	4 13/16	5 3/4	-	-	-			-	-				-
4	8	W	30	600	Pin Size	Full Male Shroud	8065-1	8065-2	-	-	30"	1 5/8	1 7/8	4 1/16	6 1/2	5 9/16	-	-	-	-	-	-	-		-		
4	8	W	30	600	Grnd Pin Rev.	Short Male Shroud	8364-6	8364-3	8364-8	8364-5	30"	1 1/8	1 5/8	3 3/4	5 3/8	5 1/8	-	-	26"	1 1/4	3 7/8	2	5 1/4	6	9/32	2 13/16	3/8
4	6	w	40	600	Pin Size	Short Male Shroud	8062-8 8062-116 8062-117	8062-24 8062-118 8062-119	8062-6 8062-113 8062-120	8062-18 8062-121 8062-122	30" 6' 10'	1 1/4	1 5/8	4 1/4	5 3/8	6 1/2	8062-33	8062-27	Term. Back	1 1/2	4 1/2	2 1/8	6 1/4	7 1/4	3/8	5 1/16	1 1/4
4	2	W	75	600	Pin Size	Short Male Shroud	8063-28	8063-27	8063-39 8063-140	8063-6 8063-142	30" 10'	1 1/2	2	4 7/8	6 7/8	7 1/8	-	-	-								-



# **Push-Lock Connectors**For Mining, Tunneling and Industry

## **STANDARD FEATURES**

- · Available attachable or molded to cable
- · Locking unit
- · Resilient neoprene construction
- · Easily installed
- · Receptacles available with covers

## **PARAMETERS**

- Single contact Number 2 through 4/0 cable
- Up to 125 volts/550 amps moulded to cable
- Up to 600 volts/235 amps
- Up to 5000 volts/175 amps moulded to cable

## **APPLICATIONS**

- Welding leads
- Portable distribution centers
- Utility Companies distribution centers
- Electromagnets
- Railroad
- Refineries



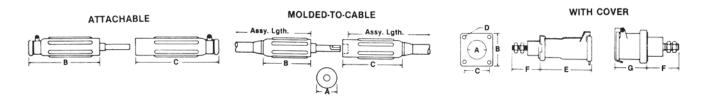








## **Push-Lock Connectors**



DATA	<b>\</b>	PLUG						RECEPTACLE									
Elect Da		Pa	art Numbe	ers		mensio orox. Inc		Part Numbers									
Max. AWG	Max AMP.	Assy. Length	Male	Female	Α	В	С	Male	Female		Α	В	С	D	E	F	G
ATTA	CHAB	SLE 600 \	/OLT														
2	110	Attach.	8168-3	8168-2	1 3/8	4 3/4	5 9/16	8168-14	8168-10	Covered	1 1/4	1 1/2	2	7/32	4 7/16	2 7/16	2 7/16
2/0	175	Attach.	8169-3	8169-4	1 5/8	5 7/16	6 3/8	8169-31	8169-17	Covered	1 1/2	2	2 5/8	9/32	5 1/2	2 1/2	2 1/2
4/0	235	Attach.	8170-1	8170-2	1 7/8	6 15/16	7 3/8	8170-36	8170-35	Covered	1 5/8	2	2 5/8	9/32M 7/32	5 1/2	2 1/2	2 7/8
4/0	235	Attach.	8567-10 le contact shrou	8567-18 ided	1 7/8	6 13/16	9 5/16	-	8567-23	Covered	3 7/16	3	4 1/16	9/32	-	8 5/8	1 15/16

For welding applications, the above will carry the same load as those listed below for corresponding wire sizes.

## **MOLDED TO CABLE UP TO 125 VOLT WELDING**

2/0	375	45"	8165-4	8165-5	1 1/8	4 3/16	5 3/16	8169-31	8169-17	Covered	1 1/2	2	2 5/8	9/32	5 1/2	2 1/2	2 1/2
4/0	550	45"	8166-6	8166-3	1 3/8	4 1/2	5 1/2	8170-36	8170-35	Covered	1 5/8	2	2 5/8	9/32M 7/32	5 1/2	2 1/2	2 7/8
2	110	24"	8173-1	8173-2	1 5/8	4	4 1/2	-	8173-13	Covered	1 1/2	2 5/8	2	9/32	2 17/32	2 1/2	-
2/0	175	18"	8174-4	8174-3	1 5/8	4 1/2	5 1/4	-	-	-	-	-	-	-	-	-	-

NOTE: Refer to price list for identification of stock items.







# **Change-Out Connectors**For Mining, Tunneling and Industry

### STANDARD FEATURES

- · Available in aluminum or nylon
- · Completely sealed against environment
- Standard lengths are 6', 12' and 18' on plugs
- · Available in any length required
- Positive locking
- · Small in size
- · Easily installed

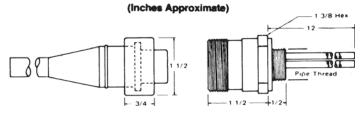
## **PARAMETERS**

- · Two through nine contacts
- · Number 18 AWG through Number 10 AWG
- Up to 600 volts/25 amps

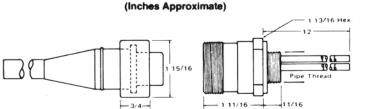
## **APPLICATIONS**

- Pre-wired Limit Switches For reducing spares for cutting downtime
- Motors Simplify replacement
- Solenoid Valves No rewiring with a changeout
- · Foot operated switches
- · Power transformers Cooling fan connectors
- Pre-wired Small h.p. pumps, photo-electric switches
- Transformer manufacturers Used on cooling unit fans
- Valve manufacturers Attached to valves for quick and easy hookup
- Skeet shooting equipment Remington Arms
- Automotive industry limit and proximity switches
- Calibrating equipment thermocouple hookups
- Small, portable tools

## DIMENSIONS - all below one body size (Series A)



## DIMENSIONS — all below one body size (Series B)









## **Change-Out Connectors**

## **ACCESSORIES (Series A)**



CAP & CHAIN 3316329-1

Plastic cover for Change-out receptacles. Supplied with short chain for attachment to receptacle shell.



SEAL A325254 (for X8651, X8652, X8653) 3325625-1 (for X8670, X8671, X8672)

Neoprene dummy plug with coupler used to all female Change-out receptacles.



ADAPTER 314492

Threaded aluminum adapter ring to couple portable Change-out connectors together.

## **UP TO 15 AMPS**

With NYLON couplers and receptacle shell

	ELEC	TRICAL I	DATA			PLUG		RECEPTACLES (12" 1/c Pigtail)			
No.	N	IAX. RATI	NG (Cable	<del>e</del> )		Adaptor red	•	Male	Female	Pipe	
Cont.	AWG	Туре	Amps	Volts	Length	Male	Female			Thread	
3	#14	SO	15	600	6' 12' 18'	8652-93 8652-95 8652-97	8652-92 8652-94 8652-96	8653-91	8653-90 8653-98	1/2" 3/4"	
4	#14	SO	12	600	6' 12' 18'	8653-93 8653-95 8653-97	8653-92 8653-94 8653-96	8653-91	8653-90 8653-98	1/2" 3/4"	
With <b>AL</b>	JMINUM (	couplers a	nd recepta	cle shell							
3	#14	SO	15	600	6' 12' 18'	8652-51 8652-52 8652-53	8652-48 8652-49 8652-50	8652-12 8652-13	8652-14 8652-15	1/2" 3/4"	
4	#14	SO	12	600	6' 12' 18'	8653-47 8653-48 8653-49	8653-44 8653-45 8653-46	8653-13 8653-14	8653-15 8653-16	1/2" 3/4"	

## **ACCESSORIES (Series B)**



## CAP & CHAIN 3316329-2

Plastic cover for Change-out receptacles. Supplied with short chain for attachment to receptacle shell.



SEAL 3325533
Neoprene dummy plug with coupler used to seal all female Change-out receptacles (except X8916).



Threaded aluminum adapter ring to couple portable Change-out connectors together

## **UP TO 25 AMPS**

With ALUMINUM couplers and receptacle shell

	ELECTRICAL DATA					PLUG		RECEPTACLES (12" 1/c Pigtail)			
No.	N	MAX. RATI	NG (Cable	e)	Note: Adaptor required to couple male and female plug.			Male	Female	Pipe	
Cont.	AWG	Туре	Amps	Volts	Length	Male	Female			Thread	
5	#10	so	20	600	6' 12'	8878-8 8878-10	-	-	8878-1	1"	
6	#10	SO	20	600	6' 12'	8877-8 8877-10	8877-7 8877-9	8877-3	8877-1	1"	
* 7	#10	SO	18	600	6' 12'	8876-10	8876-7	8876-3	8876-1	1"	

NOTE: Refer to price list for identification of stock items.

<sup>\*</sup> Not available at present time.



## **Ramp Power Connectors For Mining, Tunneling and Industry**

### STANDARD FEATURES

- Plugs are attachable
- Easily installed
- All metal parts are neoprene insulated
- Fits standard receptacles

### **PARAMETERS**

- Four power two control contacts
- Number 4 AWG through Number 4/0 AWG
- Up to 1,000 volts/225 amps

## **APPLICATIONS**

- Stand-by aircraft power
- Aircraft air conditioning systems
- Hydraulic test stands
- Motor generator sets
- Tunnel industry

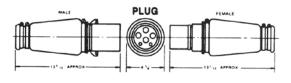


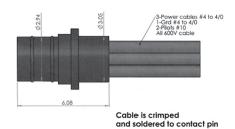




## **Ramp Power Connectors**







## **ORDERING REFERENCE**

Male Plug 1806-71

Female Plug 1806-70

Female Receptacle 1806-91

**Female Insert** 1806-62

The 1806-71 Male Ramp Power plug will mate with common Aircraft Service contactors and flush-mounted receptacles as manufactured by the Crouse-Hinds Company, Pyle Nationaland Killark Electric Mfg. Co. It is recommended that the completed cable, connector assembly be rated based on the capacity of the cable.

### **ASSEMBLY INSTRUCTIONS**

- 1 Slip grommet and outer protective sleeve over cable.
- 2. Remove cable jacket 7". Skin power and ground lead 3", insert into proper contacts and tighten set screws. (Two allen-head screws per contact).
- 3. Skin pilot leads 1/2" and crimp to terminal connector.
- 4. Slide protective sleeve and grommet forward and thread into place. Tighten hose clamps.

## **ELECTRICAL DETAILS**

- Conductor Sizes: #4 through #4/0 3/C PCG
- Number of Conductors: 4 power through 2 control
- Voltage Class: 1,000V
- Ampacity: up to 225A





# **Stringlites**

## **Special Connectors For Mining, Tunneling and Industry**

## **STANDARD FEATURES**

- Economical
- Portable
- Reusable
- · Fully Tested
- Weatherproof
- · Grounded Guards
- Brass Reinforced Suspension Mounting Hole
- Made to Customer's Specifications





## **Products for the Entertainment Markets**

### **Electrical Products**

Cable Hangers J-Hooks Cable Cutters (H.K. Porter)

Cable Fault Locator and Tracers

High Voltage Gloves

Testing Plugs and Plug Repair

Cable Grips (Kellems) Trolley Hardware (Phoenix)

Ground Check and Fault Monitors:

(AMR/Pemco/MCI) String-A-Lights

Tie Wire

Belt Monitoring (Ensign/AMR) Belt Switches (Conkie/Hawkeye)

Limit Switches (Cutter-Hammer)

Lighting Systems (SMC)

Coax Connectors

Vacuum Load Break Switches (SMC)

Connectors:

Woodhead/Burndy/T&B/3M/Amp/

**Panduit** 

Low Voltage Connectors: MCI/SMS Uni-Lock/P.D.P./Ensign

Victor

### **Electrical Cable**

Bare Copper and Aluminum Trolley Wire Blasting Wire and Shot

S.O. Cords

Bore Hole Cable

**Armoured Cable** 

Monitor and Sensor Cables

Computer Cables

Shuttle Car

Continuous Miner Cable

**Shovel Cable** 

Pump Cable

Remote Drill Cord

Jumper Cable

Welding Cable

Loaders-Cutters-Drills

Locomotive Cable

Longwall Cable

Military Specifications

Mine Power Feeder

Traffic Signal

Communication

**Building Wire** 

Portable Control Cables

Power Cable

### **Electrical Cable Manufacturers**

BICC Cablec

Laribee Powerflex

Essex

Royal

Carol

A.I.W. General

Prestolite

Service Wire

## **Cable Services**

High and Low Voltage Reconditioned

Coupler Installation

Molded Pot Heads

Stress Cones

Jacket Patches

Reinsulation

Railbonds

Cable Splicing

## **Splice Kits**

**Plymouth** 

**AMP** 

ЗМ **RMS** 

MPI

**RAYCHEM** 

## **Cable Repair Supplies**

Plymouth - Tapes/Shielding Braid Okonite - Tape/Splicing Cement

3M - Tape/Braid/Lugs

Rice Shielding Braid

Cable Jigs

Molds

Vulcanizers

## **Other Fine Products And Services**

**Exide Batteries Douglas Batteries** 

Sounding Rods

Mine Sealant

Mine Ventilation Products

Mine Battery Repair

**Battery Chargers** 

Pumps

Cable Guards



www.smsconnectors.com



**NEW!** YELLOW (YEL), ORANGE (ORG), BROWN (BRN) colors now available for ALL B-Connector Series shown. **CSA Approved & UL Listed** 

## **PLUGS**





### **PLUG HARDWARE**

SHIMS CS1502 WIRE CW 1406 SET SCREW #2 - 4/0 RETAINING PIN PP1875

# Entertainment Series

www.smsconnectors.com

## **B-Connector Series**

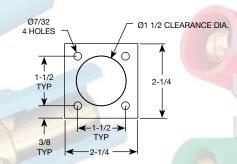
**NEW!** YELLOW (YEL), ORANGE (ORG), BROWN (BRN) colors now available for ALL B-Connector Series shown.

## **CSA Approved & UL Listed**

## **PANEL MOUNTS**



	Male	
BLACK	B41M-BLK	B41MSS-BLK
RED	B41M-RED	B41MSS-RED
GREEN	B41M-GRN	B41MSS-GRN
WHITE	B41M-WHT	B41MSS-WHT
BLUE	B41M-BLUE	B41MSS-BLUE



	Female	
BLACK	B41F-BLK	B41FSS-BLK
RED	B41F-RED	B41FSS-RED
GREEN	B41F-GRN	B41FSS-GRN
WHITE	B41F-WHT	B41FSS-WHT
BLUE	B41F-BLUE	B41FSS-BLUE

## **ACCESSORIES**









Color	Tapping "T"	Parallelling "T"	3-Fer	3 Fer/cable
BLACK	B40TT-BLK	B40PT-GRN	B3F-BLK	B3F24-BLK
RED	B40TT-RED	B40PT-GRN	B3F-RED	B3F24-RED
GREEN	B40TT-GRN	B40PT-GRN	B3F-GRN	B3F24-GRN
WHITE	B40TT-WHT	B40PT-GRN	B3F-WHT	B3F24-WHT
BLUE	B40TT-BLUE	B40PT-GRN	B3F-BLUE	B3F24-BLUE

## **ADAPTORS**











Color	Male/Male	Female / Female	Color	Part No.	Color	Male	Female
BLACK	B40MM-GRN	B40FF-BLK	BLACK	CAP-WSC-BLK	BLACK	BPCM-BLK	BPCF-BLK
RED	B40MM-GRN	B40FF-RED	RED	CAP-WSC-RED	RED	BPCM-RED	BPCF-RED
GREEN	B40MM-GRN	B40FF-GRN	GREEN	CAP-WSC-GRN	GREEN	BPCM-GRN	BPCF-GRN
WHITE	B40MM-GRN	B40FF-WHT	WHITE	CAP-WSC-WHT	WHITE	BPCM-WHT	BPCF-WHT
BLUE	B40MM-GRN	B40FF-BLUE	BLUE	CAP-WSC-BLU	BLUE	BPCM-BLUE	BPCF-BLUE



## **T-Connector Series**

MALE CONNECTORS

**NEW!** YELLOW (YEL), ORANGE (ORG), BROWN (BRN) colors now available for **ALL** T-Connector Series shown.

**CSA Approved & UL Listed** 



	Ма	le Size #2-2/0	0 · Up to 2	90 Amps,	600 Volts	Female Size #2-2/0 · Up to 290 Amps, 600 Volts							
	Complet	e Connector	Contact Only	Insulati	ng Sleeve Only	Complet	te Connector	Contact Only	Insulating	Sleeve Only			
	Color	Part No.	Part No.	Color	Part No.	Color	Part No.	Part No.	Color	Part No.			
E	BLACK	T20M-BLK	BT20M	BLACK	T20MRB-BLK	BLACK	T20F-BLK	T20F	BLACK	TFRB-BLK			
	RED	T20M-RED	BT20M	RED	T20MRB-RED	RED	T20F-RED	T20F	RED	TFRB-RED			
(	GREEN	T20M-GRN	BT20M	GREEN	T20MRB-GRN	GREEN	T20F-GRN	T20F	GREEN	TFRB-GRN			
١	WHITE	T20M-WHT	BT20M	WHITE	T20MRB-WHT	WHITE	T20F-WHT	T20F	WHITE	TFRB-WHT			
	BLUE	T20M-BLU	BT20M	BLUE	T20MRB-BLU	BLUE	T20F-BLU	T20F	BLUE	TFRB-BLU			
	Si	ize #2/0 - 4/0	• Up to 40	0 Amps, 6	600 Volts	S	ize #2/0 - 4/0	• Up to 40	0 Amps, 60	0 Volts			
E	BLACK	T40M-BLK	BT40M	BLACK	T40MRB-BLK	BLACK	T40F-BLK	T40F	BLACK	TFRB-BLK			
	RED	T40M-RED	BT40M	RED	T40MRB-RED	RED	T40F-RED	T40F	RED	TFRB-RED			
(	GREEN	T40M-GRN	BT40M	GREEN	T40MRB-GRN	GREEN	T40F-GRN	T40F	GREEN	TFRB-GRN			
١	WHITE	T40M-WHT	BT40M	WHITE	T40MRB-WHT	WHITE	T40F-WHT	T40F	WHITE	TFRB-WHT			
	BLUE	T40M-BLUE	BT40M	BLUE	T40MRB-BLUE	BLUE	T40F-BLUE	T40F	BLUE	TFRB-BLUE			

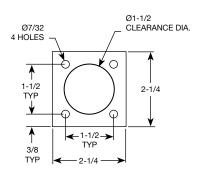
## **MALE PANEL MOUNTS**

	IAIVEE	FAITLE IVIO	OITIO				
1	Thre	eaded Stud		Thread	led Stud 45°		
	Color	Part No.	-	Color	Part No.		
	BLACK	T41M-BLK		BLACK	T45M-BLK		
	RED	T41M-RED		RED	T45M-RED		
	GREEN	T41M-GRN		GREEN	T45M-GRN		
	WHITE	T41M-WHT		WHITE	T45M-WHT		
	BLUE	T41M-BLU		BLUE	T45M-BLU		
	Doub	le Set Screw		Double Set Screw 45°			
	Color	Part No.	-	Color	Part No.		
	BLACK	T41Mss-BLK		BLACK	T45Mss-BLK		
	RED	T41Mss-RED		RED	T45Mss-RED		
	GREEN	T41Mss-GRN		GREEN	T45Mss-GRN		
	WHITE	WHITE T41Mss-WHT		WHITE	T45Mss-WHT		
	BLUE	T41Mss-BLU		BLUE	T45Mss-BLU		



## **FEMALE PANEL MOUNTS**

_					
1	Thre	aded Stud	1	Thread	ded Stud 45°
	Color	Part No.		Color	Part No.
	BLACK	T41F-BLK		BLACK	T45F-BLK
	RED	T41F-RED		RED	T45F-RED
	GREEN	T41F-GRN		GREEN	T45F-GRN
	WHITE	T41F-WHT		WHITE	T45F-WHT
	BLUE	T41F-BLU		BLUE	T45F-BLU
	Doubl	e Set Screw		Double	Set Screw 45°
	Color	Part No.		Color	Part No.
	BLACK	T41Fss-BLK		BLACK	T45Fss-BLK
	RED	T41Fss-RED		RED	T45Fss-RED
				GREEN	TAFE ODN
	GREEN	T41Fss-GRN		GREEN	T45Fss-GRN
	GREEN WHITE	T41Fss-GRN T41Fss-WHT		WHITE	T45Fss-GRN T45Fss-WHT





www.smsconnectors.com

## **T-Connector Series**

**NEW!** YELLOW (YEL), ORANGE (ORG), BROWN (BRN) colors now available for ALL T-Connector Series shown.

**CSA Approved & UL Listed** 

## **CONNECTOR HARDWARE**



Copper Shim

Part No. CS 1502



Part No. CW 1406



Set Screw #2 to 4/0

Part No. SS 2/0 4/0

Phenolic Pin For Cable Inline

Part No. P 1875

## **MALE COUPLINGS, T'S, 3-FERS**













**FEMALE COUPLINGS, T'S** 



Parallel "T" Male/Male/Female		Inline Coupling Male to Male		<b>3-Fer Moulded</b> Male to F/F/F		<b>3-Fer</b> <b>Moulded</b> Male to F/F/F	<b>3-Fer Moulded</b> Male to F/F/F on 24" Cable		<b>Tapping "T"</b> Male/Female/Female		Inline Coupling Female to Female		
Co	lor	Part No.	Color	Part No.	Color	Part No.	Part No.	Color	Part No.	Color	Part No.	Color	Part No.
BLA	ACK	T40PT-BLK	BLACK	T40MM-BLK	BLACK	T3F-BLK	T3FS	BLACK	T3F24-BLK	BLACK	T40TT-BLK	BLACK	T40FF-BLK
RI	ΕD	T40PT-RED	RED	T40MM-RED	RED	T3F-RED	T3FS	RED	T3F24-RED	RED	T40TT-RED	RED	T40FF-RED
GRI	EEN	T40PT-GRN	GREEN	T40MM-GRN	GREEN	T3F-GRN	T3FS	GREEN	T3F24-GRN	GREEN	T40TT-GRN	GREEN	T40FF-GRN
WH	IITE	T40PT-WHT	WHITE	T40MM-WHT	WHITE	T3F-WHT	T3FS	WHITE	T3F24-WHT	WHITE	T40TT-WHT	WHITE	T40FF-WHT
BL	.UE	T40PT-BLU	BLUE	T40MM-BLU	BLUE	T3F-BLU	T3FS	BLUE	T3F24-BLU	BLUE	T40TT-BLU	BLUE	T40FF-BLU

## **PROTECTIVE CAPS**







Male Co	nnectors	Molded Panel Mo	unt Snap Back Cover	Female Connectors		
Color	Part No.	Color	Part No.	Color	Part No.	
BLACK	TPCM-BLK	BLACK	CAP-WSC-BLK	BLACK	TPCF-BLK	
RED	TPCM-RED	RED	CAP-WSC-RED	RED	TPCF-RED	
GREEN	TPCM-GRN	GREEN	CAP-WSC-GRN	GREEN	TPCF-GRN	
WHITE	TPCM-WHT	WHITE	CAP-WSC-WHT	WHITE	TPCF-WHT	
BLUE	TPCM-BLU	BLUE	CAP-WSC-BLU	BLUE	TPCF-BLU	





## **Termination Guide**



569372 - 88F Female Panel Mount - 77M (Male P/M with 3 stainless screws standard)



569372-88F "F" = 3 set screws on side (standard)



**569372-88FG**"G" = Grd Pin Drilled; 1/4-20\* in Rear;
\*3/8 Hex Head



569372-88FGN
"G" = Grd Pin Drilled; 1/4-20\* in Rear
"N" = Neutral Pin Drilled; 1/4-20\* in Rear
\*3/8 Hex Head



569372-88FGNC

"G" = Grd Pin Drilled; 1/4-20\* in Rear

"N" = Neutral Pin Drilled; 1/4-20\* in Rear

"C" = Line Set Screw on Crown

\*3/8 Hex Head



Brass "Strait Slot" Screw
"B" = Replaces Stainless
Steel Screws

For more information about our equipment or services, contact Marshall Girtman, Inside Sales, Special Mine Services, Inc. at (618) 932-2151.



## **Termination Guide**



ROU	ND ST			HTING S	(in	0 0			
					Terminal B	ack Insert	Pug Sleeve	Mounting Shell	
No. of Contacts	For AWG	Amps	Volts	Insert and Sleeve Color	Male	Female	Female		
4	2	140	600	BLACK	569221-7M	569221-8F	1357722-1	504819-1 for Flush Mounting	
4	6	100	600	ORANGE	569373-7M	569373-8F	1357724-1	of 569373 Inserts	

For more information about our equipment or services, contact Marshall Girtman, Inside Sales, Special Mine Services, Inc. at (618) 932-2151.



### High Voltage Couplers • Up to 35 Kva



From our original 8-pitch housing to the industries best no thread connectors; we have a high voltage (HV) connector that will fit your needs. All TJB HV couplers feature a durable aluminum housing with a solid polyester insulator plate and your choice of EP rubber or 100% virgin molded PTFE insulating tubes. Our unique cable entrance allows TJB couplers to meet IP 67 standards for dust and water exclusion even when the cable is out of round or under sized. With contacts tested to 800A DC and able to accommodate conductor sizes as small as #10 and as large as 500MCM with a cable diameter of 3.75" means no matter what your use case is, our HV couplers will fit your needs.



#### WHY PAY MORE FOR PTFE?

PTFE has many properties that make the lifetime ownership costs lower than rubber in most situations:

- NONSTICK means coupler cleaning requires little more than a damp cloth.
- INERT there are very few chemicals that can react with or damage PTFE, so acidic mine environments do not decrease coupler life.
- HYDROPHOBIC PTFE does not absorb water like rubber so dielectric strength is not compromised in damp environments.
- RIGIDITY the stiffness of PTFE requires less cable training to maintain contact alignment during installation.
- NO TRACKING tracking is caused by the slow breakdown of an insulator due to high voltage exposure; while you may see a black path form on PTFE insulators, from arcing on dirt, the black path is NON-conductive and simple cleaning will bring the insulator back to 100% usability.



# High Voltage Couplers • Up to 35 Kva







#### **CHOOSING A THREAD PITCH**

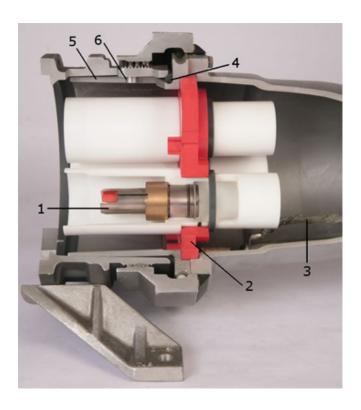
NO-THREAD. Since TJB introduced the first nothread couplers they have grown in popularity and are the most frequently ordered closure type. The nothread connectors have become so popular because they solve almost all the issues associated with other closure types. No-thread couplers use a pin and slot design that goes from open to closed in as little as 90 degrees. Detents at the end of the slot provide a positive indication of coupler closure and also prevent decoupling due to vibration. Unlike conventional threads the TJB no-thread design is self-cleaning, avoiding the prolonged downtime and damaged parts resulting from jammed threads. Kits to convert TJB and NON-TJB couplers to no-thread are available and take only a few minutes to install.

**4-PITCH**. 4-Pitch is the best option when a threaded coupler is required, with a blunt start and a double thread design, TJB 4-pitch couplers virtually eliminate the possibility of cross threading and thread roll over while also decreasing the number of turns required to mate the couplers. All TJB HV couplers come with a ball bearing mounted floating nut. The ball bearings reduce the intrinsic drag and provide a longer wear life in frequently coupled connectors. The floating nut also allows for the plug to be inserted into the socket before the threads are engaged enabling faster connections and decreasing the likelihood of insulator damage.

**8-PITCH**. 8-Pitch is only recommended to legacy operations where conversion to 4-pitch or no-thread is not an option. While not an ideal connection type TJB has taken several steps to reduce the problems that can occur with 8-pitch couplers. The plug nuts on 8-pitch couplers are fitted with a stainless steel thread to prevent galling, and as with the 4-pitch a blunt start thread provides cross threading protection and creates a more durable first thread.









#### STANDARD FEATURES

#### THAT SET US APART FROM THE COMPETITION

- TJB phase and ground contacts are made of solid copper and silver plated to resist corrosion. Male contacts have split noses and contain a silicone button that expands when heated, ensuring high contact pressure under heavy loads without increasing the force required to connect and disconnect the couplers.
- Solid polyester insulating plate allows for a double O-ring seal to eliminate water seepage and increase the stability of the ground and ground check contacts.
- Aluminum housing is grounded internally with a tinned copper braid to guarantee high conductivity and provide greater flexibility reducing installation effort.
- A beveled edge on the plug cover and socket body mate to create a dust and water tight seal independent of the threads, precluding leakage as the threads age and wear.
- Overlapping metal housings allow for coupler engagement by hand with no special tools and no risk of damage. It also allows couplers to be more compact and provides shielding to the user during coupling and uncoupling.
- A pin on the female housing aligns with a slot on the male housing preventing out of phase connections and providing rotational alignment.

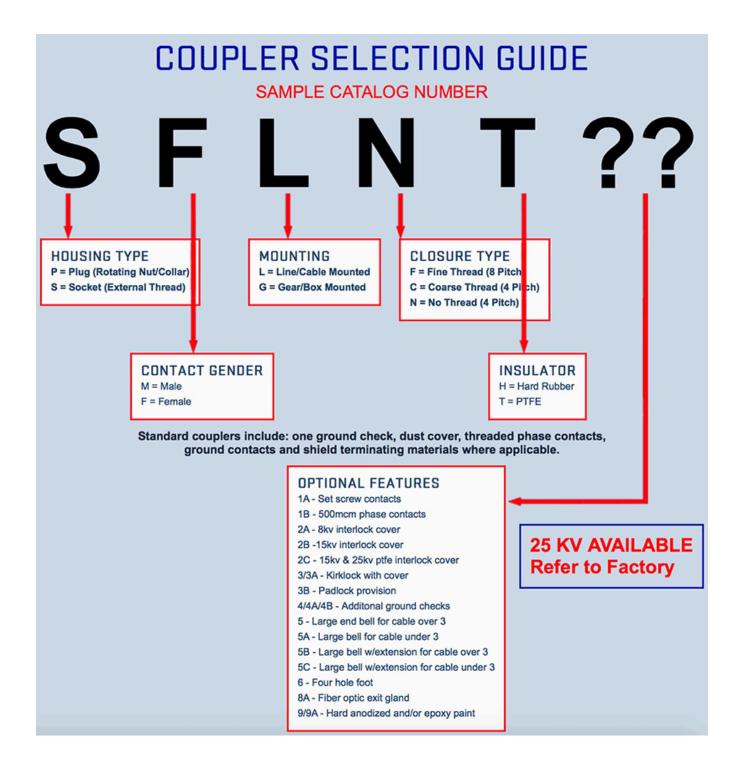
#### **TJB CABLE ENTRANCE**

A cone shaped rubber molding is placed over the opening of the end-bell with an end casting acting as a bead lock to maintain the seal. The point of the cone is molded or trimmed to fit the specified cable size. The elasticity of the material is enough to prevent water and dust intrusion but an additional hose clamp is provided to to increase the seal pressure. The advantage of this method is that it allows for a tight seal on out of spec, out of round, and even flat cable. Stress relief is provided by two solid aluminum clamps sized for your cable and bolted to the end casting. The clamps deliver evenly distributed pressure on the circumference of the cable and flared ends on the cable side of the clamp remove the possibility of





# High Voltage Couplers Coupler Selection Guide







# **High Voltage Drawings**

PDF drawing files shown below are "hyperlinked" to download from the SMS Connectors website at www.smsconnectors.com.

PLEASE NOTE: BEST RESULTS ARE OBTAINED BY DOWNLOADING THIS CATALOG PDF FILE. Should you experience the following hyperlinks ineffective from within a web browser, right click with your mouse (Control + mouse click on Mac) to prompt the dialog prompt to save this file to you computer.

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PML-FH.pdf	PML-FT.pdf	PML-NH1A.pdf
PML-NH5.pdf	PML-NH.pdf	PML-NT5.pdf
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SFG-FH2B.pdf	SFG-FH4.pdf	SFG-FH.pdf
SFG-FT2B.pdf	SFG-FT.pdf	SFG-NH2A.pdf
SFG-NH2B.pdf	SFG-NH4.pdf	SFG-NH.pdf
SFG-NT2B.pdf	SFG-NT2C.pdf	SFG-NT4.pdf
SFG-NT.pdf	SFL-CH4.pdf	SFL-CH.pdf
SFL-CT5.pdf	SFL-CT.pdf	SFL-FH5.pdf
SFL-FH.pdf	SFL-FT.pdf	SFL-NH1A.pdf
SFL-NH4.pdf	SFL-NH.pdf	SFL-NT4.pdf
SFL-NT5.pdf	SFL-NT.pdf	





# **High Voltage Parts**

#### **CONTACTS**

B100Y-COMP Male Phase and Ground, includes two #173 and one #228
B100Y-6-COMP Threaded Male Phase Contact. Includes one #173 and one #228

B100Y-6-8-COMP Threaded Male Phase Contact Assembly for 500 MCM

B100Y-6-9-COMP Male Phase with Set Screws

B100Y-9-COMP Male Ground Contact with Set Screws

101-COMP Contact - Female Phase - Copper includes two #173 and one #228

101-8-COMP Female Phase Contact Assembly for 500 MCM

101-6-COMP Contact-Female Phase-Threaded Copper includes one #173 and one #228

101-6-9-COMP Female Phase with Set Screws

102 Spacer-Male Non-Threaded Phase Contact

129 Contact - Male Interlock Ground130 Contact - Female Interlock Ground

135 Ground Check Solder Pot

137 Contact - Female Interlock Ground Check
 140 Contact - Male Interlock Ground Check

143-COMP Contact - Male Ground - Copper includes two #173 retaining rings and one #228 O-ring

143-9-COMP Female Ground Contact Set Screws

144 Spacer - Female Non Threaded Phase Contact

173 1-1/4" Retaining Ring

173S Stainless Steel 1-1/4" Retaining Ring

228 Contact Compound Seal
240-COMP Male Contact Nut Phase
241-COMP Female Contact Nut Phase

### **CLAMPS**

120A - (Specify Size)
Cable Clamp (to 3" Cable Diameter); Specify size
121A - (Specify Size)
Cable Clamp (3.01" to 4.25" cable diameter) specify size

#### **COVERS**

113A-COMPSocket Dust Cover - 8P includes #169 O-ring113D-COMPSocket Dust Cover - 4P includes #169 O-ring113DI-COMPSocket Cover - 4P-Interlock includes #169 O-ring113I-COMPSocket Cover - 8P Interlock includes #169 O-ring215-COMPNo-Thread Socket Dust Cover includes #169 O-ring

116A-COMP Plug Dust Cover 8P

116C-COMP Plug Dust Cover - includes three #185-R pins

116D-COMP Plug Dust Cover - 4P-Q

#### MISC.

123 Cable Seal (to 3" cable diameter)

126P Neoprene Gasket - Plug Switchgear Flange
 126S Neoprene Gasket - Socket Switchgear Flange

131 Waterseal Gasket

138A Cable Seal, C2 type (to 4.25" jacket diameter)

151 Extruded Dust Seal 184-SET Nylon Balls Set

Neoprene Gasket for BCEInsulator Compound Seal

244-3 Contact Wrench - FOR THREADED CONTACTS

200B Degreasing Solvent - includes 2 oz. Solvent wiping cloth and Abrasive Paper

200C Silicone Lube

216-B15 Stress Relief Tape - 3/4 x 15' roll

219-B2 Kit: Materials for 3/c "Stress Relief" tape type termination, cable size through 4/0 8KV includes

stress control, HV insulating and PVC tape







#### **ASSEMBLIES**

109B/COMP Socket Body - 8P includes one #131 waterseal gasket

109C/COMP Socket Body - No-Thread-includes 3 #185-R pins and 1 #131 water-seal gasket

109D/COMP Socket Body - 4P includes one #131 waterseal gasket

110 Socket Foot, 1 piece type110AR Socket Foot, Right110AL Socket Foot, Left

111C1-COMP End Bell (to 3" Cable Diameter)
111C2-COMP End Bell (to 4.25" Cable Diameter)

112A End Casting-C1 Type (to 3" Cable Diameter)
112AS/COMP End Casting - Split C1 Type (to 3" Cable Diameter)

114A-COMP Plug Body includes #169 O-ring

118-COMP Plug Switchgear Flange includes one #131 waterseal gasket

122-COMP Socket Switchgear Flange

128P-COMP Interlock Plate - 8KV plug includes 1 #130 and 1 #137 (For couplers with MALE phase contacts)
128S-COMP Interlock Plate - 8KV socket incl. 1 #129 and 1 #140 (For couplers with FEMALE phase contacts)

128-9-COMP Interlock Plate - Polyester includes plate only (order contacts separately)
132-AL/COMP Threaded Ring - ALUMINUM THREADS, includes dust seal #151
132-SS/COMP Threaded Ring - 8P with stainless insert includes dust seal #151

132-OSS/COMPThreaded Ring with stainless insert non-TJB132D/COMPThreaded Ring - 4P includes dust seal #151139AEnd Casting, C2 type (to 4.25" jacket diameter)139AS/COMPEnd Casting, Split C2 type (to 4.25"" jacket diameter)139BEnd Casting, C2 type (to 3.00" jacket diameter)139BS/COMPEnd Casting, C2 type (to 3.00" jacket diameter)

152 BCE Flange (to 3" cable diamter)
153 BCE Flange (to 4.25" cable diameter)

193P-COMP Interlock Plate - 15KV plug includes 1 #130 and 1 #137 (For couplers with MALE phase contacts)
193S-COMP Interlock Plate - 15KV socket incl. 1 #129 & 1 #140 (For couplers with FEMALE phase contacts)

211F Housing Adaptor with Foot Lugs

217THD/COMP No-Thread Ring includes #151 dust seal

#### **REVERSERS**

CCCR-FS1T Female coupler reverser 8P TFE
CCCR-FS2T Female coupler reverser NT TFE
CCCR-FS3T Female coupler reverser 4P TFE
CCCR-MP1T Male coupler reverser 8P TFE
CCCR-MP2T Male coupler reverser NT TFE
CCCR-MP3T Male coupler reverser 4P TFE

#### **CONVERSION KITS**

CTP 4-P Plug conversion kit CTS 4-P Socket conversion kit

CTS110LR 4-P Socket conversion kit with feet

FTPA 8-P Plug conversion kit with aluminum ring

FTPSTAF 8-P Plug and Socket conversion kit with feet and aluminum ring

FTS110LR 8-P Socket conversion kit with feet

NTPSTF NT Plug and Socket conversion kit with feet

NTP No-Thread Conversion Kit for Plug NTS No-Thread Conversion Kit for Socket

NTPST No-Thread Conversion Kit for Plug and Socket TJB

#### **INSULATORS**

200-104BHS Female Hard Tube Insulator Assembly 200-105BHS Male Hard Tube Insulator Assembly





# **High Voltage Parts**

300-104S Female Teflon Insulator Assembly 300-105S Male Teflon Insulator Assembly

522/COMP Male Ground Check Assembly for Solid Insulator 523/COMP Female Ground Check Assembly for Solid Insulator

520 Insulator O-ring

#### **HARDWARE**

167 3/8-16 x 3" Hex Head Machine Screw

168 3/8-16 Hex Lock Nut

169 O-ring

170 1/8" x 1/2" Roll Pin

171D 2-1/2' attaching cable for Cover 172 5/16-18 x 7/8" Hex Head Capscrew

173 1-1/4" Retaining Ring

173S Stainless Steel 1-1/4" Retaining Ring 174A 1/4-20 x 1-3/4" Hex Head Capscrew

177 1/4-20 Hex Brass Jam Nut
178 7/16" Retaining Ring
179A Solderless Terminal #10-12
179B Solderless Terminal #8

3" Ground Check Insulating Tube
 14"-20 x 5/8" Hex Head Capscrew
 1/4"-20 x 1" Hex Head Capscrew
 1/4"-20 x 1-1/4" Hex Head Capscrew

185J Autolign Pin

185-R No-Thread Pin - Rolling Type (each)

186A Plug 132, 132D or 217THD
187 SS Seal Clamp (to 3.00" jacket)
187A SS Seal Clamp (3" to 4.25" jacket)

190A 5/16" Lockwasher

190-COMP 5/16-18 x 5/8" Ground Screw and Lockwasher 191 Ground Strap with Terminal (Includes 190 & 190A)

199 #2 x 3/16 Drive Screw 202 1/4" Lockwasher

204 1/4"-20 x 1 Flat Head Machine Screw 207P 1/4"-20 x 1/2 Button Head Socket Capscrew

517 7/16 Ground Check Retaining Ring

519 Ground Check O-Ring

520 Insulator O-Ring-Solid Insulator 560 1/4"-20 Slim Hex Steel Lock Nut

561 1/4"-20 x 1-1/4 Button Head Socket Capscrew 562 1/4"-20 x 2 Fillister Head Socket Capscrew

574 Retaining Ring-PTFE Tube

#### **COMPOUND KIT**

74-8 Epoxy compound for filling phase tubes only Re-enterable compound for filling phase tubes only

77-0 For filling entire end bell cavity

### REPLACEMENT THREADED NUT, PLUG BODY AND O-RING ASSEMBLY

91 8 pitch stainless steel thread 091A 8 pitch aluminum thread

091-2 No-Thread 091-3 4 pitch thread







#### INTERLOCK COVERS: ASSEMBLY COMPLETE WITH CONTACTS

For Model: Catalog Number

#### **8 PITCH THREAD 8KV**

 SFL, SFG
 #092

 SML, SMG
 #093

 PFL, PFG
 #094

 PML, PMG
 #095

#### **NO THREAD 8KV**

SFL, SFG #092-2 SML, SMG #093-2 PFL, PFG #094-2 PML, PMG #095-2

#### **4 PITCH THREAD 8KV**

SFL, SFG #092-3 SML, SMG #093-3 PFL, PFG #094-3 PML, PMG #095-3

#### **8 PITCH THREAD 15KV**

SFL, SFG #096 SML, SMG #097 PFL, PFG #098 PML, PMG #099

#### **NO THREAD 15KV**

SFL, SFG #096-2 SML, SMG #097-2 PFL, PFG #098-2 PML, PMG #099-2

#### **4 PITCH THREAD 15KV**

SFL, SFG #096-3 SML, SMG #097-3 PFL, PFG #098-3 PML, PMG #099-3

#### **15KV WITH PTFE CUPS**

265

 SFL, SFG - 8 PITCH
 #396

 SFL, SFG - NO THREAD
 #396-2

 SFL, SFG - 4 PITCH
 #396-3

#### **BCE FLANGE MOUNT CLAMPS**

BCE-150	FOR CABLE UP TO 1.5" IN DIAMETER
BCE-175	FOR CABLE 1.51-1.75" IN DIAMETER
BCE-200	FOR CABLE 1.76-2.00" IN DIAMETER
BCE-225	FOR CABLE 2.01-2.25" IN DIAMETER
BCE-250	FOR CABLE 2.26-2.50" IN DIAMETER
BCE-275	FOR CABLE 2.51-2.75" IN DIAMETER
BCE-300	FOR CABLE 2.76-3.00" IN DIAMETER
BCE-325	FOR CABLE 3.01-3.25" IN DIAMETER
BCE-350	FOR CABLE 3.26-3.50" IN DIAMETER
BCF-375	FOR CABLE 3.51-3.75" IN DIAMETER

BCE FLANGE ADAPTER PLATE WITH 8-5/8" BOLT CIRCLE



# **Coupler Options**



#### **1A · SET SCREW CONTACTS**

Set screw contacts remove the need to solder the cable into the contacts. The cable is secured using two preinstalled bronze Allen head set screws. These contacts are often used for on-site cable installations and they maintain all the standard features and carry the same amp rating as the solder contacts.



#### 1B · 500MCM PHASE CONTACTS

To maintain a proper wall thickness 530MCM contacts require a larger cable end contact than our standard contact. TJB 530MCM contacts fit the standard insulators and have no limitations regarding compatibility. The larger contacts are made with the same silver plated solid copper construction and are fixed in the insulators in the same manner as the standard contacts.



#### 2A · 8KV INTERLOCK COVER

Also called a shorting cover an interlock cover connects the ground and ground check when the cover is in place and allows other outputs on the circuit to be energized without tripping the ground check monitor. Use suffix 2B for 15KV covers.



#### 2B · 15KV INTERLOCK COVER

Also called a shorting cover an interlock cover connects the ground and ground check when the cover is in place and allows other outputs on the circuit to be energized without tripping the ground check monitor. The 15KV cover has a built in rubber insulator to fully enclose the phases in insulating material.



#### 2C · 15KV & 25KV PTFE INTERLOCK COVER

Also called a shorting cover an interlock cover connects the ground and ground check when the cover is in place and allows other outputs on the circuit to be energized without tripping the ground check monitor. The PTFE interlock covers are similar to our rubber 15KV covers but with all the advantages of PTFE, including being an easy to clean hydrophobic material, is not reactive in acidic environments, and does not track when exposed to high electrical stress. Specify 15 or 25KV when ordering cover separately.



#### 3/3A · KIRKLOCK WITH COVER

A Kirklock is a brand of lock that is used as a mechanical interlock to prevent couplers from being opened or covers from being removed when the power is on. All Kirklock equipped couplers come with a dust cover (suffix 3) or an optional weatherproof cover (suffix 3A). Locks can be keyed alike or differently and serial numbers are tracked so future orders can me matched or differentiated.



#### 3B · PADLOCK PROVISION

The padlock provision enables the user to use a standard padlock (not included) to either lock the cover in place or to lock two couplers together. Padlock devices can be used as a self-managed interlock system or for security.



# **Coupler Options**



#### 4/4A/4B · ADDITIONAL GROUND CHECKS

Additional ground checks provide for redundancy in the ground check system. TJB high voltage couplers come standard with one ground but can accommodate two (suffix 4), three (suffix 4A), or four (suffix 4B) total ground checks. In all configurations every ground check makes contact after the phase and ground contacts and breaks contact before the phase and ground contacts, ensuring that there is never an improper signal path.



#### 5 · LARGE END BELL FOR CABLE OVER 3"

Cable over 3" diameter requires the use of our large end bell and cable entrance. Our large end bell is approximately 2" taller than our standard bell and has a larger cable opening resulting in a larger interior volume.



Our standard will fit cable up to 3" in diameter, but if you need more room we also offer our large end bell with clamps to fit cable sizes smaller than 3".





When you have large cable and you want a lot of interior bell space we can provide an additional 4.75" extension with our large end bell. The extension is made of solid aluminum to match the sturdiness of the rest of the coupler housing and attaches with six 1/4-20 bolts to ensure a sturdy water tight fit.

#### 5C · LARGE BELL W/EXTENSION FOR CABLE UNDER 3"

Occasionally when adding multiple extra features to the coupler there is a desire for as much space as possible even with a smaller cable size. For those cases we offer our large bell with a 4.75" extension and clamps that can be sized for even the smallest cables. The extension is made of solid aluminum to match the sturdiness of the rest of the coupler housing and attaches with 6 1/4-20 bolts to ensure a sturdy water tight fit.



#### 6 · FOUR HOLE FOOT

Our standard feet mount the coupler with 2 bolts and are designed to reduce weight and facilitate easier coupler movement, when extra mounting security is preferred we also offer a single piece four hole foot and as the name implies mounts the coupler using 4 bolts. The larger foot attached to the coupler using the same bolts as the standard feet and can be added after the initial sale with no modifications.



#### **8A · FIBER OPTIC EXIT GLAND**

For cable with an included fiber optic line that needs to connect to a panel mounted connector or another connector outside of the coupler we can supply an exit gland in the end bell. The exit gland is a compression fitting with a rubber gasket sized to your specific fiber optic cable. We also include a plug sized for the exit gland to maintain a water tight seal even if the fiber optic cable is not in use.



#### 9/9A · HARD ANODIZED AND/OR EPOXY PAINT

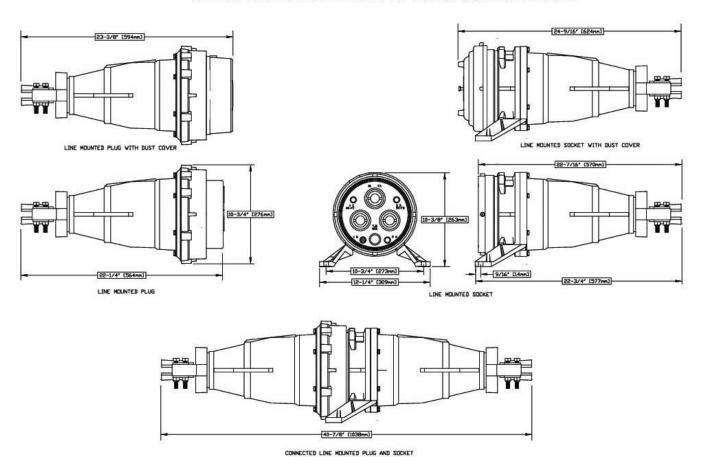
Our heavy duty aluminum housings are built to withstand almost all exposure conditions, but there are instances where even more protection is called for. In port operations where couplers are often submerged in or exposed to heavy amounts of salt water it is worthwhile to protect the coupler housing with either a hard anodized (suffix 9), or epoxy paint (suffix 9A) coating to extend the service life of the external parts.





# **Coupler Dimensions**

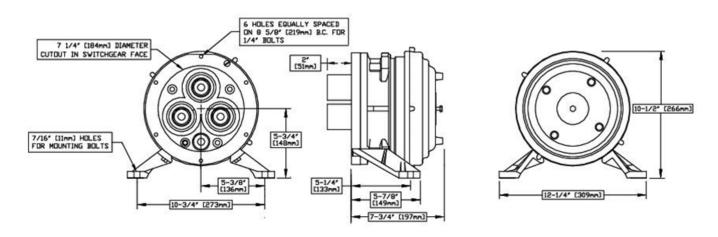
#### TJB HIGH VOLTAGE LINE MOUNTED NO-THREAD COUPLER DIMENSIONS



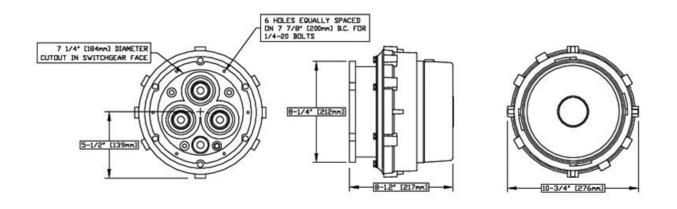


# **Coupler Dimensions**

#### TJB SOCKET SWITCHGEAR MOUNTED COUPLER DIMENSIONS



### TJB PLUG SWITCHGEAR MOUNTED COUPLER DIMENSIONS



TJB Products



## PLM • Cable Coupler Selection Guide

#### PORTABLE CABLE SYSTEMS COUPLERS/PLUGS-RECEPTACLES CABLE COUPLERS IDENTIFICATION & APPLICATION

Basic nomenclature identifies the metallic shell (Plug or Socket) first, the type of contact (Male or Female) second. For switchgear or other non-cable mounted units, the letter G suffix designation is added. Example of the PLM Catalog number system is as listed:

PMG 415A Plug, male contacts, switchgear mount, with ground check contact.

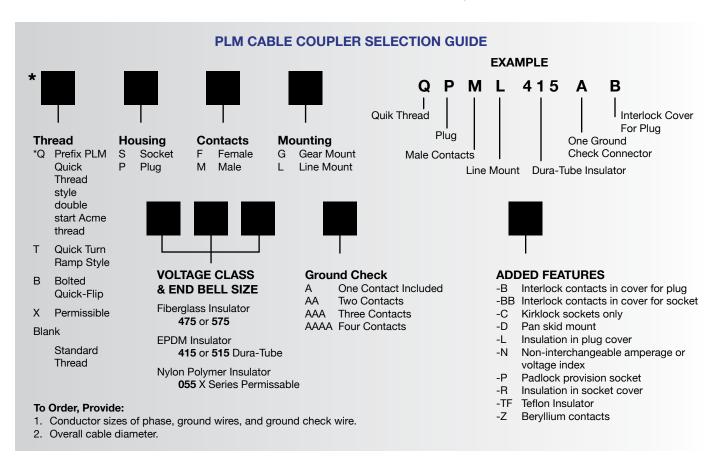
PML 415A Plug, male contacts, line mount, with ground check contact.

**SFL 415A** Socket, female contacts, line mount,

with ground check contact.

**SFG 415A** Socket, female contacts, switchgear mounted,

with ground check contact.



#### **Applications**

- Extending Portable Cables
- Mine Power Centers
- · Electric Shovels, Drills, Draglines
- · Tunneling Machines
- Transformer Connections
- Barge, Ship-Dock Applications
- Turbine Generators
- Motor Disconnect 600V-15kV to 500 Amp
- Filling Compounds

#### Features

- · Corrosion-Resistant Aluminum
- · Electrically Tested Insulator
- Silver-Plated Copper Contacts
- · Ground Check System
- Portable Cable ConnectionsSwitchgear or Equipment Mounting
- Standard Cover Included
- · FSD Terminations Included
- · Interlock Covers Available

#### **Benefits**

- Physical, Electrical Protection
- · Quick, Connect-Disconnect
- · Provides Proper Phase Alignment
- Longer Coupler Life
- · Entirely Watertight
- · Easy Installation

#### Compliance

Pennsylvania Bureau of Deep Mine Safety



### PLM • 415/515 Series Cable Couplers (Standard EPDM Insulators)



### **OPTIONS AVAILABLE AT ADDITIONAL COST**

Catalog	•
Number	•
Suffix	
-A	Ground check circuit contact (1) included
-AA	Two ground check circuit contacts
-B	Cover interlock for plug
-BB	Cover interlock for socket
-C	Kirk interlock (key type)-sockets only
-E	Electrolytic copper contacts-female
-L	Cover/insulator assembly for plug
-N	Non-interchangeable amperage or voltage index
-P	Padlock provision-socket
-R	Cover/insulator assembly for socket
-Z	Beryllium contacts-male
-TF	Teflon Insulator

#### **Features**

- Corrosion-resistant aluminum
- Rigid, non-breakable EPDM insulators
- 500 Amp contacts
- Portable cable mounting
- Switchgear or equipment mounting
- · Standard cover, stress control kit instructions included

#### **Benefits**

- Superior electrical and physical protection
- Fewer mating problems
- · Quicker installation
- · Quick connect-disconnect
- · Versatile application

Compound is not included and is not required up to 7,500 volts. Above 7,500 Volts and when compound is required, use COLDPOUR@ Compound. Do not use asphalt compound with EPDM style couplers. Compound mandatory for 15kv.

Catalog Number Standard Threads	Catalog Number ACME Quick-Thread	Catalog Number Quick-Turn	Catalog Number Quick-Flip	Description	Ship Wt. (lbs.)
SFG 415A PMG 415A	QSFG 415A QPMG 415A	TSFG 415A TPMG 415A	BSFG 415A BPMG 415A	Equipment mounted couplers Socket, Female Contacts Plug, Male Contacts	34 34
SFL 415A PML 415A	QSFL 415A QPML 415A	TSGL 415A TPML 415A	BSFL 415A BPML 415A	Line-mounted couplers 1.50 - 3.50 O.D. Cables Socket, Female Contacts Plug, Male Contacts	51 51
SFL 515A PML 515A	QSFL 515A QPML 515A	TSFL 515A TPML 515A	BSFL 515A BPML 515A	3.50 - 4.50 O.D. Cables Socket, Female Contacts Plug, Male Contacts	53 53



### **PLM • Electrical Characteristics**

## 415/515 Series Cable Couplers (Standard EPDM Insulators)

15KV, 500 AMP



Electrical Characteristics	No Compound	With Compound
Maximum Voltage Phase-to-Ground	5.5 KV rms	8.7 KV rms
<ul> <li>1 Minute Dry Withstand AC</li> </ul>	35,0 KV rms	45.0 KV rms
<ul> <li>6 Hour Dry Withstand DC</li> </ul>	25.0 KV rms	35.0 KV rms
<ul> <li>15 Minute Dry Withstand DC</li> </ul>	65.0 KV rms	75.0 KV rms
<ul> <li>Corona Extinction level</li> </ul>	7.5KV rms	11.0 KV rms
Basic Impulse level	75.OKV crest	95.0 KV crest

All tests per IEEE Stondord 48-1990

## 415/515 Series Cable Couplers (Teflon Insulators)

15KV, 500 AMP



Е	lectrical Characteristics	No Compound	With Compound
•	Maximum Voltage Phase-to-Ground	5.5 KV rms	8.7 I(V rms
•	1 Minute Dry Withstand AC	35,0 KV rms	45.0 KV rms
•	6 Hour Dry Withstand AC	25.0 KV rms	35.0 KV rms
•	15 Minute DryWithstand D(	65.0 KV rms	75.0 KV rms
•	Corona Extinction Level	7.5KV rms	11.0 KV rms
•	Basic Impulse Level	75.OKV crest	95.0 KV crest

All tests per IEEE Stondord 48-1990



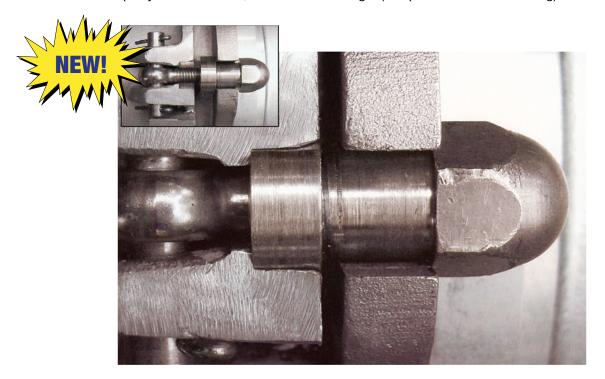
### **PLM • Connection Options**

### **Quik-Flip Bolted Coupler Connection**

PLM's new Quik-Flip connection option is ideal for harsh environments where excessive dirt and other contaminant's can seize threads and cause coupler damage. The innovative flip-bolt design utilizes stainless steel bolts that provide a one-second time delay between ground check and phase contact disengagement.

### OTHER OPTIONS (AVAILABLE ON 415/515 AND 475/575 SERIES COUPLERS)

- B-Pitch Thread (standard)
- Quik-Thread Double-Start ACME Thread, (olor-Coded Green. (use prefix "Q" when ordering)
- Quik-Turn Ramp Style Quarter-Turn, Color-coded Orange. (use prefix "T" when ordering)





Catalog Number	Catalog Number
Quik-Flip	Quik-Flip
EPDM Insulators	Teflon Insulators
BSFG 415A	BSFG 415ATF
BPMG 415A	BPMG 415ATF
BSFL 415A	BSFL 415ATF
BPML 415A	BPML 415ATF
BSFL 515A	BSFL 515ATF
BPML 515A	BPML 515ATF



### **PLM • Conversion Kits QT**

Any cable coupler, line mount or gear mount, may be converted to Quik-Thread, Quik-Turn, or Quik-Flip style. These style couplers will not mate with standard 8 pitch thread couplers; therefore, it is necessary to change the socket body, lock ring, and covers. Select the correct conversion plug or socket kit from the table below. Kits include only the thread parts which must be changed, plus new screws and gaskets.



Catalog Number Standard Threads	Acme Thread Parts Furnished	Description
QKP-8 TKP-8 BKP-8	Plug cover and lock ring	Replacement for plug-style couplers. Includes plain cover (without drilling for pilot or ground contacts).
QKP-M/F-8 TKP-M/F-8	Plug cover (drilled for pilot and ground contacts) and left ring	Replacement for plug-style couplers. Includes cover drilled for ground and pilot contacts (male or female), Customer to use existing contacts.
QKP-M/F-15 TKP-M/F-15	Plug cover (drilled for pilot and ground contacts and for cover insulator assembly) and lock ring	Replacement for plug-style couplers. Indudes over drilled for ground and pilot contacts (male or female) and for cover insulator assembly. Customer to use existing contacts and cover insulator assembly.
QKS-8 TKS-8 BKS-8	Socket cover and socket body	Replacement for socket-style couples. Includes over ring to be used with existing cover. Customer to use existing contacts.
QKS-M/F-8 TKS-M/F-8	Socket cover ring and socket body	Replacement for socket-style couplers Includes cover ring to be used with exisfing cover and cover insulator assembly. Customer to use existing contacts.
QKS-M/F-15 TKS-M/F-15	Socket cover ring and socket body	Replacement for socket-style couplers Includes cover ring to be used with exisfing cover and cover insulator assembly. Customer to use existing contacts.



### **PLM • Accessories**

### Coupler Contact Insulation (Cleaning Kit)

Compound filling can prevent condensation and provide added protection in wet locations. Asphaltic compounds cannot be used with EPDM insulation's. For those customers who may wish to use compound,

ADALET offers a COLDPOUR® compound which does not require heating for installation or removal. Suitable for all couplers. No shrinage or waste. Approximately 2-hour gel time.

Catalog Number	Description	Ship Wt. (lbs.)
CP-24	1-5/8 gal. 2-part mix for one LINE mount or two GEAR mount couplers, Series 415 or 475 coupler.	13
CP-50	1-7/8 gal. 2-part mix for one LINE mount Series, 515 or 575 coupler.	14
CP-55	2-1/4 gal. 2-part mix for one Suffix-X LINE mount coupler with extended end bell.	24





### **Coupler Contact Insulation** (Cleaning Kit)

Dirt contamination can cause electrical failures. The mating contact insulators can be efficiently cleaned with the PCK100 Cleaning Kit.

Kit consists of 16-oz. aerosol can of non-flammable electrical parts cleaner, bristle brush, two white wiping cloths and polyethylene glove. Ozone-safe spray can contains no fluorocarbons.

Catalog Number	Description	Ship Wt. (lbs.)
PCK-100	Cleaning Kit	1-1/2





### **PLM • Accessories**

### **Replacement Coupler Insulators**

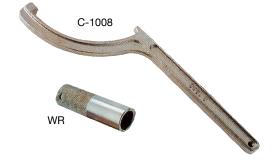
Insulator kits to replace polyester fiberglass and cone seal style insulators. Complete package includes rigid, unbreakable insulator tubes with flame-retardant flange and all necessary conductor and insulation shield terminating material except contacts. May be used with existing PLM Couplers. Add COLDPOUR® for 15kV applications.

Catalog Number	Description	Ship Wt. (lbs.)
K 415 F	For female line plugs or sockets.	10
K 415 M	For male line plugs or sockets.	10
K 415 FG	For female gear-mount plugs or sockets.	8
K 415 MG	For male gear-mount plugs or sockets.	8



## **Coupling and Contact Wrenches**

Catalog Number	Description	Ship Wt. (lbs.)
WR	Contact wrench for 415, 515, 475, S75 series.	1
C-1008	Coupling wrench (Aluminum) for 415, 515, 475, 575 series.	1
C-1008-S	Coupling wrench (Steel) for 415, 515, 475, 575 series.	3





### **PLM • Spare Parts**

PLM phase and ground contacts can be modified to meet your specific cable requirements. Simply specify the phase and ground conductor diameter and PLM will machine the parts to your specifications.



PLM couplers and accessories are utilized in some of the world's most extreme environments. PLM offers a full line of spare parts for use in maintaining, rebuilding, or repairing used couplers. All individual coupler parts are available for purchase. Most are in stocl( and available for immediate shipment. Contact PLM or your local PLM distributor for price and availability information.





### **PLM • Fittings For Metal Clad Cable**

#### **FEATURES/BENEFITS**

· Slip-on design with no disassembly for easy installation.

· Neoprene bushing for raintight seal.

 Locknuts, bushings and flange gasket included - no additional materials to purchase.

Flange gasket prevents moisture penetration through threads.

Made from copper-free aluminum alloy for corrosion resistance.

• Fits broad range - .351-4.62 cable O.D.

#### **APPLICATION**

· For terminating metal clad cable

#### **CERTIFICATION**





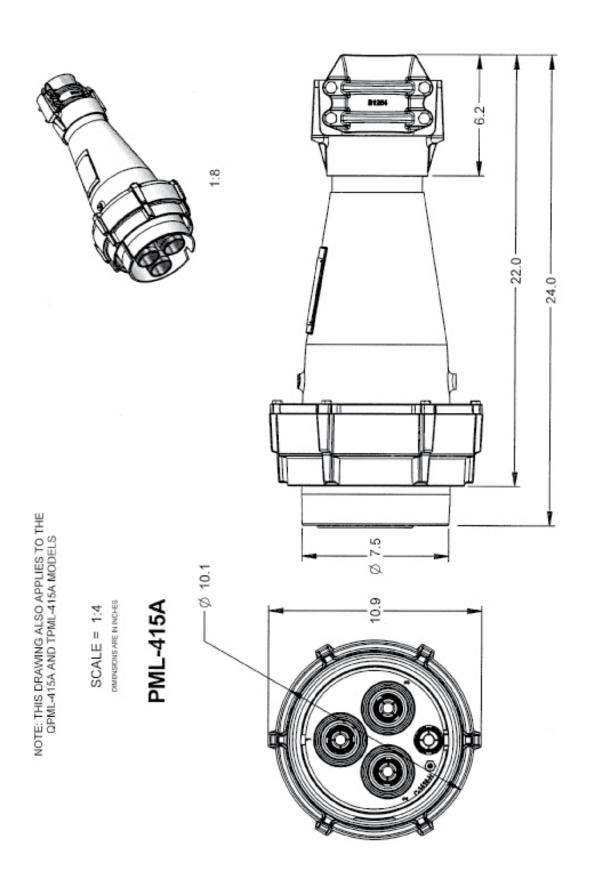
#### **TO ORDER**

DETERMINE SATISFACTORY
FIT BY CHECKING CABLE
DIMENSIONS A AND B. IF
CABLE DIMENSIONS DO NOT
FALL WITHIN ACCEPTABLE
RANGE, CONSULT FACTORY.



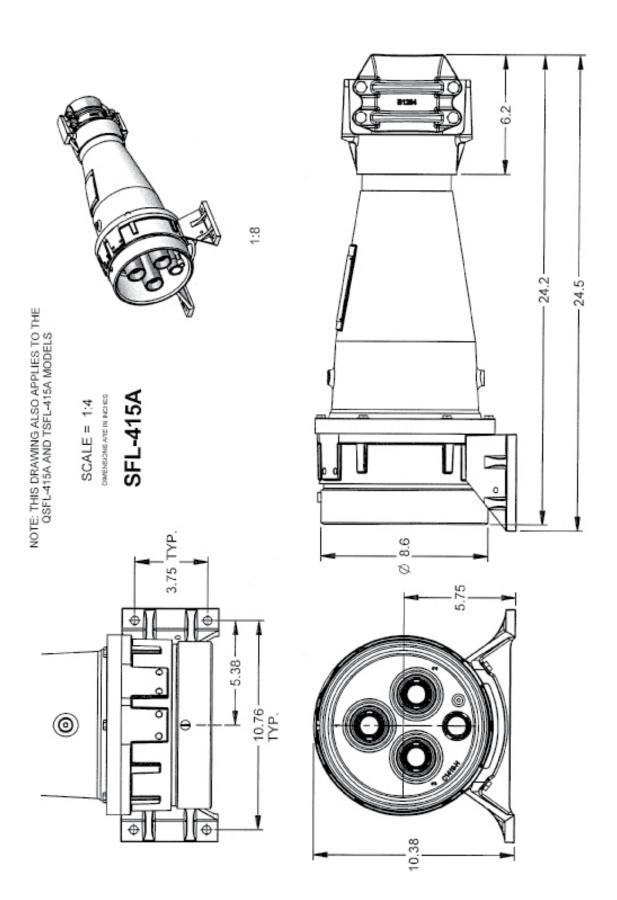
	Class II		- CI				
Catalog Number Ship Wt.		<b>4</b> er Jacket	B Core Dia.	C Max. Cable Size	<b>D</b> Conduit O.D.	E Fitting Overall	Length (Lbs.)
JAG 45-0S	.35	.45	.61	1/2	1-5/8	2-1/4	1/4
JAG 55-05	.45	.55	.61	1/2	1-5/8	2-1/4	1/4
JAG 65-05	.55	.65	.61	1/2	1-5/8	2-1/4	1/4
JAG 75-05	.65	.75	.61	1/2	1-5/8	2-1/4	1/4
JAG 85-05	.75	.85	.61	1/2	1-5/8	2-1/4	1/4
JAG 95-05	.85	.95	.61	1/2	1-5/8	2-1/4	1/4
JAG 99-07	.85	.99	.81	3/4	2	2-5/8	1/3
JAG 107-07	.92	1.07	.81	3/4	2	2-1/4	1/3
JAG 113-07	.98	1.13	.81	3/4	2	2-1/4	1/3
JAG 121-07	1.07	1.21	.81	3/4	2	2-1/4	1/3
JAG 112-10	1.00	1.12	1.00	1	2-3/8	3-1/16	1/2
JAG 125-10	1.12	1.25	1.00	1	2-3/8	3-1/16	1/2
JAG 138-10	1.22	1.38	1.00	1	2-3/8	3-1/16	1/2
JAG 138-12	1.28	1.38	1.25	1-1/4	2-7/8	3-3/8	2/3
JAG 156-12	1.38	1.56	1.25	1-1/4	2-7/8	3-3/8	2/3
JAG 174-12	1.56	1.74	1.25	1-1/4	2-7/8	3-3/8	2/3
JAG 188-12	1.74	1.88	1.25	1-1/4	2-7/8	3-3/8	2/3
JA6 174-15	1.60	1.74	1.63	1-1/2	3-1/4	4-1/16	1
JAG 188-15	1.74	1.88	1.63	1-1/2	3-1/4	4-1/16	1
JAG 200-15	1.88	2.00	1.63	1-1/2	3-1/4	4-1/16	1
JAG 218-15	2.00	2.18	1.63	1-1/2	3-1/4	4-1/16	1
JAG 219-20	2.05	2.19	2.09	2	4	4-5/16	1-1/2
JAG 236-20	2.19	2.36	2.09	2	4	4-5/16	1-1/2
JAG 247-20	2.35	2.47	2.09	2	4	4-5/16	1-1/2
JAG 261-20	2.47	2.61	2.09	2	4	4-5/16	1-1/2
JAG 263-25	2.46	2.63	2.49	2-1/2	4-23/32	5-7/16	2-1/2
JAG 280-25	2.62	2.80	2.49	2-1/2	4-23/32	5-7/16	2-1/2
JAG 296-25	2.80	2.96	2~49	2-1/2	4-23/32	5-7/16	2-1/2
JAG 297-30	2.80	2.97	3.11	3	5-3/32	5-3/4	3
JAG 311-30	2.95	3.11	3.11	3	5-3/32	5-3/4	3
JAG 327-30	3.10	3.27	3.11	3	5-3/32	5-3/4	3
JAG 343-30	3.26	3.43	3.11	3	5-3/32	5-3/4	3
JAG 359-30	3.42	3.59	3.11	3	5-3/32	5-3/4	3
JAG 375-35	3.52	3.75	3.61	3-1/2	5-11/16	5-13/16	3-1/4
JAG 392-35	3.75	3.92	3.61	3-1/2	5-11/16	5-13/16	3-1/4
JAG 412-35	3.90	4.12	3.61	3-1/2	5-11/16	5-13/16	3-1/4
JAG 423-40	4.05	4.23	4.11	4	6-3/32	5-13/16	3-1/2
JAG 437-40	4.20	4.37	4.11	4	6-3/32	5-13/16	3-1/2
JAG 4S1-4B	4.34	4.51	4.11	4	6-3/32	5-13/16	3-1/2
JAG 462-40	4.43	4.62	4.11	4	6-3/32	5-13/16	3-1/2



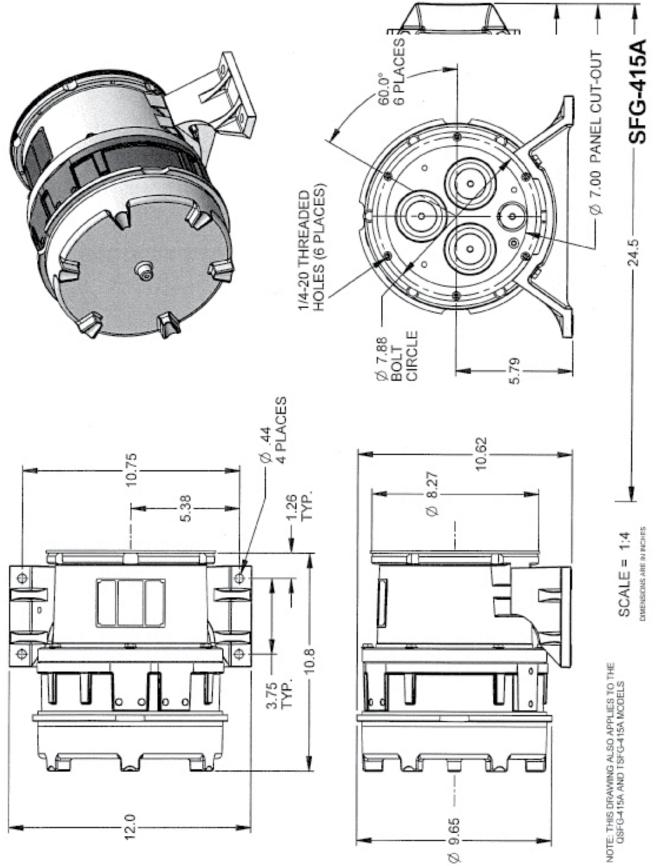


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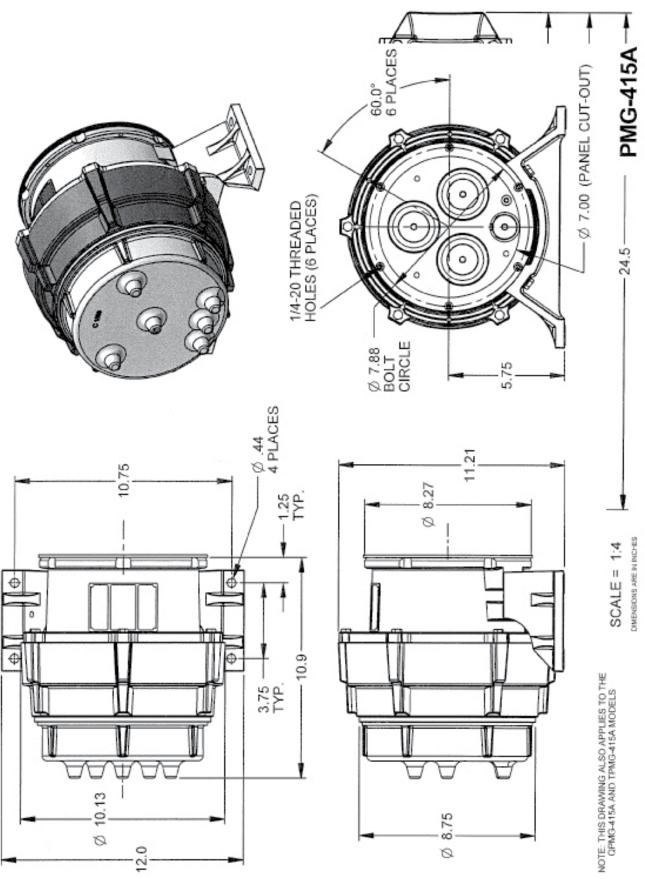












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www.smsconnectors.com

### **Standard Terms and Conditions**

The terms and conditions of sale ("Terms") apply to all sales from Special Mine Services, Inc. ("Seller" or "SMS") to the entity placing the order ("Buyer") and the Terms will prevail over any inconsistent terms of Buyer's purchase order or other documents. Additional or different terms and conditions in any way altering or modifying these Terms are expressly objected to by SMS and will not bind SMS unless specifically accepted in writing by SMS' authorized representative. NO modification or alteration of these Terms will result by SMS' shipment of products following rec of Buyer's purchase order, or other document containing additional, conflicting, or inconsistent terms. There are no terms, conditions, agreements other than those stated herein and on SMS' acknowledgment of the order ("Acknowledgement"), and all prior proposals and negotiations are merged herein. These Terms are binding on SMS and Buyer and their respective successors and permitted assigns. Notwithstanding the foregoing, if the parties have entered into a distribution agreement, the terms of the distribution agreement may after and modify these Terms, if so stated in the distribution agreement. SELLER'S ACCEPTANCE OF BUYER'S PURCHASE ORDER IS EXPRESSLY CONDITIONED ON BUYER'S ASSENT TO THESE TERMS. The failure of Seller to object to any provision in conflict herewith whether contained on Buyers purchase order or otherwise, shall not be construed as a waiver of these Terms nor as an acceptance thereof.

All quotations expire 30 calendar days from the date of quotation unless withdrawn sooner. Prices of products scheduled for shipment more than 12 months after the date of Buyer's order shall be subject to escalation. Unless otherwise expressly stated, all prices are in United States Dollars and payment shall be in United States Dollars.

#### PAYMENT TERMS

Unless otherwise specified on the SMS order acceptance form, upon approved credit the following terms will apply:

- 1. 1% cash discount within ten days of invoice date.
- 2. Net 30 days.

Seller reserves the right to require advanced payment or satisfactory security for any product purchased, if the financial performance or credit worthiness of Buyer is unsatisfactory to Seller. [Such security includes, but is not limited to, execution by Buyer of a promissory note, security agreement, financing statement and/or personal guaranty.] If Buyer fails to make timely payment or otherwise fails to comply with any provision hereof, Seller may, at its option (and in addition to other remedies), cancel any unshipped portion of the order; in such event, Buyer will remain liable for all unpaid

#### SHIPPING SCHEDULE

Seller will establish estimated shipping schedules as closely as practicable in accordance with Buyer's requested delivery date. However, Seller will not be responsible for deviations in meeting shipping schedules nor for any losses or damages to Buyer (or any third person) occasioned by any Force Majeure event, as defined herein. Seller reserves the right to ship in advance of any Buyer request dates, except those dates stipulated not before. SMS may make partial shipments at its discretion, invoicing each shipment as it is made but on terms applicable to the complete order. Should shipment be held beyond scheduled date for the convenience of Buyer, the Seller reserves the right to bill immediately for the products and to charge Buyer for all expenses incident to such

#### **TAXES & IMPORT AND EXPORT DUTIES**

Unless the shipping terms in the Seller's Acknowledgement specify differently, Seller's prices do not include, and Buyer shall pay for: any applicable sales, use, excise of similar taxes, or any import or export duties, freight (unless otherwise specified herein), insurance and inspection charges, or any other fees, duties or charges incurred in connection with any products ordered. If, under any law or governmental requisition the Seller is required to pay or collect any tax, or any import or export duties or charges, upon the products included in the order or predicated upon, measured by or arising from the sale, transportation, delivery, use of consumption of said products whether directly or indirectly, the price to be paid by the Buyer hereunder shall be increased by the amount of any such tax, duty, or charge. Buyer agrees to pay such tax, duty, or charge as part of the purchase price.

#### ADDITIONS AN/OR CHANGES

Buyer shall pay Sellers reasonable charges for changes in contract quantities, schedules, materials or services agreed to by Seller.

In the event that Buyer terminated all or any portion of its order, Seller shall have the right to charge Buyer for all costs already incurred by Seller including the price of any goods or services required to fill this order already committed to by Seller and a reasonable allowance for overhead and profit. Seller in its sole discretion shall have the right to manufacture the products provided hereunder as far in advance of its estimated shipping schedule as it deems appropriate

#### CLAIMS, SHORTAGES, RISK OF LOSS, AND TITLE

Any claims for loss, breakage or damage (obvious or concealed) are Buyer's responsibility and should be made to the carrier. Seller will render Buyer reasonable assistance in securing satisfactory adjustment of such claims. Any notice of shortages or other errors must be made in writing to Seller within 15 days after receipt of shipment. Failure to give such notice shall constitute unqualified acceptance and a waiver of all claims by Buyer.

Risk of loss will pass to Buyer pursuant to the applicable Incoterm or other shipping term, and if no Incoterm/shipping term is used, risk of loss will pass on delivery to the common carrier at SMS at the point of shipment. Shipment will be made by surface freight unless instructed to do otherwise by Buyer. Title to the products sold hereunder passes to Buyer upon payment of the full purchase

#### WARRANTIES

All of Seller's drawings, descriptive matter, weights, dimensions, descriptions and illustrations contained in Seller's catalogues, price lists, or advertisements are approximate only and intended merely to give a general idea of the products described therein and do not form part of the parties' agreement. Notwithstanding the foregoing, the Seller warrants that the ordered products that were manufactured by SMS conform to any applicable drawings and specifications accepted in writing by Seller and will be free from any defects in material and workmanship for a period of 12 months from the date of installation. If, within that period, the Seller receives from Buyer written notice of any alleged defect in or non-conformance of any product, and it, in the Seller's sole judgement the product does not confirm or is found to be defective in material or workmanship, then, Buyer shall, at Sellers request, return the part or product F.O.B. Seller's Factory, and Seller, at its option and expense, shall repair or replace the defective part or product or repay to Buyer the full price paid for such part or product by Buyer. Any purchase price repayment shall be without interest. Seller's sole responsibility, and Buyer's exclusive remedy hereunder shall be limited to such repair, replacement, or repayment of the purchase price as above provided.

Component parts and accessories not of the Seller's manufacture are warranted only to the extent that they are warranted to the end user by the manufacturers thereof.
THERE ARE NO OTHER WARRANTIES, EXPRESS, STATUTORY OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY AND OF FITNESS FOR PURPOSE; NOR ANY AFFIRMATION OF FACT OR REPRESENTATION WHICH EXTENDS BEYOND THE DESCRIPTION OF THE FACT HEREOF.

The warranties of Seller do not cover and Seller makes no warranty with respect to:

1. Failures not reported to Seller within the warranty period specified above;

- Failure or damage due to misapplication, abuse, improper installation, abnormal conditions of temperature, water, dirt or corrosive matter;
- Failures due to operation above rated capacities or in an otherwise improper manner
- Products which have been in any way tampered with or altered by anyone other than an authorized representative of Seller; and
- Products damages in shipment or storage or otherwise without fault of Seller.

Claims for expenses of Buyer relating in labor and/or material supplied by Buyer (commonly known as "Backcharges") will not be honored by Seller unless Buyer obtains Seller's prior written consent to supply such labor and/or material

#### SHIPMENT AND DELIVERY

- All products are sold on such Incoterms or other shipping terms that are indicated on the Seller's Acknowledgement. If no Incoterms are indicated on the Seller's Acknowledgement, all material is sold CPT (Incoterms 2020)
- 2. For all individual orders of products manufactured by SMS ("SMS products") for a net total of \$4,000 or more, freight will be prepaid to any free delivery point on a common carrier in the continental United States or Canada. No freight allowed for orders of SMS products under \$4,000 or for products manufactured by a third party. Such orders will be shipped freight collect or prepaid by Buyer. No freight allowance will be made on shipments forwarded collect at Buyer's request.

  SMS will use its own discretion in routing all shipments upon which it assumes transportation charges. Where practical to do so, shipment will be made in any manner requested by Buyer if Buyer
- will assume the extra transportation cost.
- Partial shipments of SMS products at Buyer's request must each total \$4,000 or more for prepaid transportation. No freight allowed for any partial shipments under \$4,000. Such orders will be shipped freight collect or prepaid by Buyer, unless otherwise agreed.
- SMS will not assume, allow, or pay any charges for cartage.

  Buyer should inspect all materials upon receipt as all claims for damage, errors, or shortages, other than attributable to the transit handling, must be made by Buyer within 15 days from receipt of shipment at destination. Failure to make such claims with in a 15-day period shall constitute irrevocable acceptance of the material.

  Orders received with a "HOLD" (for release, for approval, etc.) are not processed for manufacture until release is given. Normal shipping times apply starting from time of release.



### **Standard Terms and Conditions**

#### RETURN POLICY

To qualify for a return, all products require a Return Authorization Number (RMA) prior to being returned, must be 100% complete, in the same condition as when sold and in the original packaging as provided by the manufacturer. All packaging materials, accessories and documentation must be included. Used parts will not be accepted. All returns will be inspected and products found to be non-conforming will be rejected. All returns are subject to a 25% restocking fee. Products returned without an RMA will be denied. An RMA must be requested from SMS within 180 days of the product purchase and the request must include the purchase order number or invoice number. Returns of specially made to order items is not subject to this return policy and will be handled by SMS on a case-by-case basis

SMS is not responsible for products returned that are lost, broken, or damaged in transit. Freight and handling charges, both to and from SMS' warehouse will be paid by Buyer and are non-refundable. Refunds will be issued within 45 days from receipt of accepted items and in the same form as payment originally used for purchase. Refunds may be either in the form of credit towards future purchases from SMS, or: (a) for credit card purchases, a refund back to the credit card in U.S. funds; or (b) for purchases paid for by check, a refund in the form of a check in U.S. funds.

The refunded value for each item returned will be reduced to reflect the amount of any term discount previously taken when payment was made. If applicable, the appropriate tax amount for each item will be included with your refund. An additional deduction may be taken for any freight expense incurred by SMS when the product was originally shipped.

If SMS, at its sole discretion, decides to accept a non-qualified item for return, a restocking fee of 35% will be assessed.

Note: some manufacturers have implemented return restrictions that prevent SMS from being able to accept returns or offer exchanges, replacements or credits on their products for any reason. If this is the case, an RMA will not be issued.

#### PATENT INDEMNITY

Seller agrees that it will indemnity Buyer for all damages or costs resulting from any suit or demand alleging that the structure of a product or any part thereof manufactured by Seller infringes on any United States patent of plaintiff, if Seller is notified promptly in writing of such suit or demand and given adequate authority, information and assistance for the defense of name, provided, however, that Seller at its own option and expense shall have the right to settle such suit or demand either by procuring for Buyer the right to continue using the product or part thereof, or by replacing same with non-infringing product; or by modifying the same so that it becomes non-infringing; or by removing the alleged infringing product and refunding the purchase price. This indemnification clause does not apply to any product or part thereof made to Buyer's design or which has been modified by Buyer or to any process in which the product may be used by Buyer or to any product which may be produced by the use of the product. As to any product or part thereof made to the Buyers design or the design of which has been modified by Buyer, Buyer agrees that it will indemnify Seller for all damages or costs resulting from any suit or demand alleging infringement of any United States patent which claims the structure of such product or any part thereof.

#### LIMITATION ON LIABILITY

Seller's responsibility for any claims, damages, losses or liabilities arising out of or related to its performance of Buyer's order or the products covered hereunder shall not exceed the purchase price. In no event shall Seller be liable for any special, indirect, incidental or consequential damages of any character: including, but not limited to, loss of use of productive facilities or equipment, lost profits, property damage, expenses incurred in reliance on Seller's performance hereunder, or lost production, whether suffered by Buyer or any third party. Seller disclaims all liability for any and all costs, claims, demands, charges, expenses, or other damages, either direct or indirect, incident to all property damages arising out of any cause of action based on strict liability.

#### MODIFICATION, RECISION AND WAIVER

This contract may not be modified or rescinded nor any of its provisions waived unless such modification, rescission or waiver is in writing and signed by an authorized representative of Seller.

#### MISCELLANEOUS

Seller reserves the right to furnish substitutes for products which cannot be reasonably obtained because of any restrictions, voluntarily or compulsorily established by or in connection with any governmental authority or program. Seller may during any periods of shortage due to causes beyond the control of Seller or its suppliers, prorate its supply of products among all of its Buyers in such manner as may be deemed equitable in the sole judgement of Seller. Seller shall not incur any liability to Buyer because of any proration hereunder.

All orders must be accepted by an authorized representative of Seller. The rights and duties of the parties and construction and effect of all provisions hereof shall be governed by and construed according to the internal laws of Illinois, without reference to its choice of law provisions, provided that the parties agree to exclude the application of the United Nations Convention of Contracts for the International Sale of Goods (1980), and that all matters relating to arbitration will be governed by the Federal Arbitration Act (9 U.S.C. §§ 1 et seq.) and not by any state arbitration law.

Failure of Seller to insist in any one or more instances upon the performance of and of the terms and conditions of this contract or the failure of Seller to exercise any of its rights hereunder shall not be construed as a waiver or relinquishment of any such term, condition, or right hereunder and shall not affect Seller's right to insist upon strict performance and compliance with regard to any unexecuted portions of this contract or future performances of these terms and conditions.

#### NUCLEAR SALES

The products sold hereunder are not designed or manufactured for use in or with any atomic installation or activity.

#### FORCE MAJEURE

Seller will not be liable for: delays in shipment, default in delivery, Seller's non-performance of any obligations hereunder, or loss or damage to the products, caused directly or indirectly by any cause beyond Seller's or its suppliers' or subcontractors' reasonable control including, but not limited to, (a) government action, war, riots, civil commotion, acts of terrorism, embargoes or martial laws, (b) Seller's inability to obtain necessary materials from its usual sources of supply, (c) shortage of labor, raw material, production or transportation facilities or other delays in transit, (d) labor difficulty involving employees of Seller or others, (e) epidemic, fire, flood or other casualty, or (f) other contingencies of manufacture or shipment. In the event of any delay in Seller's performance due in whole or in part to any cause beyond Seller's reasonable control, Seller shall have such additional time for performance as may be reasonably necessary under the circumstances. Acceptance by Buyer of any goods shall constitute a waiver by Buyer of any claim for damages on account of any delay in delivery of such goods.

#### ARBITRATION

Any controversy or claim arising out of or relating to this agreement shall be determined by arbitration in accordance with the Arbitration Rules (the international rule if Buyer is located outside the U.S.A) of the American Arbitration Association. The arbitration proceedings shall be held before a one-member arbitral tribunal in Chicago, Illinois, U.S.A. and shall be conducted in the English language. The arbitrator shall be experienced in distribution matters. This arbitral tribunal shall apply the substantive laws set forth in these terms and conditions and shall render a written opinion of its decision. Seller and Buyer agree that arbitration will be conducted on an individual, not class-wide basis, and that an arbitration proceeding involving Seller and Buyer may not be consolidated with any other arbitration proceeding involving Seller or Buyer and another party. Any award of such arbitration tribunal shall be final and binding upon the parties to this agreement and non-appealable, except as provided by law or precedent, and shall be enforced in any court having competent jurisdiction.

#### U.S.A. EXPORT CONTROLS

Regardless of any disclosure made by Buyer to Seller of an ultimate destination for the good, Buyer acknowledges that goods being sold to Buyer are subject to United States export control laws. Buyer acknowledges that diversion contrary to United States law is prohibited and that it may not re-export the goods to any country or end-user subject to any United States trade embargo or otherwise ineligible to receive United States goods. Buyer shall be solely responsible for complying with all applicable government regulations of the United States and any foreign countries with respect to use of the goods outside the United States, including all costs associated therewith. Buyer shall defend, indemnify and hold Seller harmless from and against any and all claims, judgments, costs, awards, expenses (including reasonable attorneys' fees) and fall liabilities of any kind arising out of Buyer's noncompliance with applicable United States or foreign government regulations, statutes, decrees or other obligations with respect to the use or transfer of the goods outside of the United States by Buyer and its affiliates.

#### FOREIGN CORRUPT PRACTICES ACT REPRESENTATION

Buyer represents and agrees that it has not offered, given, promised to give or authorized giving, and will not offer, give, promise to give or authorize giving, directly or indirectly, any money or anything else of value to any government official, political party, political official or candidate for political official in connection with its activities hereunder.





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