

Plugs & Receptacles

# Rough-Lok™

High-amperage connectors for extreme conditions



**Crouse-Hinds**  
by **EAT•N**



# Make the right connections

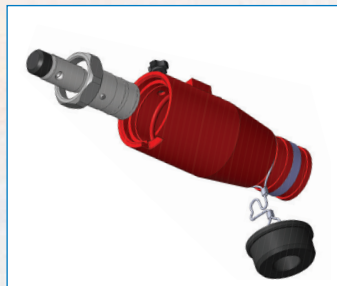
## Plugs and receptacles engineered for the extreme conditions of oil and gas drilling applications

You need solutions that stand up to the demanding environmental and physical conditions of drilling applications. Eaton's Crouse-Hinds Rough-Lok™ Connectors provide you with a safe and reliable solution for harsh environments.



### Rough-Lok™ Receptacle

You can get a full range of receptacles suitable for NEC and IEC applications. Synthetic rubber insulation provides superior corrosion resistance and low-temperature operation down to -55° C (-67° F).



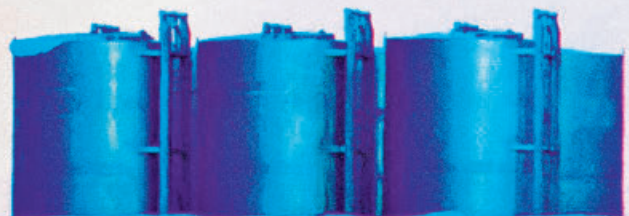
### Rough-Lok™ Plugs

Rough-Lok plugs are available for both NEC and IEC applications. They feature a unique locking device, slip-fit rubber insulator and non-metallic locking screw. Plugs deliver superior corrosion resistance and performance down to -55° C (-67° F).



### Accessories

The parts you need to finish and secure installations, Rough-Lok accessories deliver performance across your operations. The wide variety of available accessories feature customizable name plates for easy identification.



# High-amperage connectors for oil drilling applications

Rough-Lok connectors offer the ultimate performance solution for safety and reliability challenges and can stand up to the rigors of drilling operations under the most extreme conditions.

## Applications

Rough-Lok plugs and receptacles are built to take heavy abuse while providing a simple, secure and safe connection.

Rough-Lok products are designed specifically for the oil and gas drilling applications, but are also perfect for power generators, temporary power, entertainment and portable power.

## Electrical Ratings Specifications

- 1000 Volts
- 1000 Amps continuous\*

## Material Specifications

- Cable sizes: 262-777MCM, 50-185mm<sup>2</sup>
- Insulator: Synthetic Rubber
- Contact: Copper alloy with Ni-plating

## Environmental

- Survival Temperature: -55°C to 60°C (-67°F to 140°F)
- Operating Temperature: -25°C to 40°C (-13°F to 104°F)
- IP66

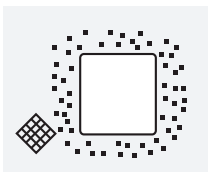
## Available Colors

Ten colors are available to provide easy circuit identification when mating plugs with receptacles. Color coding helps prevent reverse phasing on AC circuits or cross polarization on DC circuits to assure correct rotation of motors while providing for operator safety. The insulator is fastened to the cable by a hose clamp, providing IP66 protection against dust and water ingress.

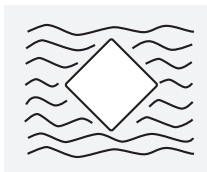


## Color Codes

- BK - Black
- BL - Blue
- BR - Brown
- G - Green
- GY - Gray
- OR - Orange
- PR - Purple
- R - Red
- W - White
- Y - Yellow



Dust tight



Protected against powerfully jetting water

## Certifications

CE: 2950040613

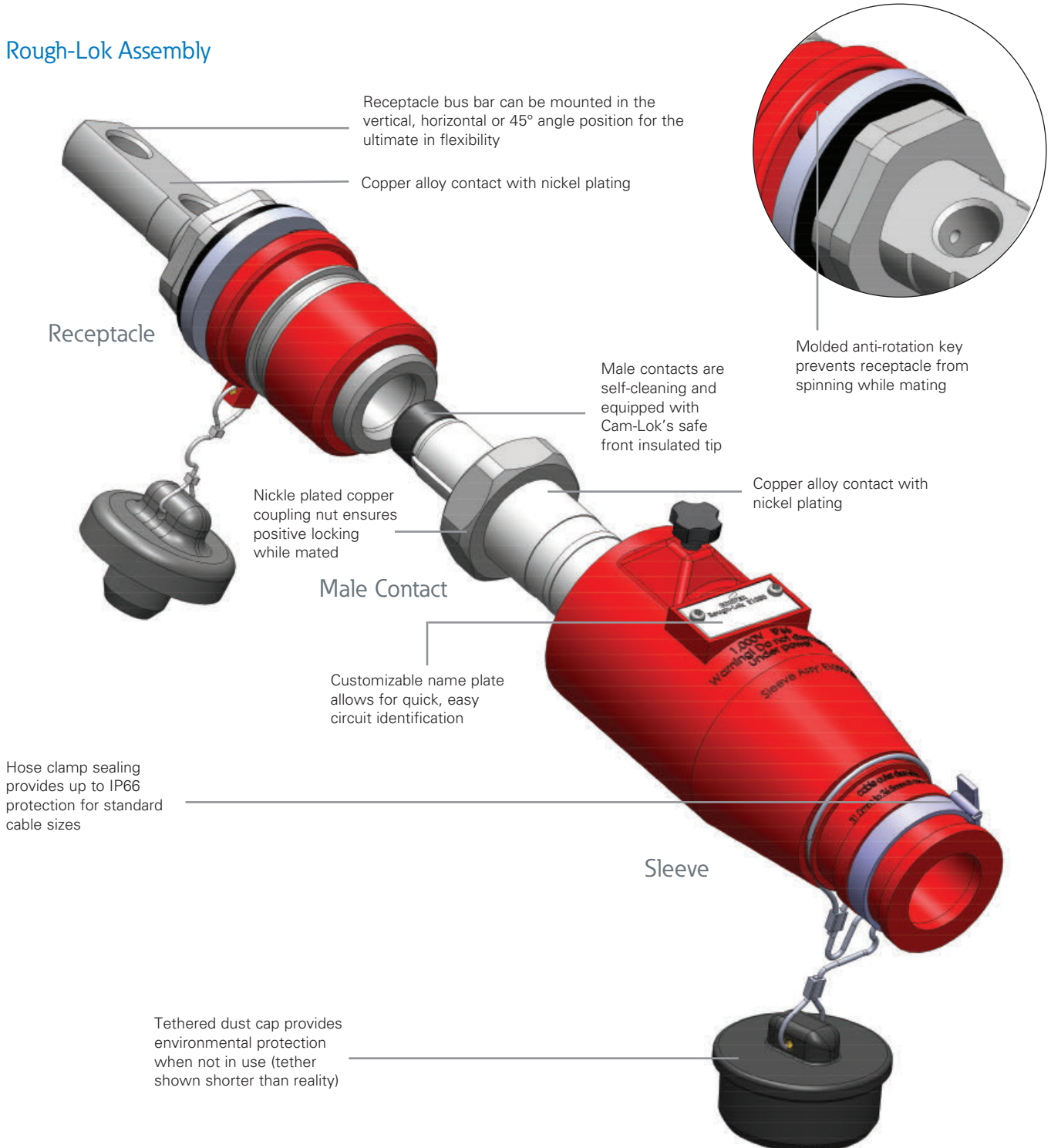
UL Recognized materials

Compliant to UL486A-486B

# Easy and Manageable Assembly

Rough-Lok™ plugs and receptacles offer many features to ensure safe and consistent connectivity.

## Rough-Lok Assembly



Project Name:	Prepared By:
Project Number:	Date:
Catalog Number:	Type:

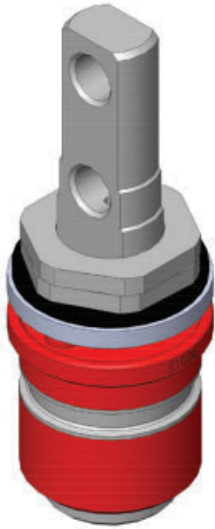
# Rough-Lok™ Receptacle (NEC & IEC)

262,313, 444, 535, 646 and 777MCM High Amperage Connectors  
 50, 75, 90, 150 and 185mm<sup>2</sup> Medium Amperage Connectors

## High Amperage Connectors

### Features

- Synthetic rubber insulation provides superior corrosion resistance and low temperature operation down to -55° C (-67° F).
- 360° mounting capability.
- IP66 protection rating when properly mated with the Rough-Lok plug
- Ten standard colors available.
- Uniquely colored receptacle housing designed to provide easy circuit identification.
- Receptacles are available in bus bar and M20 thread configurations.
- Newly designed dust cover is secured to the receptacle housing.
- For use with 262 to 777MCM NEC cable
- For use with 50mm<sup>2</sup> to 185mm<sup>2</sup> IEC cable



E1050-BB-\_\_

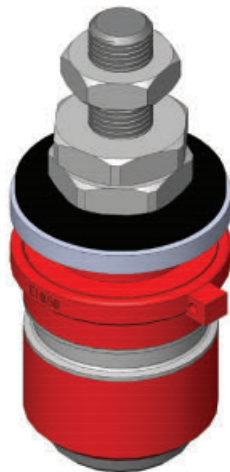
### Rough-Lok Receptacle

Volts	Amps	Description	Assembly No.
1000	1000 max	Double-Hole Bus Bar Assembly	□ E1050-BB-__
1000	1000 max	M20 Assembly	□ E1050-M-__

Note: Male plugs should be used on the power source side. Female receptacles should be used on the load distribution side. Do not disconnect under load.

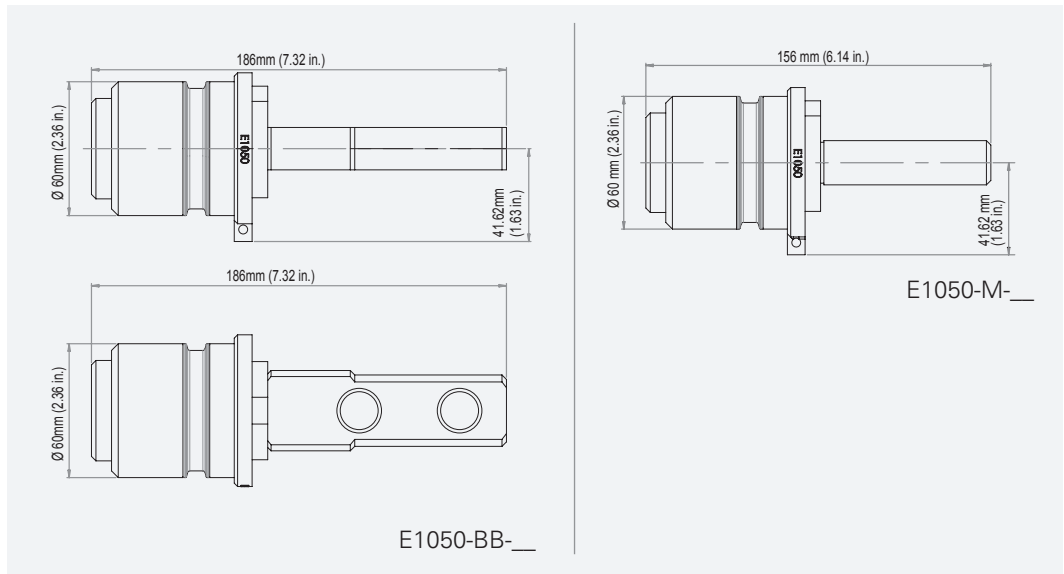
### Color Ordering Information

For ordering include Cat. No. followed by the color code: BK (Black), BL (Blue), BR (Brown), G (Green), GY (Gray), OR (Orange), R (Red), PR (Purple), W (White), Y (Yellow)



E1050-M-\_\_

### Receptacle Envelope Dimension



Project Name:	Prepared By:
Project Number:	Date:
Catalog Number:	Type:

# Rough-Lok™ Plug (NEC)

262,313, 444, 535, 646 and 777 MCM High Amperage Connectors  
IP66

## High Amperage Connectors

### Features

- Unique locking device, slip-fit rubber insulator with non-metallic locking screw.
- Synthetic rubber insulation provides superior corrosion resistance and low temperature operation down to -55° C (-67° F).
- For use with 262 to 777 MCM cable.
- IP66 protection rating for standard cable size (Outside Diameter: 21.5 mm to 36.5 mm).
- Ten standard colors available.
- Dust cover is securely attached to the insulating sleeve.

### Rough-Lok Plug Assembly

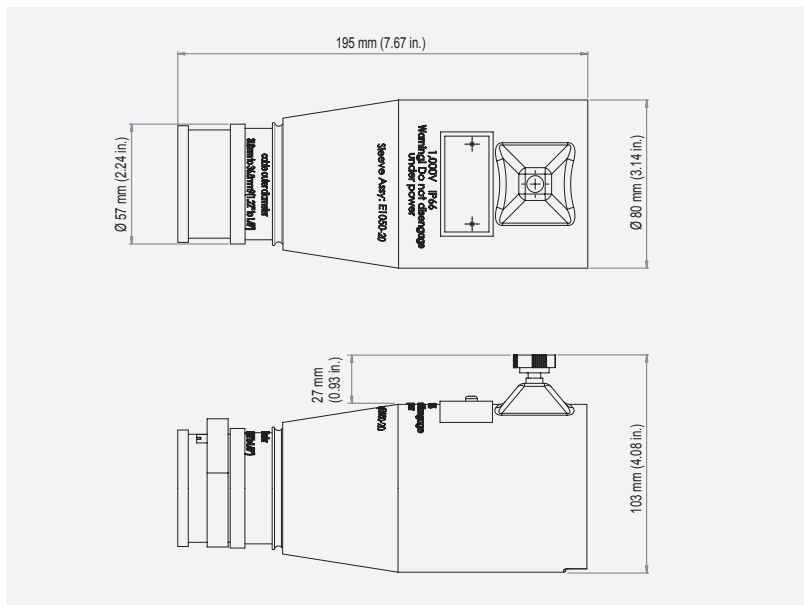
Description	Complete Assembly No.	Insulator No.	Contact No.
262 MCM Male Plug	<input type="checkbox"/> E1050-C2-__	<input type="checkbox"/> E1050-05-__	<input type="checkbox"/> E1050-C262
313 MCM Male Plug	<input type="checkbox"/> E1050-C3-__	<input type="checkbox"/> E1050-05-__	<input type="checkbox"/> E1050-C313
444 MCM Male Plug	<input type="checkbox"/> E1050-C4-__	<input type="checkbox"/> E1050-10-__	<input type="checkbox"/> E1050-C444
535 MCM Male Plug	<input type="checkbox"/> E1050-C5-__	<input type="checkbox"/> E1050-10-__	<input type="checkbox"/> E1050-C535
646 MCM Male Plug	<input type="checkbox"/> E1050-C6-__	<input type="checkbox"/> E1050-20-__	<input type="checkbox"/> E1050-C646
777 MCM Male Plug	<input type="checkbox"/> E1050-C7-__	<input type="checkbox"/> E1050-20-__	<input type="checkbox"/> E1050-C646

Note: Male plugs should be used on the power source side. Female receptacles should be used on the load distribution side. Do not disconnect under load.

### Color Ordering Information

For ordering include Cat. No. followed by the color code: BK (Black), BL (Blue), BR (Brown), G (Green), GY (Gray), OR (Orange), R (Red), PR (Purple), W (White), Y (Yellow)

### Plug Sleeve Envelope Dimension



Project Name:	Prepared By:
Project Number:	Date:
Catalog Number:	Type:

# Rough-Lok™ Plugs & Receptacles (NEC)

262,313, 444, 535, 646 and 777 MCM High Amperage Connectors  
IP66

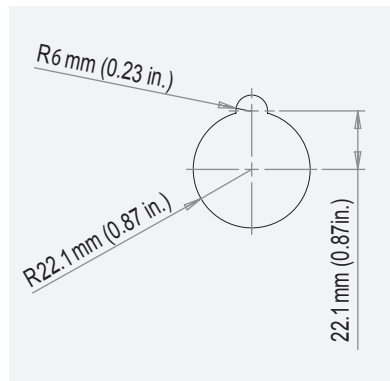
## Application

Designed for distribution of 1000 VAC or DC power up to 1000 amperes continuous duty when used with 90°C rated cable. For such applications as portable power, generators to motors, generators to SCR center, SCR panel to motors on mud pumps, drill table, draw works, or other heavy duty requirements for land or offshore drilling rigs.

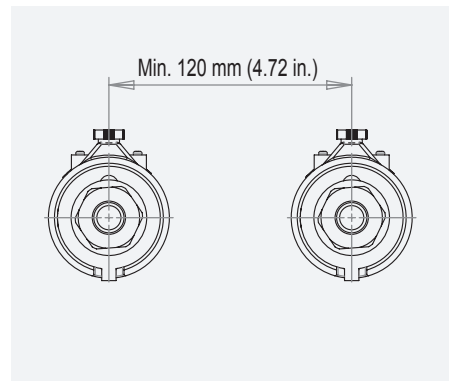
	Plug Assembly E1050-C2-__	Plug Assembly E1050-C3-__	Plug Assembly E1050-C4-__	Plug Assembly E1050-C5-__	Plug Assembly E1050-C6-__	Plug Assembly E1050-C6-__	Receptacle
<b>Cable Size</b>	262 MCM	313 MCM	444 MCM	535 MCM	646 MCM	777 MCM	N/A
<b>Protection</b>	IP66	IP66	IP66	IP66	IP66	IP66	IP66
<b>Normal Operating Temperature</b>	-25°C to 40°C (-13°F to 104°F)	-25°C to 40°C (-13°F to 104°F)	-25°C to 40°C (-13°F to 104°F)	-25°C to 40°C (-13°F to 104°F)	-25°C to 40°C (-13°F to 104°F)	-25°C to 40°C (-13°F to 104°F)	-25°C to 40°C (-13°F to 104°F)
<b>Survival Temperature</b>	-55°C to 60°C (-67°F to 140°F)	-55°C to 60°C (-67°F to 140°F)	-55°C to 60°C (-67°F to 140°F)	(-67°F to 140°F)	-55°C to 60°C (-67°F to 140°F)	-55°C to 60°C (-67°F to 140°F)	-55°C to 60°C (-67°F to 140°F)
<b>Voltage Rating</b>	1000 V max	1000 V max	1000 V max	1000 V max	1000 V max	1000 V max	1000 V max
<b>Continuous Amperage Rating</b>	475A max when used with 90° C rated cable	513A max when used with 90° C rated cable	642A max when used with 90° C rated cable	724A max when used with 90° C rated cable	814A max when used with 90° C rated cable	1000A max when used with 125° C rated cable	Up to 1000A when used with 90° C rated cable
<b>Insulator Sleeve</b>	Synthetic rubber	Synthetic rubber	Synthetic rubber	Synthetic rubber	Synthetic rubber	Synthetic rubber	Synthetic rubber
<b>Contacts</b>	Copper alloy with nickel plating	Copper alloy with nickel plating	Copper alloy with nickel plating	Copper alloy with nickel plating	Copper alloy with nickel plating	Copper alloy with nickel plating	Copper alloy with nickel plating
<b>Receptacle Locking Nuts</b>	N/A	N/A	N/A	N/A	N/A	N/A	Brass Ni-Plating
<b>Available Colors</b>	BK, BL, BR, G, GY OR, R, PR, W, Y	BK, BL, BR, G, GY OR, R, PR, W, Y	BK, BL, BR, G, GY OR, R, PR, W, Y	BK, BL, BR, G, GY OR, R, PR, W, Y	BK, BL, BR, G, GY OR, R, PR, W, Y	BK, BL, BR, G, GY OR, R, PR, W, Y	BK, BL, BR, G, GY OR, R, PR, W, Y

\* Available Colors: BK (Black), BL (Blue), BR (Brown), G (Green), GY (Gray), OR (Orange), R (Red), PR (Purple), W (White), Y (Yellow).

### Panel Cutout & Mounting Dimensions



### Minimum Spacing for Mounting





Project Name:	Prepared By:
Project Number:	Date:
Catalog Number:	Type:

# Rough-Lok™ Plug (IEC)

50mm<sup>2</sup>, 70mm<sup>2</sup>, 95mm<sup>2</sup>, 150mm<sup>2</sup> and 185mm<sup>2</sup> High Amperage Connectors  
IP66

## High Amperage Connectors

### Features

- Unique locking device, slip-fit rubber insulator with non-metallic locking screw.
- Synthetic rubber insulation provides superior corrosion resistance and low temperature operation down to -55° C (-67° F).
- For use with 50mm<sup>2</sup>, 70mm<sup>2</sup>, 95mm<sup>2</sup>, 150mm<sup>2</sup> and 185mm<sup>2</sup> cable.
- IP66 protection rating for standard cable size (Outside Diameter: 21.5 mm to 27.0 mm).
- Ten standard colors available.
- Dust cover is securely attached to the insulating sleeve.

### Rough-Lok Plug Assembly

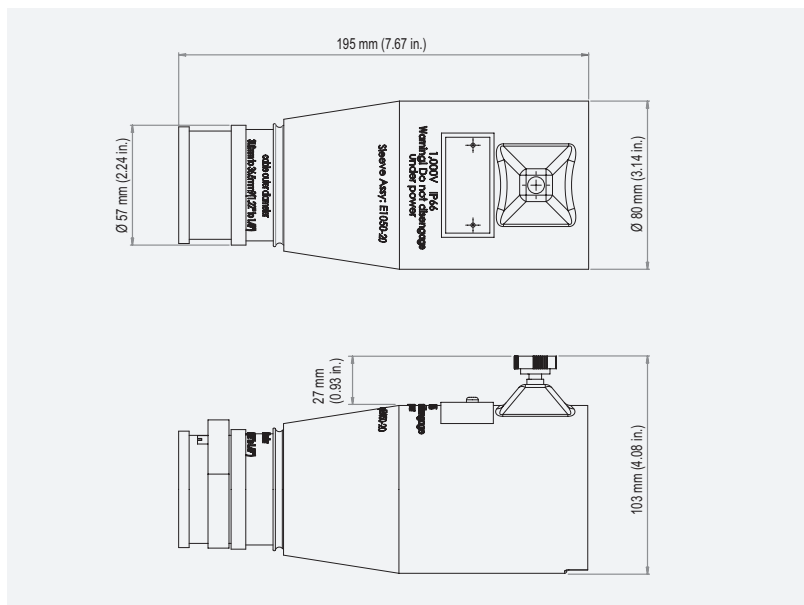
Description	Complete Assembly No.	Insulator No.	Contact No.
50mm <sup>2</sup> Male Plug	□ E1050-P50-__	□ E1050-05-__	□ E1050-P50
70mm <sup>2</sup> Male Plug	□ E1050-P70-__	□ E1050-05-__	□ E1050-P70
95mm <sup>2</sup> Male Plug	□ E1050-P95-__	□ E1050-05-__	□ E1050-P95
150mm <sup>2</sup> Male Plug	□ E1050-P150-__	□ E1050-05-__	□ E1050-P150
185mm <sup>2</sup> Male Plug	□ E1050-P185-__	□ E1050-05-__	□ E1050-P185

Note: Male plugs should be used on the power source side. Female receptacles should be used on the load distribution side. Do not disconnect under load.

### Color Ordering Information

For ordering include Cat. No. followed by the color code: BK (Black), BL (Blue), BR (Brown), G (Green), GY (Gray), OR (Orange), R (Red), PR (Purple), W (White), Y (Yellow)

### Plug Sleeve Envelope Dimension



Project Name:	Prepared By:
Project Number:	Date:
Catalog Number:	Type:

# Rough-Lok™ Plugs & Receptacles (IEC)

50mm<sup>2</sup>, 70mm<sup>2</sup>, 95mm<sup>2</sup>, 150mm<sup>2</sup>, and 185mm<sup>2</sup> High Amperage Connectors (IEC)  
IP66

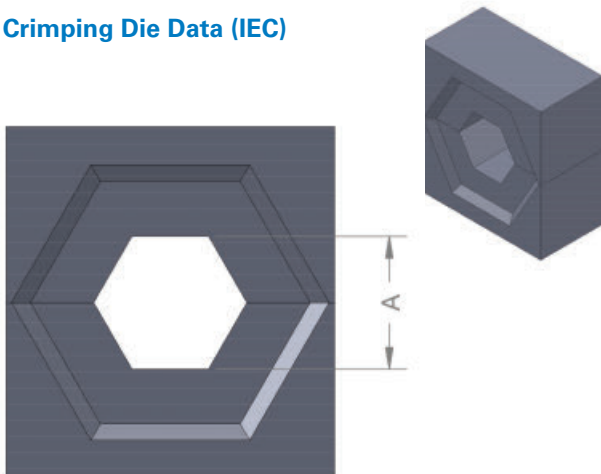
## Application

Designed for distribution of 1000 VAC or DC power up to 814 amperes continuous duty when used with 90°C rated cable. For such applications as portable power, generators to motors, generators to SCR center, SCR panel to motors on mud pumps, drill table, draw works, or other heavy duty requirements for land or offshore drilling rigs.

	Plug Assembly E1050-P50-__	Plug Assembly E1050-P70-__	Plug Assembly E1050-P95-__	Plug Assembly E1050-P150-__	Plug Assembly E1050-P185-__	
<b>Cable Size</b>	50mm <sup>2</sup>	70mm <sup>2</sup>	95mm <sup>2</sup>	150mm <sup>2</sup>	185mm <sup>2</sup>	
<b>Environmental</b>	<b>Protection</b>	IP66	IP66	IP66	IP66	
	<b>Normal Operating Temperature</b>	-25°C to 40°C (-13°F to 104°F)	-25°C to 40°C (-13°F to 104°F)	-25°C to 40°C (-13°F to 104°F)	-25°C to 40°C (-13°F to 104°F)	-25°C to 40°C (-13°F to 104°F)
	<b>Survival Temperature</b>	-55°C to 60°C (-67°F to 140°F)	(-67°F to 140°F)	-55°C to 60°C (-67°F to 140°F)	-55°C to 60°C (-67°F to 140°F)	-55°C to 60°C (-67°F to 140°F)
<b>Electrical</b>	<b>Voltage Rating</b>	1000 V max	1000 V max	1000 V max	1000 V max	
	<b>Continuous Amperage Rating</b>	250A max when used with 90° C rated cable	300A max when used with 90° C rated cable	350A max when used with 90°C rated cable	450A max when used with 90°C rated cable	500A max when used with 90°C rated cable
<b>Materials:</b>	<b>Insulator Sleeve</b>	Synthetic rubber	Synthetic rubber	Synthetic rubber	Synthetic rubber	
	<b>Contacts</b>	Copper alloy with nickel plating	Copper alloy with nickel plating	Copper alloy with nickel plating	Copper alloy with nickel plating	
	<b>Receptacle Locking Nuts</b>	N/A	N/A	N/A	N/A	
	<b>Available Colors</b>	BK, BL, BR, G, GY OR, R, PR, W, Y	BK, BL, BR, G, GY OR, R, PR, W, Y	BK, BL, BR, G, GY OR, R, PR, W, Y	BK, BL, BR, G, GY OR, R, PR, W, Y	BK, BL, BR, G, GY OR, R, PR, W, Y

\* Available Colors: BK (Black), BL (Blue), BR (Brown), G (Green), GY (Gray), OR (Orange), R (Red), PR (Purple), W (White), Y (Yellow).

## Crimping Die Data (IEC)



- Use Copper (CU) Wire Only.
- Make two crimps on undercut portion of contact.
- These crimping presses and dies are available from most electrical supply companies, dies must confirm to the dimension A on the table below.

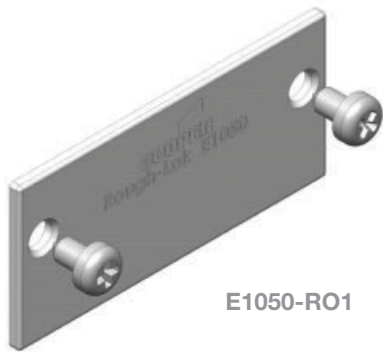
Cable Size mm <sup>2</sup>	Dimension A
50	10.4 mm
70	12.1 mm
95	14.0 mm
150	17.3 mm
185	19.4 mm

Project Name:	Prepared By:
Project Number:	Date:
Catalog Number:	Type:

# Accessories & Crimping Data

## Rough-Lok™ Accessories (NEC & IEC)

Description	Part No.
Name Plate	<input type="checkbox"/> E1050-R01
M20 Locking Nut Set	<input type="checkbox"/> E1050-R02
M8 Locking Screw	<input type="checkbox"/> E1050-R03
Dust Cap (Plug)	<input type="checkbox"/> E1050-R04
Dust Cap (Receptacle)	<input type="checkbox"/> E1050-R05
M36 Locking Nut Set	<input type="checkbox"/> E1050-R06



E1050-R01



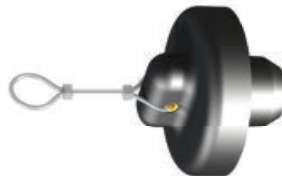
E1050-R02



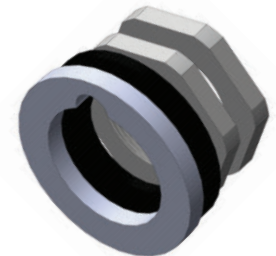
E1050-R03



E1050-R04



E1050-R05



E1050-R06

## Crimping Die Data (NEC)

- Use Copper (CU) Wire Only.
- These crimping presses and dies are available from most electrical supply companies or from Thomas & Betts Corporation.
- Make two crimps on undercut portion of contact.
- Thomas and Betts hexagon crimping press catalog #13624M or #TB151 heads provide excellent crimps when used with the following dies.

Cable Size MCM	13642PF Hydraulic Head		TBM15P Head	
	Die Cat No.	Die Code	Die Cat No	Die Code
262	—	—	—	—
313	11744	75H	15512	75H
444	11748	99H	15505	99H
535	11749	106H	15515	106H
646	11753	115H	11504	115H
777	11753	115H	11504	115H

\* The crimp die for 262 MCM same as 150 mm².

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or Customer Service  
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