






# ArmorConnect Power and Control Media

Bulletins 280, 888, 889, 898










## Three-Phase Power Media

					
	<b>Three-Phase Power Trunk Cable</b>	<b>Three-Phase Power Drop Cable</b>	<b>Three-Phase Power Tees and Reducers</b>	<b>Three-Phase Power Receptacles</b>	<b>Three-Phase Power Accessories</b>
Description	<ul style="list-style-type: none"> <li>Cordset - Cable with integral female or male connector on one end</li> <li>PatchCord - Cable with integral female or male connector on each end</li> </ul>	<ul style="list-style-type: none"> <li>Cordset - Cable with integral female or male connector on one end</li> <li>PatchCord - Cable with integral female or male connector on each end</li> </ul>	<ul style="list-style-type: none"> <li>Tee - Connects to a single drop line to trunk with M35 connectors</li> <li>Reducing Tee - Connects to a single M22 drop line to trunk M35 connector</li> <li>Reducer - Connects from M35 male connector to M22 female connector</li> </ul>	<ul style="list-style-type: none"> <li>Female receptacles are a panel mount connector with flying leads</li> <li>Male receptacles are a motor junction box mounted connector with flying leads</li> <li>Field-installable receptacle for custom length cable</li> </ul>	<ul style="list-style-type: none"> <li>Sealing Caps offered in versions to interface with female or male connectors</li> <li>Locking Clips clamshell design clips over three power phase connector to limit customer access</li> </ul>
Features	<ul style="list-style-type: none"> <li>Rated for Motor Branch Circuits <ul style="list-style-type: none"> <li>Meets UL 2237 for Industrial Machinery</li> <li>65 kA High fault rating (SCCR)</li> <li>Rated for wash down environments</li> </ul> </li> <li>Straight or right angle connectors</li> <li>4-pin connector type</li> <li>Cable rating: TC-ER/STOOW</li> <li>Multiple standard lengths</li> </ul>	<ul style="list-style-type: none"> <li>Rated for Motor Branch Circuits <ul style="list-style-type: none"> <li>Meets UL 2237 for Industrial Machinery</li> <li>65 kA High fault rating (SCCR)</li> <li>Rated for wash down environments</li> </ul> </li> <li>Straight or right angle connectors</li> <li>4-pin connector type</li> <li>Cable rating: TC-ER/STOOW</li> <li>Multiple standard lengths</li> </ul>	<ul style="list-style-type: none"> <li>Rated for Motor Branch Circuits <ul style="list-style-type: none"> <li>Meets UL 2237 for Industrial Machinery</li> <li>65 kA High fault rating (SCCR)</li> <li>Rated for wash down environments</li> </ul> </li> <li>Trunk Tee, Reducing Tee and Reducer</li> <li>4-pin connector type</li> </ul>	<ul style="list-style-type: none"> <li>Rated for Motor Branch Circuits <ul style="list-style-type: none"> <li>Meets UL 2237 for Industrial Machinery</li> <li>65 kA High fault rating (SCCR)</li> <li>Rated for wash down environments</li> </ul> </li> <li>Male and female configurations</li> <li>4-pin connector type</li> <li>1/2 in. NPT</li> <li>Available in 1 meter length</li> </ul>	<ul style="list-style-type: none"> <li>Sealing Caps - Available in M35 and M22 styles</li> <li>Locking Clips - Designed for M35 and M22 connectors</li> </ul>
Rated Voltage	600V	600V	600V	600V	—
Connector Body Dimensions	<ul style="list-style-type: none"> <li>Straight: 88.9 mm x 38.6 mm</li> <li>Right Angle: 75.5 mm x 74 mm</li> </ul>	<ul style="list-style-type: none"> <li>Straight: 56. mm x 25.4 mm</li> <li>Right Angle: 44.9 mm x 40.4 mm</li> </ul>	<ul style="list-style-type: none"> <li>Trunk Tee: 108 mm x 73.6 mm</li> <li>Reducing Tee: 108 mm x 65.5 mm</li> <li>Reducer: 112.5 mm x 38.1 mm</li> </ul>	<ul style="list-style-type: none"> <li>M22 Female: 33.45 mm x 25.45 mm</li> <li>M22 Male: 28.04 mm x 25.45 mm</li> <li>M35 Female: 71.12 mm x 38.10 mm</li> <li>M35 Male: 63.50 mm x 38.10 mm</li> </ul>	—
Product Selection	<b>Page 9</b>	<b>Page 10</b>	<b>Page 11</b>	<b>Page 15</b>	<b>page 21</b>

## Control Power Media

					
	<b>Control Power Cordsets &amp; Patchcords</b>	<b>Control Power T-ports</b>	<b>Control Power Receptacles</b>	<b>Control Power Shorting Plugs</b>	<b>Control Power Accessories</b>
Description	<ul style="list-style-type: none"> <li>Cable with integral connector on either one or both ends</li> </ul>	<ul style="list-style-type: none"> <li>Cable with single male connector attached to two female connectors</li> </ul>	<ul style="list-style-type: none"> <li>Panel mount connector with flying leads</li> </ul>	<ul style="list-style-type: none"> <li>Integral connector with leads shorted for specific application requirements</li> </ul>	<ul style="list-style-type: none"> <li>Sealing caps, mounting nuts, and sealing washers</li> </ul>
Features	<ul style="list-style-type: none"> <li>6-pin/5-used configuration</li> <li>Male and female</li> <li>Straight or right angle versions</li> <li>16 AWG conductors, cable dual rated UL TC/Open Wiring and STOOW</li> <li>Multiple standard lengths</li> </ul>	<ul style="list-style-type: none"> <li>6-pin/5-used configuration</li> <li>Compact design</li> <li>Color-coded E-stop in and E-stop out configurations</li> </ul>	<ul style="list-style-type: none"> <li>6-pin/5-used configuration</li> <li>Male and female</li> <li>16 AWG conductors</li> <li>1/2 NPT mounting threads</li> <li>Multiple standard lengths</li> </ul>	<ul style="list-style-type: none"> <li>6-pin/5-used configuration</li> <li>Male</li> <li>Multiple versions color coded for simple identification</li> </ul>	<ul style="list-style-type: none"> <li>Rugged durable construction</li> <li>Designed to mate with control power media</li> </ul>
Rated Voltage	600V	600V	600V	600V	—
Connector Body Dimensions	<ul style="list-style-type: none"> <li>Straight: 56 x 25 mm (2.2 x 1 in.)</li> <li>Right Angle: 40 x 45 mm (1.6 x 1.8 in.)</li> </ul>	72 x 64 mm (2.8 x 2.5 in.)	30 x 25 mm (1.2 x 1 in.)	56 x 25 mm (2.2 x 1 in.)	—
Product Selection	<b>Page 17</b>	<b>Page 18</b>	<b>Page 19</b>	<b>Page 20</b>	<b>Page 21</b>

### Description

The power media offers both three-phase and control power cable systems of cordsets, patchcords, receptacles, tees, reducers and accessories, to be used with the ArmorStart Distributed Motor Controller. These cable system components allow quick connection of ArmorStart Distributed Motor Controllers, thereby reducing installation time. They provide for repeatable, reliable connection of the three-phase and control power to the ArmorStart Distributed Motor Controller and motor, by providing a plug and play environment that also avoids system mis-wiring.

Compared to the traditional conduit installations, with power media you profit and benefit from:

- Reduce commissioning time
- Plug and play design eliminates wiring errors
- Increased system design flexibility
- No special tools required
- Reduced labor costs

### Three-Phase Power Media

The three-phase power media offers quick disconnect cables that provide a secure connection to the ArmorStart Distributed Motor Controller. The connectors can be straight or right angled and are physically keyed to prevent wiring mishaps. The cabling options include:

- **Cordsets:** Cable with integral male or female connector at one end and flying leads at the other
- **Patchcords:** Cable with integral connector at each end (one male, one female)

The three-phase power tee, reducing tee, and reducer offers flexibility in system design.

The receptacles provide a termination point at the panel and motor junction box. The female receptacles can be used for a panel mount connection. The male receptacles can be used for a quick disconnect at the motor junction box.

Field-installable receptacles allow for custom power cable lengths. This reduces the amount of excess cable and provides a neater appearance to machines. Selecting just a few cordsets provides the sufficient cable lengths needed to meet the required applications. This minimizes project costs and complexity by reducing the number of different part numbers that are necessary.

Three-phase power media components are rated for motor branch circuits per UL 2237.

### Control Power Media

The control power media offers a mini disconnect cable that provides a secure connection to the ArmorStart Distributed Motor Controller. The control power media components are a 6-pin/5-used configuration to prevent mis-wiring with network connectors. The connectors can be straight or right angled and are physically keyed to prevent wiring mishaps. The cabling options include:

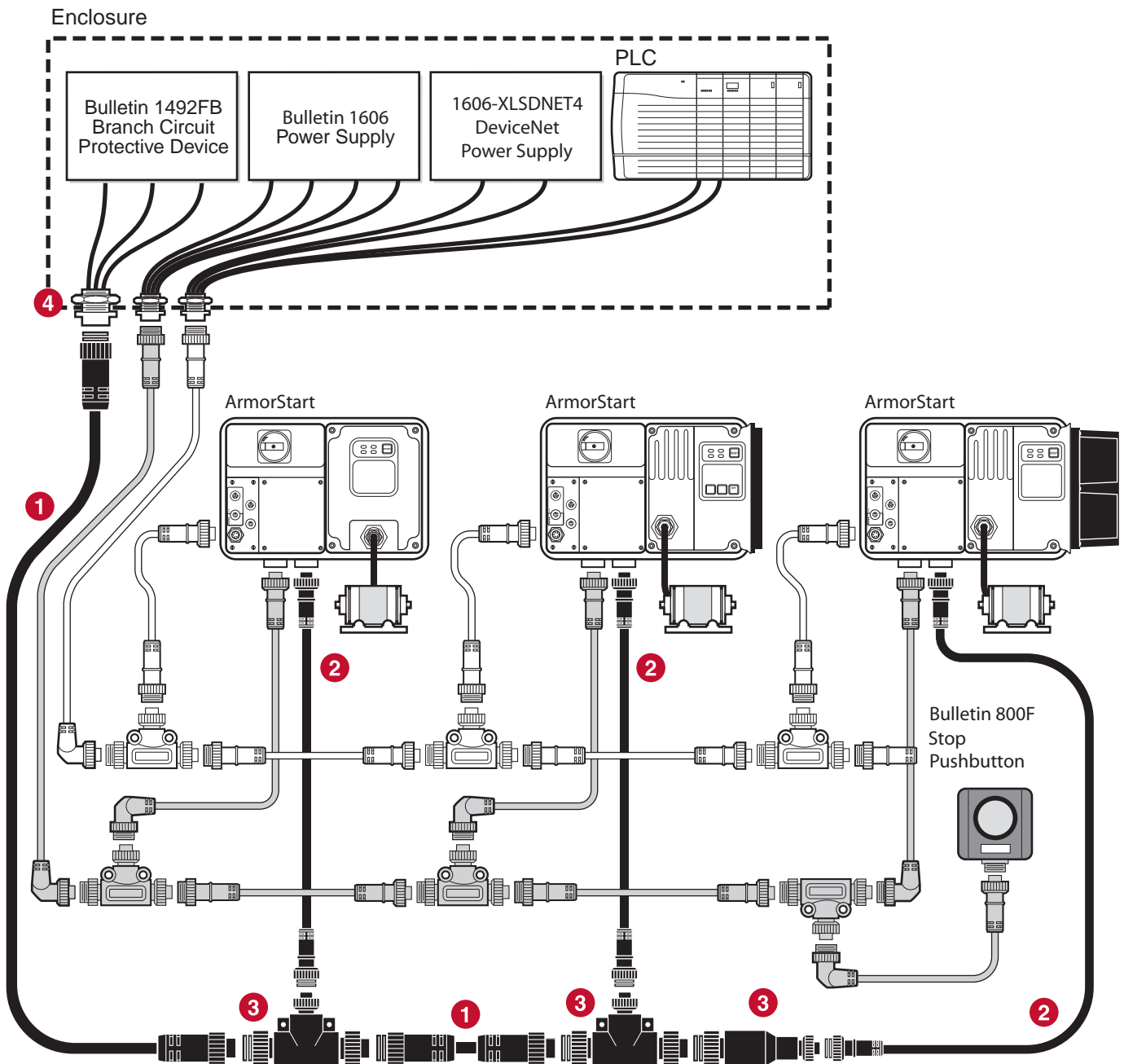
- **Cordsets:** Cable with integral male or female connector at one end and flying leads at the other
- **Patchcords:** Cable with integral connector at each end (one male, one female)

The control power tees offers flexibility in system design. The T-port connects a single drop line to the trunk. Three types of tees are offered. The E-stop In tee is used to connect to the Bulletin 800F On-Machine E-Stop station using a control power media patchcord. The E-stop Out tee is used with cordset or patchcord to connect to the ArmorStart Distributed Motor Controller. And the ArmorStart Auxiliary tees allow users to apply standard 4-wire auxiliary power down the trunk to other tees and devices.

The receptacles provide a termination point at the panel and ArmorStart Distributed Motor Controller. The female receptacles can be used for a panel mount connection. The male receptacles can be used for a quick disconnect at the ArmorStart Distributed Motor Controller with gland plate design.

**Note:** Refer to your local electrical code for proper application and protection of long length power cable to minimize physical damage and appropriate short-circuit or ground-fault protection for the assembly. See application note 290-AP001 for additional information.

## Three-Phase Power Media System Overview

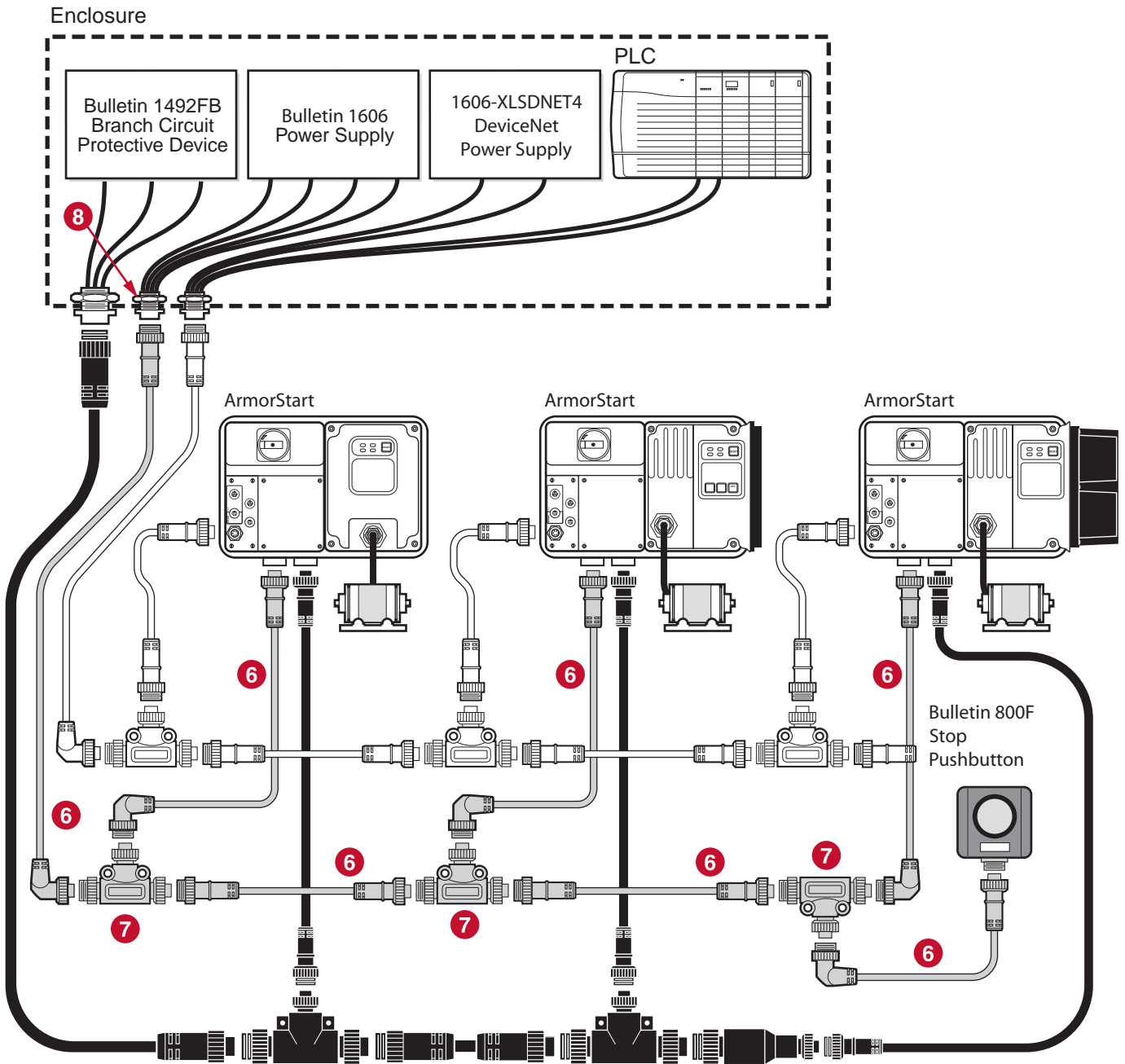


1. Three-Phase Power Trunk - Patchcord cable with integral female or male connector on each end (Example Cat. No.: 280-PWRM35A-M\*)
2. Three-Phase Drop Cable - PatchCord cable with integral female or male connector on each end (Example Cat. No.: 280-PWRM22A-M\*)
3. Three-Phase Power Tees and Reducer - Tee connects to a single drop line to trunk with quick change connectors (Cat. No.: 280-T35)  
Reducing Tee connects to a single drop line (Mini) to trunk (Quick change) connector (Cat. No.: 280-RT35)  
Reducer connects from quick change male connector to mini female connector (Cat. No.: 280-RA35)
4. Three-Phase Power Receptacles - Female receptacles are a panel mount connector with flying leads (Cat. No.: 280-M35F-M1)

# Power Media

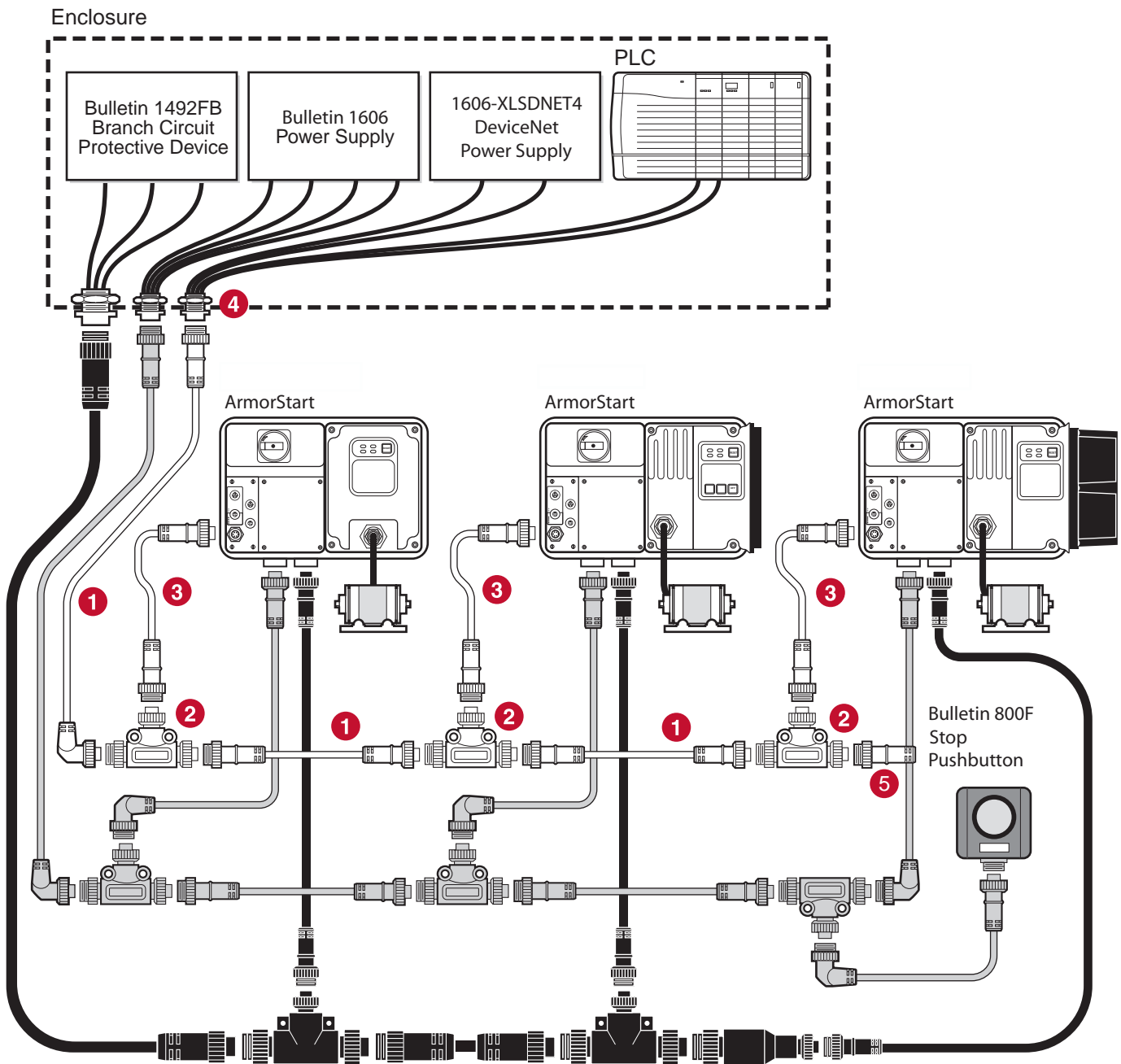
## Control Power Media Diagram

### Control Power Media System Overview



6. Control Power Media Patchcords - PatchCord cable with integral female or male connector on each end (Example Cat. No.: 889N-F65GFNM-\*)
7. Control Power Tees - The E-stop In Tee (Cat. No.: 898N-653ST-NKF) is used to connect to the Bulletin 800F On-Machine E-Stop station using a control power media patchcord. The E-stop Out tee (Cat. No.: 898N-653ES-NKF) is used with cordset or patchcord to connect to the ArmorStart Distributed Motor Controller.
8. Control Power Receptacles - Female receptacles are a panel mount connector with flying leads (Cat. No.: 888N-D65AF1-\*)

**DeviceNet Media System Overview**



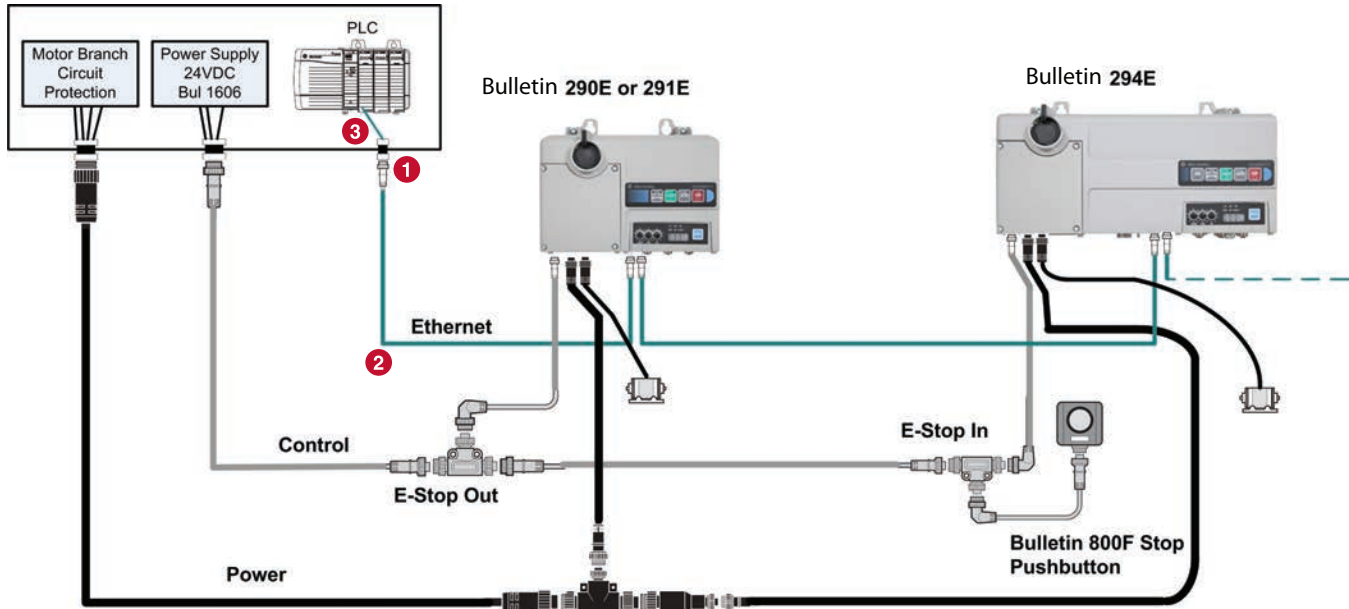
1. DeviceNet Trunk Cable - Patchcord trunk cable with integral female or male connector on each end (example 1485C-P\*N5-M5)
2. DeviceNet Mini- T-Port Tap - T-ports are used for connecting drops to the trunk line (example 1485P-P1N5-MN5KM)
3. DeviceNet Drop Cable - Drop cables and patch cords are used to connect devices to the network (example 1485G-P\*M5-Z5)
4. DeviceNet Receptacle - Receptacles are used when connections present but required (example 1485A-CXN5-M5)
5. DeviceNet Terminator - Properly designed DeviceNet networks require terminating resistors (example 1485A-T1N5)

**Note:** See the On-Machine Connectivity catalog for specific DeviceNet media components.

## Power Media

### Ethernet and Control Power Media Diagram

#### Ethernet Power Media System Overview



#### Ethernet Cat5e Connections:


1. CAT5e Bulkhead Connector and Receptacle (Example Cat. No.:1585A-DD4JD)
2. CAT5e Patch Cord, IP67, M12 D-Code, Male Straight, Male Right Angle (Example Cat. No.: 1585D-M4TBDE-\*)
3. CAT5e, Patch Cable, IP20, RJ45 Male to RJ45 Male (Example Cat. No. 1585J-M4TB-\*)

**Note:** See the On-Machine Connectivity catalog for specific Ethernet media components.



# Three-Phase Power Media

## Product Selection/Specifications/Approximate Dimensions

	<b>Bulletin 280 — Three-Phase Power Trunk Cables (Cordsets and Patchcords)</b> <ul style="list-style-type: none"> <li>Listed per UL 2237 for use in motor branch circuits per NFPA 79</li> <li>One piece molded design, M35 connection</li> <li>Can be used as a drop cable for ArmorStart Distributed Motor Controller or when desired to minimize voltage drops on extended cable runs</li> </ul>	<b>Table of Contents</b> Accessories..... 21  <b>Standards Compliance</b> UL 2237  <b>Certifications</b> UL Listed (File No. E318496, Guide PVVA)
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### Product Selection

#### Cordsets ‡

Pin Count	Assembly Rating	Cat. No.			
		Straight Female	Right-Angle Female	Straight Male	Right-Angle Male
4-pin	10 AWG, 600V, 25 A	280-PWRM35E-M★	280-PWRM35F-M★	280-PWRM35G-M★	280-PWRM35H-M★

#### Patchcords ‡

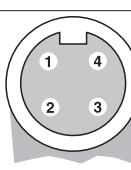
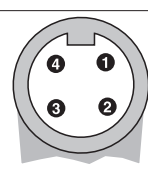
Pin Count	Assembly Rating	Cat. No.			
		Straight Female Straight Male	Right-Angle Female Straight Male	Straight Female Right-Angle Male	Right-Angle Female Right-Angle Male
4-pin	10 AWG, 600V, 25 A	280-PWRM35A-M★	280-PWRM35B-M★	280-PWRM35C-M★	280-PWRM35D-M★

‡ Stainless steel version may be ordered by adding **S** to the cat. no. (Example: Cat. No. 280**S**-PWRM35A-M\*)

★ Replace symbol with code from table below that represents length desired

<b>Feet</b>	1.62	3.3	4.9	6.5	8.1	9.8	13.1	19.7	26.2	32.8	39.4	45.9	49.2	65.6	82.0	98.4	114.8
<b>Meters</b>	0.5	1	1.5	2	2.5	3	4	6	8	10	12	14	15	20	25	30	35
<b>Code</b>	05	1	015	2	025	3	4	6	8	10	12	14	15	20	25	30	35

### Pinout and Color Code

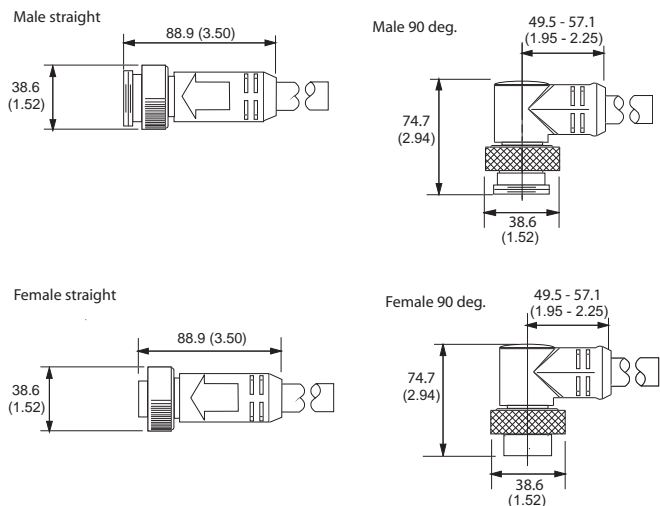
	Face View Pinout	
	4-Pin	
		
Color Code	1 Black 2 Green/Yellow Extended PIN	3 Red 4 White

### Specifications

Mechanical	
<b>Coupling Nut</b>	Black anodized aluminum
<b>Housing</b>	Black PVC
<b>Insert</b>	Black PVC
<b>Cable Diameter</b>	0.775 in. +/- 0.12 in. (19.68 mm +/- 0.5 mm) with four 10 AWG conductors
Electrical	
<b>Contacts</b>	Copper alloy with gold over nickel plating
<b>Cable</b>	Black PVC, dual rated UL TC/Open Wiring and STOOW
<b>Cable Rating</b>	600V AC/DC
<b>Assembly Rating</b>	4-pin — 10 AWG, 600V @ 25 A
<b>Short Circuit Current Rating (SCCR)</b>	<p><b>Circuit Breaker:</b> Suitable for use on a circuit capable of delivering not more than 65 000 RMS symmetrical amperes at 480V AC maximum when protected by Bul. 140U-H frame circuit breaker, not rated more than 480V, 100 A and a maximum interrupting of 65 000 RMS symmetrical amperes.</p> <p><b>Fusing:</b> Suitable for use on a circuit capable of delivering not more than 65 000 RMS symmetrical amperes at 600V AC maximum when protected by CC, J, and T class fuses.</p>
Environmental	
<b>Enclosure Rating</b>	IP67, UL Type 4/12 & NEMA 6P; 1200 psi washdown
<b>Operating Temperature</b>	UL Type TC 600V 90 °C Dry 75 °C Wet, Exposed Run (ER) or MTW 600V 90 °C or STOOW 105 °C 600V - CSA STOOW 600V FT2


### Approximate Dimensions

Dimensions in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes and are subject to change.



# Three-Phase Power Media

## Product Selection/Specifications/Approximate Dimensions

	<p><b>Bulletin 280 — Three-Phase Power Drop Cables (Cordsets and Patchcords)</b></p> <ul style="list-style-type: none"> <li>Listed per UL 2237 for use in motor branch circuits per NFPA 79</li> <li>One-piece molded design</li> <li>Can be used as a drop cable for ArmorStart family</li> <li>Can be used as a non-shielded motor cable for ArmorStart LT</li> </ul>	<p><b>Table of Contents</b></p> <p>Accessories..... 21</p> <p><b>Standards Compliance</b></p> <p>UL 2237</p> <p><b>Certifications</b></p> <p>UL Listed (File No. E318496, Guide PVVA)</p>
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### Cordsets ‡

Pin Count	Assembly Rating	Cat. No.			
		Straight Female	Right-Angle Female	Straight Male	Right-Angle Male
4-pin	16 AWG, 600V, 10 A*	280-PWRM22E-M*	280-PWRM22F-M*	280-PWRM22G-M*	280-PWRM22H-M*
4-pin	14 AWG, 600V, 15 A*	280-PWRM24E-M*	280-PWRM24F-M*	280-PWRM24G-M*	280-PWRM24H-M*

### Patchcords ‡

Pin Count	Assembly Rating	Cat. No.			
		Straight Female Straight Male	Right-Angle Female Straight Male	Straight Female Right-Angle Male	Right-Angle Female Right-Angle Male
4-pin	16 AWG, 600V, 10 A*	280-PWRM22A-M*	280-PWRM22B-M*	280-PWRM22C-M*	280-PWRM22D-M*
4-pin	14 AWG, 600V, 15 A*	280-PWRM24A-M*	280-PWRM24B-M*	280-PWRM24C-M*	280-PWRM24D-M*



‡ Stainless steel version may be ordered by adding **S** to the cat. no. (Example: Cat. No. 280S-PWRM22A-M\*)

\* M22 is 16 AWG wire with a 22 mm connector. M24 is 14 AWG wire with 22 mm connector.

\* Replace symbol with code from table below that represents length desired.

Feet	1.62	3.3	4.9	6.5	8.1	9.8	13.1	19.7	26.2	32.8	39.4	45.9
Meters	0.5	1	1.5	2	2.5	3	4	6	8	10	12	14
Code	05	1	015	2	025	3	4	6	8	10	12	14

### Pinout and Color Code

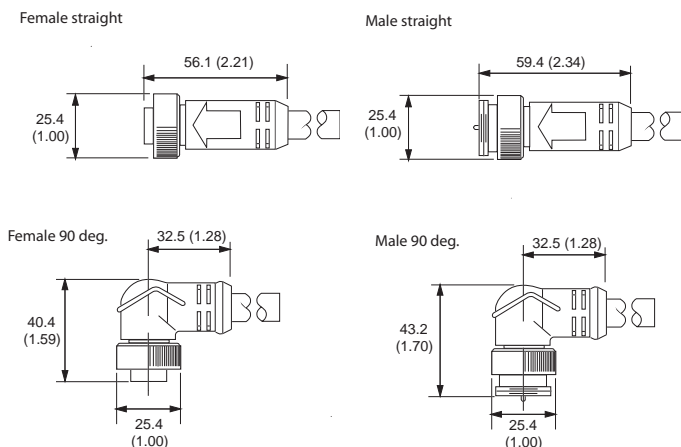
Face View Pinout	
4-Pin	
 <p>Female</p>	 <p>Male</p>
Color Code	1 Black 2 White 3 Red 4 Green/Yellow Extended PIN


### Specifications

Mechanical	
<b>Coupling Nut</b>	Black anodized aluminum
<b>Housing</b>	Black PVC
<b>Insert</b>	Black PVC
<b>Cable Diameter</b>	0.43 in. +/- 0.12 in. (10.9 mm +/- 0.5 mm) with four 16 AWG conductors 0.58 in. +/- 0.12 in. (14.7 mm +/- 0.5 mm) with four 14 AWG conductors
Electrical	
<b>Contacts</b>	Brass with gold over nickel plating
<b>Cable</b>	Black PVC, dual rated UL TC/Open Wiring and STOOW
<b>Cable Rating</b>	600V AC/DC
<b>Assembly Rating</b>	4-pin — 16 AWG, 600V @ 10 A 4-pin — 14 AWG, 600V @ 15 A
<b>Short Circuit Current Rating (SCCR)</b>	<p><b>Fusing:</b> Suitable for use on a circuit capable of delivering not more than 65 000 RMS symmetrical amperes at 600V AC maximum when protected by CC, J, and T class fuses, rated 40 A non-time delay or 20 A time delay.</p> <p><b>Circuit Breaker:</b> Suitable for use on a circuit capable of delivering not more than 45 000 RMS symmetrical amperes at 480Y/277V AC maximum when protected by Cat. No. 140U-D6D3-C30 circuit breaker, not rated more than 480Y/277V, 30 A, having an interrupting rating not less than 45 000 RMS symmetrical amperes, 480Y/277V maximum.</p>
Environmental	
<b>Enclosure Rating</b>	IP67, UL Type 4/12 & NEMA 6P; 1200 psi washdown
<b>Operating Temperature</b>	UL Type TC 600V 90 °C Dry 75 °C Wet, Exposed Run (ER) or MTW 600V 90 °C or STOOW 105 °C 600V - CSA STOOW 600V FT2

### Approximate Dimensions

Dimensions in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes and are subject to change.



	<p><b>Bulletin 280 — Three-Phase Power Tees and Reducers (4-Pole)</b></p> <ul style="list-style-type: none"> <li>• Listed per UL 2237 for use in motor branch circuits per NFPA 79                     <ul style="list-style-type: none"> <li>– One-piece molded design</li> <li>– M35 power tee</li> <li>– M35 power tee with M22 reducing drop</li> <li>– M35 to M22 straight reducer</li> </ul> </li> <li>• 4-pin T-port connects a single drop line to the trunk</li> <li>• 4-pin configuration</li> </ul>	<p><b>Table of Contents</b></p> <p>Approximate              Dimensions..... 12              Accessories..... 21</p> <p><b>Standards Compliance</b>              UL 2237</p> <p><b>Certifications</b>              UL Listed (File No. E318496, Guide PVVA)</p>
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**Product Selection**  
**Tees and Reducing Adapters ‡**

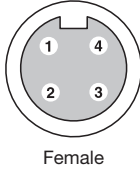
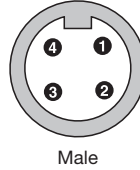
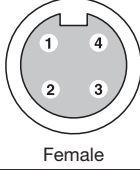
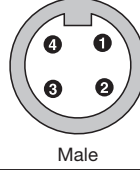

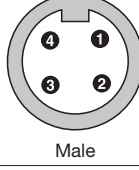
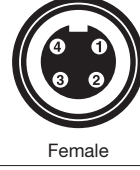
Description	Assembly Rating	Color Code	Cat. No.
M35, 3-Phase Power Tee, 4-pole	25 A	A	<b>280-T35</b>
M35, 3-Phase Power Tee Reducing drop M22, 4-pole	Trunk 25 A/Drop 15 A	B	<b>280-RT35</b>
M35, 3-Phase Reducing Adapter, 4-pole	15 A	C	<b>280-RA35</b>

‡ Stainless steel version may be ordered by adding **S** to the cat. no. (Example: Cat. No. 280**S**-T35)

**Specifications**

Mechanical	
<b>Coupling Nut</b>	Black anodized aluminum (Trunk), black zinc diecast (Drop)
<b>Housing</b>	Black PVC
<b>Insert</b>	Black PVC
Electrical	
<b>Contacts</b>	Copper alloy with gold over nickel plating
<b>Voltage</b>	600V AC/DC
<b>Assembly Rating</b>	Trunk Tee: 25 A Reducing Tee: Trunk 25 A/Drop 15 A Reducer: 15 A
<b>Short Circuit Current Rating (SCCR)</b>	<p><i>Trunk Tee: 25 A</i></p> <p><b>Fusing:</b> Suitable for use on a circuit capable of delivering not more than 65 000 RMS symmetrical amperes at 600V AC maximum when protected by CC, J, and T class fuses.</p> <p><b>Circuit Breaker:</b> Suitable for use on a circuit capable of delivering not more than 65 000 RMS symmetrical amperes at 480V AC maximum when protected by Bulletin 140U-H frame circuit breaker, not rated more than 480V, 100 A and a maximum interrupting of 65 000 RMS symmetrical amperes.</p> <p><i>Reducing Tee 25 A/Drop 15 A and Reducer</i></p> <p><b>Fusing:</b> Suitable for use on a circuit capable of delivering not more than 65 000 RMS symmetrical amperes at 600V AC maximum when protected by CC, J, and T class fuses, rated 40 A non-time delay or 20 A time delay.</p> <p><b>Circuit Breaker:</b> Suitable for use on a circuit capable of delivering not more than 45 000 RMS symmetrical amperes at 480Y/277V AC maximum when protected by Cat. No. 140U-D6D3-C30 circuit breaker, not rated more than 480Y/277V, 30 A, having an interrupting rating not less than 45 000 RMS symmetrical amperes, 480Y/277V maximum.</p>
Environmental	
<b>Enclosure Rating</b>	IP67, UL Type 4/12 & NEMA 6P; 1200 psi washdown

**Pinout and Color Code**

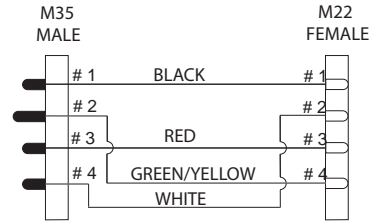
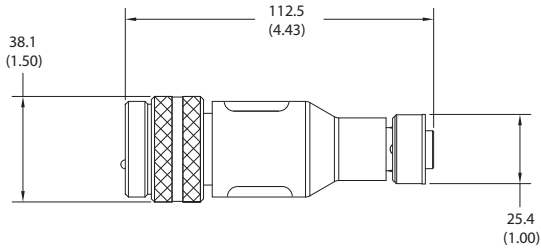
Assembly Rating	Color Code	Face View Pinout	
		4-Pin	
		M35 Connector	M22 Connector
Trunk Tee: 25 A	A	 Female	 Male
		1 Black 2 Green/Yellow Extended PIN	3 Red 4 White
Reducing Tee: Trunk 25 A/ Drop 15 A	B	 Female	 Male
		1 Black 2 Green/Yellow Extended PIN	 Female
Reducer: Trunk 25 A/ Drop 15 A	C	 Male	 Female
		1 Black 2 Green/Yellow Extended PIN	3 Red 4 White
		1 Black 2 Green/Yellow Extended PIN	3 Red 4 Green/Yellow Extended PIN

# Three-Phase Power Media

## Approximate Dimensions/Wiring Diagrams

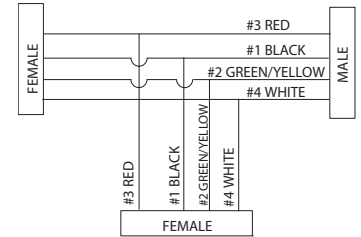
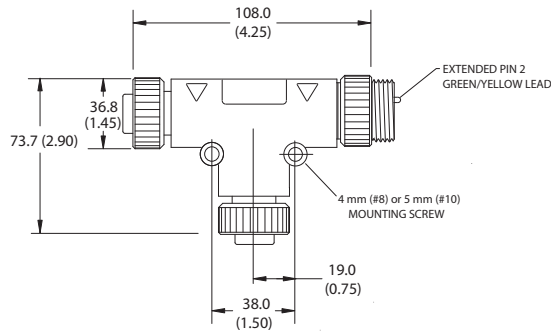
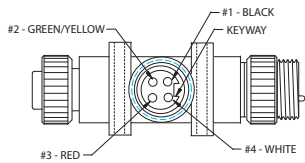
Dimensions in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes and are subject to change.

### Reducer



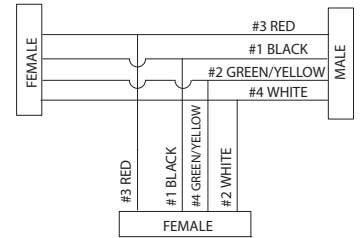
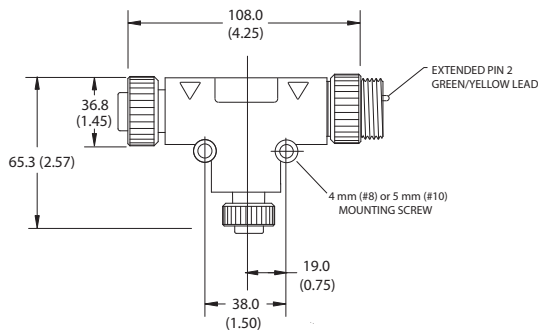
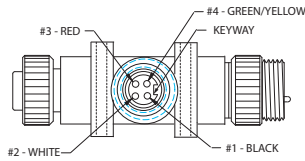
WIRING DIAGRAM

### Power Tee




WIRING DIAGRAM

### Power Tee - reducing drop



WIRING DIAGRAM

	<p><b>Bulletin 280 — Three-Phase Power Receptacles (Male and Female)</b></p> <ul style="list-style-type: none"> <li>Listed per UL 2237 for use in motor branch circuits per NFPA 79</li> <li>16, 14, and 10 AWG conductors</li> <li>4-pin configuration, M35 or M22 connection</li> <li>Female receptacles can be used for panel mount connection</li> <li>Male receptacles can be used for quick disconnect motor junction box</li> <li>1/2 in.-14 NPT threads</li> </ul>	<p><b>Table of Contents</b></p> <p>Approx. Dimensions . 14              Additional Accessories..... 21</p> <p><b>Standards Compliance</b>              UL 2237</p> <p><b>Certifications</b>              UL Listed (File No. E318496, Guide PVVA)</p>
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**Product Selection**  
**Receptacles ‡**

Pin Count	Assembly Rating	Color Code	Cat. No.	
			Female	Male
4-pin	16 AWG, 600V, 10 A	A	<b>280-M22F-M1</b>	<b>280-M22M-M1</b>
	14 AWG, 600V, 15 A	A	280-M24F-M1	280-M24M-M1
	10 AWG, 600V, 25 A	B	<b>280-M35F-M★</b>	<b>280-M35M-M★</b>

‡ Stainless steel version may be ordered by adding **S** to the cat. no. (Example: Cat. No. 280**S**-M22F-M1)  
 ★ Replace symbol with length in meters: 1 for 1 m or 3 for 3 m.

**Accessories**

**Mounting Nuts and Flat Seals**

Description	Pkg. Quantity	Cat. No.
Mounting nuts for 1/2 in.-14 NPT threaded receptacles	10	<b>889A-U1NUT-10</b>
Flat sealing washers for 1/2 in.-14 NPT threaded receptacles		<b>889A-U1FSL-10</b>

**Specifications**

<b>Mechanical</b>	
<b>Insert</b>	Black PVC
<b>Receptacle Shell Material</b>	Black anodized aluminum (female) and zinc diecast, black E-coat (male)
<b>Electrical</b>	
<b>Contacts</b>	Copper alloy with gold over nickel plating (Trunk), brass with gold over nickel plating (Drop)
<b>Cable Rating</b>	600V AC/DC
<b>Assembly Rating</b>	4-pin — 16 AWG, 600V @ 10 A 4-pin — 14 AWG, 600V @ 15 A 4-pin — 10 AWG, 600V @ 25 A
<b>Short Circuit Current Rating (SCCR)</b>	<p style="text-align: center;"><i>4-pin — 10 AWG</i></p> <p><b>Fusing:</b> Suitable for use on a circuit capable of delivering not more than 65 000 RMS symmetrical amperes at 600V AC maximum when protected by CC, J, and T class fuses</p> <p><b>Circuit Breaker:</b> Suitable for use on a circuit capable of delivering not more than 65 000 RMS symmetrical amperes at 480V AC maximum when protected by Bul. 140U-H frame circuit breaker, not rated more than 480V, 100 A and a maximum interrupting of 65 000 RMS symmetrical amperes.</p> <p style="text-align: center;"><i>4-pin — 16 or 14 AWG</i></p> <p><b>Fusing:</b> Suitable for use on a circuit capable of delivering not more than 65 000 RMS symmetrical amperes at 600V AC maximum when protected by CC, J, and T class fuses, rated 40 A non-time delay or 20 A time delay.</p> <p><b>Circuit Breaker:</b> Suitable for use on a circuit capable of delivering not more than 45 000 RMS symmetrical amperes at 480Y/277V AC maximum when protected by Cat. No. 140U-D6D3-C30 circuit breaker, not rated more than 480Y/277V, 30 A, having an interrupting rating not less than 45 000 RMS symmetrical amperes, 480Y/277V maximum.</p>
<b>Environmental</b>	
<b>Enclosure Rating</b>	IP67, UL Type 4/12 & NEMA 6P; 1200 psi washdown

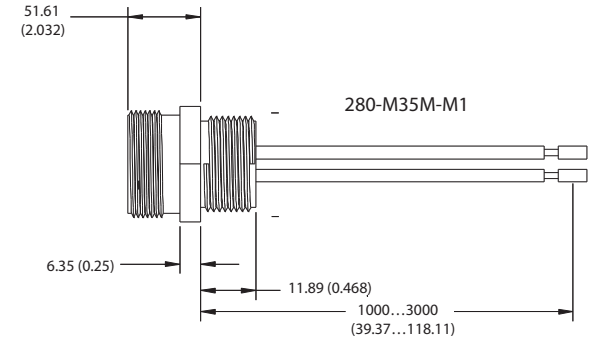
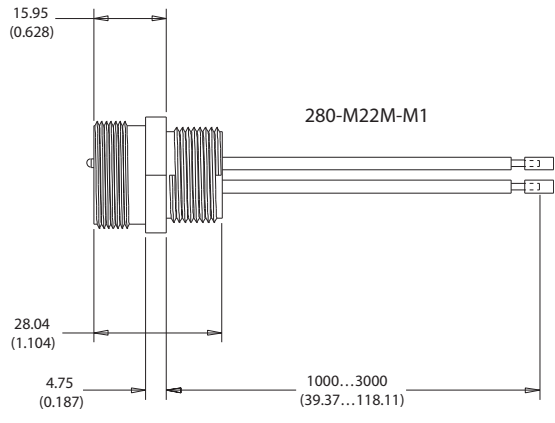
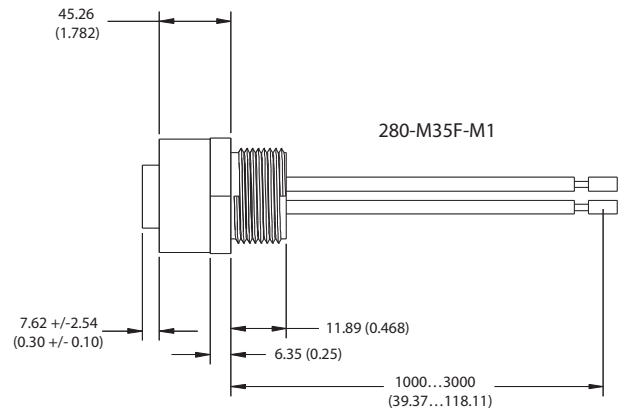
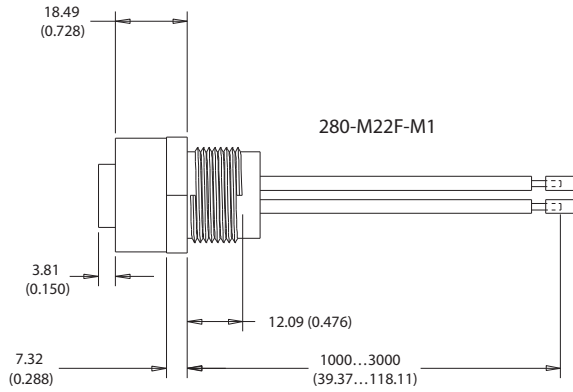
# Three-Phase Power Media

## Approximate Dimensions

### Pinout and Color Code

Assembly Rating	Color Code	Face View Pinout			
		4-Pin			
		M35 Connector		M22 Connector	
		Female	Male	Female	Male
14 AWG, 600V, 15 A 16 AWG, 600V, 10 A	A		—	1 Black 2 White	3 Red 4 Green/Yellow Extended PIN
10 AWG, 600V, 25 A	B	1 Black 2 Green/Yellow Extended PIN	3 Red 4 White		—

Dimensions in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes and are subject to change.





**Bulletin 280 — Three-Phase Power Field-Installed Receptacles**

- Listed per UL 2237 for use in motor branch circuits per NFPA 79
- 16 to 10 AWG conductors
- 4-pin configuration, M35 or M22 connection
- Used to configure custom-length cordsets

**Table of Contents**

Approximate  
 Dimensions..... 16  
 Accessories..... 21

**Standards Compliance**

UL 2237

**Certifications**

UL Listed (File No. E318496, Guide PVVA)

**Product Selection**  
**Receptacles**

Pin Count	Assembly Rating	Certifications	Cable Diameter	Cat. No.	
				Female	Male
4-pin	16 AWG, 600V, 10 A 14 AWG, 600V, 15 A	UL Listed UL 2237 (File No. E318496, Guide PVVA)	0.28...0.47 in.	280-FAM22F	280-FAM22M
	10 AWG, 600V, 25 A ♦		0.48...0.81 in.	280-FAM35F	280-FAM35M

♦ When used with Cat. No. 280-PWRM24\_-M\* [E,F,G,or H], use Cat. No. 280-FAM35\* and the corresponding mating receptacle 280-M35F-M\*

**Specifications**

<b>Mechanical</b>	
<b>Insert</b>	Black PVC
<b>Receptacle Shell Material</b>	Black anodized aluminum (female) and zinc diecast, black E-coat (male)
<b>Electrical</b>	
<b>Contacts</b>	Copper alloy with gold over nickel plating (Trunk), brass with gold over nickel plating (Drop)
<b>Cable Rating</b>	600V AC/DC: 14 AWG Listed TC, 16 AWG Listed TC-ER/STOOW, 10 AWG Listed TC-ER/STOOW
<b>Assembly Rating</b>	<p><b>Note:</b> When applied with 14 AWG or larger wire, this is suitable for use on Motor Branch Circuits, per NFPA 79.</p> <p>4-pin — 16 AWG, 600V @ 10 A                      4-pin — 14 AWG, 600V @ 15 A                      4-pin — 10 AWG, 600V @ 25 A</p>
<b>Short Circuit Current Rating (SCCR)</b>	<p style="text-align: center;"><i>4-pin — 10 AWG</i></p> <p><b>Fusing:</b> Suitable for use on a circuit capable of delivering not more than 65 000 RMS symmetrical amperes at 600V AC maximum when protected by CC, J, and T class fuses</p> <p><b>Circuit Breaker:</b> Suitable for use on a circuit capable of delivering not more than 65 000 RMS symmetrical amperes at 480V AC maximum when protected by Bul. 140U-H frame circuit breaker, not rated more than 480V, 100 A and a maximum interrupting of 65 000 RMS symmetrical amperes.</p> <p style="text-align: center;"><i>4-pin — 16 and 14 AWG</i></p> <p><b>Fusing:</b> Suitable for use on a circuit capable of delivering not more than 65 000 RMS symmetrical amperes at 600V AC maximum when protected by CC, J, and T class fuses, rated 40 A non-time delay or 20 A time delay.</p> <p><b>Circuit Breaker:</b> Suitable for use on a circuit capable of delivering not more than 45 000 RMS symmetrical amperes at 480V AC maximum when protected by Cat. No. 140U-D6D3-C30 circuit breaker, not rated more than 480Y/277V, 30 A, having an interrupting rating not less than 45 000 RMS symmetrical amperes, 480Y/277V maximum.</p>
<b>Environmental</b>	
<b>Enclosure Rating</b>	IP67, UL Type 4/12 & NEMA 6P; 1200 psi washdown

**Pinout and Color Code**

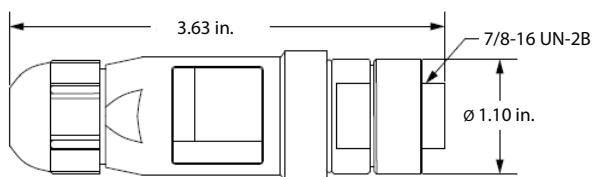
Assembly Rating	Face View Pinout			
	4-Pin			
	M35 Connector		M22 Connector	
	 Female	 Male	 Female	 Male
16 AWG, 600V, 10 A 14 AWG, 600V, 15 A	—	—	1 Black 2 White	3 Red 4 Green/Yellow Extended PIN
10 AWG, 600V, 25 A	1 Black 2 Green/Yellow Extended PIN	3 Red 4 White	—	—

# Three-Phase Power Media

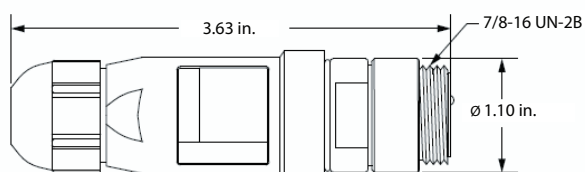
## Approximate Dimensions

### M22, 16 AWG Field-Installed Receptacles

Cat. No. 280-FAM22F (Female)

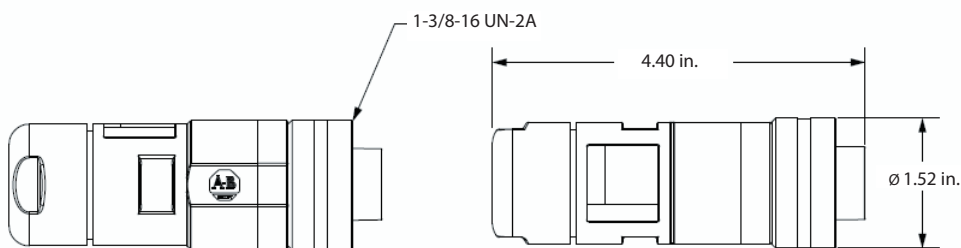


Cat. No. 280-FAM22M (Male)

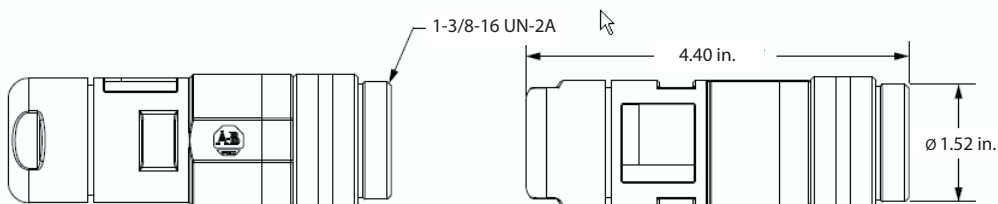


### M35, 10 AWG Field-Installed Receptacles


Cat. No. 280-FAM35F (Female)



Cat. No. 280-FAM35M (Male)





	<p><b>Bulletin 889N — Control Power Trunk and Drop Cables</b></p> <ul style="list-style-type: none"> <li>• 6-pin/5-used configuration to prevent mis-wiring with network connectors</li> <li>• One-piece molded design</li> <li>• 16 AWG exposed run (TC-ER) rated cable</li> </ul>	<p><b>Table of Contents</b></p> <p>Accessories..... 21</p>
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**Product Selection**

**Cordsets**

Pin Count	Assembly Rating	Cat. No.			
		Straight Female	Right-Angle Female	Straight Male	Right-Angle Male
6-pin/5 used	16 AWG 600V, 10 A	889N-F65GF-*	889N-R65GF-*	889N-M65GF-*	889N-E65GF-*

\* Replace symbol with code from the table below that represents the desired length:

	Feet	Meters	Code
	6.5	2	2
	16.4	5	5
	32.8	10	10

**Patchcords**

Pin Count	Assembly Rating	Cat. No.			
		Straight Female Straight Male	Right-Angle Female Straight Male	Straight Female Right-Angle Male	Right-Angle Female Right-Angle Male
6-pin/5 used	16 AWG 600V, 10 A	889N-F65GFNM-*	889N-R65GFNM-*	889N-F65GFNE-*	889N-R65GFNE-*



\* Replace symbol with code from the table below that represents the desired length:

	Feet	Meters	Code
	3.3	1	1
	6.5	2	2
	9.8	3	3
	16.4	5	5
	32.8	10	10

**Specifications**

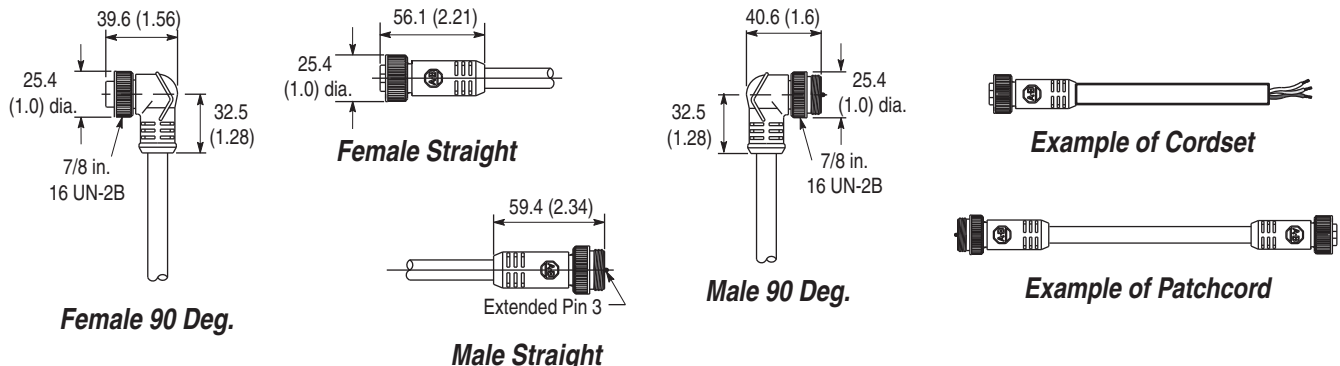
Mechanical	
<b>Coupling Nut</b>	Black epoxy coated zinc
<b>Overmold</b>	Black Riteflex TPE
<b>Insert</b>	Yellow Riteflex TPE
<b>Contacts</b>	Brass/gold over palladium nickel
<b>Cable</b>	Grey PVC, 16 AWG, dual rated UL TC/Open Wiring and STOOW
<b>Cable Diameter</b>	0.44 in. +/- 0.12 in. (11.18 mm +/- 0.5 mm)
Electrical	
<b>Cable Rating</b>	UL Type TC 600V 90 °C Dry 75 °C Wet, Open Wiring or MTW 600V 90 °C or STOOW 105 °C 600V - CSA STOOW 600V FT2
<b>Assembly Rating</b>	600V, 10 A
Environmental	
<b>Enclosure Type Rating</b>	IP67, NEMA 6P, 1200 psi washdown
<b>Operating Temperature</b>	-20...+90 °C (-4...+194 °F)

**Pinout and Color Code**

	Face View Pinout	
	6-pin/5-used	
	 <p>Female</p>	 <p>Male</p>
<b>Color Code</b>	1 Red (+) 2 Black (-) 3 Green (GND)	4 Blank/Not Used 5 Blue (S1) 6 White (S2)

**Approximate Dimensions**

Dimensions in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes and are subject to change.



# Control Power Media

## Product Selection/Specifications/Approximate Dimensions



### Bulletin 898N — Control Power T-Ports

- 6-pin/5-used configuration to prevent mis-wiring with network connectors
- One piece molded design
- Durable compact design
- ArmorStart adapter T-Port for use with auxiliary power media

### Table of Contents

Accessories..... 21

## Product Selection

### T-Ports

Configuration	Assembly Rating	Overmold Color	Wiring Diagram	Cat. No.
E-stop out	600V, 10 A	Red		898N-653ES-NKF
E-stop in	600V, 10 A	Black		898N-653ST-NKF
ArmorStart auxiliary	600V, 8 A	Black		898N-543ES-NKF★

★ Refer to the On-Machine Connectivity catalog for media.

## Specifications

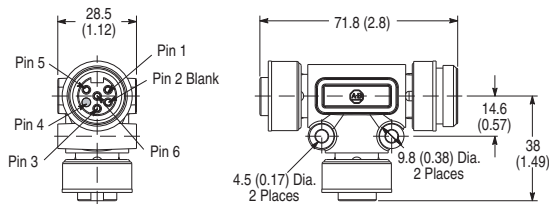
Mechanical	
Coupling Nut	Black epoxy coated zinc
Housing	Riteflex TPE
Insert	Yellow Riteflex TPE
Contacts	Brass/gold over palladium nickel
Electrical	
Assembly Rating	600V, 10 or 8 A
Environmental	
Enclosure Type Rating	IP67, NEMA 6P, 1200 psi washdown
Operating Temperature	-20...+90 °C (-4...+194 °F)

## Pinout and Color Code

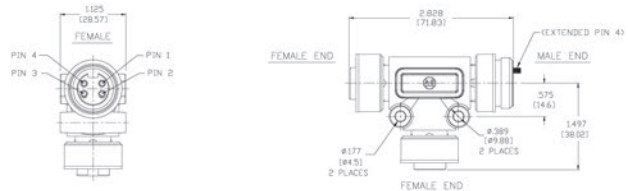
	Face View Pinout	
	6-pin/5-used	4-pin/4-used
	Cat. No. 898N-653ES-NKF or 898N-653ST-NKF	Cat. No. 898N-543ES-NKF
	Female	Female
Color Code	1 Red 2 Black 3 Green 4 Blank/Not Used 5 Blue 6 White	1 White 2 Black 3 Blue 4 Red

## Approximate Dimensions

Dimensions in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes and are subject to change.




Cat. No. 898N-653ES-NKF or 898N-653ST-NKF



Cat. No. 898N-543ES-NKF



	<p><b>Bulletin 888N — Control Power Receptacles</b></p> <ul style="list-style-type: none"> <li>• 6-pin/5-used configuration to prevent mis-wiring with network connectors</li> <li>• 1/2 in. - 14 NPT threads</li> </ul>	<p><b>Table of Contents</b></p> <p>Accessories..... 21</p>
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**Product Selection**

**Receptacles**



Pin Count	Assembly Rating	Cat. No.	
		Female	Male
6-pin/5 used	16 AWG 600V, 10 A	888N-D65AF1-*	888N-M65AF1-*

\* Replace symbol with length in meters (0.3 or 1 standard)

**Specifications**

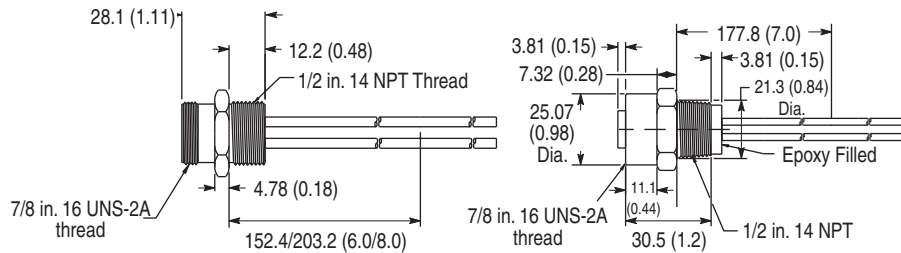
Mechanical	
Receptacle Shell	Male: Black epoxy coated zinc diecast Female: Black anodized aluminum
Insert	Yellow PVC
Contacts	Brass/gold over palladium nickel
Electrical	
Assembly Rating	600V, 10 A
Environmental	
Enclosure Type Rating	IP67, NEMA 6P, 1200 psi washdown
Operating Temperature	-20...+90 °C (-4...+194 °F)

**Pinout and Color Code**

	Face View Pinout	
	6-pin/5-used	
		
	Female	Male
Color Code	1 Red (+) 2 Black (-) 3 Green (GND)	4 Blank/Not Used 5 Blue (S1) 6 White (S2)


**Approximate Dimensions**

Dimensions in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes and are subject to change.



# Control Power Media

## Product Selection/Specifications/Approximate Dimensions

	<p><b>Bulletin 889A — Control Power Shorting Plugs</b></p> <ul style="list-style-type: none"> <li>• 6-pin/5-used configuration to prevent mis-wiring with network connectors</li> <li>• 1/2 in. - 14 NPT threads</li> </ul>	<p><b>Table of Contents</b></p> <p>Accessories..... 21</p>
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### Product Selection



#### Shorting Plugs

Configuration	Assembly Rating	Overmold Color	Wiring Diagram	Cat. No.
E-stop out	600V, 10 A	Red	1. ← 2. ← N/C 3. ← N/C 4. ← Blank 5. ← N/C 6. ←	889A-M65SP61
E-stop in		Black	1. ← N/C 2. ← N/C 3. ← N/C 4. ← Blank 5. ← 6. ←	889A-M65SP65

### Specifications

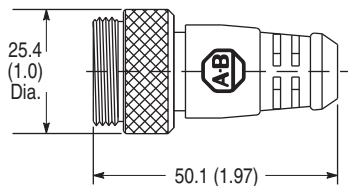
Mechanical	
Coupling Nut	Black epoxy coated zinc
Overmold	Riteflex TPE
Insert	Yellow Riteflex TPE
Contacts	Brass/gold over palladium nickel
Electrical	
Assembly Rating	600V, 10 A
Environmental	
Enclosure Type Rating	IP67, NEMA 6P, 1200 psi washdown
Operating Temperature	-20...+90 °C (-4...+194 °F)

### Pinout and Color Code

	Face View Pinout	
	6-pin/5-used	
	 <p>Female</p>	 <p>Male</p>
Color Code	1 Red (+) 2 Black (-) 3 Green (GND)	4 Blank/Not Used 5 Blue (S1) 6 White (S2)

### Approximate Dimensions

Dimensions in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes and are subject to change.

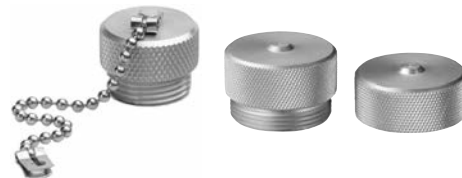


## Locking Clips



Description	Material	Pkg. Quantity	Connector Style	Cat. No.
Clam shell design clips over the three-phase power media drop connection, to limit customer access.	ABS/PC plastics	10	M22 Connector	280-MTR22-LC
Clam shell design clips over the three-phase power media trunk connection, to limit customer access.			M35 Connector	280-MTR35-LC

## Sealing Caps



Connector Style	Material	Enclosure Type Rating	Thread Configuration	Dimensions	Cat. No.
Control Power (M22)	Aluminum grey, anodized	IP20	External, male	<p>7/8 in. -16 UN 2 A Threads Gasket</p>	1485A-C1
			Internal, female	<p>7/8 in. -16 UN 2 B Threads Gasket</p>	889A-NCAP
3-Phase Power (M35)		IP67, NEMA 4 & 6P: 1200 psi washdown	External, male	<p>1-3/8 in. -16 UN 2A Threads Gasket</p>	889A-QMCAP
			Internal, female	<p>1-3/8 in. -16 UN 2B Threads Gasket</p>	889A-QCAP

## Mounting Nuts and Flat Seals

Description	Pkg. Quantity	Cat. No.
Mounting nuts for 1/2 in.-14 NPT threaded receptacles	10	889A-U1NUT-10
Flat sealing washers for 1/2 in.-14 NPT threaded receptacles		889A-U1FSL-10

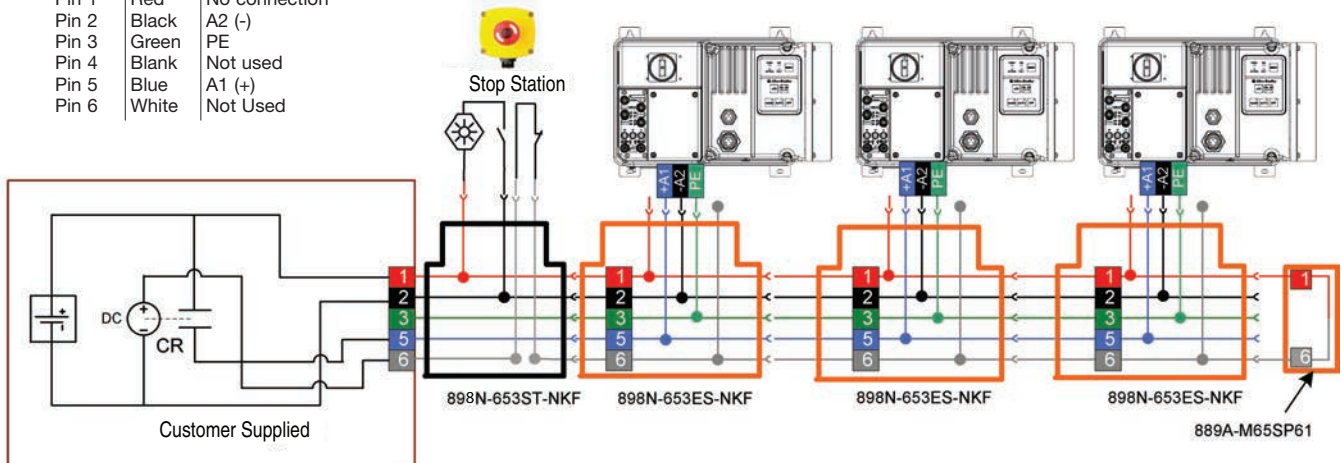
On-Machine Stop Stations



Enclosure Type	Quick Connect	Knockout Type	Operator	Illumination Voltage	Contact Configuration	Cat. No.
Plastic	Mini Receptacle	Metric	Twist-to-Release 40 mm	24V AC/DC	1 N.O./1 N.C.	800F-1YMQ4
Metal						800F-1MYMQ4

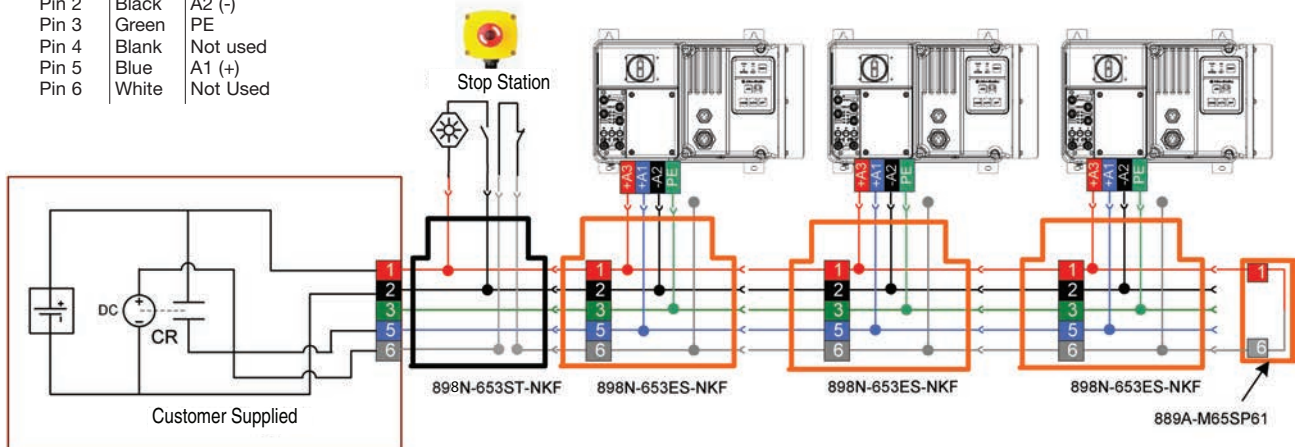
Example Stop Circuit for DeviceNet Version

Pin 1	Red	No connection
Pin 2	Black	A2 (-)
Pin 3	Green	PE
Pin 4	Blank	Not used
Pin 5	Blue	A1 (+)
Pin 6	White	Not Used



Example Stop Circuit for EtherNet/IP Version

Pin 1	Red	A3
Pin 2	Black	A2 (-)
Pin 3	Green	PE
Pin 4	Blank	Not used
Pin 5	Blue	A1 (+)
Pin 6	White	Not Used





# Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products.

At <http://www.rockwellautomation.com/support/>, you can find technical manuals, a knowledge base of FAQs, technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools.

For an additional level of technical phone support for installation, configuration, and troubleshooting, we offer TechConnect support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://www.rockwellautomation.com/support/>.

## Installation Assistance

If you experience a problem within the first 24 hours of installation, review the information that is contained in this manual. You can contact Customer Support for initial help in getting your product up and running.

United States or Canada	1.440.646.3434
Outside United States or Canada	Use the <a href="#">Worldwide Locator</a> at <a href="http://www.rockwellautomation.com/support/americas/phone_en.html">http://www.rockwellautomation.com/support/americas/phone_en.html</a> , or contact your local Rockwell Automation representative.

## New Product Satisfaction Return

Rockwell Automation tests all of its products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned, follow these procedures.

United States	Contact your distributor. You must provide a Customer Support case number (call the phone number above to obtain one) to your distributor to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for the return procedure.

## Documentation Feedback

Your comments will help us serve your documentation needs better. If you have any suggestions on how to improve this document, complete this form, publication [RA-DU002](#), available at <http://www.rockwellautomation.com/literature/>.

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