

ARMORSTART AND ARMORSTART ST CONNECTIVITY

QUICK REFERENCE GUIDE COLLECTION:

Single page documents providing comprehensive information on the cable assemblies for ArmorStart and ArmorStart ST distributed motor controllers. Complete with diagrams and references to find more information.

- ☐ ArmorConnect® 3-Phase Power
- ☐ EtherNet/IP™ Network
- ☐ Auxiliary Network
- ☐ ArmorStart® ST Motor Control and I/O
- ☐ ArmorStart® ST Hardwired Safety Connections

NOTE: ArmorStart ST with Integrated Safety (Bulletins 280ES/GS and 284ES/GS) is not covered in this Quick Reference Guide.



ARMORSTART



ARMORSTART ST

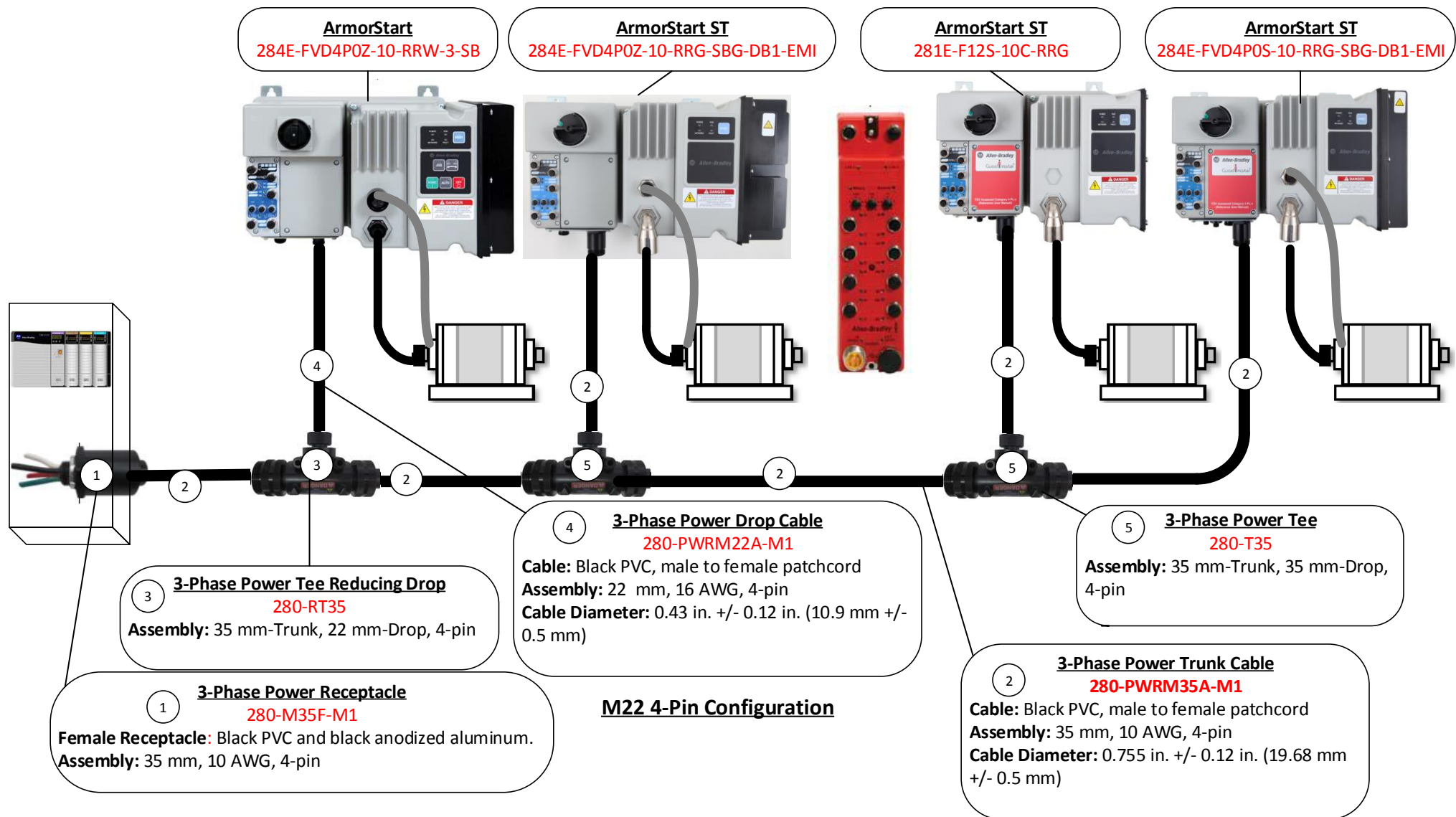


ARMORCONNECT

ArmorStart and ArmorStart ST distributed motor controls provide solutions for light and heavy industrial needs ranging from the food and beverage to the automotive industry

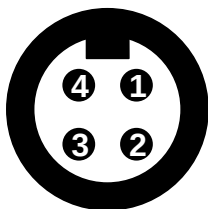


280ES-CL001C-EN-P

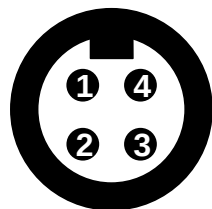


M35 Incoming Three-Phase Power - Male

M22 Incoming Three-Phase Power - Male



Pin 1: L1 - Black
Pin 2: Ground (green/yellow)
Pin 3: L3 - Red
Pin 4: L2 - White



Pin 1: L1 - Black
Pin 2: L2 - White
Pin 3: L3 - Red
Pin 4: L2 - Ground (green/yellow)

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ArmorConnect 3-Phase Power

	Description	Cat. No.
	Power cable - straight female to straight male	280-PWRM35A-M1
	Power cable - straight male and wires	280-PWRM35G-M1
	Power tee - 3-phase, 4-pole	280-T35

① Select length

3-PHASE POWER RECEPTACLE OPTIONS

280- M35 F- M*

*Lengths (m): 1, 3
Example: M1=1 m

F-Female
M-Male

M22: 22 mm, 16 AWG, 600V, 10 A
M24: 22 mm, 14 AWG, 600V, 15 A
M35: 35 mm, 10 AWG, 600V, 32 A



3-PHASE POWER DROP CABLE OPTIONS

280- PWR M22 A- M*

*Lengths: See table of available lengths

A-Straight Female; Straight-Male
B- Right Angle Female; Straight Male
C-Straight Female; Right Angle Male
D-Right Female; Right Male

M22: 22 mm, 16 AWG, 600V, 10A
M24: 22 mm, 14 AWG, 600V, 15A



3-PHASE POWER TRUNK CABLE OPTIONS

280- PWR M35 A- M*

*Lengths: See table of available lengths

A-Straight Female; Straight-Male
B- Right Angle Female; Straight Male
C-Straight Female; Right Angle Male
D-Right Angle Female; Right Angle Male

M35: 35 mm, 10 AWG, 600V, 32A



3-PHASE POWER TEES & REDUCER OPTIONS

280-RT35

M35 3-PHASE POWER TEE REDUCING DROP M22

Trunk: 35 mm, 4-pin, 32A
Drop: 22 mm, 4-pin, 13A

280-RA35

M35 3-PHASE REDUCING ADAPTER

35 mm to 22 mm, 4-pin, 15A

280-T35

M35 3-PHASE POWER TEE (NOT SHOWN IN DIAGRAM)

Trunk: 35 mm, 4-pin, 32A
Drop: 35 mm, 4-pin, 32A



*AVAILABLE LENGTHS

Feet	1.6	3	5	7	8	10	13	20	26	33	39	46	49	66	82	98	115
Meters	0.5	1	2	2	3	3	4	6	8	10	12	14	15	20	25	30	35
Code	5	1	15	2	25	3	4	6	8	10	12	14	15	20	25	30	35

Drop Cable: Maximum Length of 14m; if additional lengths are desired for the trunk or drop cable use a cable spool and field installable receptacle.

FIELD REPLACEABLE RECEPTACLES

MALE : 280-FAM22M 14 AWG, 600 V, 15 A
280-FAM35M 10 AWG, 600 V, 32 A

FEMALE: 280-FAM22F 14 AWG, 600 V, 15 A
280-FAM35F 10 AWG, 600 V, 32 A



FIELD ATTACHABLE RECEPTACLE



CABLE SPOOL
(Not supplied by Rockwell)

ADDITIONAL ACCESSORIES

SEALING CAPS



889A-QMCAP M35, Male
1485A-C1 M22, Male

LOCKING CLIPS



280-MTR22-LC M22-Drop
280-MTR35-LC M35-Trunk

BILL OF MATERIALS

Qty	Catalog #	Description
3-Phase Power Media		
1	280-M35F-M1	3-Phase Power Receptacle
1	280-PWRM22A-M1	3-Phase Power Drop Cable
6	280-PWRM35A-M1	3-Phase Power Trunk Cable
1	280-RT35	3-Phase Power Tee Reducing Drop
2	280-T35	3-Phase Power Tee

BILL OF MATERIALS PICTURED IN DIAGRAM, ONLY TO BE USED AS AN EXAMPLE.

ENVIRONMENTAL RATINGS

Type 4/12 IP67 Pending

SHORT CIRCUIT CURRENT RATINGS (SCCR)

ARMORCONNECT*: 65 kA maximum when protected by specified circuit breaker or by a CC, J or T class fuse.

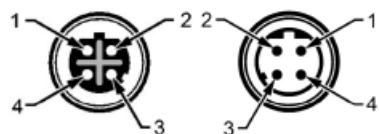
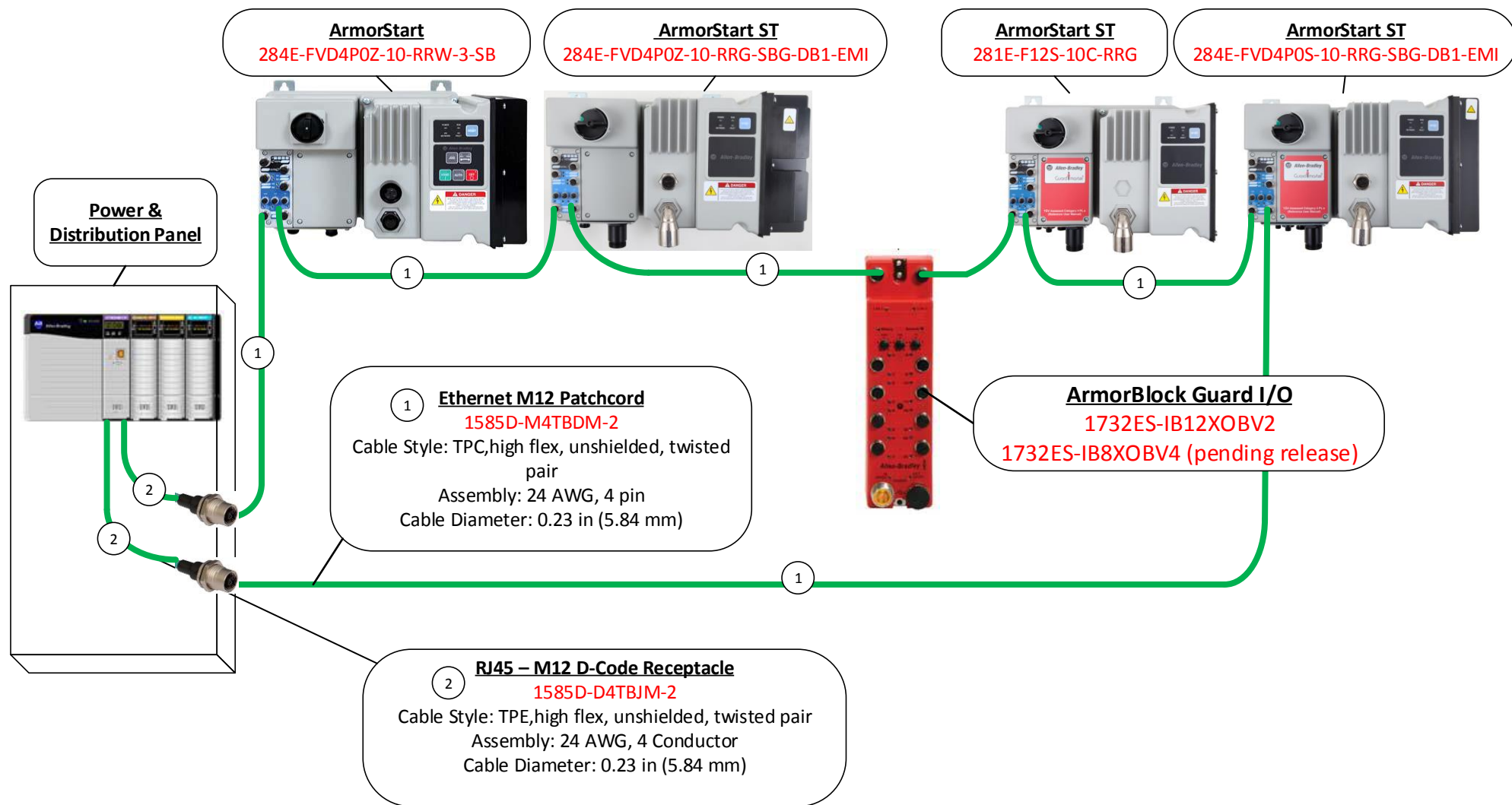
ARMORSTART*: 65 kA maximum when protected by specified circuit breaker or by a CC, J or T class fuse.

ArmorStart ST*: Still in testing for 65 kA when protected by specified circuit breaker or by a CC, J or T class fuse.

*SEE SPECIFICATIONS FOR MORE DETAILS AT www.ab.com.

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ArmorConnect 3-Phase Power



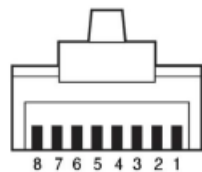
FEMALE

MALE

M12 PINOUT

1 White-Orange
2 White-Green

3 Orange
4 Green



RJ45 8-PIN PINOUT

1 White/Orange	5 White/Blue
2 Orange	6 Green
3 White/Green	7 White/Brown
4 Blue	8 Brown

1

ETHERNET M12 PATCHCORD OPTIONS

1585D-M 4 T BD M- *

Lengths: See Key Below

Second End Connector:

M-Male Straight

E-Male Right Angle

F-Female Straight (only with straight male first connector)

Jacket Material:

T-TPE: 24 AWG

First End Connector:

M-Male Straight

E-Male Right-Angle

*Lengths available in 0.3, 0.6, 1, 2, 5, 10, 15 and additional increments of 5m up to 75m.

Assembly: 24 AWG, 300 V

Ratings: IP67

2

RJ45 TO M12 D-CODE RECEPTACLE

1585D-D4TBJM-*: 4-Pin M12 D-Code Front Mount Receptacle to RJ45 Patchcord.

*Lengths available in 0.3, 0.6, 1, 2, 5, 10, 15 and additional increments of 5m up to 75m.

Ratings: IP67

1585A-DD4JD- M12 Female to RJ45 Cat 5e Female Field Attachable.

ETHERNET RJ45 PATCHCORD OPTIONS

RJ45 Patchcords can be used in combination with a field receptacle in lieu of the RJ45 to M12 D-Code Receptacle.

1585J-M 4 T BJM- *

Lengths: See Key

Jacket Material:

T-Teal High Flex TPE

4-4 Conductors

8-8 Conductors

*Lengths available in 0.3, 0.6, 1, 2, 5, 10, 15 and additional increments of 5m up to 75m.

ADDITIONAL LENGTHS

If additional lengths are desired use a cable spool and RJ45 Crimp connector

RJ45 CRIMP CONNECTOR WITH BOOT: 1585J-M8CC-C 150 V, 1.5 A



CABLE SPOOL



RJ45 CRIMP

ADDITIONAL OPTIONS

Additional Options such as jacket material, conductors, and shielding are available. See the On-Machine Connectivity Products Catalog or contact your local Allen-Bradley distributor.

BILL OF MATERIALS

Qty	Catalog #	Description
Ethernet Media		
5	1585D-M4TBDM-2	Ethernet M12 Patchcord
2	1585D-D4TBJM-2	RJ45 to M12 D-Code Receptacle

*Bill of materials pictured in diagram, only to be used as an example.

ArmorBlock® Guard I/O™

1732ES-IB12XOBV2

1732ES-IB8XOBV4 (pending release)

ArmorStart

284E-FVD4P0Z-10-RRW-3-SB

ArmorStart ST

284E-FVD4P0Z-10-RRG-SBG-DB1-EMI

ArmorStart ST

281E-F12S-10C-RRG

ArmorStart ST

284E-FVD4P0S-10-RRG-SBG-DB1-EMI

Power & Distribution Panel

Control Power Drop Cable

889N-F65GFNM-1

Cable: Grey PVC, male to female patchcord
Assembly: 22 mm, 18 AWG, 4-pin
Diameter: 0.29 in (7.4 mm)

Auxiliary Power Receptacle

888N-D4AF1-1F

Female Receptacle: Aluminum with clear sealant
Assembly: 22 mm, 16 AWG, 4-in

Auxiliary ArmorStart T-Port

898N-543ES-NKF

Assembly: Drop 22 mm, 6-pin/5 used
Trunk 22 mm, 4-pin

Auxiliary Device T-Port

898N-43PB-N4KT

Assembly: 22 mm, 4-pin

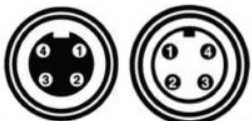
Auxiliary Power Trunk Cable

889N-F4AFNM-2

Cable: Yellow PVC, male to female patchcord
Assembly: 22 mm, 16 AWG, 4-pin
Cable Diameter: 0.42 in (11 mm)

4 pin for ① ② ⑤

5 pin for ④ and drop port ③



FEMALE

MALE

1 Black
2 White

3 Red
4 Green



Female



Male

Color Code

1 Red
2 Black
3 Green

4 Blank/Not Used
5 Blue
6 White

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Auxiliary Power

NOTE: For the ArmorStart ST, the control aux power is 4-pin as listed

<i>ArmorStart ST Control (AUX) Power</i>	Description	Cat. No.
	Patchcord - mini straight male to straight female	889N-F4AFNM-①
	Control power tee - 24V DC, 4-pole	898N-43PB-N4KF
	Panel Power Receptacle	888N-D4AF1-1F

① Select length

AUXILIARY DEVICE T-PORT



898N-43PB-N4KT: Drop 22mm, 4-pin
Trunk 22mm, 4-pin

AUXILIARY POWER DROP CABLE OPTIONS

Catalog Number: 889N-F4AENM-D•



Assembly: 22 mm, 18 AWG, 300 V, 10 A, 4-Pin Straight mini male to straight mini female.

Cable Rating: UL AWM style 2661 VW-1 105C 300V, CSA AWM A/B I/II 80C 300V FT1, UV oil and water resistant

•Lengths: Replace 2 with 5 or 10 for additional standard length in meters.

AUXILIARY POWER TRUNK CABLE OPTIONS



Catalog Number: 889N-F4AFNM-•

Assembly: 22 mm, 16 AWG, 600 V, 10 A, 4-Pin, Straight mini male to straight mini female

Cable Rating: UL ST00W VW-1 105C 600V, CSA ST 105C 600V FT2, UV oil and water resistant

•Lengths: Replace symbol with 2, 5 or 10 for standard lengths in meters.

***AVAILABLE LENGTHS**

Feet	1.6	3	4.9	7	8.2	10	13	16	20	26	33	39	46	49	66
Meters	0.5	1	1.5	2	2.5	3	4	5	6	8	10	12	14	15	20
Code	0M5	1	1M5	2	2M5	3	5	10	6	8	10	12	14	15	20

AUXILIARY POWER RECEPTACLE OPTIONS



888N- D 4AF1- 1F

Lengths (m): 1F=0.3 m; 3F=0.9 m

M-Male

D-Female

CONTROL POWER TRUNK/DROP CABLE OPTIONS



889N- F 65GFN M *

*Lengths: See available lengths table

M- Straight Male

E- Right Angle Male

F- Straight Female

R- Right-Angle Female

Assembly: 22 mm, 16 AWG, 600 V, 10 A, 6-pin/5 used
All Patchcords are male to female.

Bill Of Materials

Qty	Catalog#	Description
1	888N-D4AF1-1F	Auxiliary Power Receptacle
8	889N-F4AFNM-2	Auxiliary Power Trunk Cable
1	898N-543ES-NKF	Auxiliary ArmorStart T-Port
4	889N-F64GFNM-1	Control Power Drop Cable
3	898N-43PB-N4KT	Auxiliary Device T-Port

*Bill of materials pictured in diagram, only to be used as an example.

ENVIRONMENTAL RATINGS

All components have the following Environmental Ratings:

IP67, NEMA 6p, 1200 psi washdown

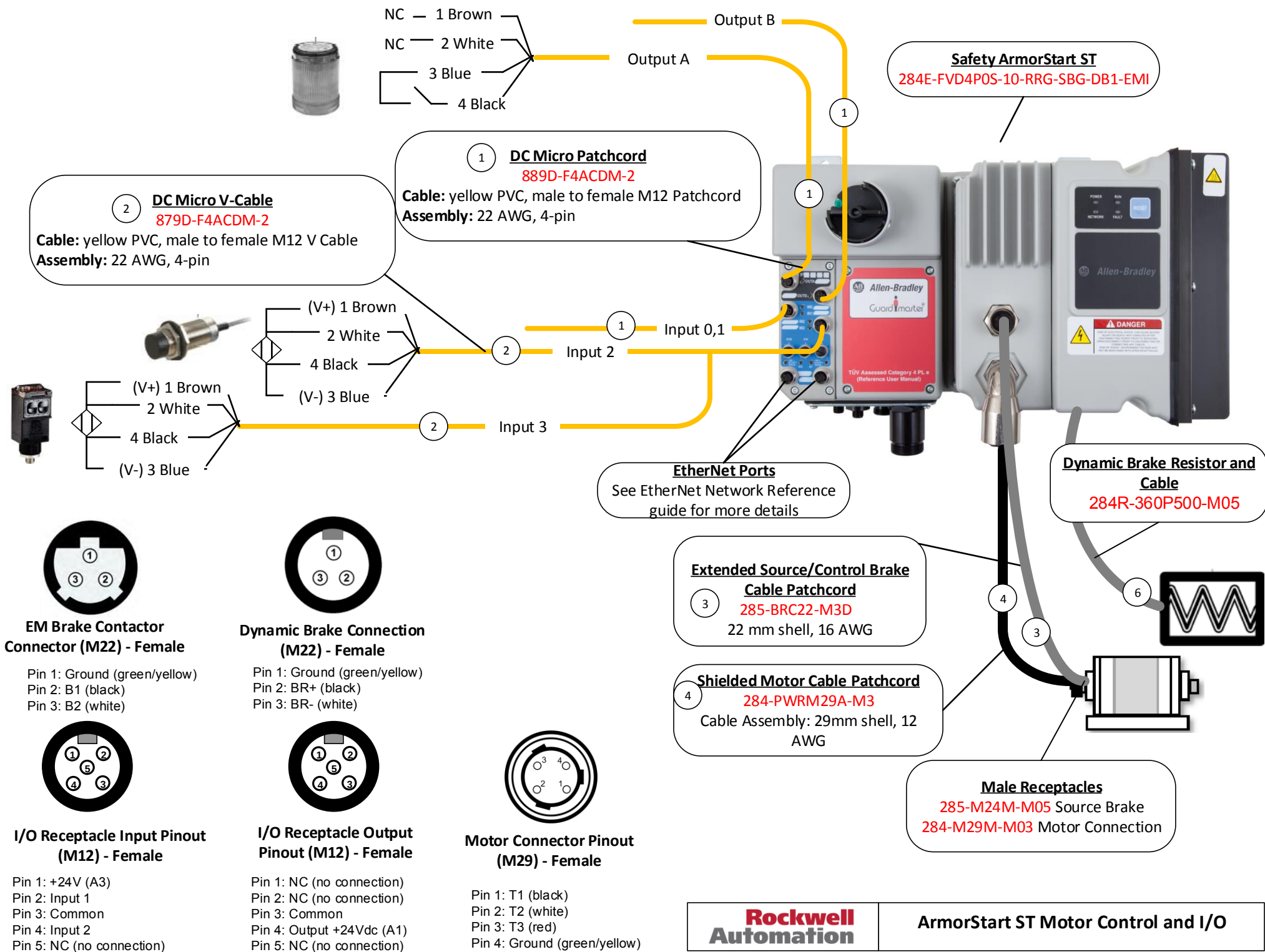
AUXILIARY ARMORSTART T-PORT



898N-543ES-NKF: Drop 22mm, 6-pin/5-used
Trunk 22mm, 4-pin

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Auxiliary Network



DC MICRO V-CABLE (INPUT) OPTIONS



879D-F4ACDM-*
879D-R4ACDM - *

Straight female (sensor side), 22 AWG, 4 pin, 300 V, 4 A
Right angle female (sensor side), 22 AWG, 4 pin, 300 V, 4 A

*Replace symbol with 0M3, 1, 2, 3, 4, 5, 6, 10, 15 for standard cable lengths in meters.

Ratings: IP67, IP69K, NEMA 6P, 1200 psi washdown

DC MICRO PATCHCORD (INPUT/OUTPUT) OPTIONS



889D-F4ACDM-*

Straight female, straight male, 22 AWG 4 pin, 250 V, 4 A

*Replace symbol with 0M2, 0M3, 0M5, 0M6, 0M7, 1, 1M3, 1M5, 1M6, 2 – 25 in one meter increments and 25-95 in five meter increments for standard lengths in meters.

Ratings: IP69K, NEMA 6P, 1200 psi washdown

DYNAMIC BRAKE CABLE

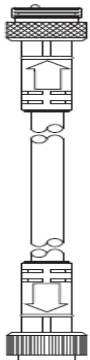


285-DBK22-M3

Straight M22, 3 meter Cordset, IP67/Nema Type 4

* Only available for bulletin 284

Quick Disconnect Source Brake Patchcords



285-BRC22-M*D

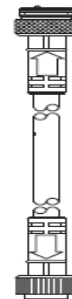
Non-shielded patch cable assembly with straight male / straight female receptacle with leads, 22 mm shell, 3 Pin, 16 AWG Conductors

285-BRC22D-M*

Non-shielded patch cable assembly with 90° male / 90° female receptacle with leads, 22 mm shell, 3 Pin, 16 AWG Conductors

*Replace symbol with 1, 3, 6, 8, 10, 12 or 14 for standard lengths in meters.

ArmorStart ST Motor Cable Cordset Options



284-PWRM29A-M*

Shielded patch cable assembly with straight male / female receptacle with leads, 29 mm shell, 4 Pin, 12 AWG Conductors

280-PWRM29A-M*

Non-shielded patch cable assembly with straight male / female receptacle, 29 mm shell, 4 Pin, 12 AWG Conductors

*Replace symbol with 0.5, 1, 1.5, 2, 3, 4, 6, 8, 10, 12 or 14 for standard lengths in meters.

Ratings: IP67, NEMA 4/12,TC-ER

MALE RECEPTACLE

Note: A male, field installed connector is required for the motor connection when using a patchcord for motor.

285-M24M-M05

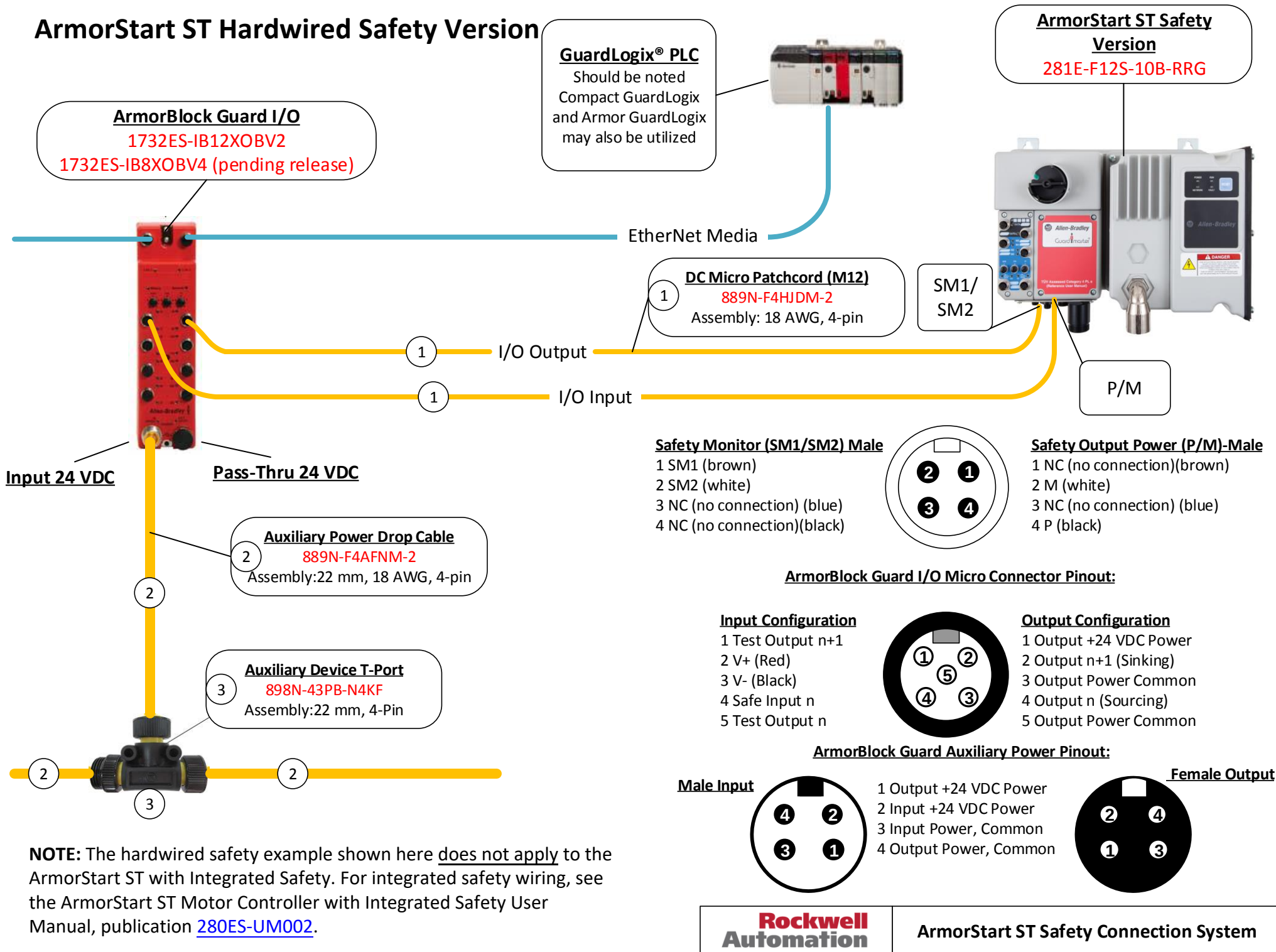
Source Brake motor male receptacle 3-pin , 22 mm shell, 14 AWG, 600V, 15A.



284-M29M-M03

Motor Connection shielded straight male receptacle with 4 wires, 29 mm shell, 4 Pin, 12 AWG Conductors

ArmorStart ST Hardwired Safety Version



ArmorStart ST Hardwired Safety Version

ARMORSTART SAFETY RELATED PARTS

Each ArmorStart Safety Distributed motor controller is intended to be combined with the Cat. No. 1732ES-IB8XOBV4 (pending) or 1732ES-IB12XOBV2 safety I/O module to form a subsystem that is part of the overall machine stop function. The motor controllers are connected to the safety I/O module through specified cable assemblies. The combination of one of these controllers, the safety module, and the specified interconnecting cables are referred to as the ArmorStart Safety-Related Parts. The catalog numbers for each of these components is specified below. The combination of these components is shown below. The safety I/O module and PLC program must be configured appropriately to meet TUV CAT4 Ple certification. Refer to the user manual for details.

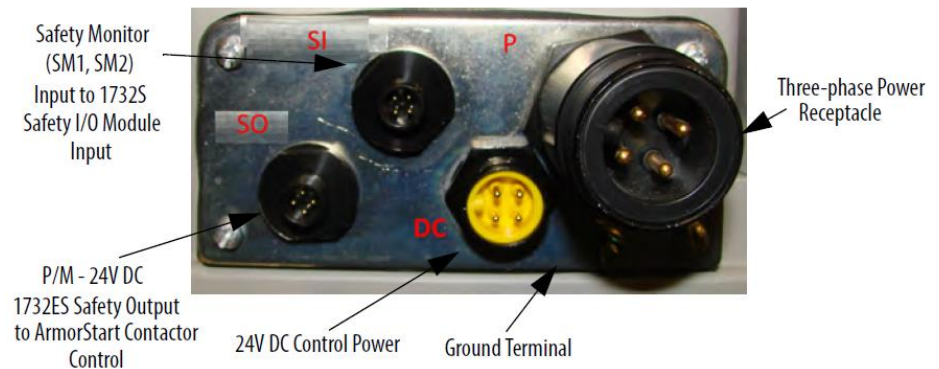
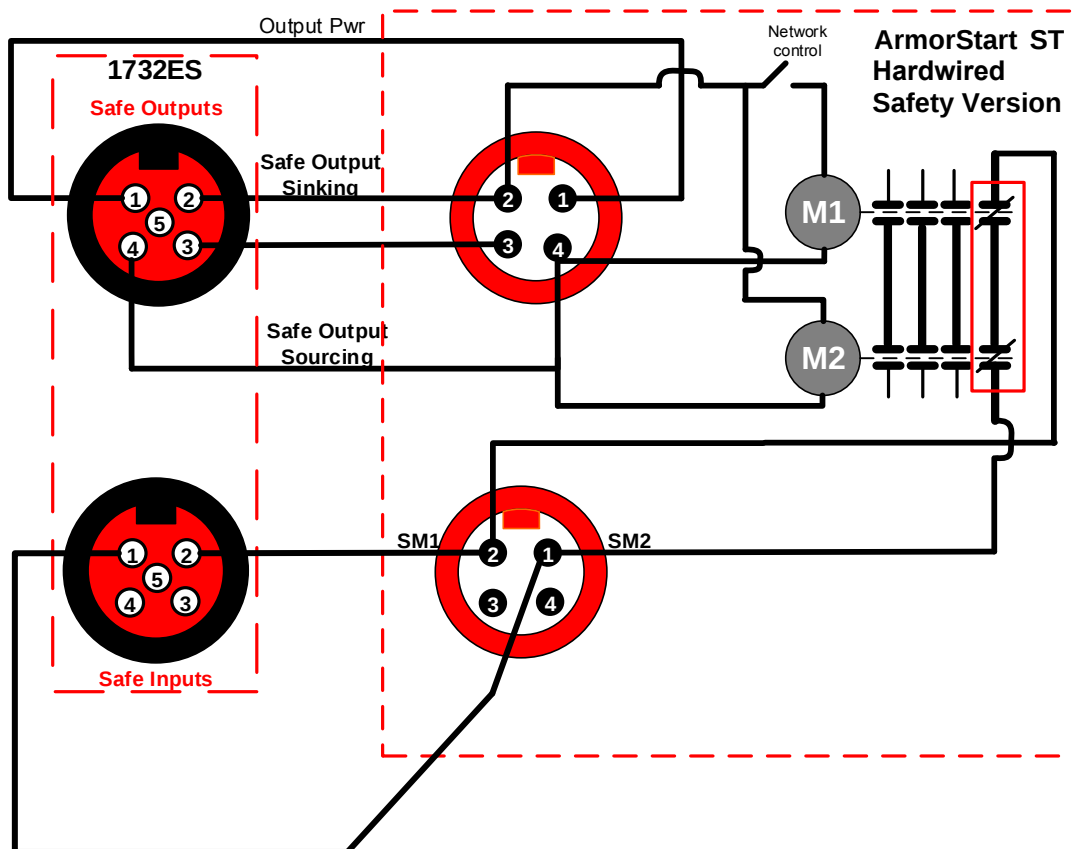


ARMORBLOCK GUARD I/O MODULES

ArmorBlock Guard I/O provides all the advantages of traditional distributed I/O for safety systems, but has an IP67 package that can be mounted directly on your machine. You can use Guard Safety I/O with any safety controller that communicates on EtherNet/IP using CIP Safety for the control and monitoring of safety circuits. Guard I/O detects circuit failures at each I/O point while providing detailed diagnostics directly to the controller.

For assistance and example configuration, see the Safety Accelerator for Guardlogix Systems at www.ab.com

Safety Connections Between 1732ES and ArmorStart Safety



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**ArmorStart ST Hardwired Safety
Connection System**

Rockwell Automation Support

Use these resources to access support information.

Technical Support Center	Find help with how-to videos, FAQs, chat, user forums, and product notification updates.	rok.auto/support
Knowledgebase	Access Knowledgebase articles.	rok.auto/knowledgebase
Local Technical Support Phone Numbers	Locate the telephone number for your country.	rok.auto/phonesupport
Literature Library	Find installation instructions, manuals, brochures, and technical data publications.	rok.auto/literature
Product Compatibility and Download Center (PCDC)	Download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes.	rok.auto/pcdc

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