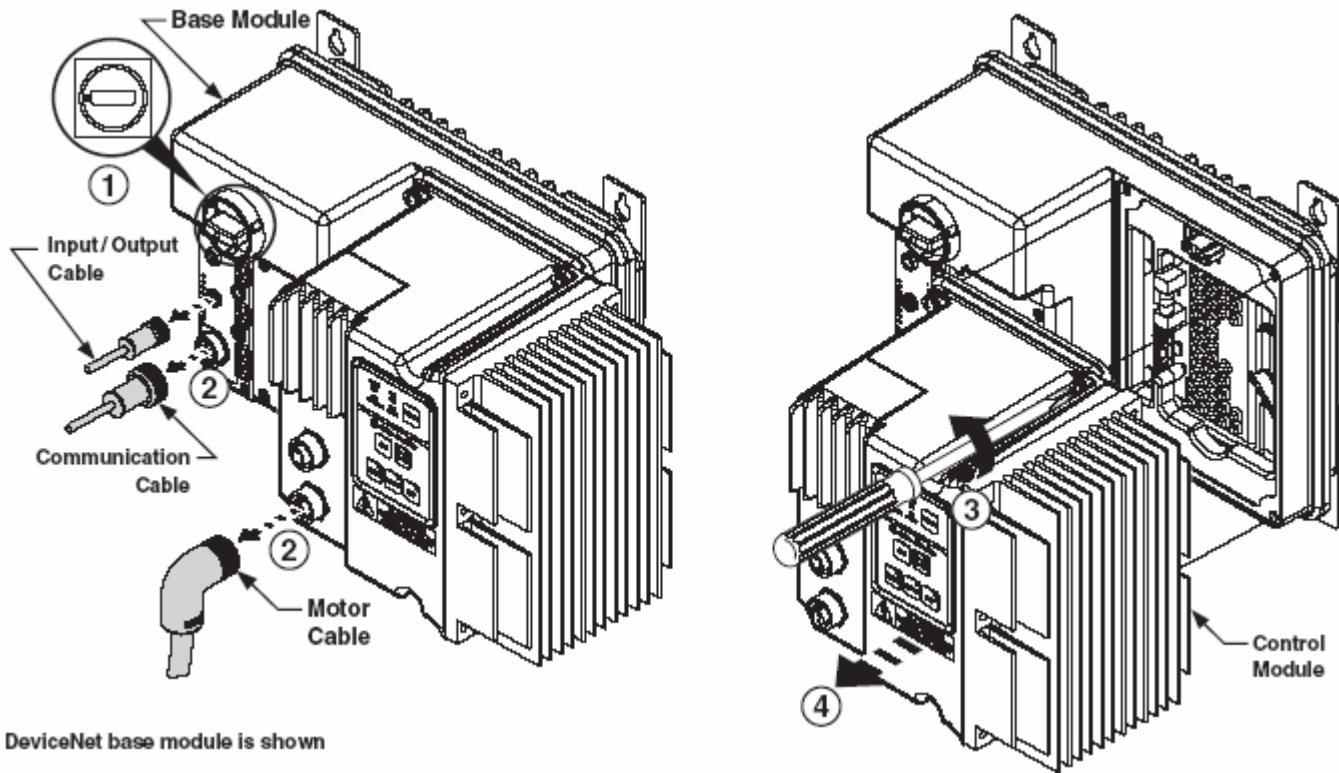


Renewal Parts for the Bulletin 284D ArmorStart Products

ArmorStart Base, Control Module and Motor Cable

See p. 2 for renewal parts listing. Bulletin 280D is pictured below; bulletin 284D is similar in appearance.



Note:

Control module contains the both the control section and the variable frequency AC Drive component.

Renewal Parts for the Bulletin 284D ArmorStart Products

Renewal Parts For Bulletin 284D-FV Sensorless Vector Control Products - ArmorStart Base, Control/Starter Module and Motor Cable

Motor Cable repair part numbers are 3 meters in length. Cat. No. 284-MTRS22-M3 is a shielded cable.

Control/Starter module contains the both the control section and the variable frequency AC Drive component.

Complete Catalog Number	Renewal Part Number for Control/Starter Module Only	Renewal Part Number for Base Module Only	Renewal Part for Motor Cable (90 deg connector)
284D-FVB2P3Z-10-CR-*	284D-FVB2P3Z-N-R	280D-FN-10-C	280-MTR22-M3
284D-FVB2P3Z-10-CRN-*	284D-FVB2P3Z-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FVB5P0Z-10-CR-*	284D-FVB5P0Z-N-R	280D-FN-10-C	280-MTR22-M3
284D-FVB5P0Z-10-CRN*	284D-FVB5P0Z-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FVB7P6Z-25-CR-*	284D-FVB7P6Z-N-R	280D-FN-25-C	280-MTR35-M3
284D-FVB7P6Z-25-CRN-*	284D-FVB7P6Z-N-R	280D-FN-25-C	284-MTRS22-M3
284D-FVB2P3D-10-CR-*	284D-FVB2P3D-N-R	280D-FN-10-C	280-MTR22-M3
284D-FVB2P3D-10-CRN-*	284D-FVB2P3D-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FVB5P0D-10-CR-*	284D-FVB5P0D-N-R	280D-FN-10-C	280-MTR22-M3
284D-FVB5P0D-10-CRN-*	284D-FVB5P0D-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FVB7P6D-25-CR-*	284D-FVB7P6D-N-R	280D-FN-25-C	280-MTR35-M3
284D-FVB7P6D-25-CRN-*	284D-FVB7P6D-N-R	280D-FN-25-C	284-MTRS22-M3
284D-FVB2P3B-10-CR-*	284D-FVB2P3B-N-R	280D-FN-10-C	280-MTR22-M3
284D-FVB2P3B-10-CRN-*	284D-FVB2P3B-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FVB5P0B-10-CR-*	284D-FVB5P0B-N-R	280D-FN-10-C	280-MTR22-M3
284D-FVB5P0B-10-CRN-*	284D-FVB5P0B-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FVB7P6B-25-CR-*	284D-FVB7P6B-N-R	280D-FN-25-C	280-MTR35-M3
284D-FVB7P6B-25-CRN-*	284D-FVB7P6B-N-R	280D-FN-25-C	284-MTRS22-M3
284D-FVD1P4Z-10-CR-*	284D-FVD1P4Z-N-R	280D-FN-10-C	280-MTR22-M3
284D-FVD1P4Z-10-CRN-*	284D-FVD1P4Z-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FVD2P3Z-10-CR-*	284D-FVD2P3Z-N-R	280D-FN-10-C	280-MTR22-M3
284D-FVD2P3Z-10-CRN-*	284D-FVD2P3Z-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FVD4P0Z-10-CR-*	284D-FVD4P0Z-N-R	280D-FN-10-C	280-MTR35-M3
284D-FVD4P0Z-10-CRN-*	284D-FVD4P0Z-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FVD6P0Z-25-CR-*	284D-FVD6P0Z-N-R	280D-FN-25-C	280-MTR22-M3
284D-FVD6P0Z-25-CRN-*	284D-FVD6P0Z-N-R	280D-FN-25-C	284-MTRS22-M3
284D-FVD7P6Z-25-CR-*	284D-FVD7P6Z-N-R	280D-FN-25-C	280-MTR22-M3
284D-FVD7P6Z-25-CRN-*	284D-FVD7P6Z-N-R	280D-FN-25-C	284-MTRS22-M3
284D-FVD1P4D-10-CR-*	284D-FVD1P4D-N-R	280D-FN-10-C	280-MTR35-M3
284D-FVD1P4D-10-CRN-*	284D-FVD1P4D-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FVD2P3D-10-CR-*	284D-FVD2P3D-N-R	280D-FN-10-C	280-MTR22-M3
284D-FVD2P3D-10-CRN-*	284D-FVD2P3D-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FVD4P0D-10-CR-*	284D-FVD4P0D-N-R	280D-FN-10-C	280-MTR22-M3
284D-FVD4P0D-10-CRN-*	284D-FVD4P0D-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FVD6P0D-25-CR-*	284D-FVD6P0D-N-R	280D-FN-25-C	280-MTR35-M3
284D-FVD6P0D-25-CRN-*	284D-FVD6P0D-N-R	280D-FN-25-C	284-MTRS22-M3
284D-FVD7P6D-25-CR-*	284D-FVD7P6D-N-R	280D-FN-25-C	280-MTR22-M3
284D-FVD7P6D-25-CRN-*	284D-FVD7P6D-N-R	280D-FN-25-C	284-MTRS22-M3
284D-FVD1P4B-10-CR-*	284D-FVD1P4B-N-R	280D-FN-10-C	280-MTR22-M3
284D-FVD1P4B-10-CRN-*	284D-FVD1P4B-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FVD2P3B-10-CR-*	284D-FVD2P3B-N-R	280D-FN-10-C	280-MTR35-M3
284D-FVD2P3B-10-CRN-*	284D-FVD2P3B-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FVD4P0B-10-CR-*	284D-FVD4P0B-N-R	280D-FN-10-C	280-MTR22-M3
284D-FVD4P0B-10-CRN-*	284D-FVD4P0B-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FVD6P0B-25-CR-*	284D-FVD6P0B-N-R	280D-FN-25-C	280-MTR22-M3
284D-FVD6P0B-25-CRN-*	284D-FVD6P0B-N-R	280D-FN-25-C	284-MTRS22-M3
284D-FVD7P6B-25-CR-*	284D-FVD7P6B-N-R	280D-FN-25-C	280-MTR35-M3
284D-FVD7P6B-25-CRN-*	284D-FVD7P6B-N-R	280D-FN-25-C	284-MTRS22-M3

* = other options may follow

Renewal Parts for the Bulletin 284D ArmorStart Products

Renewal Parts For Bulletin 284D-FH Volts Per Hertz (Sensorless Vector Performance) Products - ArmorStart Base, Control/Starter Module and Motor Cable

Motor Cable repair part numbers are 3 meters in length. Cat. No. 284-MTRS22-M3 is a shielded cable.

Control/Starter module contains the both the control section and the variable frequency AC Drive component.

Complete Catalog Number	Renewal Part Number for Control/Starter Module Only	Renewal Part Number for Base Module Only	Renewal Part for Motor Cable (90 deg connector)
284D-FHB2P3Z-10-CR-*	284D-FHB2P3Z-N-R	280D-FN-10-C	280-MTR22-M3
284D-FHB2P3Z-10-CRN-*	284D-FHB2P3Z-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FHB5P0Z-10-CR-*	284D-FHB5P0Z-N-R	280D-FN-10-C	280-MTR22-M3
284D-FHB5P0Z-10-CRN*	284D-FHB5P0Z-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FHB7P6Z-25-CR-*	284D-FHB7P6Z-N-R	280D-FN-25-C	280-MTR35-M3
284D-FHB7P6Z-25-CRN-*	284D-FHB7P6Z-N-R	280D-FN-25-C	284-MTRS22-M3
284D-FHB2P3D-10-CR-*	284D-FHB2P3D-N-R	280D-FN-10-C	280-MTR22-M3
284D-FHB2P3D-10-CRN-*	284D-FHB2P3D-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FHB5P0D-10-CR-*	284D-FHB5P0D-N-R	280D-FN-10-C	280-MTR22-M3
284D-FHB5P0D-10-CRN-*	284D-FHB5P0D-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FHB7P6D-25-CR-*	284D-FHB7P6D-N-R	280D-FN-25-C	280-MTR35-M3
284D-FHB7P6D-25-CRN-*	284D-FHB7P6D-N-R	280D-FN-25-C	284-MTRS22-M3
284D-FHB2P3B-10-CR-*	284D-FHB2P3B-N-R	280D-FN-10-C	280-MTR22-M3
284D-FHB2P3B-10-CRN-*	284D-FHB2P3B-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FHB5P0B-10-CR-*	284D-FHB5P0B-N-R	280D-FN-10-C	280-MTR22-M3
284D-FHB5P0B-10-CRN-*	284D-FHB5P0B-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FHB7P6B-25-CR-*	284D-FHB7P6B-N-R	280D-FN-25-C	280-MTR35-M3
284D-FHB7P6B-25-CRN-*	284D-FHB7P6B-N-R	280D-FN-25-C	284-MTRS22-M3
284D-FHD1P4Z-10-CR-*	284D-FHD1P4Z-N-R	280D-FN-10-C	280-MTR22-M3
284D-FHD1P4Z-10-CRN-*	284D-FHD1P4Z-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FHD2P3Z-10-CR-*	284D-FHD2P3Z-N-R	280D-FN-10-C	280-MTR22-M3
284D-FHD2P3Z-10-CRN-*	284D-FHD2P3Z-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FHD4P0Z-10-CR-*	284D-FHD4P0Z-N-R	280D-FN-10-C	280-MTR35-M3
284D-FHD4P0Z-10-CRN-*	284D-FHD4P0Z-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FHD6P0Z-25-CR-*	284D-FHD6P0Z-N-R	280D-FN-25-C	280-MTR22-M3
284D-FHD6P0Z-25-CRN-*	284D-FHD6P0Z-N-R	280D-FN-25-C	284-MTRS22-M3
284D-FHD7P6Z-25-CR-*	284D-FHD7P6Z-N-R	280D-FN-25-C	280-MTR22-M3
284D-FHD7P6Z-25-CRN-*	284D-FHD7P6Z-N-R	280D-FN-25-C	284-MTRS22-M3
284D-FHD1P4D-10-CR-*	284D-FHD1P4D-N-R	280D-FN-10-C	280-MTR35-M3
284D-FHD1P4D-10-CRN-*	284D-FHD1P4D-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FHD2P3D-10-CR-*	284D-FHD2P3D-N-R	280D-FN-10-C	280-MTR22-M3
284D-FHD2P3D-10-CRN-*	284D-FHD2P3D-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FHD4P0D-10-CR-*	284D-FHD4P0D-N-R	280D-FN-10-C	280-MTR22-M3
284D-FHD4P0D-10-CRN-*	284D-FHD4P0D-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FHD6P0D-25-CR-*	284D-FHD6P0D-N-R	280D-FN-25-C	280-MTR35-M3
284D-FHD6P0D-25-CRN-*	284D-FHD6P0D-N-R	280D-FN-25-C	284-MTRS22-M3
284D-FHD7P6D-25-CR-*	284D-FHD7P6D-N-R	280D-FN-25-C	280-MTR22-M3
284D-FHD7P6D-25-CRN-*	284D-FHD7P6D-N-R	280D-FN-25-C	284-MTRS22-M3
284D-FHD1P4B-10-CR-*	284D-FHD1P4B-N-R	280D-FN-10-C	280-MTR22-M3
284D-FHD1P4B-10-CRN-*	284D-FHD1P4B-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FHD2P3B-10-CR-*	284D-FHD2P3B-N-R	280D-FN-10-C	280-MTR35-M3
284D-FHD2P3B-10-CRN-*	284D-FHD2P3B-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FHD4P0B-10-CR-*	284D-FHD4P0B-N-R	280D-FN-10-C	280-MTR22-M3
284D-FHD4P0B-10-CRN-*	284D-FHD4P0B-N-R	280D-FN-10-C	284-MTRS22-M3
284D-FHD6P0B-25-CR-*	284D-FHD6P0B-N-R	280D-FN-25-C	280-MTR22-M3
284D-FHD6P0B-25-CRN-*	284D-FHD6P0B-N-R	280D-FN-25-C	284-MTRS22-M3
284D-FHD7P6B-25-CR-*	284D-FHD7P6B-N-R	280D-FN-25-C	280-MTR35-M3
284D-FHD7P6B-25-CRN-*	284D-FHD7P6B-N-R	280D-FN-25-C	284-MTRS22-M3

Renewal Parts

Table D.A Motor Cables

Description	Length m (ft)	Cat. No.
90° M22 Motor cordset	3 (9.8)	280-MTR22-M3
90° M22 Motor shielded cordset	3 (9.8)	284-MTRS22-M3

Table D.B Dynamic Brake Cable

Description	Length m (ft)	Cat. No.
90° M22 Motor cordset	3 (9.8)	285-DBK22-M3

Table D.C Brake Cable

Description	Length m (ft)	Cat. No.
90° M22 Motor cordset	3 (9.8)	285-BRC22-M3

Table D.D Internal Fan

Description	Cat. No.
Internal Fan	284-FAN

Accessories

Table C.A DeviceNet Media ①







Description	Length (m [ft])	Cat. No.
 <p>KwikLink™ pigtail drops are Insulation Displacement Connector (IDC) with integral Class 1 round cables for interfacing devices or power supplies to flat cable.</p>	1 (3.3)	1485P-P1E4-B1-N5
	2 (6.5)	1485P-P1E4-B2-N5
	3 (9.8)	1485P-P1E4-B3-N5
	6 (19.8)	1485P-P1E4-B6-N5
 <p>DeviceNet Mini T-Port Tap</p>	Left Keyway	1485P-P1N5-MN5L1
	Right Keyway	1485P-P1N5-MN5R1
 <p>DeviceNet Mini Male to Female Patchcord</p>	1 (3.3)	1485R-P1N5-M5
	2 (6.5)	1485R-P2N5-M5
	3 (9.8)	1485R-P3N5-M5
	4 (13.1)	1485R-P4N5-M5
	5 (16.4)	1485R-P5N5-M5
	6 (19.8)	1485R-P6N5-M5

Table C.B Sensor Media ②

Description	Length (m [ft])	Cat. No.
 <p>DC Micro Patchcord DC Micro to DC Micro</p>	1 (3.3)	889D-F4ACDM-1
	2 (6.5)	889D-F4ACDM-2
	5 (16.4)	889D-F4ACDM-5
 <p>DC Micro Y-Cable</p>	0.3 (1)	879D-F4ACDM-OM3
	1 (3.3)	879D-F4ACDM-1
	2 (6.5)	879D-F4ACDM-2
 <p>AC Micro Patchcord AC Micro Male to AC Micro Female</p>	1 (3.3)	889R-F3AERM-1
	2 (6.5)	889R-F3AERM-2
	3 (9.8)	889R-F3AERM-3
	5 (16.4)	889R-F3AERM-5

① See Publication C114-CA001A-EN-P for complete cable selection information.

② See Publication 1485-CG001A-EN-P for complete cable selection information.

C-2 Accessories

Table C.C Sealing Caps

Description	For Use with	Cat. No.
Plastic Sealing Cap (M12)	Input I/O Connection	1485A-M12
Aluminum Sealing Cap	Output I/O Connection	889A-RMCAP

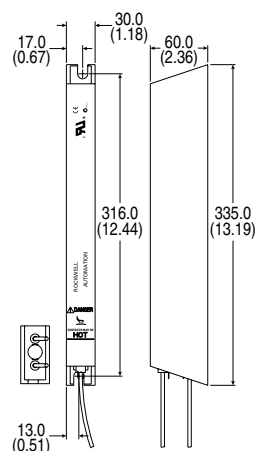
To achieve IP67 rating, sealing caps must be installed on all unused connections.

Table C.D Dynamic Brake Modules ①②

Input Voltage	Drive Ratings			Cat. No. ②
	kW	Hp	Min. Resistance (Ω)	
240V, 50/60 Hz, 3-Phase	0.4	0.5	—	③
	0.75	1.0	48	AK-R2-091P500
	1.5	2.0	48	AK-R2-091P500
	2.2	3.0	32	AK-R2-047P500
	3.7	5.0	19	AK-R2-047P500
480V, 50/60 Hz, 3-Phase	0.4	0.5	—	③
	0.75	1.0	97	AK-R2-360P500
	1.5	2.0	97	AK-R2-360P500
	2.2	3.0	97	AK-R2-120P1K2
	4.0	5.0	77	AK-R2-120P1K2

- ① Dynamic brake modules are IP00 rated.
- ② The resistors listed in this table are rated for 5% duty cycle.
- ③ Drive does not support dynamic braking.

Figure C.1 Dynamic Brake Modules Approximate Dimensions



Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of this control equipment must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes and standards.

The illustrations, charts, sample programs and layout examples shown in this guide are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Rockwell Automation does not assume responsibility or liability (to include intellectual property liability) for actual use based upon the examples shown in this publication.

Allen-Bradley publication SGI-1.1, *Safety Guidelines for the Application, Installation and Maintenance of Solid-State Control* (available from your local Allen-Bradley office), describes some important differences between solid-state equipment and electromechanical devices that should be taken into consideration when applying products such as those described in this publication.

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Throughout this document we use notes to make you aware of safety considerations:

ATTENTION

Identifies information about practices or circumstances that can lead to personal injury or death, property damage or economic loss



IMPORTANT

Identifies information that is critical for successful application and understanding of the product.

Use only replacement parts and devices recommended by Rockwell Automation to maintain the integrity of the equipment. It is the user's responsibility to ensure that the renewal part number selected is properly matched to the model, series and revision level of the equipment being serviced.

ATTENTION

Servicing energized Industrial Control Equipment can be hazardous. Severe injury or death can result from electrical shock, burn, or unintended actuation of controlled equipment. Recommended practice is to disconnect and lockout control equipment from power sources, and release stored energy, if present.



Refer to **National Fire Protection Association Standard No. NFPA70E, Part 2 and (as applicable) OSHA rules for Control of Hazardous Energy Sources (Lockout/Tagout) and OSHA Electrical Safety Related Work Practices** for safety related work practices, including procedural requirements for lockout/tagout, and appropriate work practices, personnel qualifications and training requirements where it is not feasible to de-energize and lockout or tagout electric circuits and equipment before working on or near exposed circuit parts.

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