

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

ALLEN-BRADLEY KINETIX SERVO DRIVE

2090-XXNPMF-14S20

20 M SERVO MOTOR POWER CABLE

Applicable product family: Allen-Bradley Kinetix motion systems

OFFICIAL SOURCE

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The following pages are selected from the supplied manufacturer document and retain their original page content.

Kinetix 2090 Power and Feedback Cables

Catalog Numbers 2090-CPBM7DF, 2090-CPWM7DF, 2090-CPBM7E7, 2090-CFBM7E7, 2090-CFBM7DF, 2090-CFBM7DD

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Summary of Changes

This publication contains new and updated information as indicated in the following table.

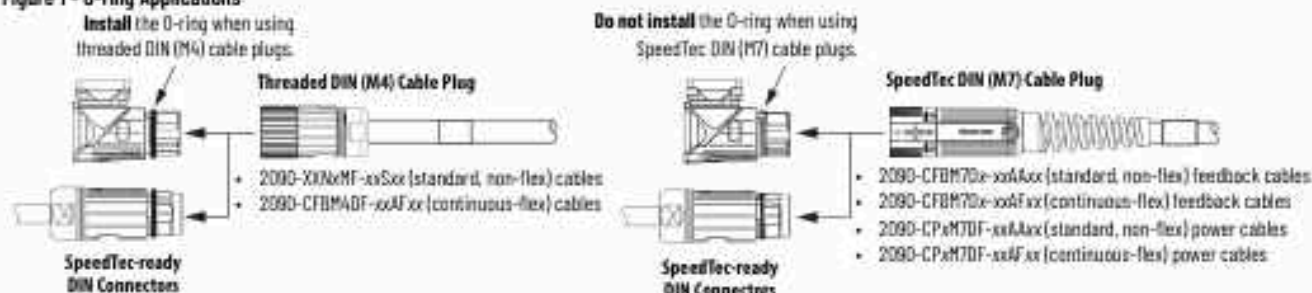
Topic	Page
Updated naming conventions from xxx-Series and Bulletin xxx to Kinetix xxx.	Throughout
Added reference to KNX-TD004.	2
Updated maximum cable length.	2
Added 2090-CFBM7DF-CFAFxx to Motor/Actuator (M4 and M7) Cable Applications.	3
Added 2090-CFBM7DF-CFAFxx to Install Motor Feedback Cables and Feedback Pinouts.	6...7
Updated Notes in Table B.	8
Expanded pubs referenced in Additional Resources table.	13

Verify the O-ring Installation for Threaded DIN Cable Plugs

Allen-Bradley® motors and actuators with SpeedTec motor power/brake and feedback connectors include O-rings that are enclosed in a separate bag. The type of plug on the connecting cable determines whether an O-ring is required to be installed on the motor connector, cable extension, or continuous-flex extension cable receptacles. See Kinetix Motion Accessories Specifications, publication [KNX-10004](#) for catalog details.

IMPORTANT If your motor/actuator includes a SpeedTec-ready DIN (M7) connector and mates with a threaded DIN (M4) cable plug, install the O-ring on the motor/actuator connector before connecting the M4 cable plug.

Figure 1 - O-ring Applications



Before You Begin

Remove all packing material from within and around the item. After unpacking, verify the catalog number against the purchase order and visually inspect the cable and each connector for damage. If necessary, notify the carrier of any shipping damage immediately.

Cables are stored and shipped in a coil. Cables retain this shape until you straighten the cable. To straighten a cable, hang a short cable from its mid-point or lay a long cable on the floor in a straight line. Any coiling that remains in the cable is straightened out within the next 24 hours and a straight cable is easier to install.



ATTENTION: Observe the following precautions when installing cables in a servo system. Failure to observe these safety notices can result in personal injury or damage to the motor and equipment.

- Arcing or unexpected motion can occur if the power/brake or feedback cables are connected or disconnected while power is applied to the drive. Always remove power to the servo drive before connecting or disconnecting cables at the drive or at the motor.
- To avoid electrical shock, make sure that shielded power cables are grounded at a minimum of one point. To prevent the build-up of electrical energy, factory-supplied power cables use one of these grounding techniques:
 - The overall shield is bonded to the connector housing.
 - A section of the overall shield is exposed for connection to ground.
 - The overall shield is connected to a ground wire.

If the exposed cable braid or a ground wire is present, connect it to the power cable clamp, housing, or another suitable chassis ground on the drive.

- The maximum cable length between the drive and the motor varies, depending on the application. See Kinetix Servo Drives Specifications, publication [KNX-10003](#), for additional information.
- Do not tightly gather or coil the excess length of a power cable. Heat is generated within a cable whenever power is applied. Always position a power cable so it can freely dissipate heat.
 - Do not coil a power cable except for temporary use when building or testing a machine. If you temporarily coil a power cable, you must also derate the cable to meet local code or follow an authoritative directive, such as Engineering Section 310.15(C) of the NEC Handbook.
- The examples in this publication show all available connections. Some connections are not used for specific installations. See your drive installation instructions or user manual for recommended wire trim lengths and wiring examples for your drive and motor application.
 - Do not connect unused wires. Trim and finish unused wires to prevent accidental contact with other wires or wire shields, or with a ground connection.

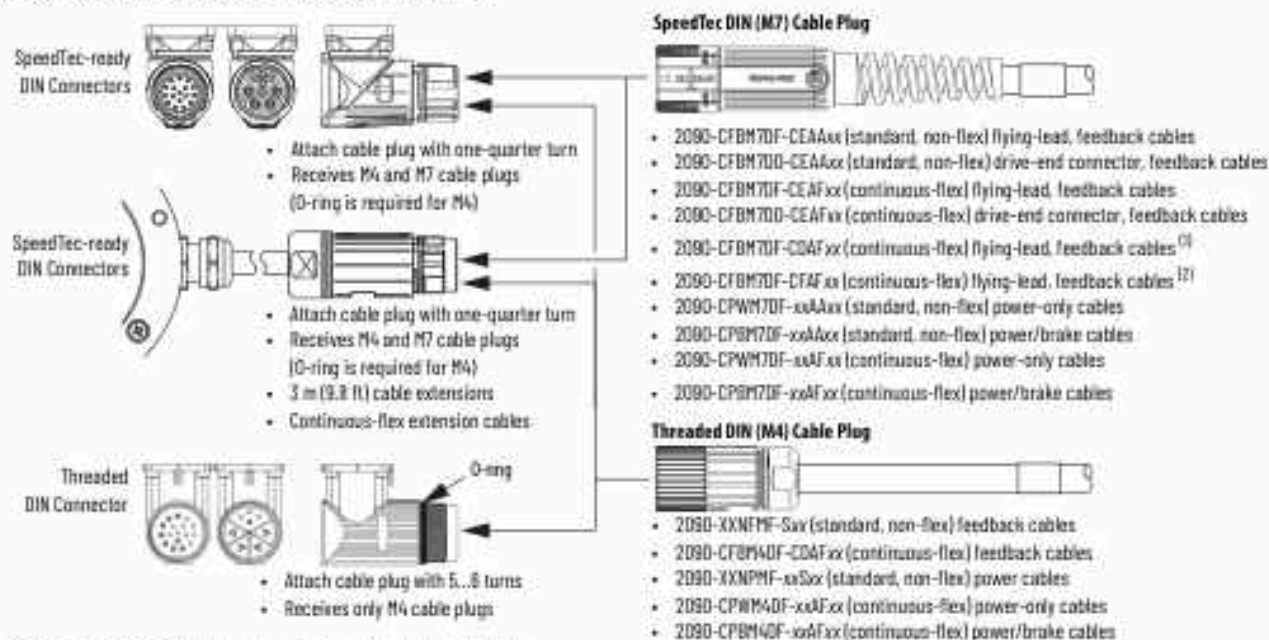
IMPORTANT Standard (non-flex) cables can be bent or reformed during installation and maintenance. Continuous-flex cables can be flexed repeatedly within a specified bend radius when properly installed. Do not use standard cables in a continuous-flex operation.

Motor/Actuator (M4 and M7) Cable Applications

Observe these guidelines when connecting your cable plug with the mating motor connector, motor extension cable, or an extension cable receptacle:

- Motors and actuators that are equipped with SpeedTec-ready DIN (M7) connectors are compatible with threaded DIN (M4) cable plugs.
- SpeedTec-ready DIN motor connectors are also compatible with SpeedTec DIN (M7/E7) extension cable plugs.
- Motors and actuators that are equipped with threaded DIN (M4) connectors are compatible with only threaded DIN (M4) cable plugs.

Figure 2 - Motor/Actuator Connector and Cable Plug Compatibility



(1) For 2090-CFBM7DF-CDAFxx flying-leads are optimized for the Kinetix drives.

(2) For 2090-CFBM7DF-CTAFxx flying-leads have a dedicated thermostat that is optimized for PowerFlex® drives.

Refer to 2090-Series Single Motor Cables Installation Instruction, publication [2090-IN052](#) for 2090-CS catalog descriptions.

Power/Brake and Feedback Cables

When installing cable runs between the motor and drive, be careful not to stress the cable by making bends too sharp. See the table below for bend radius definitions, and the sections that follow, when routing cables during system installation.

Table 1 - Motor Power and Feedback Cable Bend Radius Definitions

Type of Bend Radius	Type of Cable	Description
Static bend radius	Standard (non-flex)	The static (installation) bend radius and dimension B are 7 times the cable diameter: • Do not begin a static bend inside dimension B. • Use this measurement when routing the cable in a non-flex application between motor and drive (the bend area). – The bend area is where standard (non-flex) or continuous-flex cables can be bent to their specified bend radius.
	Continuous-flex	
Continuous bend radius	Continuous-flex	The continuous bend radius for Kinetix 2090 motor power and feedback cables is 12 times the cable diameter: • Secure the continuous-flexing area, at least 7 cable diameters (dimension B) from each end of the cable, with a rigid mount that helps protect against cable flexing where it connects to the motor or shield clamp. • Use this measurement when routing the cable in a continuous-flex application between motor and drive (the continuous-flexing area). – The continuous flexing area is where continuous-flex cables can be flexed repeatedly.

Install Motor Power/Brake Cables

This figure illustrates how to measure the bend radius and where cable bends can be made on motor power/brake cables.

Figure 3 - Motor Power/Brake Bend Radius Example

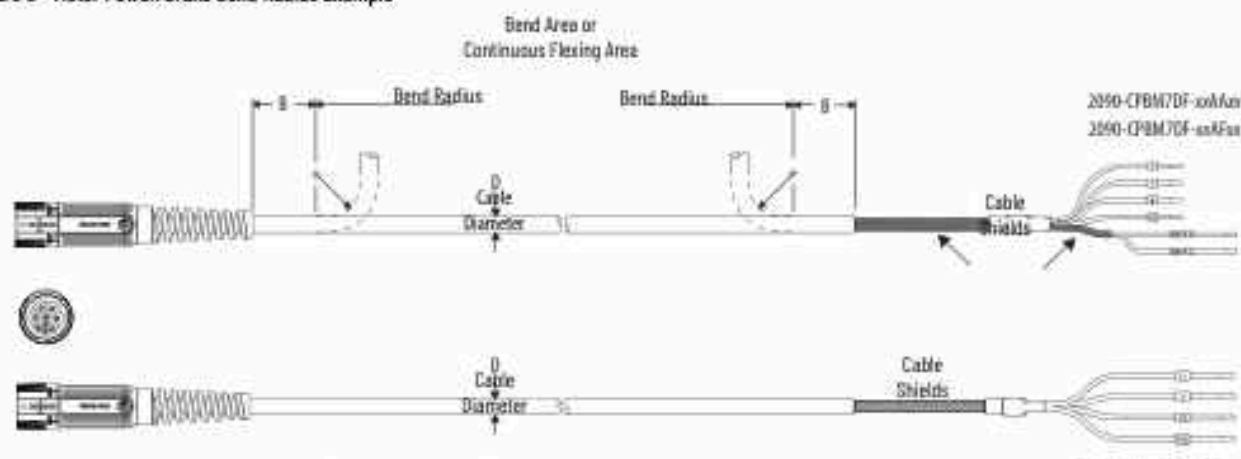


Table 2 - Power/Brake Cable Specifications (standard, non-flex)

Cable Type	Cable Cat. No.	Wire Size AWG	D mm (in.)	B ⁽¹⁾ mm (in.)
Power/brake cables (standard, non-flex)	2090-CPBM7DF-16AAxx	16	11.6 (0.47)	81.2 (3.2)
	2090-CPBM7DF-14AAxx	14	12.7 (0.50)	88.9 (3.5)
	2090-CPBM7DF-12AAxx	12	14.3 (0.56)	100 (3.9)
	2090-CPBM7DF-10AAxx	10	16.8 (0.66)	118 (4.6)
	2090-CPBM7DF-08AAxx	8	20.1 (0.79)	141 (5.5)
	2090-CPBM7DF-06AAxx	6	24.3 (0.96)	170 (6.7)
	2090-CPBM7DF-04AAxx	4	28.8 (1.13)	202 (7.9)
	2090-CPBM7DF-02AAxx	2	32.7 (1.29)	229 (9.0)
Power-only cables (standard, non-flex)	2090-CPWM7DF-16AAxx	16	9.20 (0.36)	64.4 (2.5)
	2090-CPWM7DF-14AAxx	14	10.3 (0.40)	72.1 (2.8)
	2090-CPWM7DF-12AAxx	12	11.2 (0.44)	78.4 (3.1)
	2090-CPWM7DF-10AAxx	10	15.3 (0.6)	107 (4.2)
	2090-CPWM7DF-08AAxx	8	18.7 (0.74)	131 (5.2)

⁽¹⁾ Dimension B is based on the cable diameter. See Motor Power and Feedback Cable Bend Radius Definitions on [page 3](#) for more information.

Table 3 - Power/Brake Cable Specifications (continuous-flex)

Cable Type	Cable Cat. No.	Wire Size AWG	D mm (in.)	B ⁽¹⁾ mm (in.)	Continuous Bend Radius ⁽¹⁾ mm (in.)
Power/brake cables (continuous-flex)	2090-CPBM7DF-16AFxx	16	12.5 (0.49)	87.5 (3.4)	150 (5.9)
	2090-CPBM7DF-14AFxx	14	13.7 (0.54)	95.9 (3.8)	164 (6.5)
	2090-CPBM7DF-10AFxx	10	17.8 (0.70)	125 (4.9)	214 (8.4)
	2090-CPBM7DF-08AFxx	8	20.6 (0.81)	144 (5.7)	247 (9.7)
Power-only cables (continuous-flex)	2090-CPWM7DF-16AFxx	16	9.7 (0.38)	67.9 (2.7)	116 (4.6)
	2090-CPWM7DF-14AFxx	14	10.4 (0.41)	72.8 (2.9)	125 (4.9)
	2090-CPWM7DF-10AFxx	10	15.7 (0.62)	110 (4.3)	188 (7.4)
	2090-CPWM7DF-08AFxx	8	20.2 (0.79)	141 (5.5)	242 (9.5)

⁽¹⁾ Dimension B and continuous bend radius are based on the cable diameter. See Motor Power and Feedback Cable Bend Radius Definitions on [page 3](#) for more information.

Table 4 - Power/Brake Cable Pinouts

Power/Brake Cable Type	Cable Cat. No.	Description
Power/brake cables (standard, non-flex)	2090-CPBM7DF-16AAxx, 2090-CPBM7DF-14AAxx, 2090-CPBM7DF-12AAxx	
Power/brake cables (continuous-flex)	2090-CPBM7DF-16AFxx, 2090-CPBM7DF-14AFxx	
Power-only cables (standard, non-flex)	2090-CPWM7DF-16AAxx, 2090-CPWM7DF-14AAxx, 2090-CPWM7DF-12AAxx	
Power-only cables (continuous-flex)	2090-CPWM7DF-16AFxx, 2090-CPWM7DF-14AFxx	
Power/brake cables (standard, non-flex)	2090-CPBM7DF-10AAxx, 2090-CPBM7DF-08AAxx, 2090-CPBM7DF-06AAxx	
Power/brake cables (continuous-flex)	2090-CPBM7DF-10AFxx, 2090-CPBM7DF-08AFxx	
Power-only cables (standard, non-flex)	2090-CPWM7DF-10AAxx, 2090-CPWM7DF-08AAxx	
Power-only cables (continuous-flex)	2090-CPWM7DF-10AFxx, 2090-CPWM7DF-08AFxx	
Power/brake cables (standard, non-flex)	2090-CPBM7DF-04AAxx, 2090-CPBM7DF-02AAxx	

Install Motor Feedback Cables

This figure illustrates how to measure the bend radius and where cable bends can be made on motor feedback cables.

Figure 4 - Motor Feedback Bend Radius Examples

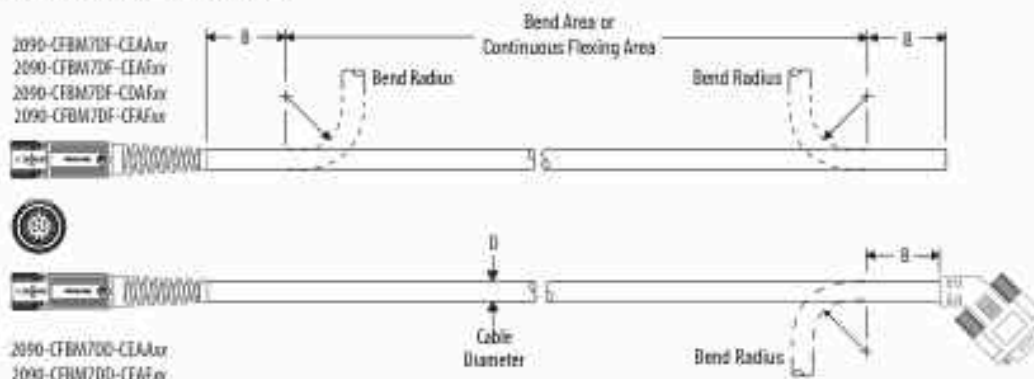


Table 5 - Feedback Cable Specifications

Cable Type	Cable Cat. No.	D mm (in.)	B ⁽¹⁾ mm (in.)	Continuous Bend Radius (1) mm (in.)
Feedback cables (standard, non-flex)	2090-CFBM70D-CEAAxx	9.8 (0.39)	68.6 (2.7)	N/A
	2090-CFBM70F-CEAAxx			
Feedback cables (continuous-flex)	2090-CFBM70D-CEAFxx	10.3 (0.40)	72.1 (2.8)	124 (4.9)
	2090-CFBM70F-CEAFxx			
	2090-CFBM70F-CDAFxx	11.7 (0.46)	81.9 (3.2)	140 (5.5)
	2090-CFBM70F-CFAFxx	11.7 (0.46)	81.9 (3.2)	140 (5.5)

(1) Dimension B and continuous bend radius are based on the cable diameter. See Motor Power and Feedback Cable Bend Radius Definitions on [page 3](#) for more information.

Table 6 - Feedback Cable Pinouts (premolded cable connectors)

Feedback Cable Type	Cable Cat. No.	Description
Feedback cable (standard, non-flex)	2090-CFBM70D-CEAAxx	2090-CFBM70D-CEAAxx feedback cables (-CE designation) have fewer conductors and are designed for motors with high-resolution absolute-position encoders.
Feedback cable (continuous-flex)	2090-CFBM70D-CEAFxx	36 AWG Shield Connector Backshell Shielded 360° Twisted Wire Pair Shield Wire Connection

Table 7 - Feedback Cable Pinouts (flying leads)

Feedback Cable Type	Cable Cat. No.	Description
Feedback cable (standard, non-flex)	2090-CFBM70F-CEAxx	Motor Plug To Drive 1 SBH+/SBH+ 22 KRG Black 2 SBH-/SBH- 22 KRG White/Black 3 OS+/OB+ 22 KRG Red 4 OS-/OB- 22 KRG White/Red 5 DM+/DM+ (R) 22 KRG Green 6 DM-/DM- (R) 22 KRG White/Green 9 EPW1 5V 22 KRG Gray 10 ECOM 22 KRG White/Gray 11 EPW1 0V 22 KRG Orange 12 TS+ 22 KRG White/Orange 13 TS- 22 KRG White/Orange 14 ECOM 22 KRG White/Orange 16 KRG Shield Connector Backshell Shielded 360° Twisted Wire Pair Shield Wire Connection Connect Cable Shield to Ground
Feedback cable (continuous-flex)	2090-CFBM70F-CEAFxx	

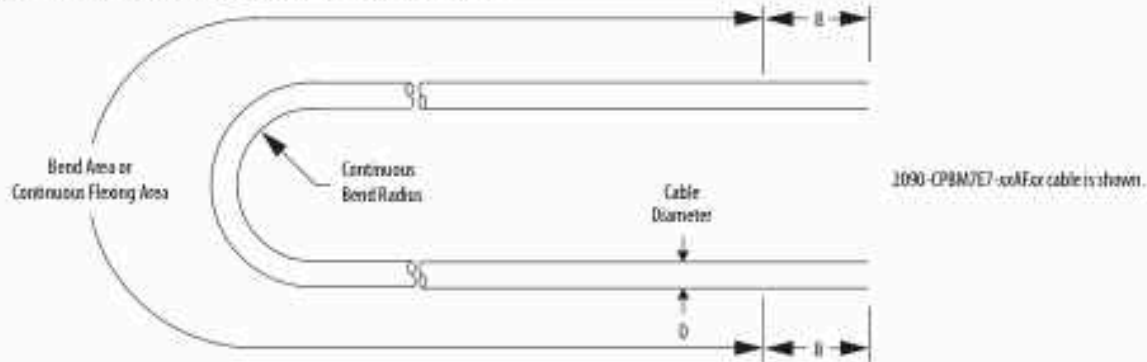
Table 8 - Feedback Cable Pinouts (Flying-leads with Hall signals)

Feedback Cable Type	Cable Cat. No.	Description
Feedback cable (continuous-flex)	2090-CFBM7DF-CDAFxx	

Install Continuous-flex Extension Cables

This figure illustrates how to measure the bend radius and where cable bends can be made on continuous-flex extension cables.

Figure 5 - Continuous-flex Extension Cable Bend Radius Example



Extension Power Cable Pinout Diagrams and Specifications

Table 9 - Extension Power/Brake Cable Pinouts

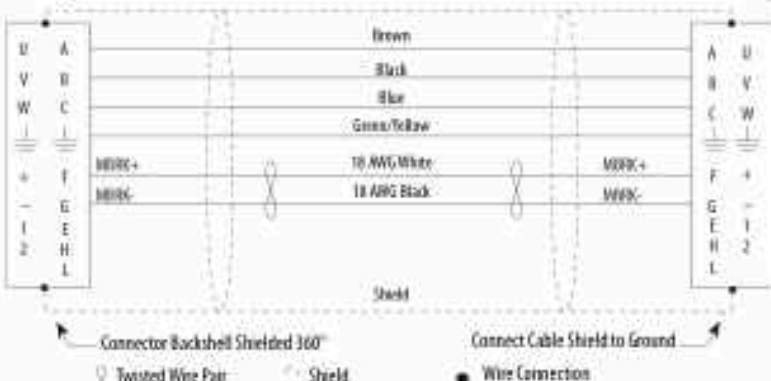
Extension Cable Type	Cable Cat. No.	Description
Extension power/brake cable (continuous-flex)	2090-CPBM7E7-16AFxx, 2090-CPBM7E7-14AFxx, 2090-CPBM7E7-10AFxx, 2090-CPBM7E7-08AFxx	 2090-CPBM7E7-10AFxx 2090-CPBM7E7-08AFxx  2090-CPBM7E7-16AFxx 2090-CPBM7E7-14AFxx
		 Motor Plug Extension Plug Connector Backshell Shielded 360° Twisted Wire Pair Shield Connect Cable Shield to Ground Wire Connection

Table 10 - Extension Power/Brake Cable Specifications

Cable Type	Cable Cat. No.	Wire Size AWG	D mm (in.)	B ⁽¹⁾ mm (in.)	Continuous Bend Radius ⁽¹⁾ mm (in.)
Extension power/brake cables (continuous-flex)	2090-CPBM7E7-16AFxx	16	12.5 (0.49)	87.5 (3.4)	150 (5.9)
	2090-CPBM7E7-14AFxx	14	13.7 (0.54)	95.9 (3.8)	164 (6.4)
	2090-CPBM7E7-10AFxx	10	17.8 (0.70)	125 (4.9)	214 (8.4)
	2090-CPBM7E7-08AFxx	8	20.6 (0.81)	144 (5.7)	247 (9.7)

(1) Dimension B and continuous bend radius are based on the cable diameter. See Motor Power and Feedback Cable Bend Radius Definitions on [page 3](#) for more information.

Extension Feedback Cable Pinout Diagrams and Specifications

2090-CFBM7E7 extension feedback cables are available with and without Hall signal conductors.

- 2090-CFBM7E7-CEAFxx feedback cables (-CE designation) have fewer conductors and are designed for motors with high-resolution absolute-position encoders.
- 2090-CFBM7E7-CDAFxx feedback cables (-CD designation) include Hall signal conductors and are designed for motors with incremental encoders.

Table 11 - Extension Feedback Cable Pinouts

Cable Type	Cable Cat. No.	Description																																																				
Extension feedback cable (continuous-flex)	2090-CFBM7E7-CEAFxx	 <table><thead><tr><th>Motor Plug</th><th></th><th>Extension Plug</th></tr></thead><tbody><tr><td>1</td><td>5B+/5B+</td><td>26 AWG Black</td></tr><tr><td>2</td><td>5B-/5B-</td><td>26 AWG White/Black</td></tr><tr><td>3</td><td>0D5+/0D5+</td><td>26 AWG Red</td></tr><tr><td>4</td><td>0D5-/0D5-</td><td>26 AWG White/Red</td></tr><tr><td>5</td><td>DATA+/0M+/R1</td><td>26 AWG Green</td></tr><tr><td>6</td><td>DATA-/0M-/R2</td><td>26 AWG White/Green</td></tr><tr><td>9</td><td>EPWR/SV</td><td>16 AWG Gray</td></tr><tr><td>10</td><td>ECOM</td><td>16 AWG White/Gray</td></tr><tr><td>11</td><td>EPWR/W</td><td>22 AWG Orange</td></tr><tr><td>13</td><td>TS+</td><td>22 AWG White/Orange</td></tr><tr><td>14</td><td>TS-</td><td>26 AWG Blue</td></tr><tr><td>15*</td><td>S1</td><td>26 AWG White/Blue</td></tr><tr><td>16*</td><td>S2</td><td>26 AWG Yellow</td></tr><tr><td>17*</td><td>S3</td><td>26 AWG White/Yellow</td></tr><tr><td>12</td><td>ECOM</td><td>16 AWG Shield</td></tr></tbody></table> <table><thead><tr><th>Connector Backshell Shielded 360°</th><th>Twisted Wire Pair</th><th>Shield</th><th>Wire Connection</th></tr></thead></table>	Motor Plug		Extension Plug	1	5B+/5B+	26 AWG Black	2	5B-/5B-	26 AWG White/Black	3	0D5+/0D5+	26 AWG Red	4	0D5-/0D5-	26 AWG White/Red	5	DATA+/0M+/R1	26 AWG Green	6	DATA-/0M-/R2	26 AWG White/Green	9	EPWR/SV	16 AWG Gray	10	ECOM	16 AWG White/Gray	11	EPWR/W	22 AWG Orange	13	TS+	22 AWG White/Orange	14	TS-	26 AWG Blue	15*	S1	26 AWG White/Blue	16*	S2	26 AWG Yellow	17*	S3	26 AWG White/Yellow	12	ECOM	16 AWG Shield	Connector Backshell Shielded 360°	Twisted Wire Pair	Shield	Wire Connection
	Motor Plug			Extension Plug																																																		
1	5B+/5B+	26 AWG Black																																																				
2	5B-/5B-	26 AWG White/Black																																																				
3	0D5+/0D5+	26 AWG Red																																																				
4	0D5-/0D5-	26 AWG White/Red																																																				
5	DATA+/0M+/R1	26 AWG Green																																																				
6	DATA-/0M-/R2	26 AWG White/Green																																																				
9	EPWR/SV	16 AWG Gray																																																				
10	ECOM	16 AWG White/Gray																																																				
11	EPWR/W	22 AWG Orange																																																				
13	TS+	22 AWG White/Orange																																																				
14	TS-	26 AWG Blue																																																				
15*	S1	26 AWG White/Blue																																																				
16*	S2	26 AWG Yellow																																																				
17*	S3	26 AWG White/Yellow																																																				
12	ECOM	16 AWG Shield																																																				
Connector Backshell Shielded 360°	Twisted Wire Pair	Shield	Wire Connection																																																			
2090-CFBM7E7-CDAFxx																																																						

Table 12 - Extension Feedback Cable Specifications

Cable Type	Cable Cat. No.	D mm (in.)	B ⁽²⁾ mm (in.)	Continuous Bend Radius ⁽²⁾ mm (in.)
Extension feedback cables (continuous-flex)	2090-CFBM7E7-CEAFxx	10.3 (0.40)	72.1 (2.8)	124 (4.9)
	2090-CFBM7E7-CDAFxx ⁽¹⁾	11.7 (0.46)	81.9 (3.2)	140 (5.5)

(1) Pins TS, S1, S2, and S3 (marked with an asterisk) for Hall signals S1, S2, and S3, apply to only the -CD feedback cable. Feedback cables with the -CE designation do not include these conductors.

(2) Dimension B and continuous bend radius are based on the cable diameter. See Motor Power and Feedback Cable Bend Radius Definitions on [page 3](#) for more information.

Install the Right Angle Cables

Follow these steps to attach a right-angle cable connector to the motor connector.

1. Align all flat surfaces on the cable connector with the flat surface on the motor connector.
2. Push the cable connector onto the motor connector to fully seat the connection.
3. Twist the knurled front end of the cable connector clockwise approximately 60° to secure the connection.

Right-angle Power/Brake Cables

This figure illustrates how to measure the bend radius and where cable bends can be made on right-angle power/brake cables.

Figure 6 - Right-angle Power/Brake Cable Bend Radius Example

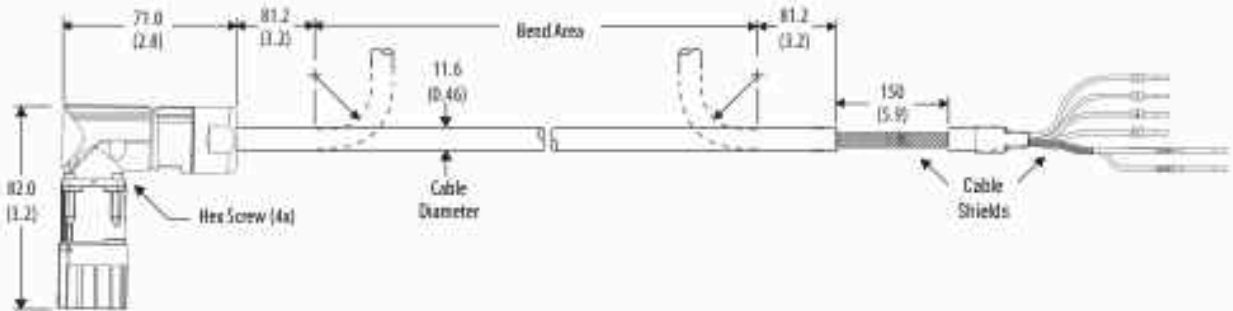


Table 13 - Right-angle Power/Brake Cable Specifications

Power/Brake Cable Type	Cable Cat. No.	Wire Size AWG	Available Lengths mm (in.)	Connector IP Rating
Right-angle power/brake cable (standard, non-flex)	2090-CP8M7DF-16RAxx	16 (power) 18 (brake)	3, 6, 9, 15 m (10, 16, 30, 49 ft)	IP54 (dust protected, splashing water)

You can reposition right-angle power cables in 90° increments. Follow these steps to reposition the power cable connector.

1. Remove the four 2 mm hex screws on the back of the cable connector.
2. Reposition the connector body to a new position by rotating the connector 90°, 180°, or 270°.
3. Secure the two parts together with the four 2 mm hex screws.

Torque screws to 0.25 N•m (2.2 lb•in), maximum.

Table 14 - Right-angle Power/Brake Cable Pinouts

Power/Brake Cable Type	Cable Cat. No.	Description
Right-angle power/brake cable (standard, non-flex)	2090-CP8M7DF-16RAxx	

Right-angle Feedback Cables

This figure illustrates how to measure the bend radius and where cable bends can be made on right-angle feedback cables.

Figure 7 - Right-angle Power/Brake Cable Bend Radius Example

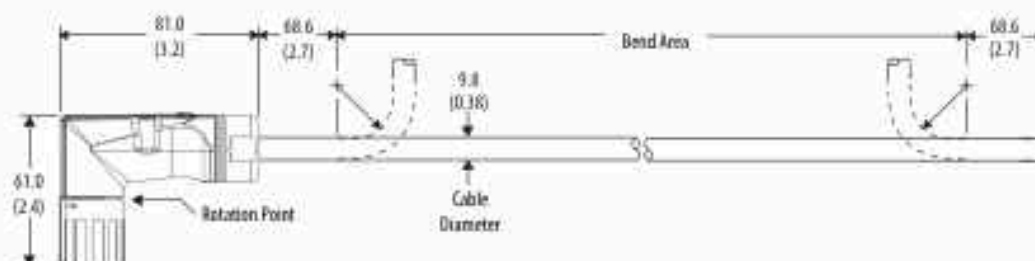


Table 15 - Right-angle Feedback Cable Specifications

Feedback Cable Type	Cable Cat. No.	Wire Size AWG	Available Lengths mm (in.)	Connector IP Rating
Right-angle feedback cable (standard, non-flex)	2090-CFBM70F-CERAxx	22	3, 6, 9, 15 m (10, 16, 30, 49 ft)	IP67 (dust tight, water immersion)

The right-angle feedback cable can be rotated 124° to the left of center or 200° to the right of center. Follow these steps to rotate the feedback cable connector.

4. Mount the cable on the motor connector.
5. Use two hands to rotate the connector into position.
 - a. Grasp the front and rear sections of the connector.
 - b. Use one hand to stabilize the front section of the connector (the area with the knurled locking sleeve) and the connector on the motor.
 - c. Use your other hand to rotate the back section of the connector (the area with the cable) into position.

Table 16 - Right-angle Feedback Cable Pinout

Feedback Cable Type	Cable Cat. No.	Description																																																																																																																																																																																																																																																																																																																																																																																																																
Right-angle feedback cable (standard, non-flex)	2090-CFBM70F-CERAxx	 Rotation Point  <table><tr><td>1</td><td>Black</td><td>0V+ (0V+)</td><td></td></tr><tr><td>2</td><td>White/Black</td><td>0V- (0V-)</td><td></td></tr><tr><td>3</td><td>Red</td><td>0V+ (0V+)</td><td></td></tr><tr><td>4</td><td>White/Red</td><td>0V- (0V-)</td><td></td></tr><tr><td>5</td><td>Green</td><td>0V+ (0V+)</td><td></td></tr><tr><td>6</td><td>White/Green</td><td>0V- (0V-)</td><td></td></tr><tr><td>7</td><td>Gray</td><td>0V+ (0V+)</td><td></td></tr><tr><td>8</td><td>White/Gray</td><td>0V- (0V-)</td><td></td></tr><tr><td>9</td><td>Orange</td><td>0V+ (0V+)</td><td></td></tr><tr><td>10</td><td>White/Orange</td><td>0V- 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• Wire Connection Twisted Wire Pair	1	Black	0V+ (0V+)		2	White/Black	0V- (0V-)		3	Red	0V+ (0V+)		4	White/Red	0V- (0V-)		5	Green	0V+ (0V+)		6	White/Green	0V- (0V-)		7	Gray	0V+ (0V+)		8	White/Gray	0V- (0V-)		9	Orange	0V+ (0V+)		10	White/Orange	0V- (0V-)		11	TS+	TS+		12	TS-	TS-		13	COM	COM		14	COM	COM		15	COM	COM		16	COM	COM		17	COM	COM		18	COM	COM		19	COM	COM		20	COM	COM		21	COM	COM		22	COM	COM		23	COM	COM		24	COM	COM		25	COM	COM		26	COM	COM		27	COM	COM		28	COM	COM		29	COM	COM		30	COM	COM		31	COM	COM		32	COM	COM		33	COM	COM		34	COM	COM		35	COM	COM		36	COM	COM		37	COM	COM		38	COM	COM		39	COM	COM		40	COM	COM		41	COM	COM		42	COM	COM		43	COM	COM		44	COM	COM		45	COM	COM		46	COM	COM		47	COM	COM		48	COM	COM		49	COM	COM		50	COM	COM		51	COM	COM		52	COM	COM		53	COM	COM		54	COM	COM		55	COM	COM		56	COM	COM		57	COM	COM		58	COM	COM		59	COM	COM		60	COM	COM		61	COM	COM		62	COM	COM		63	COM	COM		64	COM	COM		65	COM	COM		66	COM	COM		67	COM	COM		68	COM	COM		69	COM	COM		70	COM	COM		71	COM	COM		72	COM	COM		73	COM	COM		74	COM	COM		75	COM	COM		76	COM	COM		77	COM	COM		78	COM	COM		79	COM	COM		80	COM	COM		81	COM	COM		82	COM	COM		83	COM	COM		84	COM	COM		85	COM	COM		86	COM	COM		87	COM	COM		88	COM	COM		89	COM	COM		90	COM	COM		91	COM	COM		92	COM	COM		93	COM	COM		94	COM	COM		95	COM	COM		96	COM	COM		97	COM	COM		98	COM	COM		99	COM	COM		100	COM	COM	
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Additional Resources

These documents contain additional information concerning related products from Rockwell Automation:

Resource	Description
Kinetix Rotary Motion Specifications, publication KNX-TD001	Provides product specifications for Kinetix VPL, VPC, VPF, VPH, VPS; Kinetix MMA; Kinetix MPL, MPM, MPF, MPS; Kinetix TL and TLY, Kinetix TLP, and Kinetix HPK rotary motors.
Kinetix Linear Motion Specifications, publication KNX-TD002	Provides product specifications for Kinetix MPAS and MPMA linear stages, Kinetix VPAR, MPAR, and MPAL electric cylinders, and Kinetix LDC and Kinetix LDL linear motors.
Kinetix Servo Drives Specifications, publication KNX-TD003	Provides product specifications for Kinetix Integrated Motion over the EtherNet/IP network, Integrated Motion over sercos interface, EtherNet/IP networking, and component servo drive families.
Kinetix Motion Accessories Specifications, publication KNX-TD004	Provides product specifications for Kinetix 2090 motor and interface cables, low-profile connector kits, drive power components, and other servo drive accessory items.
Kinetix Motion Control Selection Guide, publication KNX-SG001	Provides overview of Kinetix servo drives, motors, actuators, and motion accessories designed to help make initial decisions for the motion control products best suited for your system requirements.
Encoder Output Module User Manual, publication 2198-UM003	Provides information on installing, configuring, startup, troubleshooting, and applications for your Kinetix servo drive system.
Kinetix 5300 Single-axis EtherNet/IP Servo Drives User Manual, publication 2198-UM005	
Kinetix 5700 Servo Drives User Manual, publication 2198-UM002	
Kinetix 5500 Servo Drives User Manual, publication 2198-UM001	
Kinetix 6200 and Kinetix 6500 Modular Servo Drives User Manual, publication 2194-UM002	
Kinetix 6000 Multi-axis Servo Drive User Manual, publication 2194-UM001	
Kinetix 300 EtherNet/IP Indexing Servo Drives User Manual, publication 2197-UM001	
Kinetix 350 Single-axis EtherNet/IP Servo Drives User Manual, publication 2197-UM002	
Kinetix 3 Component Servo Drives User Manual, publication 2197-UM001	
Kinetix 7000 High Power Servo Drive User Manual, publication 2199-UM001	Provides information, examples, and techniques that are designed to minimize system failures that are caused by electrical noise.
System Design for Control of Electrical Noise Reference Manual, publication 6MC-RM001	
Rockwell Automation Product Certification, website rak.auto/certifications	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at rak.auto/literature.

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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Waste Electrical and Electronic Equipment (WEEE)



At the end of life, this equipment should be collected separately from any unsorted municipal waste.

Rockwell Automation maintains current product environmental compliance information on its website at rok.auto/pec.

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For technical support, visit rok.auto/support.

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