

2090-Series Motor/Actuator Cables

A wide variety of motor/actuator cables with rugged DIN connectors are available for connecting your motion control system. Standard (non-flex) motor power and feedback cables are available for all Allen-Bradley servo motors and actuators. Continuous-flex rated cables, intended for moving applications, are also available. Continuous-flex extension and standard (non-flex) transition cables are also available for your applications that require them.

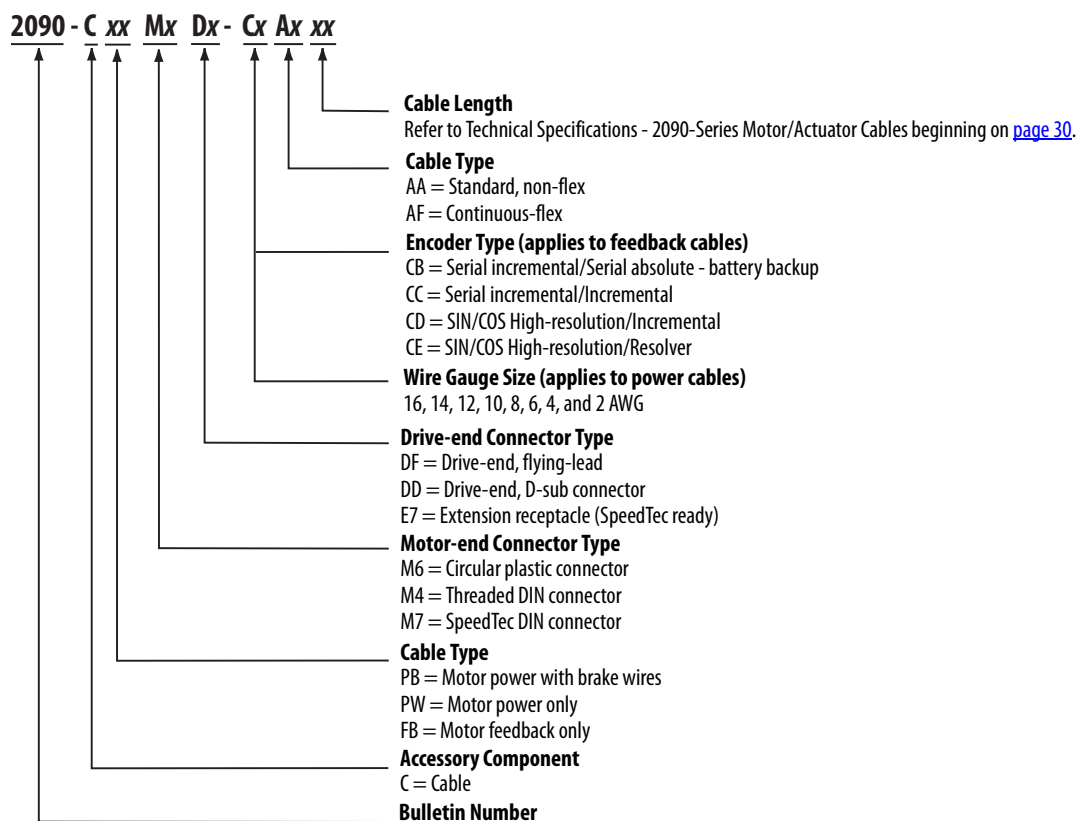
IMPORTANT All flying-lead feedback cables require breakout components or connector kits for drive-end terminations. Refer to Breakout Components and Connector Kits beginning on [page 65](#) for catalog numbers and descriptions.

IMPORTANT Standard (non-flex) cables have a regular maintenance and installation bend radius of 10 times the cable diameter. For flexing applications, continuous-flex cables have an operational bend radius of 12 times the cable diameter.

Catalog Numbers - 2090-Series Motor/Actuator Cable

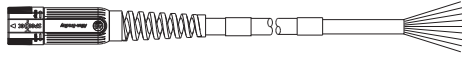

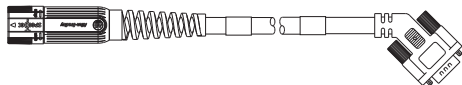

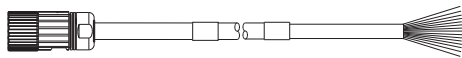







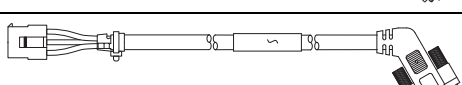

Catalog numbers consist of various characters, each of which identifies a specific option for that component. Use the catalog numbering charts below to understand the configuration of your component. For questions regarding product availability, contact your Allen-Bradley distributor.

Motor Power/Brake, Feedback, and Extension Cables



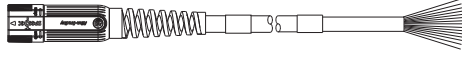

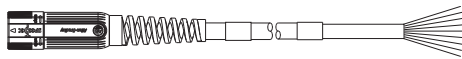

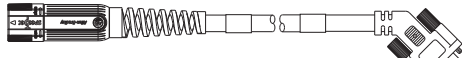

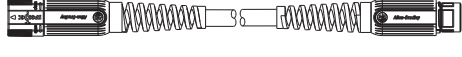

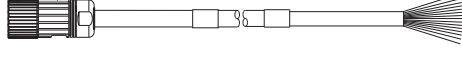

2090-Series Motor/Actuator Cables Overview

Feedback Cable Descriptions (standard, non-flex)

Standard Cable Cat. No.	Description	Cable Configuration		Motor/Actuator Connector
		Motor/Actuator End	Drive End	
2090-CFBM7DF-CEAAxx	<ul style="list-style-type: none"> Drive-end flying-leads (DF) High-resolution or resolver applications (CE) 			SpeedTec DIN (M7)
2090-CFBM7DD-CEAAxx	<ul style="list-style-type: none"> Drive-end 15-pin connector (DD) High-resolution or resolver applications (CE) 			
2090-XXNFMF-Sxx	<ul style="list-style-type: none"> Drive-end flying-leads High-resolution or incremental applications 			Threaded DIN (M4)
2090-CFBM4E2-CATR	<ul style="list-style-type: none"> Drive-end bayonet (E2), transition (TR) cable ⁽¹⁾ Motor-end threaded DIN (M4) All feedback types (CA) 			
2090-CFBM6DF-CBAAxx	<ul style="list-style-type: none"> Drive-end flying-leads (DF) High-resolution, battery backup or Incremental applications (CB) 			Circular Plastic (M6)
2090-CFBM6DD-CCAAxx	<ul style="list-style-type: none"> Drive-end 15-pin connector (DD) Incremental applications only (CC) 			
2090-DANFCT-Sxx	<ul style="list-style-type: none"> Drive-end 20-pin connector High-resolution applications 			Rectangular Plastic

(1) Threaded DIN connector (motor end) and bayonet connector for 2090-XXNFMF-Sxx cable. Refer to 2090-Series Motor Power and Feedback Transition Cables on [page 17](#).

Feedback Cable Descriptions (continuous-flex)

Continuous-flex Cable Cat. No.	Description	Cable Configuration		Motor/Actuator Connector
		Motor/Actuator End	Drive End	
2090-CFBM7DF-CDAFxx	<ul style="list-style-type: none"> Drive-end flying-leads (DF) High-resolution or incremental applications (CD) 			SpeedTec DIN (M7)
2090-CFBM7DF-CEAFxx	<ul style="list-style-type: none"> Drive-end flying-leads (DF) High-resolution or resolver applications (CE) 			
2090-CFBM7DD-CEAFxx	<ul style="list-style-type: none"> Drive-end 15-pin connector (DD) High-resolution or resolver applications (CE) 			
2090-CFBM7E7-CDAFxx	<ul style="list-style-type: none"> Drive-end (male) connector, extension (E7) ⁽¹⁾ Motor-end SpeedTec DIN cable plug (M7) 			Threaded DIN (M4)
2090-CFBM7E7-CEAFxx				
2090-CFBM4DF-CDAFxx	<ul style="list-style-type: none"> Drive-end flying-leads High-resolution or incremental applications 			

(1) SpeedTec DIN connector (motor end) and male connector for extending SpeedTec or threaded DIN cable. Refer to SpeedTec DIN Continuous-flex Extension Cables on [page 16](#).

IMPORTANT Feedback cables with the CE designation, for example 2090-CFBM7DF-CEAAxx, are intended for high-resolution encoder or resolver applications and have fewer conductors than feedback cables with the CD designation, for example 2090-CFBM7DF-CDAFxx that are intended for high-resolution or incremental encoder applications.

TL-Series Low Inertia Motors

Cat. No.	Drive Compatibility	Feedback Type	Feedback Cable Cat. No.	IP Rating
TLY-Axxxx-H	2093-AC05-MPx or 2093-AMxx 2094-ACxx-Mxx-S or 2094-AMxx-S 2097-V3xPRx or 2097-V3xPRx-LM 2098-DSD-xxx	Incremental	2090-CFBM6DF-CBAAxx (flying lead) or 2090-CFBM6DD-CCAAxx (premolded connector)	Shaft seal is optional: <ul style="list-style-type: none"> • IP54 without shaft seal • IP65 with shaft seal Cable connectors IP30
	2071-Axx		2090-CFBM6DF-CBAAxx (flying lead)	
TLY-Axxxx-B	2093-AC05-MPx or 2093-AMxx 2097-V3xPRx or 2097-V3xPRx-LM	Multi-turn High Resolution Absolute Encoder Feedback	2090-CFBM6DF-CBAAxx (flying lead) or 2090-CFBM6DD-CCAAxx (premolded connector)	
	2071-Axx		2090-CFBM6DF-CBAAxx (flying lead)	
TL-Axxxx-B	2071-Axx		2090-DANFCT-Sxx ⁽¹⁾	

(1) Use when high-resolution absolute encoder feedback is not required. For high-resolution encoder applications, remove the drive-side connector and wire flying leads to the 2071-TBMF connector kit with customer-supplied 3.6V lithium battery.

TL-Series (200V-class) Motors		Power Cable Cat. No.	IP Rating
TLY-Axxxx-H		2090-CPBM6DF-16AAxx (power and brake)	Shaft seal is optional: <ul style="list-style-type: none"> • IP54 without shaft seal • IP65 with shaft seal Cable connectors IP30
TLY-Axxxx-B		2090-CPWM6DF-16AAxx (power without brake)	
TL-Axxxx-B		2090-DANPT-16Sxx	

TL-Series (200V-class) Motors		Brake Cable Cat. No.	IP Rating
TL-Axxxx-B motors		2090-DANBT-18Sxx	Shaft seal is optional: <ul style="list-style-type: none"> • IP54 without shaft seal • IP65 with shaft seal Cable connectors IP30

For cable configuration illustrations and feature descriptions, by catalog number, refer to 2090-Series Motor/Actuator Cables Overview beginning on [page 13](#).

Cable length xx is in meters. Refer to Technical Specifications - 2090-Series Motor/Actuator Cables beginning on [page 30](#).

For N-Series retrofit cable information, refer to the Kinetix Rotary Motion Technical Data, publication [GMC-TD001](#).

IMPORTANT TL-Axxxx-B motors have rectangular plastic connectors and are intended for use with Kinetix 3 (Bulletin 2071) servo drives. The TLY-Axxxx motors have circular plastic connectors and are intended for use with Bulletin 2093, 2094, 2097, and 2098 (200V-class) servo drives.

Brake Cable Specifications

Brake Cables Cat. No.	Cable Type/ Jacket Color	Description	Wire Size AWG	Weight, approx kg/m (lb/ft)	Standard Cable Lengths m (ft)
2090-DANBT-18Sxx	Standard (non-flex) cable, Industrial TPE, Black	Two conductor, 600V, 18 AWG, shielded cable for motor brake.	18	0.070 (0.047)	01 (3.2) 05 (16.4) 15 (49.2) 02 (6.5) 07 (22.9) 20 (65.6) 03 (9.8) 09 (29.5) 25 (82.0) 04 (13.1) 12 (39.4) 30 (98.4)

Feedback Cable Specifications

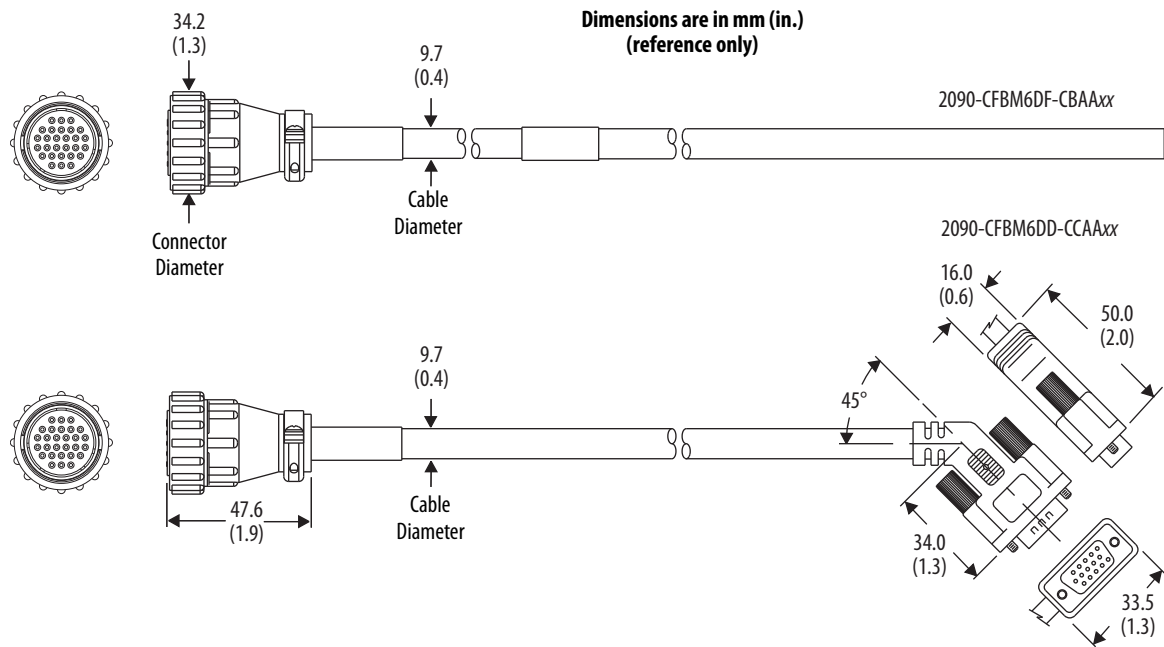
Feedback Cables ^{(1) (2)} Cat. No.	Cable Type/ Jacket Color	Description	Wire Size AWG	Weight, approx kg/m (lb/ft)	Standard Cable Lengths m (ft)
2090-XXNFMF-Sxx	Standard (non-flex) cable, Industrial TPE, Black	Threaded DIN connector (motor end) to flying leads (drive end), 30V.	28 Feedback 16 Power, 5V 22 Power, 9V	0.120 (1.35)	01 (3.2) 07 (22.9) 25 (82.0) 02 (6.5) 09 (29.5) 30 (98.4) 03 (9.8) 12 (39.4) 40 (131.2) 04 (13.1) 15 (49.2) 60 (196.8) 05 (16.4) 20 (65.6) 90 (295.3)
2090-CFBM7DD-CEAxx	Standard (non-flex) cable, Industrial TPE, Green (DESINA, RAL 6018)	SpeedTec DIN connector (motor end) to premolded connector (drive end), 600V.	22 All conductors	0.136 (0.092)	
2090-CFBM7DF-CEAxx		SpeedTec DIN connector (motor end) to flying leads (drive end), 600V.			
2090-UXNFM-Sxx ⁽³⁾	Standard (non-flex) cable, Industrial TPE, Black	Flying-leads (motor end) to premolded connector (drive end), 30V.	28 Feedback 16 Power, 5V 22 Power, 9V	0.120 (1.35)	01 (3.2) 15 (49.2) 03 (9.8) 30 (98.4) 09 (29.5)
2090-CFBM6DF-CBAxx		Circular plastic connector (motor end) to flying leads (drive end), 300V.	28 Feedback 16 Power, 5V 22 BAT+		
2090-CFBM6DD-CCAxx		Circular plastic connector (motor end) to premolded connector (drive end), 300V.	28 Feedback 16 Power, 5V	0.130 (0.088)	01 (3.2) 05 (16.4) 15 (49.2) 02 (6.5) 07 (22.9) 20 (65.6) 03 (9.8) 09 (29.5) 25 (82.0) 04 (13.1) 12 (39.4) 30 (98.4)
2090-DANFCT-Sxx		Rectangular plastic connector (motor end) to premolded connector (drive end), 30V.	28 Feedback 16 Power, 5V 22 BAT+		
2090-CFBM4DF-CDAFxx	Continuous-flex cable Industrial TPE, Green (DESINA, RAL 6018)	Threaded DIN connector (motor end) to flying leads (drive end), 600V.	26 Feedback 16 Power, 5V 22 Power, 9V	0.177 (0.119)	01 (3.2) 09 (29.5) 40 (131.2) 02 (6.5) 12 (39.4) 50 (164.0) 03 (9.8) 15 (49.2) 60 (196.8) 04 (13.1) 20 (65.6) 75 (264.0) 05 (16.4) 25 (82.0) 90 (295.3) 07 (22.9) 30 (98.4)
2090-CFBM7DF-CDAFxx		SpeedTec DIN connector (motor end) to flying leads (drive end), 600V.		0.143 (0.096)	
2090-CFBM7DF-CEAFxx			22 All conductors		
2090-CFBM7DD-CEAFxx		SpeedTec DIN connector (motor end) to premolded connector (drive end), 600V.			

(1) 2090-CFBM7xx-CEAxxx feedback cables are UL Listed, bulk cable, type PLTC-ER.

(2) 2090-CFBM4DF-CDAXxx and 2090-CFBM7xx-CDAXxx feedback cables are UL Listed, bulk cable, type CM.

(3) Use with 2090-KFBM4-CAAA (threaded) or 2090-KFBM7-CAAA (SpeedTec) DIN connector kit.

Feedback Cable Dimensions (catalog numbers 2090-CFBM6DF-CBAAxx and 2090-CFBM6DD-CCAAxx)



Feedback Cable Dimensions (catalog number 2090-DANFCT-Sxx)

