

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.

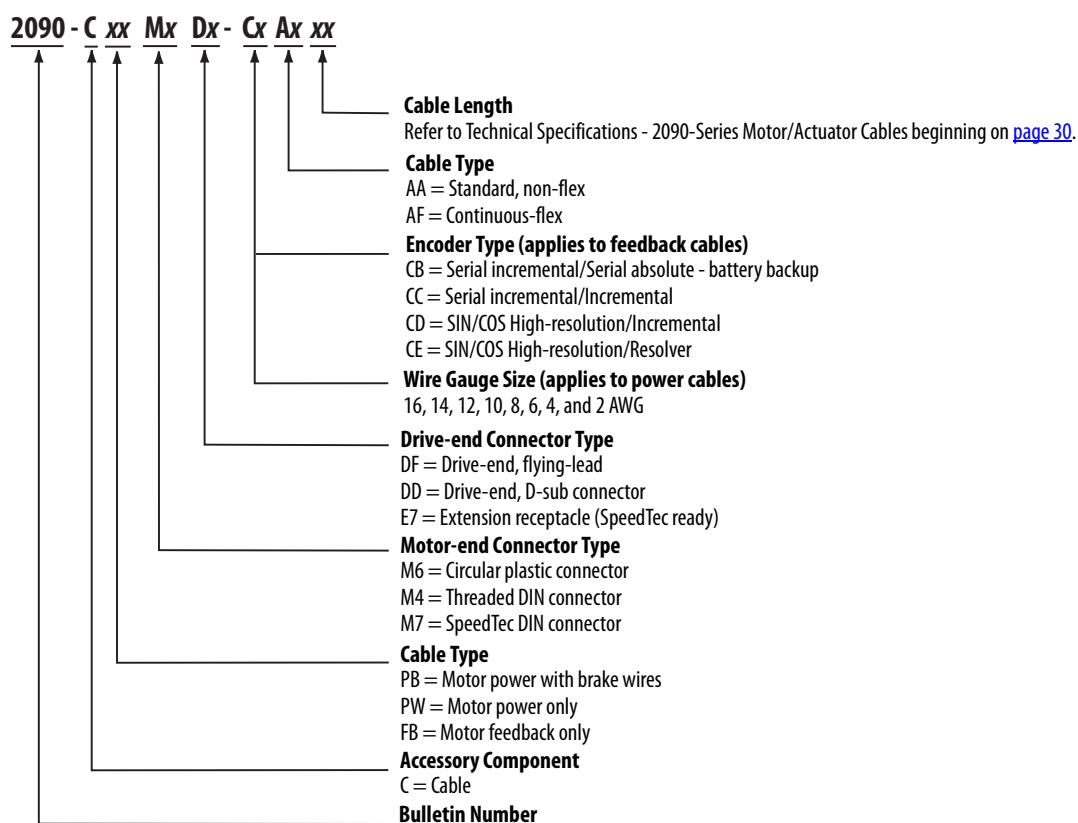
IMPORTANT All flying-lead feedback cables require breakout components or connector kits for drive-end terminations. Refer to Breakout Components and Connector Kits beginning on [page 65](#) for catalog numbers and descriptions.

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.

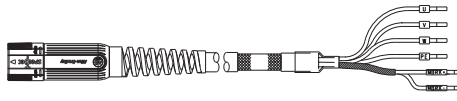
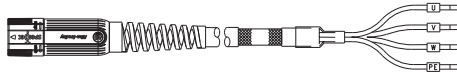
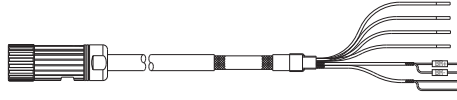
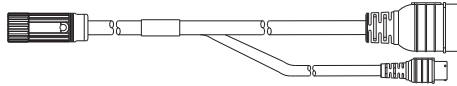
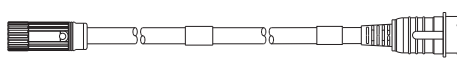
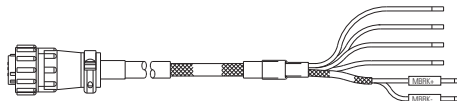
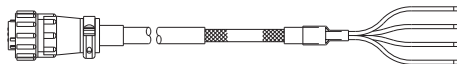
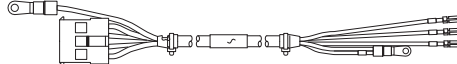
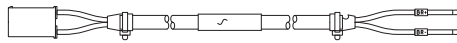
Catalog Numbers - 2090-Series Motor/Actuator Cable

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

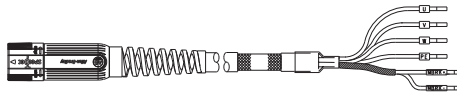
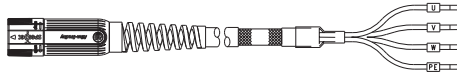
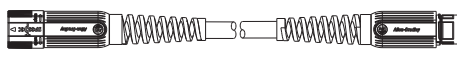
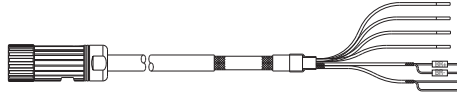
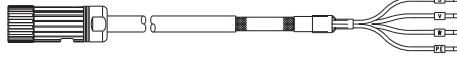


Power/Brake Cable Descriptions (standard, non-flex)

Standard Cable Cat. No.	Description	Cable Configuration		Motor/Actuator Connector
		Motor/Actuator End	Drive End	
2090-CPBM7DF-xxAAxx	- Drive-end flying-leads (DF) - Power/brake wires (PB)			SpeedTec DIN (M7)
2090-CPWM7DF-xxAAxx	- Drive-end flying-leads (DF) - Power wires only (PW)			
2090-XXNPMF-xxSxx	- Drive-end flying-leads - Power/brake wires			Threaded DIN (M4)
2090-CPBM4E2-xxTR	- Drive-end bayonet (E2), transition (TR) cable ⁽¹⁾ - Motor-end threaded DIN (M4) - Power/brake wires (PB)			
2090-CPWM4E2-xxTR	- Drive-end bayonet (E2), transition (TR) cable ⁽¹⁾ - Motor-end threaded DIN (M4) - Power wires only (PW)			
2090-CPBM6DF-16AAxx	- Drive-end flying-leads (DF) - Power/brake wires (PB)			Circular Plastic (M6)
2090-CPWM6DF-16AAxx	- Drive-end flying-leads (DF) - Power wires only (PW)			
2090-DANPT-16Sxx	- Drive-end flying-leads - Power wires only			Rectangular Plastic
2090-DANBT-18Sxx	Drive-end flying-lead brake wires			

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

Power/Brake Cable Descriptions (continuous-flex)

Continuous-flex Cable Cat. No.	Description	Cable Configuration		Motor/Actuator Connector
		Motor/Actuator End	Drive End	
2090-CPBM7DF-xxAFxx	- Drive-end flying-leads (DF) - Power/brake wires (PB)			SpeedTec DIN (M7)
2090-CPWM7DF-xxAFxx	- Drive-end flying-leads (DF) - Power wires only (PW)			
2090-CPBM7E7-xxAFxx	- Drive-end (male) connector, extension (E7) ⁽¹⁾ - Motor-end SpeedTec DIN cable plug (M7)			
2090-CPBM4DF-xxAFxx	- Drive-end flying-leads (DF) - Power/brake wires (PB)			Threaded DIN (M4)
2090-CPWM4DF-xxAFxx	- Drive-end flying-leads (DF) - Power wires only (PW)			

(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](#).

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: • 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: • 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: • 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.

LDAT-Series Integrated Linear Thrusters

Actuator Cat. No.	Drive Compatibility	Feedback Type	Feedback Cable Cat. No.	IP Rating
LDAT-Sxxxxxx-xDx (230V operation)	2198-Hxxx-ERS or 2198-Hxxx-ERS2 2097-V3xPRx	Absolute Linear Encoder Feedback	2090-CFBM7DF-CEAAxx or 2090-CFBM7DD-CEAAxx (standard, non-flex)	IP30
LDAT-Sxxxxxx-xDx (460V operation)	2198-Hxxx-ERS or 2198-Hxxx-ERS2 2198-Dxxx-ERS3 2097-V34PRx		2090-CFBM7DF-CEAFxx 2090-CFBM7DD-CEAFxx (continuous-flex)	
LDAT-Sxxxxxx-xBx (230V operation)	2093-AC05-MPx or 2093-AMxx 2094-ACxx-Mxx-S or 2094-AMxx-S 2097-V3xPRx 2098-DSD-xxx 2071-Axx	Incremental Encoder Feedback	2090-XXNFMF-Sxx (standard, non-flex) 2090-CFBM7DF-CDAFxx (continuous-flex)	
LDAT-Sxxxxxx-xBx (460V operation)	2198-Dxxx-ERS3 2094-BCxx-Mxx-S or 2094-BMxx-S 2094-BCxx-Mxx-M or 2094-BMxx-M 2097-V34PRx 2098-DSD-HVxxx			

LDAT-Series (230V or 460V operation) Linear Thrusters	Power Cable Cat. No.	IP Rating
LDAT-S031xxx, LDAT-S032xxx, LDAT-S033xxx	2090-CPWM7DF-16AAxx (standard, non-flex) 2090-CPWM7DF-16AFxx (continuous-flex)	IP30
LDAT-S051xxx, LDAT-S052xxx, LDAT-S053xxx, LDAT-S054xxx		
LDAT-S072xxx, LDAT-S073xxx, LDAT-S074xxx, LDAT-S076xxx-Exx		
LDAT-S102xxx, LDAT-S103xxx, LDAT-S104xxx, LDAT-S106xxx-Exx		
LDAT-S152xxx, LDAT-S153xxx, LDAT-S154xxx, LDAT-S156xxx-Exx		
LDAT-S076xxx-Dxx	2090-CPWM7DF-14AAxx (standard, non-flex) 2090-CPWM7DF-14AFxx (continuous-flex)	
LDAT-S106xxx-Dxx		
LDAT-S156xxx-Dxx		

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](#).

TL-Series Electric Cylinders

Actuator Cat. No.	Drive Compatibility	Feedback Type	Motor Feedback Cable	IP Rating
TLAR-Axxxxx	2093-AC05-MPx or 2093-AMxx 2097-V3xPRx or 2097-V3xPRx-LM 2071-Axx	Multi-turn High Resolution Absolute Encoder Feedback	2090-CFBM6DF-CBAAxx (flying-lead) standard, non-flex	IP40 ⁽¹⁾

TL-Series (200V-class) Electric Cylinders		Motor Power Cable	IP Rating
TLAR-Axxxxx		2090-CPBM6DF-16AAxx (power and brake) standard, non-flex 2090-CPWM6DF-16AAxx (power without brake) standard, non-flex	IP40 ⁽¹⁾

(1) Applies to complete unit, including rod-end seal and breather port.

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](#).

Technical Specifications - 2090-Series Motor/Actuator Cables

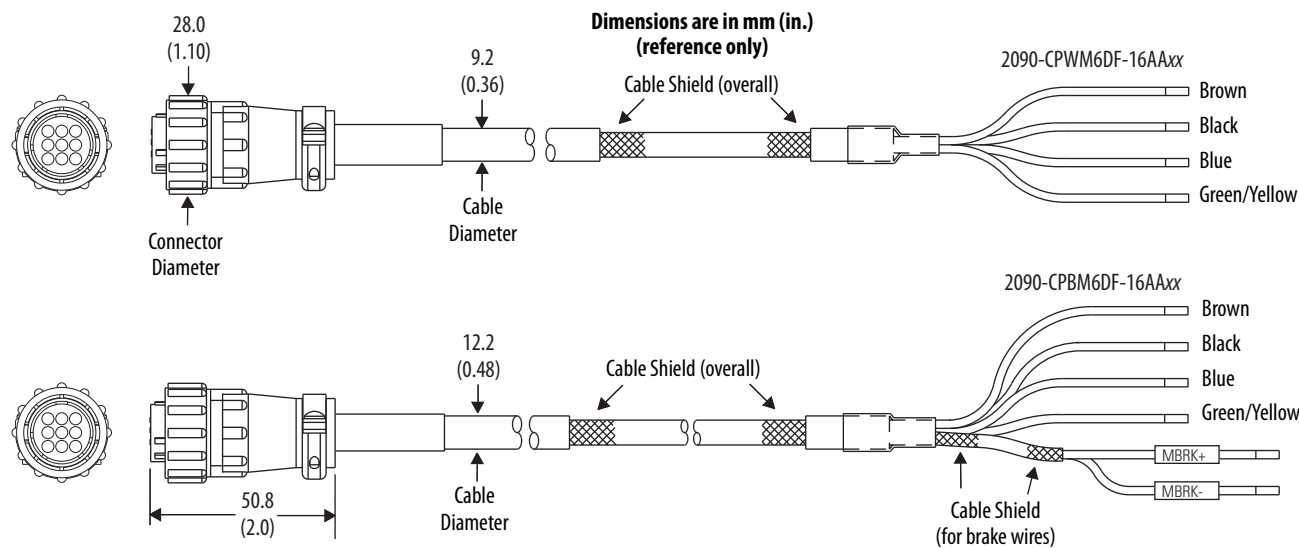
Power Cable Specifications

Power Cables ⁽¹⁾ Cat. No.	Cable Type/ Jacket Color	Description	Wire Size AWG	Weight, approx kg/m (lb/ft)	Standard Cable Lengths m (ft)		
2090-XXNPMF-16Sxx	Standard (non-flex) cable, Industrial TPE, Black	Four conductor, 600V, shielded cable for three- phase power with additional four conductors, 18 AWG, shielded, for motor brake and spares.	16	0.276 (0.186)	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-XXNPMF-14Sxx			14	0.315 (0.212)			
2090-CPBM7DF-16AAxx	Standard (non-flex) cable, Industrial TPE, Orange (DESINA, RAL 2003)	Four conductor, 600V, shielded cable for three- phase power with additional two conductors 18 AWG for motor brake.	16	0.212 (0.143)			
2090-CPBM7DF-14AAxx			14	0.261 (0.175)			
2090-CPBM7DF-12AAxx			12	0.349 (0.235)			
2090-CPBM7DF-10AAxx			10	0.492 (0.331)			
2090-CPBM7DF-08AAxx			8	0.708 (0.476)			
2090-CPBM7DF-06AAxx			6	1.038 (0.698)			
2090-CPBM7DF-04AAxx ⁽²⁾		Four conductor, 600V, shielded cable for three- phase power with additional two conductors 16 AWG for motor brake.	4	1.549 (1.041)			
2090-CPBM7DF-02AAxx ⁽²⁾			2	2.166 (1.455)			
2090-CPWM7DF-16AAxx	Standard (non-flex) cable, Industrial TPE, Black	Four conductor, 600V, shielded cable for three- phase power.	16	0.136 (0.091)			
2090-CPWM7DF-14AAxx			14	0.185 (0.124)			
2090-CPWM7DF-12AAxx			12	0.248 (0.167)			
2090-CPWM7DF-10AAxx			10	0.418 (0.281)			
2090-CPWM7DF-08AAxx			8	0.644 (0.433)			
2090-CPWM6DF-16AAxx			16	0.138 (0.093)			
2090-DANPT-16Sxx	16						
2090-CPBM6DF-16AAxx			16	0.180 (0.121)			
2090-CPBM4DF-16AFxx	Continuous-flex cable	Four conductor, 600V, shielded cable for three- phase power with additional two conductors 18 AWG for motor brake.	16	0.228 (0.153)	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-CPBM7DF-16AFxx			16				
2090-CPBM7DF-14AFxx			14	0.289 (0.194)			
2090-CPBM7DF-10AFxx			10	0.513 (0.345)			
2090-CPBM7DF-08AFxx		8	0.697 (0.468)				
2090-CPWM4DF-16AFxx	Industrial TPE, Orange (DESINA, RAL 2003)	Four conductor, 600V, shielded cable for three- phase power.	16	0.154 (0.104)			
2090-CPWM7DF-16AFxx			16				
2090-CPWM7DF-14AFxx			14	0.196 (0.132)			
2090-CPWM7DF-10AFxx			10	0.452 (0.304)			
2090-CPWM7DF-08AFxx			8	0.666 (0.448)			

(1) 2090-CPxM4DF-xxAxxx and 2090-CPxM7DF-xxAxxx power cables are UL Listed, bulk cable, type TC-ER.

(2) For this cable, the 01 and 02 m (3.2 and 6.5 ft) standard lengths do not apply.

Power Cable Dimensions (catalog number 2090-CPxM6DF-16AAxx)



Power Cable Dimensions (catalog number 2090-DANPT-16Sxx)

