

2090-Series Motor/Actuator Cable Selection

These tables provide motor power and feedback cable catalog numbers for use with Allen-Bradley servo motors. Most motor brake wires are in the power cable, so a separate brake cable is not required (except where noted). The IP rating is dependent on the use of Allen-Bradley Bulletin 2090 cables as listed in these tables.

IMPORTANT The MP-Series low-inertia motors on this page are equipped with DIN connectors (specified by 7 in the catalog number) and are not compatible with cables designed for motors equipped with bayonet connectors (specified by 2 in the catalog number). The motors with bayonet connectors (for example, MPL-A310P-xx2xAA) are being discontinued and require 2090-XXNFMP-Sxx (bayonet) cables. For help with migration or to select bayonet cables, contact your Rockwell Automation sales representative.

MP-Series (Bulletin MPL) Motor Feedback Cables

Motor Cat. No.	Compatible Drive Cat. No.	Feedback Type	Feedback Cable Cat. No.	IP Rating
MPL-A15xxx-V/Ex7xAA, MPL-A2xxx-V/Ex7xAA	2093-AC05-MPx or 2093-AMxx 2094-ACxx-Mxx-S or 2094-AMxx-S 2097-V3xPRx or 2097-V3xPRx-LM 2098-DSD-xxx	Multi-turn High-resolution Absolute or Single-turn High-resolution Encoder Feedback	2090-CFBM7DF-CEAAxx or 2090-CFBM7DD-CEAAxx (standard, non-flex) 2090-CFBM7DF-CEAFxx 2090-CFBM7DD-CEAFxx (continuous-flex)	Shaft seal is optional: <ul style="list-style-type: none"> • IP50 without shaft seal • IP66 with shaft seal
MPL-B15xxx-V/Ex7xAA, MPL-B2xxx-V/Ex7xAA	2094-BCxx-Mxx-S or 2094-BMxx-S 2094-BCxx-Mxx-M or 2094-BMxx-M 2097-V34PRx or 2097-V34PRx-LM 2098-DSD-HVxxx			
MPL-A3xxx-M/Sx7xAA, MPL-A4xxx-M/Sx7xAA, MPL-A45xxx-M/Sx7xAA, MPL-A5xxx-M/Sx7xAA	2093-AC05-MPx or 2093-AMxx 2094-ACxx-Mxx-S or 2094-AMxx-S 2097-V3xPRx or 2097-V3xPRx-LM 2098-DSD-xxx			
MPL-B3xxx-M/Sx7xAA, MPL-B4xxx-M/Sx7xAA, MPL-B45xxx-M/Sx7xAA, MPL-B5xxx-M/Sx7xAA, MPL-B6xxx-M/Sx7xAA, MPL-B8xxx-M/Sx7xAA, MPL-B9xxx-M/Sx7xAA	2094-BCxx-Mxx-S or 2094-BMxx-S 2094-BCxx-Mxx-M or 2094-BMxx-M 2097-V34PRx or 2097-V34PRx-LM 2098-DSD-HVxxx 2099-BMxx-S			
MPL-A15xxx-Hx7xAA, MPL-A2xxx-Hx7xAA	2093-AC05-MPx or 2093-AMxx 2094-ACxx-Mxx-S or 2094-AMxx-S 2097-V3xPRx or 2097-V3xPRx-LM 2098-DSD-xxx	Incremental ⁽¹⁾ Feedback	2090-XXNFMP-Sxx (standard, non-flex) 2090-CFBM7DF-CDAFxx (continuous-flex)	Shaft seal is optional: <ul style="list-style-type: none"> • IP50 without shaft seal • IP66 with shaft seal
MPL-B15xxx-Hx7xAA, MPL-B2xxx-Hx7xAA	2094-BCxx-Mxx-S or 2094-BMxx-S 2094-BCxx-Mxx-M or 2094-BMxx-M 2097-V34PRx or 2097-V34PRx-LM 2098-DSD-HVxxx			
MPL-A3xxx-Hx7xAA, MPL-A4xxx-Hx7xAA, MPL-A45xxx-Hx7xAA	2093-AC05-MPx or 2093-AMxx 2094-ACxx-Mxx-S or 2094-AMxx-S 2097-V3xPRx or 2097-V3xPRx-LM 2098-DSD-xxx			
MPL-B3xxx-Hx7xAA, MPL-B4xxx-Hx7xAA, MPL-B45xxx-Hx7xAA	2094-BCxx-Mxx-S or 2094-BMxx-S 2094-BCxx-Mxx-M or 2094-BMxx-M 2097-V34PRx or 2097-V34PRx-LM 2098-DSD-HVxxx			
MPL-Bxxx-Rx7xAA	2094-BCxx-Mxx-S or 2094-BMxx-S	Resolver Feedback ⁽¹⁾	2090-CFBM7DF-CEAAxx (standard, non-flex) 2090-CFBM7DF-CEAFxx (continuous-flex)	

(1) Not all MP-Series low-inertia motors are available with incremental and resolver feedback options.

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](#).

MP-Series Medium Inertia Motors

Motor Cat. No.	Drive Compatibility	Feedback Type	Feedback Cable Cat. No.	IP Rating
MPM-Axxxxx-M/S	2093-AC05-MPx or 2093-AMxx 2094-ACxx-Mxx-S or 2094-AMxx-S 2097-V3xPRx or 2097-V3xPRx-LM 2098-DSD-xxx	Multi-turn High Resolution Absolute or Single-turn High Resolution Encoder Feedback	2090-CFBM7DF-CEAAxx or 2090-CFBM7DD-CEAAxx (standard, non-flex)	Shaft seal is optional: • IP50 without shaft seal • IP66/67 with shaft seal
MPM-Bxxxxx-M/S	2094-BCxx-Mxx-S or 2094-BMxx-S 2094-BCxx-Mxx-M or 2094-BMxx-M 2097-V34PRx or 2097-V34PRx-LM 2098-DSD-HVxxx 2099-BMxx-S		2090-CFBM7DF-CEAFxx 2090-CFBM7DD-CEAFxx (continuous-flex)	
MPM-Axxxxx-2	2094-ACxx-Mxx-S or 2094-AMxx-S	Resolver Feedback ⁽¹⁾	2090-CFBM7DF-CEAAxx (standard, non-flex)	
MPM-Bxxxxx-2	2094-BCxx-Mxx-S or 2094-BMxx-S		2090-CFBM7DF-CEAFxx (continuous-flex)	

(1) Not all MP-Series medium-inertia motors are available with the resolver feedback option.

MP-Series (200V-class) Medium Inertia Motors	Power Cable Cat. No.	IP Rating
MPM-A115xx	2090-CPxM7DF-16AAxx (standard, non-flex) 2090-CPxM7DF-16AFxx (continuous-flex)	Shaft seal is optional: • IP50 without shaft seal • IP66/67 with shaft seal
MPM-A1302F	2090-CPxM7DF-14AAxx (standard, non-flex) 2090-CPxM7DF-14AFxx (continuous-flex)	
MPM-A1304F	2090-CPxM7DF-12AAxx (standard, non-flex)	
MPM-A1651F	2090-CPxM7DF-10AAxx (standard, non-flex) 2090-CPxM7DF-10AFxx (continuous-flex)	
MPM-A1652F, MPM-A1653F	2090-CPxM7DF-08AAxx (standard, non-flex) 2090-CPxM7DF-08AFxx (continuous-flex)	
MPM-A215xx	2090-CPBM7DF-06AAxx (standard, non-flex)	

MP-Series (400V-class) Medium Inertia Motors	Power Cable Cat. No.	IP Rating
MPM-B1151x, MPM-B1152x	2090-CPxM7DF-16AAxx (standard, non-flex) 2090-CPxM7DF-16AFxx (continuous-flex)	Shaft seal is optional: • IP50 without shaft seal • IP66/67 with shaft seal
MPM-B1153E, MPM-B1153F		
MPM-B1302F, MPM-B1302M, MPM-B1304C, MPM-B1304E		
MPM-B1651C, MPM-B1652C		
MPM-B1153T	2090-CPxM7DF-14AAxx (standard, non-flex) 2090-CPxM7DF-14AFxx (continuous-flex)	
MPM-B1302T, MPM-B1304M		
MPM-B1651F, MPM-B1653C		
MPM-B1651M, MPM-B1652E, MPM-B1652F, MPM-B1653E	2090-CPxM7DF-10AAxx (standard, non-flex) 2090-CPxM7DF-10AFxx (continuous-flex)	
MPM-B2152C, MPM-B2153B		
MPM-B1653F	2090-CPxM7DF-08AAxx (standard, non-flex) 2090-CPxM7DF-08AFxx (continuous-flex)	
MPM-B2152F, MPM-B2152M, MPM-B2153E, MPM-B2153F, MPM-B2154B, MPM-B2154E, MPM-B2154F		

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](#).

MP-Series Food Grade Motors

Motor Cat. No.	Drive Compatibility	Feedback Type	Feedback Cable Cat. No.	IP Rating
MPF-Axxxx-M/S	2093-AC05-MPx or 2093-AMxx 2094-ACxx-Mxx-S or 2094-AMxx-S 2097-V3xPRx or 2097-V3xPRx-LM 2098-DSD-xxx	Multi-turn High Resolution Absolute or Single-turn High Resolution Encoder Feedback	2090-CFBM7DF-CEAAxx or 2090-CFBM7DD-CEAAxx (standard, non-flex)	Shaft seal is standard. IP66/67 with shaft seal.
MPF-Bxxxx-M/S	2094-BCxx-Mxx-S or 2094-BMxx-S 2094-BCxx-Mxx-M or 2094-BMxx-M 2097-V34PRx or 2097-V34PRx-LM 2098-DSD-HVxxx		2090-CFBM7DF-CEAFxx 2090-CFBM7DD-CEAFxx (continuous-flex)	

MP-Series (200V-class) Food Grade Motors	Power Cable Cat. No.	IP Rating
MPF-A310P, MPF-A320H, MPF-A320P, and MPF-A330P	2090-CPxM7DF-16AAxx (standard, non-flex) 2090-CPxM7DF-16AFxx (continuous-flex)	Shaft seal is standard. IP66/67 with shaft seal.
MPF-A430H		
MPF-A430P, MPF-A4530K and MPF-A4540F	2090-CPxM7DF-14AAxx (standard, non-flex) 2090-CPxM7DF-14AFxx (continuous-flex)	
MPF-A540K	2090-CPxM7DF-08AAxx (standard, non-flex) 2090-CPxM7DF-08AFxx (continuous-flex)	

MP-Series (400V-class) Food Grade Motors	Power Cable Cat. No.	IP Rating
MPF-B310P, MPF-B320P, and MPF-B330P	2090-CPxM7DF-16AAxx (standard, non-flex) 2090-CPxM7DF-16AFxx (continuous-flex)	Shaft seal is standard. IP66/67 with shaft seal.
MPF-B430P, MPF-B4530K, and MPF-B4540F		
MPF-B540K	2090-CPxM7DF-10AAxx (standard, non-flex) 2090-CPxM7DF-10AFxx (continuous-flex)	

MP-Series Stainless Steel Motors

Motor Cat. No.	Drive Compatibility	Feedback Type	Feedback Cable Cat. No.	IP Rating
MPS-Axxxx-M/S	2093-AC05-MPx or 2093-AMxx 2094-ACxx-Mxx-S or 2094-AMxx-S 2097-V3xPRx or 2097-V3xPRx-LM 2098-DSD-xxx	Multi-turn High Resolution Absolute or Single-turn High Resolution Encoder Feedback	2090-CFBM7DF-CEAAxx or 2090-CFBM7DD-CEAAxx (standard, non-flex)	Shaft seal is standard. IP66/67/IP69K with shaft seal and slinger.
MPS-Bxxxx-M/S	2094-BCxx-Mxx-S or 2094-BMxx-S 2094-BCxx-Mxx-M or 2094-BMxx-M 2097-V34PRx or 2097-V34PRx-LM 2098-DSD-HVxxx		2090-CFBM7DF-CEAFxx 2090-CFBM7DD-CEAFxx (continuous-flex)	

MP-Series (200V-class) Stainless Steel Motors	Power Cable Cat. No.	IP Rating
MPS-A330P	2090-CPxM7DF-16AAxx (standard, non-flex) 2090-CPxM7DF-16AFxx (continuous-flex)	Shaft seal is standard. IP66/67/IP69K with shaft seal and slinger.
MPS-A4540F		

MP-Series (400V-class) Stainless Steel Motors	Power Cable Cat. No.	IP Rating
MPS-B330P	2090-CPxM7DF-16AAxx (standard, non-flex) 2090-CPxM7DF-16AFxx (continuous-flex)	Shaft seal is standard. IP66/67/IP69K with shaft seal and slinger.
MPS-B4540F		
MPS-B560F	2090-CPxM7DF-14AAxx (standard, non-flex) 2090-CPxM7DF-14AFxx (continuous-flex)	

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 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.

MP-Series Integrated Linear Stages

Actuator Cat. No.	Drive Compatibility	Feedback Type	Feedback Cable Cat. No.	IP Rating
MPAS-Axxxxx-VxxSxA (ball screw) MPMA-A (ball screw)	2093-AC05-MPx or 2093-AMxx 2094-ACxx-Mxx-S or 2094-AMxx-S 2097-V3xPRx 2097-V34PRx-LM 2098-DSD-xxx	Multi-turn High Resolution Absolute Encoder Feedback	2090-CFBM7DF-CEAAxx or 2090-CFBM7DD-CEAAxx (standard, non-flex) 2090-CFBM7DF-CEAFxx 2090-CFBM7DD-CEAFxx (continuous-flex)	IP30
MPAS-Axxxxx-ALMx2C (direct drive) MPMA-A (direct drive)	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)	
MPAS-Bxxxxx-VxxSxA (ball screw) MPMA-B (ball screw)	2094-BCxx-Mxx-S or 2094-BMxx-S 2094-BCxx-Mxx-M or 2094-BMxx-M 2097-V3xPRx 2097-V34PRx-LM 2098-DSD-xxx	Multi-turn High Resolution Absolute Encoder Feedback	2090-CFBM7DF-CEAAxx or 2090-CFBM7DD-CEAAxx (standard, non-flex) 2090-CFBM7DF-CEAFxx 2090-CFBM7DD-CEAFxx (continuous-flex)	
MPAS-Bxxxxx-ALMx2C (direct drive) MPMA-B (direct drive)	2094-BCxx-Mxx-S or 2094-BMxx-S 2094-BCxx-Mxx-M or 2094-BMxx-M 2097-V3xPRx 2098-DSD-xxx	Incremental Encoder Feedback	2090-XXNFMF-Sxx (standard, non-flex) 2090-CFBM7DF-CDAFxx (continuous-flex)	

MP-Series (200V-class) Integrated Linear Stages	Power Cable Cat. No.	IP Rating
MPAS-Axxxxx-VxxSxA (ball screw) or MPMA-A	2090-CPxM7DF-16AAxx (standard, non-flex) 2090-CPxM7DF-16AFxx (continuous-flex)	IP30
MPAS-Axxxxx-ALMx2C (direct drive) or MPMA-A	2090-CPWM7DF-16AAxx (standard, non-flex) 2090-CPWM7DF-16AFxx (continuous-flex)	

MP-Series (400V-class) Integrated Linear Stages	Power Cable Cat. No.	IP Rating
MPAS-Bxxxxx-VxxSxA (ball screw) or MPMA-B	2090-CPxM7DF-16AAxx (standard, non-flex) 2090-CPxM7DF-16AFxx (continuous-flex)	IP30
MPAS-Bxxxxx-ALMx2C (direct drive) or MPMA-B	2090-CPWM7DF-16AAxx (standard, non-flex) 2090-CPWM7DF-16AFxx (continuous-flex)	

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](#).

LDAT-Series Integrated Linear Thrusters

Actuator Cat. No.	Drive Compatibility	Feedback Type	Feedback Cable Cat. No.	IP Rating
LDAT-Sxxxxxx-xDx (230V operation)	2097-V3xPRx	Absolute Linear Encoder Feedback	2090-CFBM7DF-CEAAxx or 2090-CFBM7DD-CEAAxx (standard, non-flex)	IP30
LDAT-Sxxxxxx-xDx (460V operation)	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)	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)	IP30
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](#).

MP-Series Electric Cylinders

Actuator Cat. No.	Drive Compatibility	Feedback Type	Feedback Cable Cat. No.	IP Rating
MPAR-A1xxxx MPAR-A2xxxx MPAR-A3xxxx	2093-AC05-MPx or 2093-AMxx 2094-ACxx-Mxx-S or 2094-AMxx-S 2097-V3xPRx or 2097-V3xPRx-LM 2098-DSD-xxx	Multi-turn High Resolution Absolute Encoder Feedback	2090-CFBM7DF-CEAAxx or 2090-CFBM7DD-CEAAxx (standard, non-flex)	IP40 ⁽¹⁾ IP66 ⁽²⁾
MPAR-B1xxxx MPAR-B2xxxx MPAR-B3xxxx	2094-BCxx-Mxx-S or 2094-BMxx-S 2094-BCxx-Mxx-M or 2094-BMxx-M 2097-V34PRx or 2097-V34PRx-LM 2098-DSD-HVxxx		2090-CFBM7DF-CEAFxx or 2090-CFBM7DD-CEAFxx (continuous-flex)	

MP-Series (200V-class) Electric Cylinders	Power Cable Cat. No.	IP Rating
MPAR-A1xxxx MPAR-A2xxxx MPAR-A3xxxx	2090-CPxM7DF-16AAxx (standard, non-flex) 2090-CPxM7DF-16AFxx (continuous-flex)	IP40 ⁽¹⁾ IP66 ⁽²⁾

MP-Series (400V-class) Electric Cylinders	Power Cable Cat. No.	IP Rating
MPAR-B1xxxx MPAR-B2xxxx MPAR-B3xxxx	2090-CPxM7DF-16AAxx (standard, non-flex) 2090-CPxM7DF-16AFxx (continuous-flex)	IP40 ⁽¹⁾ IP66 ⁽²⁾

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

MP-Series Heavy Duty Electric Cylinders

Actuator Cat. No.	Drive Compatibility	Feedback Type	Feedback Cable Cat. No.	IP Rating
MPAI-A2xxxx MPAI-A3xxxx MPAI-A4xxxx MPAI-A5xxxx	2093-AC05-MPx or 2093-AMxx 2094-ACxx-Mxx-S or 2094-AMxx-S 2097-V3xPRx or 2097-V3xPRx-LM 2098-DSD-xxx	Multi-turn High Resolution Absolute Encoder Feedback	2090-CFBM7DF-CEAAxx or 2090-CFBM7DD-CEAAxx (standard, non-flex)	IP67 (with specified cables)
MPAI-B2xxxx MPAI-B3xxxx MPAI-B4xxxx MPAI-B5xxxx	2094-BCxx-Mxx-S or 2094-BMxx-S 2094-BCxx-Mxx-M or 2094-BMxx-M 2097-V34PRx or 2097-V34PRx-LM 2098-DSD-HVxxx		2090-CFBM7DF-CEAFxx or 2090-CFBM7DD-CEAFxx (continuous-flex)	

MP-Series (200V-class) Heavy Duty Electric Cylinders	Power Cable Cat. No.	IP Rating
MPAI-A2xxxx, MPAI-A3xxxx, MPAI-A4xxxx	2090-CPxM7DF-16AAxx (standard, non-flex) 2090-CPxM7DF-16AFxx (continuous-flex)	IP67 (with specified cables)
MPAI-A5xxxx	2090-CPxM7DF-14AAxx (standard, non-flex) 2090-CPxM7DF-14AFxx (continuous-flex)	

MP-Series (400V-class) Heavy Duty Electric Cylinders	Power Cable Cat. No.	IP Rating
MPAI-B2xxxx, MPAI-B3xxxx, MPAI-B4xxxx, MPAI-B5xxxx	2090-CPxM7DF-16AAxx (standard, non-flex) 2090-CPxM7DF-16AFxx (continuous-flex)	IP67 (with specified cables)

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](#).

LDC-Series Linear Motors

Cat. No.	Drive Compatibility	Feedback Type	Feedback Cable Cat. No.	IP Rating
LDC-Cxxxxx-xxTx1 (230V operation)	2093-AC05-MPx or 2093-AMxx 2094-ACxx-Mxx-S or 2094-AMxx-S 2097-V3xPRx 2098-DSD-xxx 2071-Axx	Sin/Cos or TTL Encoder Feedback	2090-XXNFMF-Sxx (standard, non-flex) 2090-CFBM7DF-CDAFxx (continuous-flex)	IP65
LDC-Cxxxxx-xxTx1 (460V operation)	2094-BCxx-Mxx-S or 2094-BMxx-S 2094-BCxx-Mxx-M or 2094-BMxx-M 2097-V34PRx 2098-DSD-HVxxx			

LDC-Series (230V or 460V operation) Linear Motors			Power Cable Cat. No.	IP Rating
LDC-Cxxxxx-xxTx1			2090-CPWM7DF-16AAxx (standard, non-flex) 2090-CPWM7DF-16AFxx (continuous-flex)	IP65

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](#).

LDL-Series Linear Motors

Cat. No.	Drive Compatibility	Feedback Type	Feedback Cable Cat. No.	IP Rating
LDL-xxxxxx-xxTx1	2093-AC05-MPx or 2093-AMxx 2094-ACxx-Mxx-S or 2094-AMxx-S 2097-V3xPRx 2098-DSD-xxx 2071-Axx	Sin/Cos or TTL Encoder Feedback	2090-XXNFMF-Sxx (standard, non-flex) 2090-CFBM7DF-CDAFxx (continuous-flex)	IP65

LDL-Series Linear Motors			Power Cable Cat. No.	IP Rating
LDL-xxxxxx-xxTx1			2090-CPWM7DF-16AAxx (standard, non-flex) 2090-CPWM7DF-16AFxx (continuous-flex)	IP65

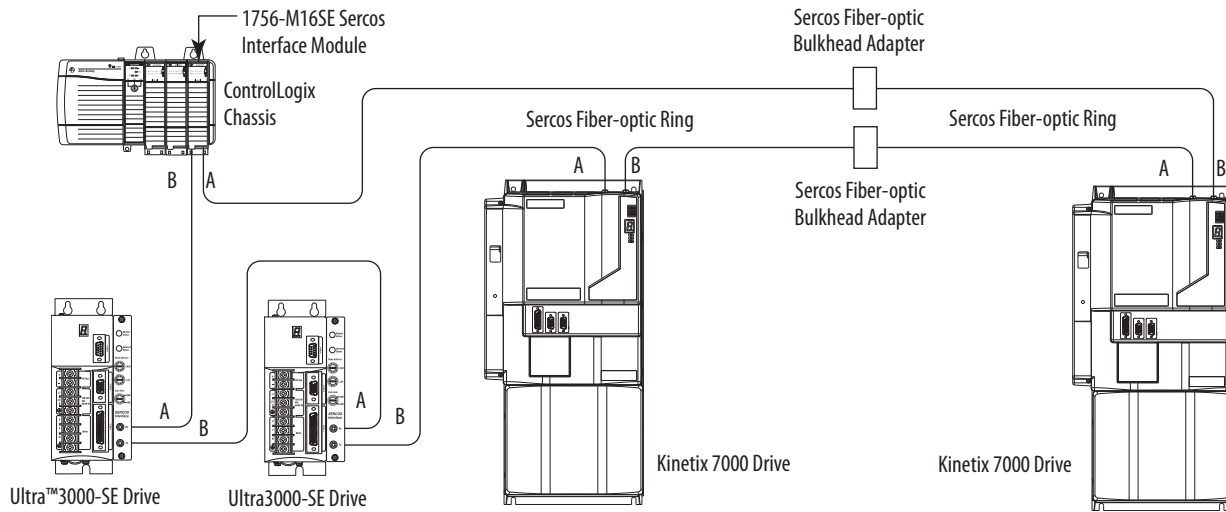
For cable configuration illustrations and feature descriptions, by catalog number, refer to 2090-Series Motor/Actuator Cables Overview beginning on [page 13](#).

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

Fiber-optic Cable Connection Examples

The length of each transmission section (point A to B) can be up to 32 m (105 ft) for plastic cable and 50...200 m (164.2...656.7 ft) for glass cable. In this example, the second Kinetix 7000 drive is mounted in a separate cabinet and connected with bulkhead adapters.

Fiber-optic Cable Example for Single-axis Connections



IMPORTANT To avoid signal loss, do not use bulkhead adapters to connect glass cables. Use bulkhead adapters only for making plastic-to-plastic cable connections.

Multi-axis servo drives with sercos interface have specific cable lengths for making drive-to-drive connections for single-wide and double-wide modules.

Drive-to-Drive Cable Length for Multi-axis Drive Families

IAM Module	Adjacent Drive Module		Cable Cat. No.	Cable Length m (in.)
Kinetix 2000	2093-AMP1, 2093-AMP2, or 2093-AMP5	Single-wide	2090-SCEP0-1	0.1 (5.1)
	2093-AM01 or 2093-AM02	Double-wide	2090-SCEP0-2	0.2 (7.1)
Kinetix 6000	2094-AMxx-S, 2094-BMP5-S, 2094-BM01-S, or 2094-BM02-S	Single-wide	2090-SCEP0-1	0.1 (5.1)
	2094-SEPM-B24-S		2090-SCEP0-2	0.2 (7.1)
	2094-BMP5-M, 2094-BM01-M, or 2094-BM02-M	Double-wide		
Kinetix 6200	2094-BM03-S and 2094-BM05-S			
	2094-BMP5-M, 2094-BM01-M, or 2094-BM02-M	Single-wide	2090-SCEP0-2	0.2 (7.1)
	2094-SEPM-B24-S		2090-SCEP0-1	0.1 (5.1)
	2094-BMP5-S, 2094-BM01-S, or 2094-BM02-S	Double-wide		
	2094-BM03-M and 2094-BM05-M			