

## 2090-Series Single Motor Cables

Catalog Numbers 2090-CSBM1DF, 2090-CSWM1DF, 2090-CSBM1DE, 2090-CSWM1DE, 2090-CSBM1DG, 2090-CSWM1DG, 2090-CSBM1E1

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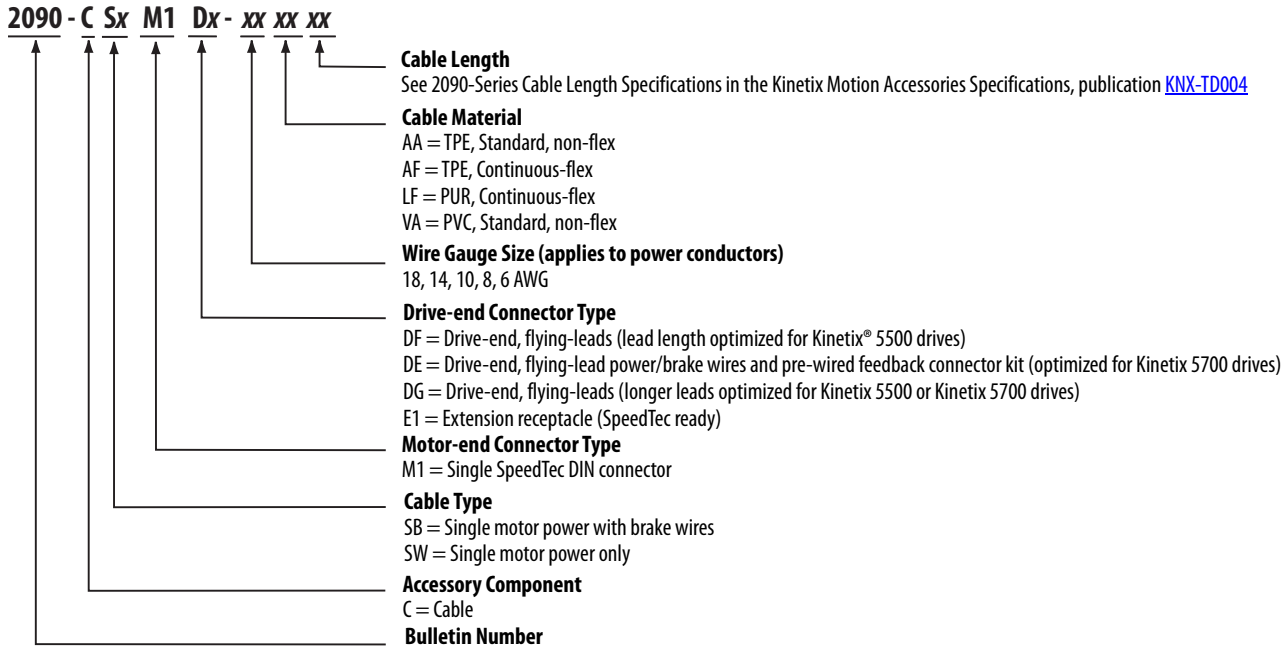
### Summary of Changes

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

Topic	Page
Added 2090-CSxM1xx-xxVAxx (PVC) and 2090-CSxM1xx-xxLFxx (Halogen-free PUR) single motor-cable specifications and pinout diagrams	throughout document
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## Catalog Numbers - 2090-Series Single Motor Cables

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.



## 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. This practice makes the cable 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, but never exceeds 50 m (164 ft) for Kinetix 5500 drives and 90 m (295 ft) for Kinetix 5700 drives. See Kinetix Servo Drives Specifications, publication [KNX-TD003](#), 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.

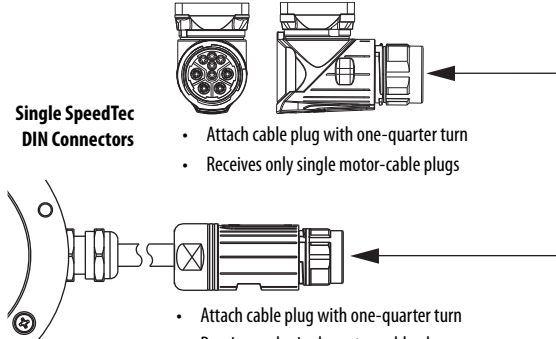
**IMPORTANT** Standard (non-flex) cables can be bent or reformed during installation and maintenance. Continuous-flex cables can be flexed repeatedly within a specified bend radius when properly installed.  
Do not use standard cables in a continuous-flex operation.

## Single Motor Cable Applications

SpeedTec DIN single (M1) motor cables are compatible with only Kinetix VP motors.

### Single Motor Connector and Cable Plug Compatibility

**Single SpeedTec DIN Connectors**

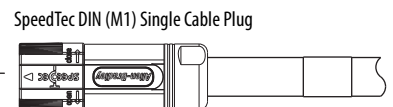


- Attach cable plug with one-quarter turn
- Receives only single motor-cable plugs

- Attach cable plug with one-quarter turn
- Receives only single motor-cable plugs
- 5 m (16.4 ft) cable extension

**SpeedTec DIN (M1) Single Cable Plug**



- 2090-CSBM1DF-xxAAxx (standard, non-flex) power/feedback/brake cables
- 2090-CSWM1DF-xxAAxx (standard, non-flex) power/feedback cables
- 2090-CSBM1DF-xxAFxx (continuous-flex) power/feedback/brake cables
- 2090-CSBM1DE-xxxAAxx (standard, non-flex) power/feedback/brake cables
- 2090-CSWM1DE-xxxAAxx (standard, non-flex) power/feedback cables
- 2090-CSBM1DE-xxxFxx (continuous-flex) power/feedback/brake cables
- 2090-CSBM1DG-xxxAAxx (standard, non-flex) power/feedback/brake cables
- 2090-CSWM1DG-xxxAAxx (standard, non-flex) power/feedback cables
- 2090-CSBM1DG-xxxFxx (continuous-flex) power/feedback/brake cables

The cable technology used in single cables is the same regardless of the catalog number. What is different about each cable is the lead preparation and feedback conductor terminations.

- 2090-CSxM1DF cable conductors have flying-leads and lead preparation that is designed specifically for Kinetix 5500 servo drives. No on-site lead preparation is required.
- 2090-CSxM1DE cables include the 2198-KITCON-DSL connector kit. The kit is pre-assembled with the feedback conductors and lead preparation for the flying-lead power conductors is designed specifically for Kinetix 5700 servo drives. No on-site lead preparation is required.
- 2090-CSxM1DG cable conductors have flying-leads and lead preparation that is designed for either Kinetix 5500 or Kinetix 5700 servo drives. No on-site lead preparation is required, however, 2090-CSxM1DG cable leads are longer than 2090-CSxM1DF cable leads to accommodate either drive family.

## Single Motor Cable Bend Radius Specifications

When installing cable runs between the motor and drive, be careful not to stress the cable by making bends too sharp. See the [Bend Radius Definitions](#) table when making static and continuous bend-radius cable bends.

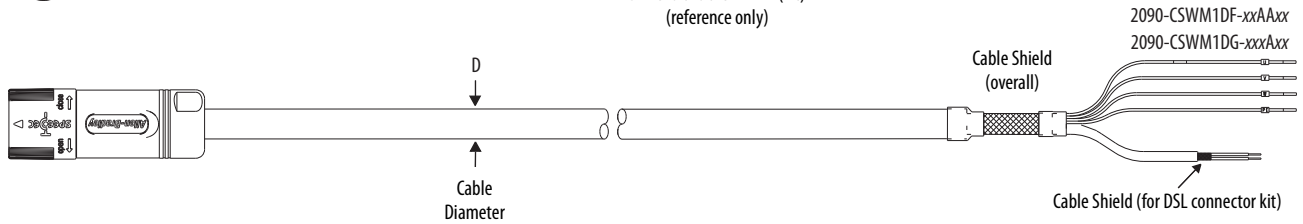
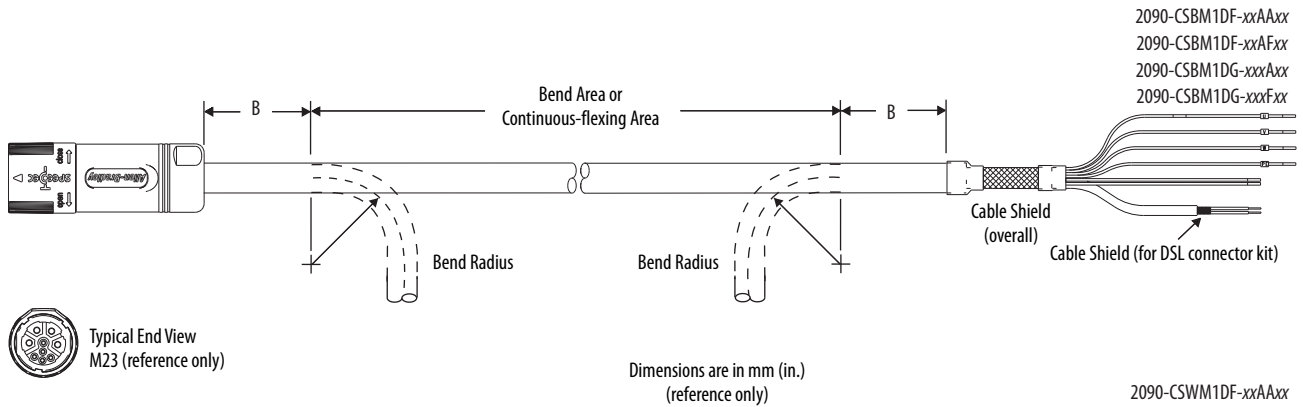
### Bend Radius Definitions

Type of Bend Radius	Type of Cable	Description
Static bend radius	Standard (non-flex)	The static (installation) bend radius and dimension B is: <ul style="list-style-type: none"> <li>• 7 times the cable diameter for 2090-CSBM1DF-xxAA/AFxx cables</li> <li>• 5 times the cable diameter for 2090-CSBM1DF-xxVA/LFxx cables</li> </ul>
	Continuous-flex	<ul style="list-style-type: none"> <li>• Do not begin a static bend inside dimension B.</li> <li>• Use this measurement when routing the cable in a non-flex application between motor and drive (the bend area).</li> <li>• The bend area is where standard (non-flex) or continuous-flex cables can be bent to their specified bend radius.</li> </ul>
Continuous bend radius	Continuous-flex	The continuous bend radius for Bulletin 2090 single motor cables is: <ul style="list-style-type: none"> <li>• 10 times the cable diameter for 2090-CSBM1DF-xxAFxx cables</li> <li>• 7 times the cable diameter for 2090-CSBM1DF-xxLFxx cables</li> <li>• Secure the continuous-flexing area, the recommended cable diameters (dimension B) from each end of the cable, with a rigid mount that helps prevent the cable from flexing where it connects to the motor or shield clamp. Refer to the cable carrier manufacturer's recommendations for procedure and dimensions related to flexing applications.</li> <li>• Use this measurement when routing the cable in a continuous-flex application between motor and drive (the continuous-flexing area).</li> <li>• The continuous flexing area is where continuous-flex cables can be flexed repeatedly.</li> <li>• Install the cable along the neutral axis to make sure that the cable is not in contact with the inner radius of the cable carrier while flexing.</li> </ul>

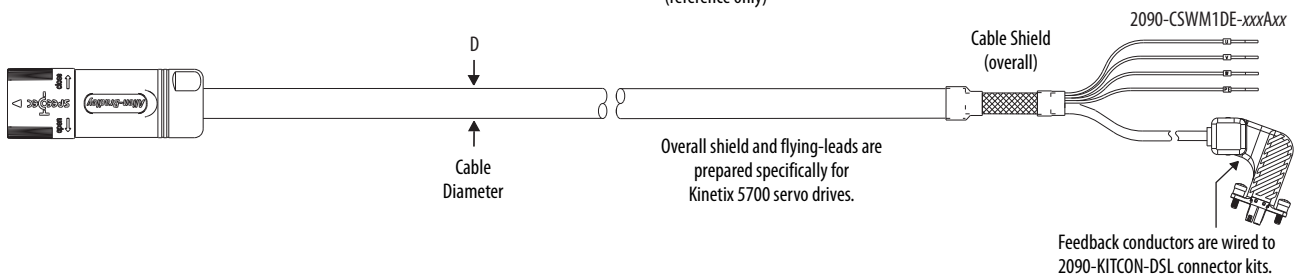
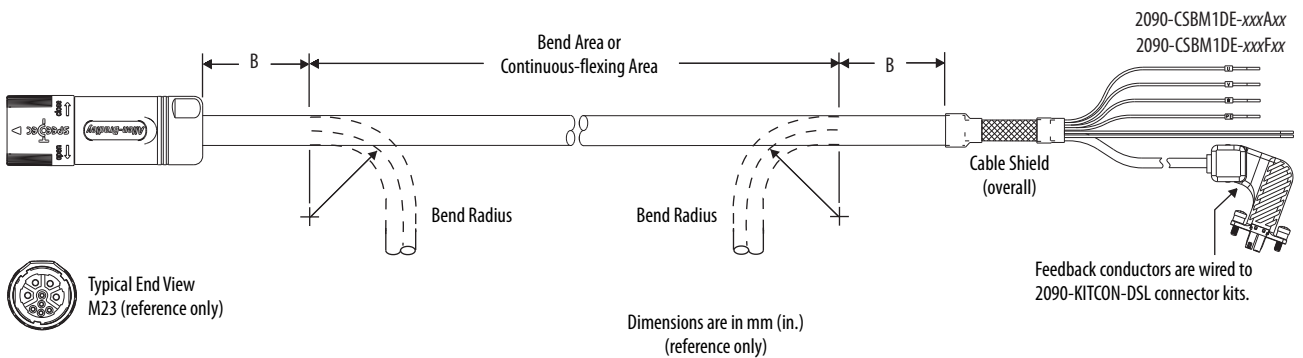
## Install Single Motor Cables

These figures illustrate how to measure the bend radius and where cable bends can be made on single motor cables. Use these figures with the cable pinout and specification tables that follow when routing cables during system installation.

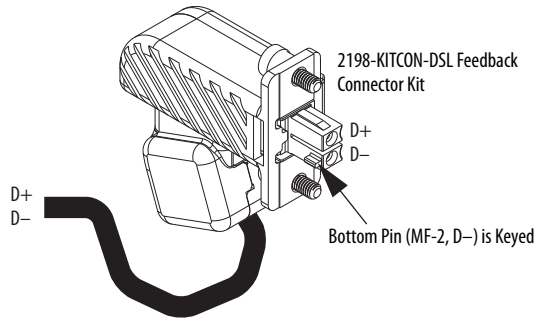
### 2090-CSxM1DF and 2090-CSxM1DG Motor Cables



### 2090-CSxM1DE Motor Cables



**DSL Connector Kit Pin Orientation**



**ATTENTION:** To avoid damage to the 2198-KITCON-DSL connector kit that is pre-wired to 2090-CSxM1DE cables, use caution when installing the cable and when routing the cable to the drive.

**IMPORTANT** To avoid problems securing the cable in the shield clamp and routing the flying leads to the motor power, feedback, and brake connector plugs, make sure that you are using the cable that is best suited for your application.

- Use 2090-CSxM1DF cables with Kinetix 5500 servo drives (2198-KITCON-DSL connector kit is included with the drive)
- Use 2090-CSxM1DE cables with Kinetix 5700 servo drives (2198-KITCON-DSL connector kit is pre-wired to the feedback conductors)
- Use 2090-CSxM1DG cables with Kinetix 5500 or Kinetix 5700 servo drives (when used with Kinetix 5700 drives, the 2198-KITCON-DSL connector kit is ordered separately)

**Power/Feedback/Brake Cable Pinouts (18 and 14 AWG)**

Cable Type	Cable Cat. No.	Description		
Standard, non-flex	2090-CSBM1DF-18AAxx, 2090-CSBM1DF-14AAxx, 2090-CSBM1DG-18xAxx, 2090-CSBM1DG-14xAxx	<p>Motor-end Cable View</p> <p>● Wire Connection ⌈⌋ Shield ∞ Twisted Wire Pair</p>	<p>To Motor</p> <p>A Brown</p> <p>B Black</p> <p>C Blue</p> <p>⊥ D Green/Yellow</p> <p>F Black</p> <p>G White</p> <p>E 22 AWG Blue</p> <p>H 22 AWG White/Blue</p> <p>Electrical Screens (braided copper)</p> <p>Conductive Connector Housing</p> <p>360° shield-to-ground connections are required</p> <p>To Drive</p> <p>U</p> <p>V</p> <p>W</p> <p>PE</p> <p>MBRK+<sup>(1)</sup></p> <p>MBRK-</p> <p>D+</p> <p>D-</p>	
Continuous-flex	2090-CSBM1DF-18AFxx, 2090-CSBM1DF-14AFxx, 2090-CSBM1DG-18xFxx, 2090-CSBM1DG-14xFxx			
Standard, non-flex	2090-CSBM1DE-18xAxx, 2090-CSBM1DE-14xAxx			<p>To Motor</p> <p>A Brown</p> <p>B Black</p> <p>C Blue</p> <p>⊥ D Green/Yellow</p> <p>F Black</p> <p>G White</p> <p>E 22 AWG Blue</p> <p>H 22 AWG White/Blue</p> <p>Electrical Screens (braided copper)</p> <p>Conductive Connector Housing</p> <p>360° shield-to-ground connections are required</p> <p>To Drive</p> <p>U</p> <p>V</p> <p>W</p> <p>PE</p> <p>MBRK+<sup>(1)</sup></p> <p>MBRK-</p> <p>D+</p> <p>D-</p>
Continuous-flex	2090-CSBM1DE-18xFxx, 2090-CSBM1DE-14xFxx			<p>To Motor</p> <p>A Brown</p> <p>B Black</p> <p>C Blue</p> <p>⊥ D Green/Yellow</p> <p>F Black</p> <p>G White</p> <p>E 22 AWG Blue</p> <p>H 22 AWG White/Blue</p> <p>Electrical Screens (braided copper)</p> <p>Conductive Connector Housing</p> <p>360° shield-to-ground connections are required</p> <p>To Drive</p> <p>D+</p> <p>D-</p> <p>Conductive Connector Housing</p>

(1) See [2090-Series Cable Length Specifications](#) beginning on [page 10](#) for brake wire sizes.

**Power/Feedback/Brake Cable Specifications (standard, non-flex)**

Cable Cat. No.	Wire Size AWG (mm <sup>2</sup> )	D mm (in.)	B <sup>(1)</sup> mm (in.)
2090-CSBM1DF-18AAxx 2090-CSBM1DF-14AAxx	18 (1.0) 14 (2.5)	15.0 (0.59)	105 (4.1)
2090-CSBM1DG-18AAxx 2090-CSBM1DG-14AAxx	18 (1.0) 14 (2.5)		
2090-CSBM1DE-18AAxx 2090-CSBM1DE-14AAxx (series A)	18 (1.0) 14 (2.5)		
2090-CSBM1DE-14AAxx (series B)	14 (2.5)	16.3 (0.64)	114 (4.5)
2090-CSBM1DG-18VAxx 2090-CSBM1DE-18VAxx	18 (1.0)	13.2 (0.52)	92.4 (3.6)
2090-CSBM1DG-14VAxx 2090-CSBM1DE-14VAxx	14 (2.5)	15.2 (0.60)	106.4 (4.2)

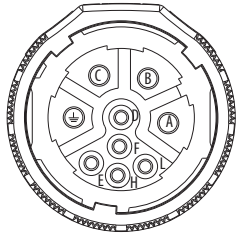


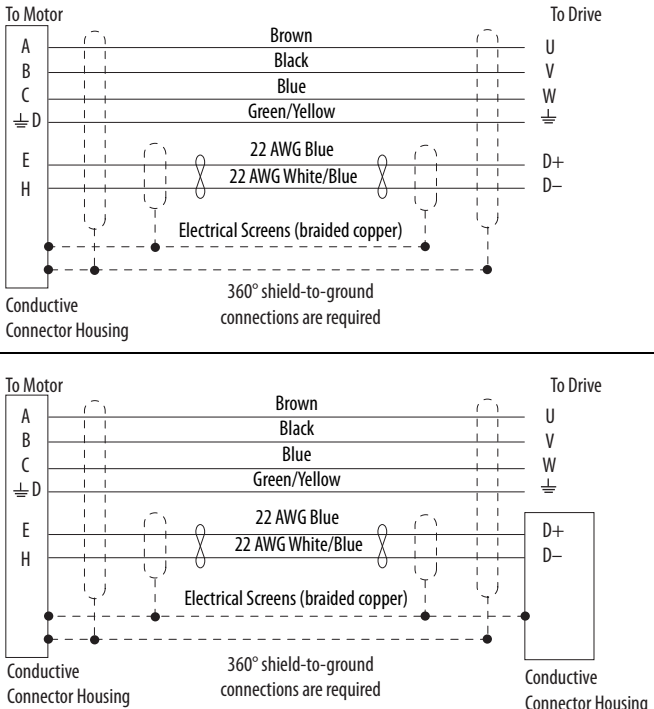
(1) Dimension B is based on the cable diameter. See Bend Radius Definitions on [page 3](#) for more information.

**Power/Feedback/Brake Cable Specifications (continuous-flex)**

Cable Cat. No.	Wire Size AWG (mm <sup>2</sup> )	D mm (in.)	B <sup>(1)</sup> mm (in.)	Continuous Bend Radius <sup>(1)</sup> mm (in.)	Continuous Bend Radius Factor	Expected Flex Cycles at Rated Radius
2090-CSBM1DF-18AFxx 2090-CSBM1DF-14AFxx	18 (1.0) 14 (2.5)	15.0 (0.59) 17.0 (0.67)	105 (4.1) 119 (4.7)	150 (5.9) 170 (6.7)	10x	20 Million
2090-CSBM1DG-18AFxx 2090-CSBM1DG-14AFxx	18 (1.0) 14 (2.5)	15.0 (0.59) 17.0 (0.67)	105 (4.1) 119 (4.7)	150 (5.9) 170 (6.7)	10x	20 Million
2090-CSBM1DE-18AFxx 2090-CSBM1DE-14AFxx (series A and B)	18 (1.0) 14 (2.5)	15.0 (0.59) 17.0 (0.67)	105 (4.1) 119 (4.7)	150 (5.9) 170 (6.7)	10x	20 Million
2090-CSBM1DG-18LFxx 2090-CSBM1DE-18LFxx	18 (1.0)	13.2 (0.52)	92.4 (3.6)	92.4 (3.6)	7x	8 Million
2090-CSBM1DG-14LFxx 2090-CSBM1DE-14LFxx	14 (2.5)	15.2 (0.60)	106.4 (4.2)	106.4 (4.2)	7x	8 Million

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

**Power/Feedback Cable Pinouts (18 and 14 AWG)**

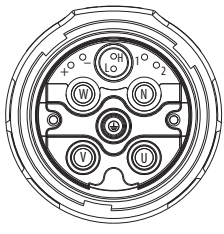
Cable Type	Cable Cat. No.	Description
Standard, non-flex	2090-CSWM1DF-18AAxx, 2090-CSWM1DF-14AAxx, 2090-CSWM1DG-18xAxx, 2090-CSWM1DG-14xAxx	<p>Motor-end Cable View</p>  <p>● Wire Connection   Shield   Twisted Wire Pair</p>
Standard, non-flex	2090-CSWM1DE-18xAxx, 2090-CSWM1DE-14xAxx	

**Power/Feedback Cable Specifications (standard, non-flex)**

Cable Cat. No.	Wire Size AWG (mm <sup>2</sup> )	D mm (in.)	B <sup>(1)</sup> mm (in.)
2090-CSBW1DG-18VAxx 2090-CSBW1DE-18VAxx	18 (1.0)	12.2 (0.48)	85.4 (3.4)
2090-CSWM1DG-14VAxx 2090-CSWM1DE-14VAxx	14 (2.5)	13 (0.51)	91 (3.6)
2090-CSWM1DG-18AAxx 2090-CSWM1DF-18AAxx 2090-CSWM1DE-18AAxx	18 (1.0)	15.0 (0.59)	105 (4.1)
2090-CSWM1DG-14AAxx 2090-CSWM1DF-14AAxx 2090-CSWM1DE-14AAxx	14 (2.5)		

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

**Power/Feedback/Brake Cable Pinouts (10 AWG)**

Cable Type	Cable Cat. No.	Description
Continuous-flex	2090-CSBM1DF-10AFxx 2090-CSBM1DG-10xFxx	 <p>Motor-end Cable View</p>
Standard, non-flex	2090-CSBM1DG-10VAxx	<ul style="list-style-type: none"> <li>● Wire Connection</li> <li>⌋ Shield</li> <li>∞ Twisted Wire Pair</li> </ul>

To Motor

U Brown

V Black

W Blue

⊕ Green/Yellow

1 Black

2 White

L 22 AWG Blue

H 22 AWG White/Blue

Electrical Screens (braided copper)

Conductive Connector Housing

To Drive

U

V

W

⊕

MBRK+<sup>(1)</sup>

MBRK-

D+

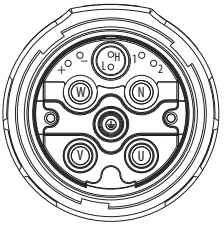
D-

SHIELD

360° shield-to-ground connections are required

(1) See [2090-Series Cable Length Specifications](#) beginning on [page 10](#) for brake wire sizes.

**Power/Feedback/Brake Cable Pinouts (10, 8, and 6 AWG)**

Cable Type	Cable Cat. No.	Description
Continuous-flex	2090-CSBM1DE-10xFxx 2090-CSBM1DE-08xFxx 2090-CSBM1DE-06xFxx	 <p>Motor-end Cable View</p>
Standard, non-flex	2090-CSBM1DE-10VAxx 2090-CSBM1DE-08VAxx 2090-CSBM1DE-06VAxx	<ul style="list-style-type: none"> <li>● Wire Connection</li> <li>⌋ Shield</li> <li>∞ Twisted Wire Pair</li> </ul>

To Motor

U Brown

V Black

W Blue

⊕ Green/Yellow

1 Black

2 White

L 22 AWG Blue

H 22 AWG White/Blue

Electrical Screens (braided copper)

Conductive Connector Housing

To Drive

U

V

W

⊕

MBRK+<sup>(1)</sup>

MBRK-

D+

D-

SHIELD

360° shield-to-ground connections are required

Conductive Connector Housing

(1) See [2090-Series Cable Length Specifications](#) beginning on [page 10](#) for brake wire sizes.

**Power/Feedback/Brake Cable Specifications (continuous-flex)**

Cable Cat. No.	Wire Size AWG (mm <sup>2</sup> )	D mm (in.)	B <sup>(1)</sup> mm (in.)	Continuous Bend Radius <sup>(1)</sup> mm (in.)	Continuous Bend Radius Factor	Expected Flex Cycles at Rated Radius
2090-CSBM1DF-10AFxx	10 (6)	19.0 (0.75)	133 (5.2)	190 (7.5)	10x	20 Million
2090-CSBM1DG-10AFxx					10x	20 Million
2090-CSBM1DE-10AFxx (series A) 2090-CSBM1DE-10AFxx (series B)		19.0 (0.75) 20.3 (0.80)	133 (5.2) 142 (5.6)	190 (7.5) 203 (8.0)	10x	20 Million
2090-CSBM1DE-08AFxx 2090-CSBM1DE-06AFxx	8 (10) 6 (16)	25.0 (0.98)	200 (8.0)	250 (10.0)	10x	6.5 Million
2090-CSBM1DG-10LFxx 2090-CSBM1DE-10LFxx	10 (6)	18 (0.70)	126 (5.0)	126 (5.0)	7x	8 Million
2090-CSBM1DE-08LFxx	8 (10)	21.6 (0.85)	151.2 (5.9)	151.2 (5.9)	7x	8 Million
2090-CSBM1DE-06LFxx	6 (16)	24 (0.94)	168 (6.6)	168 (6.6)	7x	8 Million

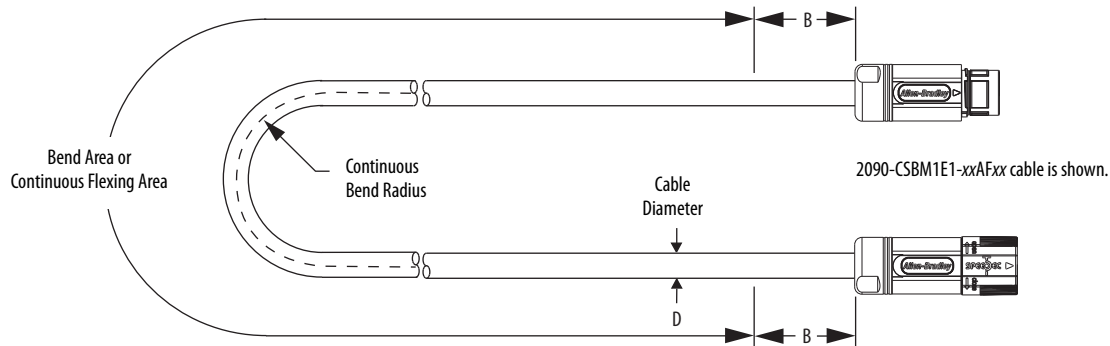
(1) Dimension B and continuous bend radius are based on the cable diameter. See Bend Radius Definitions on [page 3](#) for more information.



## Install Extension Cables

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

### Continuous-flex Extension Cable Bend-radius Example



### Extension Cable Pinouts

Extension Cable Type	Cable Cat. No.	Description
Continuous-flex	2090-CSBM1E1-18xFxx 2090-CSBM1E1-14xFxx 2090-CSBM1E1-10xFxx 2090-CSBM1E1-08xFxx 2090-CSBM1E1-06xFxx	<p>2090-CSBM1E1-10 2090-CSBM1E1-08 2090-CSBM1E1-06</p>
		<p>2090-CSBM1E1-18 2090-CSBM1E1-14</p>
Standard, non-flex	2090-CSBM1E1-18VAxx 2090-CSBM1E1-14VAxx 2090-CSBM1E1-10VAxx 2090-CSBM1E1-08VAxx 2090-CSBM1E1-06VAxx	<p>Motor Plug</p> <p>Extension Plug</p> <p>Brown Black Blue Green/Yellow White 22 AWG Blue 22 AWG White/Blue Electrical Screens (braided copper)</p> <p>U A V B W C D 1 F 2 G L E H H (2)</p> <p>A U B V C W D F 1 G 2 E L H H (2)</p> <p>(1)</p> <p>(1)</p> <p>(3) MBRK+ MBRK- D+ D- EMC/EMI Tube</p>

- (1) On 18 AWG and 14 AWG cables, the electrical screen of the blue and white/blue pair is grounded to the connector chassis.
- (2) On 10, 8, and 6 AWG cables, the electrical screen of the blue and white/blue pair is grounded to the internal metal EMC/EMI tube.
- (3) See [2090-Series Cable Length Specifications](#) beginning on [page 10](#) for brake wire sizes.

## Extension Cable Specifications

Cable Cat. No.	Wire Size AWG (mm <sup>2</sup> )	D mm (in.)	B <sup>(1)</sup> mm (in.)	Continuous Bend Radius <sup>(1)</sup> mm (in.)	Continuous Bend Radius Factor	Expected Flex Cycles at Rated Radius
2090-CSBM1E1-18AFxx	18 (1.0)	15.0 (0.59)	105 (4.1)	150 (5.9)	10x	20 Million
2090-CSBM1E1-18LFxx		13.2 (0.52)	92.4 (3.6)	92.4 (3.6)	7x	8 Million
2090-CSBM1E1-18VAxx				–	–	–
2090-CSBM1E1-14AFxx (series A and B)	14 (2.5)	17.0 (0.67)	119 (4.7)	170 (6.7)	10x	20 Million
2090-CSBM1E1-14LFxx		15.2 (0.60)	106.4 (4.2)	106.4 (4.2)	7x	8 Million
2090-CSBM1E1-14VAxx				–	–	–
2090-CSBM1E1-10AFxx (series A) 2090-CSBM1E1-10AFxx (series B)	10 (6.0)	19.0 (0.75) 20.3 (0.80)	133 (5.2) 142 (5.6)	190 (7.5) 203 (8.0)	10x	20 Million
2090-CSBM1E1-10LFxx		18 (0.70)	126 (5.0)	126 (5.0)	7x	8 Million
2090-CSBM1E1-10VAxx				–	–	–
2090-CSBM1E1-08AFxx	8 (10.0)	25.0 (0.98)	200 (8.0)	250 (10.0)	10x	6.5 Million
2090-CSBM1E1-08LFxx		21.6 (0.85)	151.2 (5.9)	151.2 (5.9)	7x	8 Million
2090-CSBM1E1-08VAxx				–	–	–
2090-CSBM1E1-06AFxx	6 (16.0)	25.0 (0.98)	200 (8.0)	250 (10.0)	10x	6.5 Million
2090-CSBM1E1-06LFxx		24 (0.94)	168 (6.6)	168 (6.6)	7x	8 Million
2090-CSBM1E1-06VAxx				–	–	–

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

## 2090-Series Cable Length Specifications

To meet the current requirements of motor brake circuits on Kinetix 5700 servo drive systems with cable lengths that exceed 50 m (164 ft), the 2090-CSBM1DE (series B) cables are available with 18 AWG brake conductors. Series B cables are designed for applications with cable lengths from 51 m (167 ft)...90 m (294 ft) and are available in 1.0 m (3.3 ft) increments. For Kinetix 5700 drive systems requiring cable lengths from 1.0 m (3.3 ft)...50 m (164 ft), the 2090-CSBM1DE (series A) cables are still available.

## TPE Single Motor Cables

2090-CSxM1Dx-xxAA/AFxx single motor cables use TPE cable material.

## TPE Flying-lead Motor Cables

Cable Cat. No.	Drive Compatibility	Brake Conductors AWG (mm <sup>2</sup> )	Available Cable Length, max <sup>(2)</sup> m (ft)
2090-CSBM1DF (series A and B)	Kinetix 5500	22 (0.34)	50 (164)
2090-CSBM1DG	Kinetix 5500 and Kinetix 5700	22 (0.34)	
2090-CSBM1DE-18	Kinetix 5700	22 (0.34)	90 (294)
2090-CSBM1DE-14 (series A) 2090-CSBM1DE-10 (series A)			50 (164)
2090-CSBM1DE-14 (series B) <sup>(1)</sup> 2090-CSBM1DE-10 (series B) <sup>(1)</sup>		18 (1.0)	90 (294)
2090-CSBM1DE-08 2090-CSBM1DE-06			

(1) Series B cables are used in applications with cable lengths from 51 m (167 ft) . . . 90 m (294 ft).

(2) The maximum cable length between the drive and the motor varies, depending on the application, but never exceeds 50 m (164 ft) for Kinetix 5500 drives and 90 m (295 ft) for Kinetix 5700 drives. For details, see [Additional Resources](#) on [page 12](#) for the publication number of your servo drive user manual.

**TPE Extension Motor Cables**

Cable Cat. No.	Drive Compatibility	Brake Conductors (series B) AWG (mm <sup>2</sup> )	Brake Conductors (series A) AWG (mm <sup>2</sup> )	Available Cable Length, max m (ft)
2090-CSBM1E1-18	Kinetix 5500 and Kinetix 5700	–	22 (0.34)	30 (98.4)
2090-CSBM1E1-14		18 (1.0)	22 (0.34) <sup>(1)</sup>	
2090-CSBM1E1-10				

(1) Series B cables replace series A cables. These series A cables are no longer offered.

**Halogen-free PUR and PVC Single Motor Cables**

2090-CSxM1Dx-xxVA/LExx single motor cables use halogen-free PUR and PVC cable material.

**Halogen-free PUR and PVC Flying-lead Motor Cables**

Cable Cat. No.	Drive Compatibility	Brake Conductors AWG (mm <sup>2</sup> )	Available Cable Length, max <sup>(1)</sup> m (ft)
2090-CSBM1DG-18	Kinetix 5500 and Kinetix 5700	22 (0.34)	50 (164)
2090-CSBM1DG-14		18 (1.0)	
2090-CSBM1DG-10			
2090-CSBM1DE-18	Kinetix 5700	22 (0.34)	90 (294)
2090-CSBM1DE-14		18 (1.0)	
2090-CSBM1DE-10			
2090-CSBM1DE-08 2090-CSBM1DE-06		16 (1.5)	

(1) The maximum cable length between the drive and the motor varies, depending on the application, but never exceeds 50 m (164 ft) for Kinetix 5500 drives and 90 m (295 ft) for Kinetix 5700 drives. For details, see [Additional Resources](#) on [page 12](#) for the publication number of your servo drive user manual.

**Halogen-free PUR and PVC Extension Motor Cables**

Cable Cat. No.	Drive Compatibility	Brake Conductors AWG (mm <sup>2</sup> )	Available Cable Length, max <sup>(1)</sup> m (ft)
2090-CSBM1E1-18	Kinetix 5500 and Kinetix 5700	22 (0.34)	30 (98.4)
2090-CSBM1E1-14		18 (1.0)	
2090-CSBM1E1-10			
2090-CSBM1E1-08 2090-CSBM1E1-06		16 (1.5)	

(1) The maximum cable length between the drive and the motor varies, depending on the application, but never exceeds 50 m (164 ft) for Kinetix 5500 drives and 90 m (295 ft) for Kinetix 5700 drives. For details, see [Additional Resources](#) on [page 12](#) for the publication number of your servo drive user manual.

## Additional Resources

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

Resource	Description
Kinetix Rotary Motion Specifications, publication <a href="#">KNX-TD001</a>	Product specifications for Kinetix VPL, VPC, VPE, VPH, VPS, MPL, MPM, MPF, MPS, Kinetix TL and TLY, Kinetix RDB, and Kinetix HPK rotary motors.
Kinetix Linear Motion Specifications, publication <a href="#">KNX-TD002</a>	Product specifications for LDAT-Series linear thrusters, Kinetix MPAS and MPMA linear stages, Kinetix MPAI, MPAI, and VPAR electric cylinders, and LDC-Series™ and LDL-Series™ linear motors.
Kinetix Servo Drives Specifications, publication <a href="#">KNX-TD003</a>	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 <a href="#">KNX-TD004</a>	Product specifications for Bulletin 2090 motor and interface cables, low-profile connector kits, drive power components, and other servo drive accessory items.
Kinetix Halogen-free PUR and PVC Single Motor Cables Quick Reference, publication <a href="#">2090-OR002</a>	Provides product specifications comparing 2090-CSBM1xx-xxLfx (Halogen-free PUR) and 2090-CSxM1xx-xxVAxx (PVC) single motor cables.
Kinetix Motion Control Selection Guide, publication <a href="#">KNX-SG001</a>	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.
Kinetix 5500 Servo Drives User Manual, publication <a href="#">2198-UM001</a>	Provides information on installing, configuring, startup, troubleshooting, and applications for your servo drive system.
Kinetix 5700 Servo Drives User Manual, publication <a href="#">2198-UM002</a>	
System Design for Control of Electrical Noise Reference Manual, publication <a href="#">GMC-RM001</a>	Provides information, examples, and techniques designed to minimize system failures caused by electrical noise.
Rockwell Automation® Product Certification, website <a href="http://www.rockwellautomation.com/global/certification/overview.page">http://www.rockwellautomation.com/global/certification/overview.page</a>	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at <http://www.rockwellautomation.com/global/literature-library/overview.page>. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

**Notes:**

# Rockwell Automation Support

Use the following resources to access support information.

<b>Technical Support Center</b>	Knowledgebase Articles, How-to Videos, FAQs, Chat, User Forums, and Product Notification Updates.	<a href="https://rockwellautomation.custhelp.com/">https://rockwellautomation.custhelp.com/</a>
<b>Local Technical Support Phone Numbers</b>	Locate the phone number for your country.	<a href="http://www.rockwellautomation.com/global/support/get-support-now.page">http://www.rockwellautomation.com/global/support/get-support-now.page</a>
<b>Direct Dial Codes</b>	Find the Direct Dial Code for your product. Use the code to route your call directly to a technical support engineer.	<a href="http://www.rockwellautomation.com/global/support/direct-dial.page">http://www.rockwellautomation.com/global/support/direct-dial.page</a>
<b>Literature Library</b>	Installation Instructions, Manuals, Brochures, and Technical Data.	<a href="http://www.rockwellautomation.com/global/literature-library/overview.page">http://www.rockwellautomation.com/global/literature-library/overview.page</a>
<b>Product Compatibility and Download Center (PCDC)</b>	Get help determining how products interact, check features and capabilities, and find associated firmware.	<a href="http://www.rockwellautomation.com/global/support/pcdc.page">http://www.rockwellautomation.com/global/support/pcdc.page</a>

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

Rockwell Automation maintains current product environmental information on its website at <http://www.rockwellautomation.com/rockwellautomation/about-us/sustainability-ethics/product-environmental-compliance.page>.

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