Technical Data

Allen-Bradley

Kinetix Motion Accessories Specifications

Bulletin 2090, 2094, 1394, 8720MC

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This document provides catalog numbers, product specifications, and dimensions for Allen-Bradley® servo drive accessories.

Use this publication along with the Kinetix® Motion Control Selection Guide, publication KNX-SG001, and the drive-system design guides to help make decisions on the motion control products that are best suited for your system requirements. See Additional Resources on page 133 for publication numbers.

Summary of Changes

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

Topic	Page
Added 2090-CSBM1DE-06AF*xx* and 2090-CSBM1DE-08AF*xx* single cable specifications	2…13
Added 2090-CSBM1E1-06AF*xx* and 2090-CSBM1E1-08AF*xx* single extension-cable specifications	
Added Bulletin VPC-B*xxxxxx*-Q (single connector) cable combinations	7
Added 2090-CSBM1DE-10AA*xx* (series B) cable specifications	12
Added 2090-CSBM1E1-10AA*xx* and 2090-CSBM1E1-14AA*xx* (series B) cable specifications	13
Added Bulletin VPC-B*xxxxxx*-S and VPC-B*xxxxxx*-Y (power and feedback connectors) cable combinations	21 and 22
Updated External Auxiliary Encoders with Bulletin 847H and 847T catalog numbers.	99

2090-Series Single Motor Cables

Allen-Bradley single motor cables combine motor power, feedback, and brake conductors all in a single shielded cable. Standard (non-flex) motor cables with rugged SpeedTec DIN connectors are designed for use with Kinetix 5500 and Kinetix 5700 drive systems, and intended for static applications. Continuous-flex rated cables, intended for rolling and reverse bending applications, are also available.

IMPORTANT Due to the unique characteristics of single-cable technology, which is designed for and tested with the Kinetix 5000 drive families and Kinetix VP motors, building your own cables or using third-party cable is not an option.

IMPORTANT Flying-lead motor power, feedback, and (optional) brake conductors terminate at the drive by using the 2198-KITCON-DSL feedback connector kit. Refer to the Kinetix Servo Drives Specifications Technical Data, publication KNX-TD003, for more information on the 2198-KITCON-DSL connector kit that is used with the Kinetix 5500 and Kinetix 5700 servo drives.

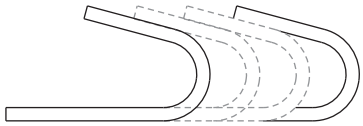
IMPORTANT Continuous-flex single motor cables have a minimum bend radius of 10 times the cable diameter.

These 2090-Series motor cables with SpeedTec DIN connectors, designed by Rockwell Automation for optimal performance with Kinetix 5000 drive families and Kinetix VP servo motors, offer best-in-class features and standards compliance. The single-cable design includes power, feedback, and brake conductors. The continuous-flex cable option, cable lengths in 1 m (3.3 ft) increments, and SpeedTec connectors provide machine builders with complete control of the cable requirements in their machines.

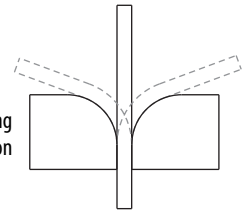
Single Motor Cable Features

- NFPA-79 compliant
- UL Listings: 10, 8, and 6 AWG cable - Flexible VFD servo cable, 18 and 14 AWG cables - PLTC-ER
  - UL AWM, 1000V, 105 °C construction
  - cUR AWM I/II A/B, 600V, 105 °C construction for 6 and 8 AWG cables
- CSA AWM I/II A/B, 1000V, 105 °C construction for 10, 14, and 18 AWG cables
- Low capacitance design to maximize system power density
- 1/4-turn SpeedTec connection system
- Encoder communication data pair with state of the art noise rejection
- DESINA compliant jacket (orange) coloring for easy identification and separation of cables in a machine
- Rated flex-cycles in linear flexing applications
  - 10, 14, and 18 AWG continuous-flex cables and continuous-flex extension cables are suitable for 20 million flex-cycles and 10 million cycles in bending (tic-toc) applications (see illustration on page 3)
  - 8 AWG continuous-flex cables and continuous-flex extension cables are suitable for 6.5 million flex-cycles
  - 6 AWG continuous-flex cables and continuous-flex extension cables are suitable for 5.0 million flex-cycles
- TPE jacket with superior mechanical and chemical properties
- Cable features overall tinned copper braid with aluminum/polyester tape, delivering 100% coverage for excellent EMC/EMI performance and permits power and signal conductors in a single cable
- Cables are included in the Rockwell Automation® servo system Declaration of Conformity (DoC)

Types of Cable Flexing



Rolling Motion



Reverse Bending
(tic-toc) Motion

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.

2090 - C S*x* M1 D*x* - *xx* A*x* *xx*

Cable Length
Refer to Technical Specifications - 2090-Series Single Motor Cables beginning on page 8.

Cable Type
AA = Standard, non-flex
AF = Continuous-flex

Wire Gauge Size (applies to power conductors)
18, 14, 10, 8, 6 AWG

Drive-end Connector Type
DF = Drive-end, flying-leads (lead length optimized for Kinetix 5500 drives)
DE = Drive-end, flying-lead power/brake wires and pre-wired feedback connector kit (optimized for Kinetix 5700 drives)
DG = Drive-end, flying-leads (longer leads optimized for Kinetix 5500 or Kinetix 5700 drives)
E1 = Extension receptacle (SpeedTec ready)

Motor-end Connector Type
M1 = Single SpeedTec DIN connector

Cable Type
SB = Single motor power with brake wires
SW = Single motor power only

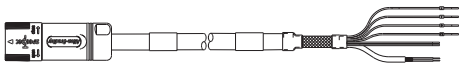
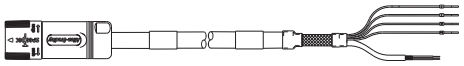
Accessory Component
C = Cable

Bulletin Number

2090-Series Single Motor Cables Overview

2090-CS*x*M1DF and 2090-CS*x*M1DG single motor cables with flying leads provide power, feedback, and brake conductors in a single shielded cable. Refer to Technical Specifications - 2090-Series Single Motor Cables on page 8 for cable descriptions, weights, and standard cable lengths.

Single Motor Cable Descriptions (flying leads)

Cable Cat. No.	Description	Cable Configuration Motor End / Drive End	Motor Connector
2090-CSBM1DF-*xx*AA*xx* 2090-CSBM1DF-*xx*AF*xx* 2090-CSBM1DG-*xx*AA*xx* 2090-CSBM1DG-*xx*AF*xx*	• Drive-end flying-leads (DF) (DG = longer lead lengths) • Power/feedback/brake wires (SB) • Standard, non-flex (AA) • Continuous-flex (AF)		SpeedTec DIN
2090-CSWM1DF-*xx*AA*xx* 2090-CSWM1DG-*xx*AA*xx*	• Drive-end flying-leads (DF) (DG = longer lead lengths) • Power/feedback wires only (SW)