



## Hi-Resolution Feedback Option Card for PowerFlex 700S Drives



**ATTENTION:** To avoid an electric shock hazard, verify that the voltage on the bus capacitors has discharged before performing any work on the drive. Measure the DC bus voltage at the +DC & -DC terminals of the Power Terminal Block. The voltage must be zero.



**ATTENTION:** HOT surfaces can cause severe burns. **Do not** touch the heatsink surface during operation of the drive. After disconnecting power allow time for cooling.



**ATTENTION:** This drive contains **ESD** (Electrostatic Discharge) sensitive parts and assemblies. Static control precautions are required when installing, testing, servicing or repairing this assembly. Component damage may result if ESD control procedures are not followed. If you are not familiar with static control procedures, reference A-B publication 8000-4.5.2, “Guarding Against Electrostatic Damage” or any other applicable ESD protection handbook.

### What This Kit Contains

Verify that your kit contains the items listed in the following table. If your kit does not contain the correct items, contact your Allen-Bradley sales representative.

Quantity:	Description
1	Hi-Resolution Feedback Option circuit board
2	34 - pin “stacker” connectors
3	Screws with captive lock washers
3	Stand-offs

## Opening the Cover of the Control Assembly

Step	Description
1	Loosen captive screw
2	Push down on cover
3	Pull cover away from assembly

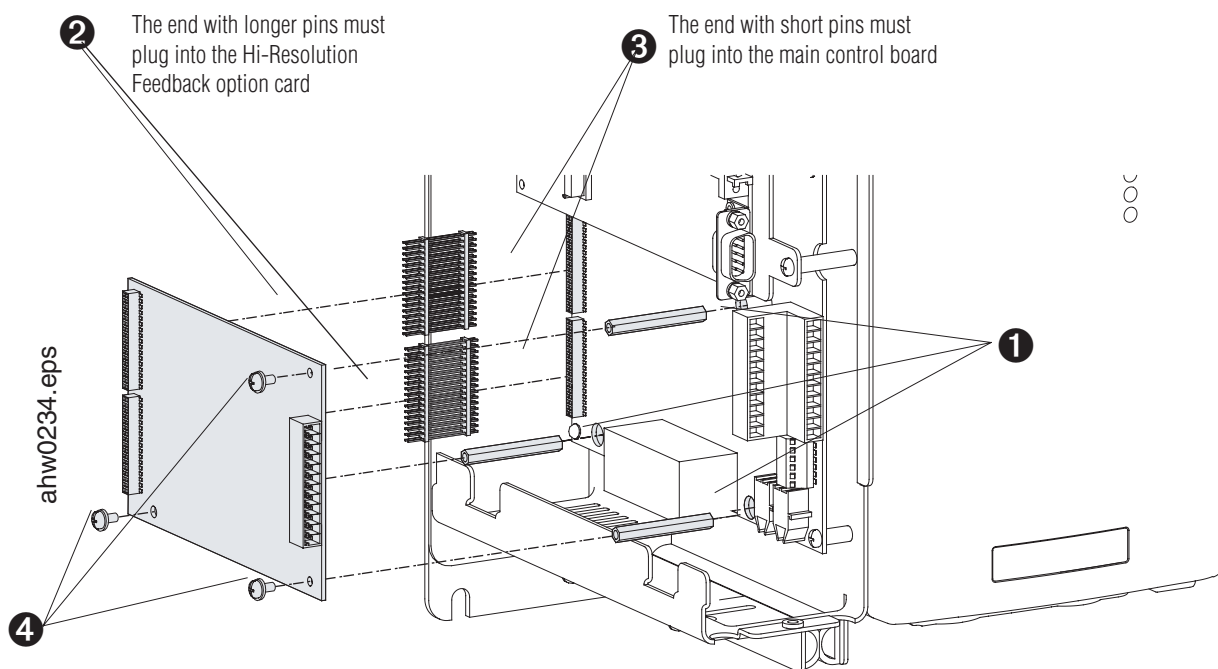


## Installing the Hi-Resolution Feedback Option Card in a PowerFlex 700S Drive

Figure 1 shows the Hi-Resolution Feedback Option card and the parts associated with its installation. To install the card, follow the steps below:

Step	Description
①	Screw stand-offs onto studs
②	Insert long pins of through-board pin connectors into mating connectors on the Hi-Resolution Feedback option card
③	Plug card and through-board pin connectors into mating connectors on the main control board
④	Secure card to stand-offs, using screws with captive lock washers

Figure 1 Hi-Resolution Feedback Option Card Installation



**TIP:** Remove the Control Assembly or drive from control panel and perform this procedure on a flat work surface if possible.

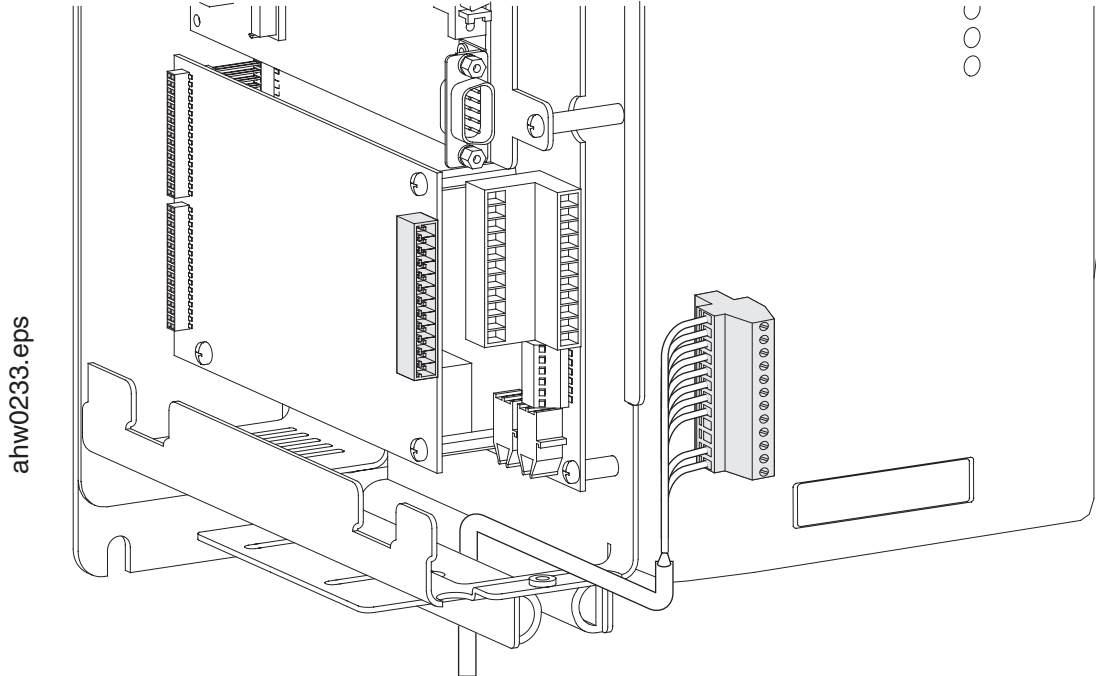


**TIP:** When performing step ③, view the mating connectors on the main board through the front of the drive.

### Wiring the Hi-Resolution Feedback Option Card to an Encoder

Terminal block P1 contains connection points for a Stegmann Hiperface® encoder. This terminal block resides on the Hi-Resolution Encoder Feedback Option card.

Hiperface® is a registered trademark of Stegmann Inc.



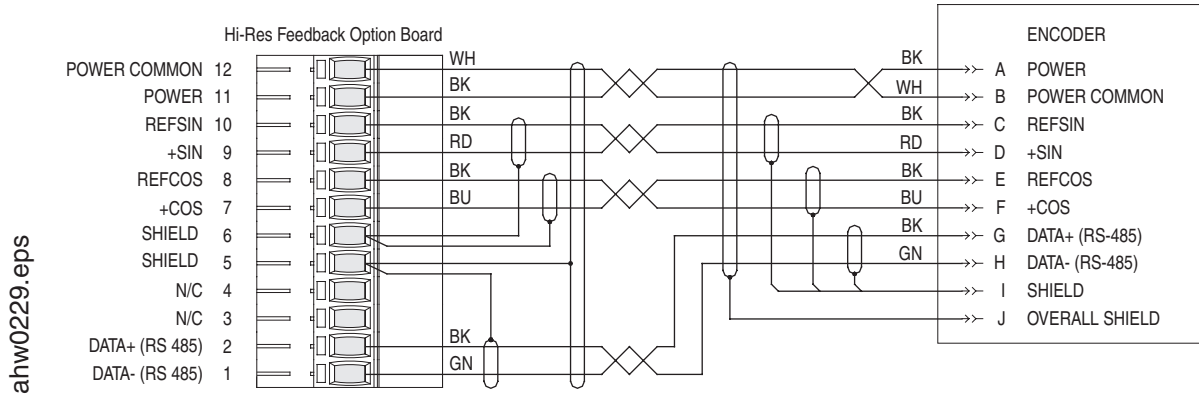
Remove the terminal block plug from the socket, and make connections. Re-install the plug, when wiring is complete.

▶ **TIP:** Remember to route wires through the sliding access panel at the bottom of the Control Assembly.

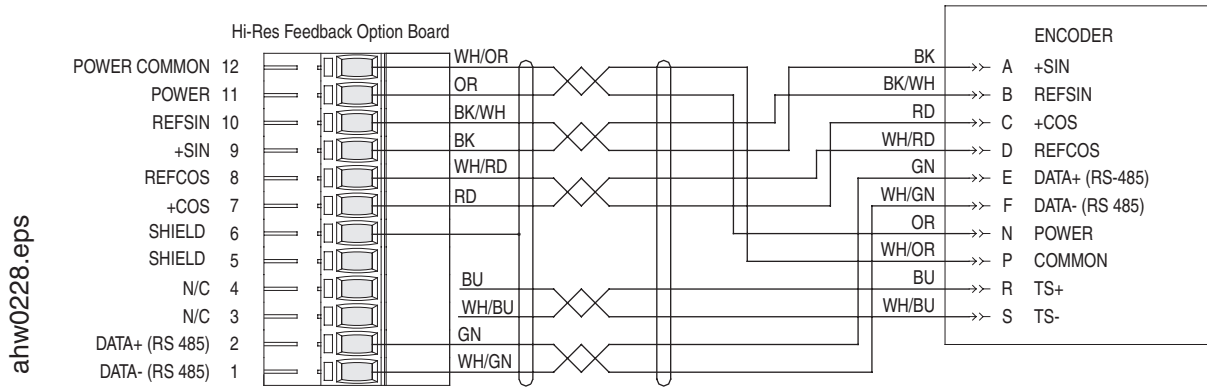
	Terminal	Signal	Description
<p>ahw0230.eps</p>	12	POWER COMMON	Power supply for encoder interface.
	11	POWER	
	10	REFSIN	Negative Sine signal.
	9	+SIN	Positive Sine signal.
	8	REFCOS	Negative Cosine signal.
	7	+COS	Positive Cosine signal.
	6	SHIELD	Connection point for encoder cable shield.
	5	SHIELD	
	4	N/C	Not connected.
	3	N/C	
	2	DATA+ (RS 485)	Positive DH485 terminal.
	1	DATA- (RS 485)	Negative DH485 terminal.

**Connection Examples**

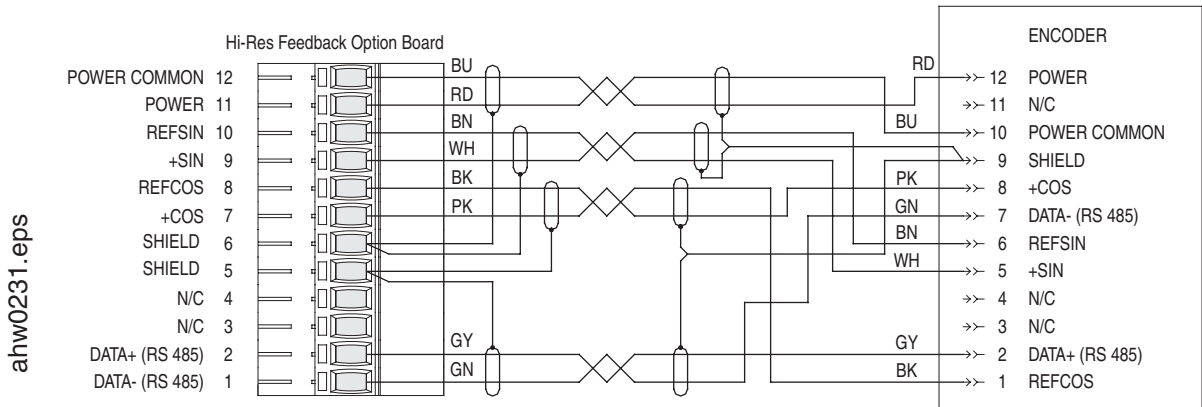
1326-CECU-XXL-XXX cable



2090-CDNFMP-SXX cable

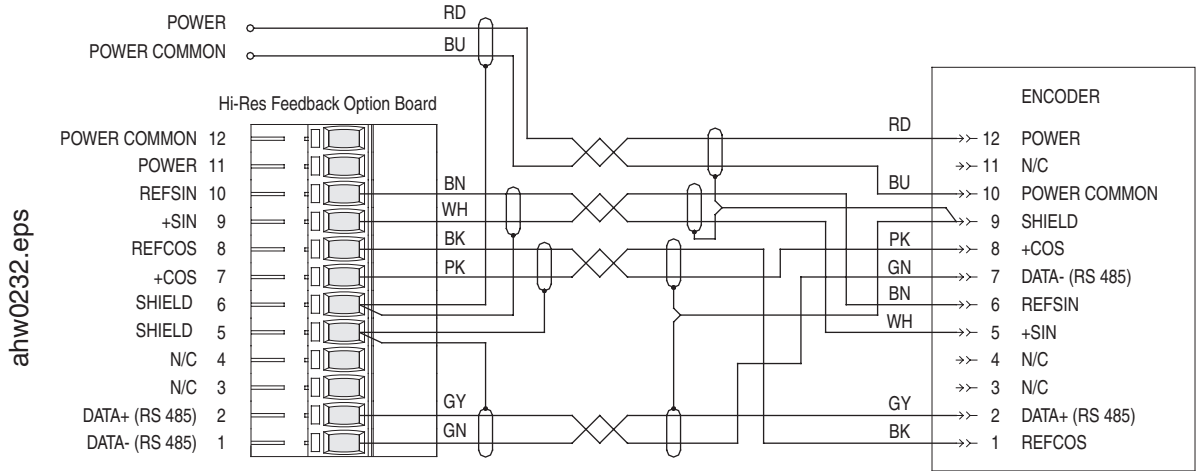


Stegmann 6-411682-XX cable - using internal power supply



**Connection Examples**

Stegmann 6-411682-XX cable - using external power supply



**Specifications**

**Hi-Resolution Feedback Option Card Specifications**

Consideration	Description
Encoder Voltage Supply	11.5V dc @ 130 mA
Hi-Resolution Feedback	Sine/Cosine 1V P-P Offset 2.5
Maximum Cable Length	182m (600 ft.)
RS-485 Interface	The Hi-Resolution Feedback Option card obtains the following information via the Hiperface RS-485 interface shortly after power-up: <ul style="list-style-type: none"> <li>• Address</li> <li>• Command Number</li> <li>• Mode</li> <li>• Number of turns</li> <li>• Number of Sine/Cos cycles</li> <li>• Checksum</li> </ul>
Customer-I/O plug (P1)	Allen-Bradley PN: S94262912 Weidmuller PN: BL3.50/90/12BK

**Supported Encoders**

[Table 1.A](#) specifies which encoders are supported by the 700S Hi-Resolution Stegmann Encoder Feedback Option module.

**Important:** Please note that encoders must be ordered as "Single Ended". This will ensure that the RS-485 channel has the proper termination network installed at the factory.

**Table 1.A Supported Stegmann Encoders**

Model	Resolution	Comment
SINCOS® SCS-60, SCS-70, SCM-60, and SCM-70	512 sine cycles per revolution.	SCM-60 and SCM-70 have built-in mechanical turns counter.
SINCOS® SCS-KIT-101 and SCM-KIT-101	1024 sine cycles per revolution.	SCM-60 and SCM-70 have built-in mechanical turns counter.
SINCOS® SRS-50, SRS-60, SRM-50, and SRM-60	1024 sine cycles per revolution.	SRM-50 and SRM-60 have built-in mechanical turns counter.

Model	Resolution	Comment
SINCOS® SRS/M 25	1024 sine cycles per revolution	SRS25 and SRM25 have built-in mechanical turns counter. IP65 Protection Class. Size 25 square flange mounting.
SINCOS® SRS660	1024 sine cycles per revolution	Hollow-shaft up to 14 mm diameter
SINCOS® SHS-170	512 sine cycles per revolution.	While the software supports this encoder, the SHS-170 draws excessive current and should only be used with an external power supply.

SINCOS®, SINCODER® and LINCODER® are registered trademarks of Stegmann Inc.

### Recommended Cables

If you are using this motor and feedback device:	Use this cable:
Allen-Bradley 1326AB-BXXXX-21ML, and -21MKXL motors with embedded Stegmann encoder	Allen-Bradley 1326-CECU-XXL-XXX
Allen-Bradley 1326AB-BXXXX-M2L, -M2KXL, -S2L, and -S2KXL motors with embedded Stegmann encoder	Allen-Bradley 2090-CDNFMP-SXX
Any other motor with external Stegmann encoder	Stegmann 6-411682-XX cables with C12 FUR connectors

**Important:** Please note that encoders must be ordered with the C12 FUR connectors to accommodate these cables.

# Allen-Bradley Parts

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