



■ Encoder Option Module (OPCENC)

The encoder module can be used as feedback source for closed loop Flux control (par. H-42) as well as closed loop speed control (par. PI-00). Configure encoder option in parameter group EC-##.

Used for:
• Advanced Vector Control closed loop
• Flux Vector Speed control
• Flux Vector Torque control
• Permanent magnet motor

Supported encoder types:

Incremental Encoder: 5 V TTL type, RS422, max. frequency: 410 kHz

Incremental Encoder: 1Vpp, Sine-Cosine

Hiperface® Encoder: Absolute and Sine-Cosine (Stegmann/SICK)

EnDat Encoder: Absolute and Sine-Cosine (Heidenhain) Supports version 2.1

SSI Encoder: Absolute

Encoder monitor:

The 4 encoder channels (S, B, Z and D) are monitored, open and short circuit can be detected.

There is a green LED for each channel which lights up when the channel is OK.

**NOTE!**

The LEDs are only visible when removing the keypad. In case of an encoder error please see par. EC-61: None, Warning or Trip.

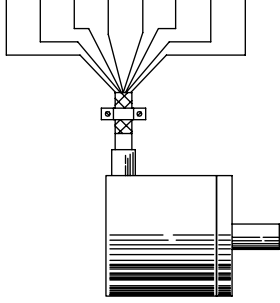
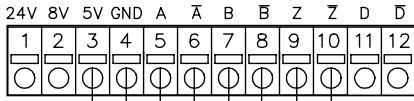
When the encoder option kit is ordered separately the kit includes:

- Encoder Option Module (OPCENC)
- Larger keypad cradle and terminal cover for Unit Size 12, 13 and 23 drives (230V to 10 HP & 460/575V to 20 HP)

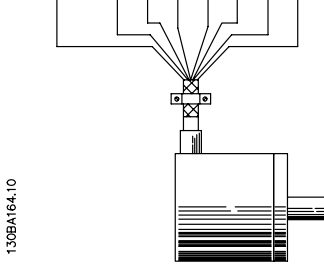
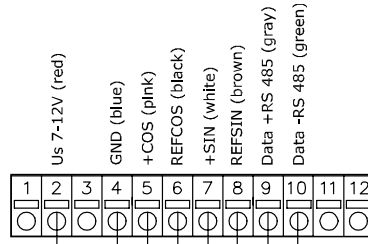
Terminal Designation X31/ ##	Incremental Encoder (please refer to Graphic A)	SinCos Encoder Hiperface® (please refer to Graphic B)	EnDat Encoder	SSI Encoder	Description
1	NC	NC	NC	24 V	24 V Output (21-25 V), I <sub>max</sub> 125 mA
2	NC	8 VCC	NC	NC	8 V Output (7-12 V, I <sub>max</sub> 200 mA)
3	5 VCC	NC	5 VCC	5 V	5 V Output (5 V ± 5%, I <sub>max</sub> 200 mA)
4	GND	+COS	GND	GND	GND
5	A input	REFCOS	+COS	A input	A input
6	A inv input	NC	REFCOS	A input inv.	A inv input
7	B input	+SIN	+SIN	B input	B input
8	B inv input	REFSIN	REFSIN	B input inv.	B inv input
9	Z input	+Data RS485	Clock out	Clock out	Z input OR +Data RS485
10	Z inv input	-Data RS485	Clock out inv.	Clock out inv.	Z input OR -Data RS485
11	NC	NC	Data in	Data in	Future use
12	NC	NC	Data in inv.	Data in inv.	Future use
Max. 5V on terminal 12.					

## AF-650 GP™ General Purpose Drive

130BA163.10



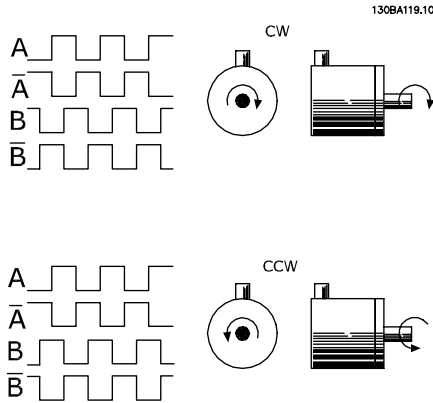
5V Incremental encoder



130BA164.10

HiPerface® encoder

Max. cable length 150 m.



The instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to the GE company.

AF-650 GP is trademark of the General Electric Company.

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[www.geelectrical.com/drives](http://www.geelectrical.com/drives)



imagination at work

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