

Installation Instructions

VLT[®] Automation Drive FC 360

Encoder Option MCB 102

Introduction

The encoder module can be used as feedback source for closed loop speed control (7-00 Speed PID Feedback Source). Configure encoder option in parameter group 17-** Feedback Option.

Used for

- VVC^{plus} closed loop

Incremental encoder	5 V TTL type, RS-422, max. frequency: 410 kHz
Incremental encoder	1 Vpp, sine-cosine

Table 1.1 Supported Encoder Types/Specifications

Safety Instructions

⚠ WARNING

DISCHARGE TIME

Frequency converters contain DC-link capacitors that can remain charged even when the frequency converter is not powered. To avoid electrical hazards, disconnect AC mains, any permanent magnet type motors, and any remote DC-link power supplies, including battery backups, UPS and DC-link connections to other frequency converters. Wait for the capacitors to fully discharge before performing any service or repair work. The amount of wait time is listed in the *Discharge Time* table. Failure to wait the specified time after power has been removed before doing service or repair could result in death or serious injury.

Voltage [V]	Minimum waiting time [minutes]	
	4	15
380-480	0.37-7.5 kW	11-22 kW

Table 1.2 Discharge Time

Scope of Delivery

- Encoder Option MCB 102

NOTICE

A terminal cover must be ordered separately.

Enclosure	Ordering number
J1	132b0263
J2	132b0265
J3	132b0266
J4	132b0267
J5	132b0268

Table 1.3 Terminal Cover Ordering Numbers

Mounting the Option

Mount the option according to *Illustration 1.1* and *Illustration 1.2*.

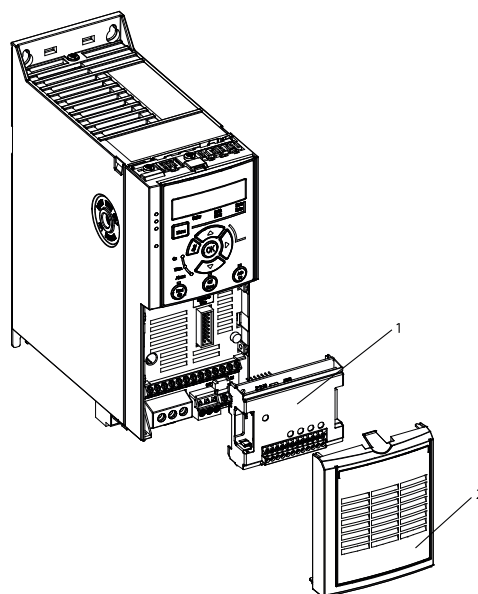


Illustration 1.1 Cover

1	Option
2	Terminal cover

Table 1.4 Legend to *Illustration 1.1*

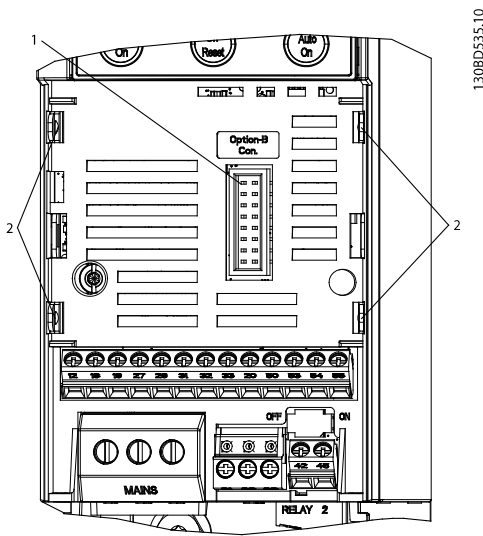


Illustration 1.2

1	Connector
2	Metal clamps

Table 1.5 Legend to Illustration 1.2

Ambient Working Temperature

For ambient working temperature of full load, see Table 1.6.

	Without MCB	With MCB
Standard Control Card	45-50 °C*	45 °C
Profibus or ProfiNet	45 °C	40 °C

Table 1.6 Ambient Temperature

* Some types can reach 50 °C, see VLT® AutomationDrive FC 360 Design Guide.

Electrical Installation

NOTICE

Supply the encoder through the MCB 102. Avoid to use external power supply for the encoder.

Encoder monitor

The 4 encoder channels (A, 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.

NOTICE

To view the LEDs on the option, remove the cover. Select response to encoder errors in 17-61 Feedback Signal Monitoring.

NOTICE

Max. cable length for incremental encoder 150 m.

X31	Incremental Encoder	Description
1	NC	24 V Output (21-25 V, I _{max} :125 mA)
2	NC	8 V Output (7-12 V, I _{max} : 200 mA)
3	5 VCC	5 V Output (5 V ± 5%, I _{max} : 200 mA)
4	GND	GND
5	A input	A input
6	A inv input	A inv input
7	B input	B input
8	B inv input	B inv input
9	Z input	Z input OR +Data RS-485
10	Z inv input	Z input OR -Data RS-485
11	NC	Future use
12	NC	Future use
Max. 5 V on X31.5-12		
* Supply for encoder: see data on encoder		

Table 1.7 Connector Designation X31

