

Installation Instructions

Encoder Option MCB 102

VLT[®] AutomationDrive FC 360

1.1.1 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⁺ 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

1.1.2 Safety Instructions

⚠ WARNING

DISCHARGE TIME

The frequency converter contains DC-link capacitors, which can remain charged even when the frequency converter is not powered. Failure to wait the specified time after power has been removed before performing service or repair work, could result in death or serious injury.

- Stop the motor.
- Disconnect AC mains, permanent magnet type motors, and remote DC-link power supplies, including battery back-ups, UPS, and DC-link connections to other frequency converters.
- Wait for the capacitors to discharge fully, before performing any service or repair work. The duration of waiting time is specified in *Table 1.2*.

Voltage [V]	Minimum waiting time (minutes)	
	4	15
380-480	0.37-7.5 kW	11-75 kW
High voltage may be present even when the warning LEDs are off!		

Table 1.2 Discharge Time

1.1.3 Items Supplied

- Encoder Option MCB 102

NOTICE

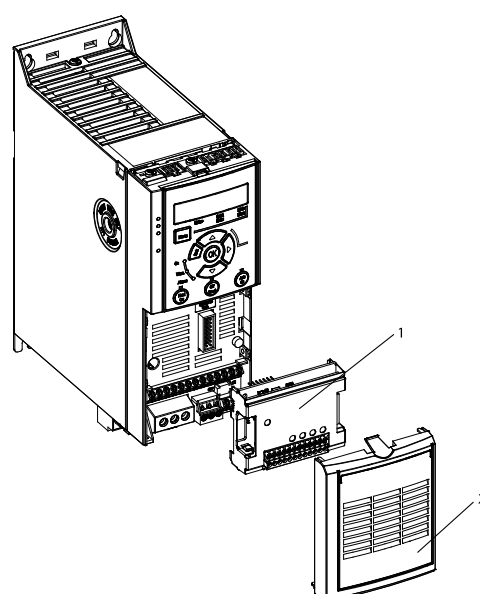
For J1-J5 enclosure types, a terminal cover must be ordered separately. For J6 and J7 enclosure types, no separate terminal covers are needed.

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

Table 1.3 Terminal Cover Code Numbers

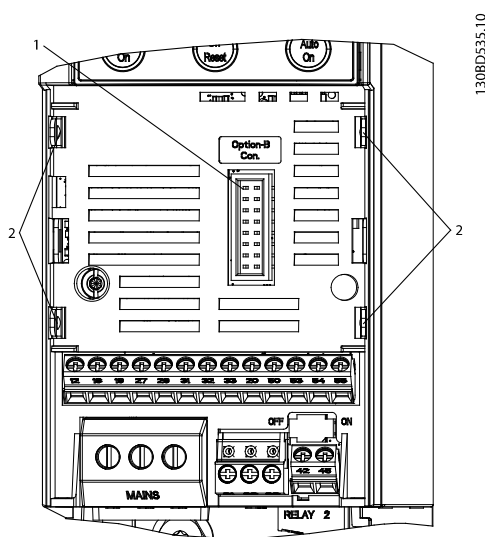
1.1.4 Mounting the Option

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



1	Option
2	Terminal cover

Illustration 1.1 Frequency Converter, Option and Terminal Cover



1	Connector
2	Metal clamps

Illustration 1.2 Connector and Metal Clamps

1.1.5 Ambient Working Temperature

For ambient working temperature af full load, see *Table 1.4*.

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

Table 1.4 Ambient Temperature

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

1.1.6 Electrical Installation

NOTICE

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

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 1.5 Connector Designation X31

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