Installation Instructions

VLT® AutomationDrive FC 302 with Connectors

NOTICE

VLT® AutomationDrive FC 302 with connectors is NOT UL approved.

The ETR functionality is not guaranteed.

General rating: Enclosure IP55.

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.

1. **Stop the motor.**
2. **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.**
3. **Wait for the capacitors to discharge fully, before performing any service or repair work. The duration of waiting time is specified in *Table 2.1*.**

Voltage [V]	Power range [kW]	Minimum waiting time (minutes)
3x400	0.55–7.5	4
High voltage can be present even when the warning LED indicator lights are off.		

Table 2.1 Discharge Time

3 Items Supplied

Depending on the ordering number, the following is supplied:

FC 302 with connectors - 2 motor connectors (134N3195)

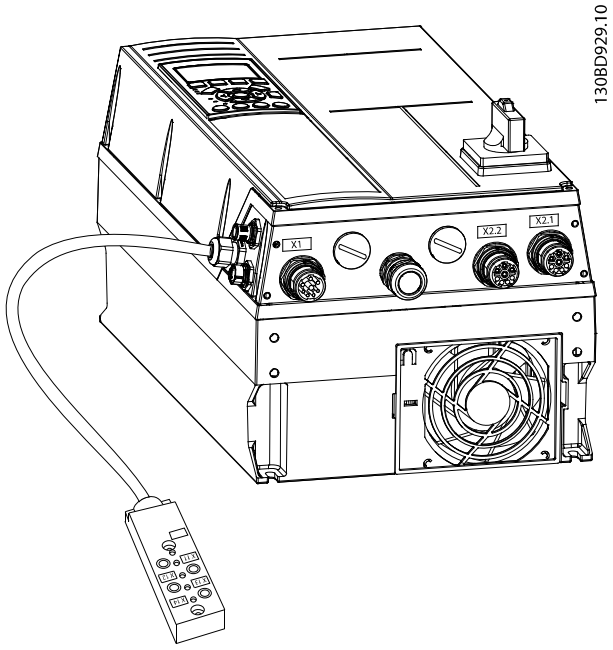

Illustration 3.1 2 Motor Connectors

FC 302 with connectors - 4 motor connectors (134N3196)

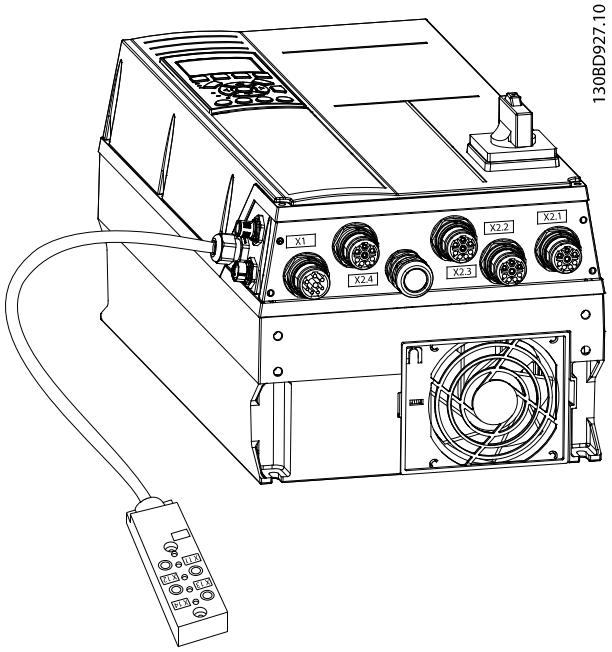

Illustration 3.2 4 Motor Connectors

FC 302 with connectors - side view

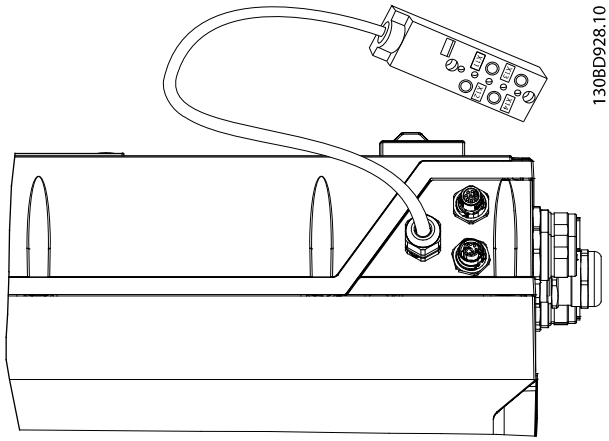

Illustration 3.3 Side View

For overall dimensions, refer to the *VLT® AutomationDrive FC 302 Design Guide*.

NOTICE

See the *VLT® AutomationDrive FC 302 Design Guide* for further information.

4 Connectors

4.1 Overview

The frequency converter has 7 connectors plus 2 or 4 motor connectors

Label	Connector	Description
X1	Mains	Mains in M23 (in M25) Male
X2.1-X2.4	Motor	Motor connection M23 Female
X51	PROFIBUS - Male	PROFIBUS M12
X52	PROFIBUS - Female	PROFIBUS M12
X11-X14	I/O box connector	Phoenix I/O box

Table 4.1 Connectors

4.2 X1- Mains M23 (in M25) Male

General ratings

- Pins 1, 2, 3 and 4: 480 V AC, maximum 15 A
- Pins C and D: 30 V DC, maximum 3 A
- Tightening torque: 1.5–2.0 Nm

Pin	Label	Connected to frequency converter wiring schematic	Min. wire [mm^2]
1	T1	91 (L1)	2.5
4	T2	92 (L2)	2.5
3	T3	93 (L3)	2.5
2	PE	95 (PE)	2.5
D	0 V DC	35	0.75
C	24 V DC	36	0.75

Table 4.2 Wire/Connector Assignment for Plug X1

Mating part: Mains X1 (female)
Phoenix order number.: KK-0885/XX,XX

4.3 X2.1-X2.4 Motor Connectors M23 (in M25) Female

General ratings

- Pins 1, 2, 3 and 4: 480 V AC, maximum 15 A
- Pins C and D: 30 V DC, maximum 3 A
- Tightening torque: 1.5–2.0 Nm

Pin	Label	Connected to frequency converter wiring schematic	Min. wire [mm²]
1	U	96 (U)	2.5
3	V	97 (V)	2.5
4	W	98 (W)	2.5
2	PE	99 (PE)	2.5

Table 4.3 Wire/Connector Assignment for Plug X2

Mating part: Motor X2 (male)
Phoenix order number.: KCX-K0341/XX,XX
Max. cable length 7.0 m

4.4 2 Motor Connection Variant (134N3195)

Keep blind plugs installed at all times to keep the enclosure tight.

Label	Connected to frequency converter wiring schematic
X2.1-B	53
X2.2-A	50
X2.1-A and X2.2-B	Connected to a common terminal
X2.1-C and X2.2-C	Connected to an open terminal available in the frequency converter
X2.1-D and X2.2-D	Connected to an open terminal available in the frequency converter

Table 4.4 2 Motor Connection

4.5 4 Motor Connection Variant (134N3196)

Label	Connected to frequency converter wiring schematic
X2.1-B	53
X2.4-A	50
X2.1-A and X2.2-B	Connected via an internal terminal
X2.2-A and X2.3-B	Connected via an internal terminal
X2.3-A and X2.4-B	Connected via an internal terminal

Table 4.5 4 Motor Connection

4.6 X51 PROFIBUS M12 Male, X52 PROFIBUS M12 Female

General ratings

- 30 V DC, maximum 1 A
- Tightening torque: 0.2–0.3 Nm

Label		Connected to frequency converter PROFIBUS connector
1	5 V DC	67
2		63
3	0 V DC	66
4		62

Table 4.6 PROFIBUS Connection

Mating part: PROFIBUS X52 and X51 (female/male)
Phoenix order number.: SAC-2P-MSB/ XX,XX-910/FSB SCO CT

4.7 X11-X14 I/O Connector Box

Phoenix sensor/actuator box - SACB-4/4-L-0,57HPUR CDA - 1531426

Tightening torque slot sensor/actuator cable 0.4 Nm

Label	Wire	Connected to frequency converter wiring schematic	
X11-X14 1	Brown	12	+24 V Out
X11-X14 2			
X11-X14 3	Blue	20	COM D IN
X14-4	Grey	33	D IN
X13-4	Yellow	29	D IN/OUT
X12-4	Green	19	D IN
X11-4	White	18	D IN

Table 4.7 Connector Box

5 Installation

NOTICE

For installation, refer to the *VLT® AutomationDrive FC 301/FC 302 Operating Instructions*.

Danfoss A/S
Ulsnaes 1
DK-6300 Graasten
www.danfoss.com/drives