

# MOVITRAC® 31C Frequency Inverters

## Addendum to the Installation and Operating Instructions EF...-503 EMC-Module

Edition 07/98

- Equipment may only be installed by qualified electrical personnel in compliance with the applicable accident prevention regulations and the MOVITRAC®31C Installation and Operating Instructions.



### EF...-503 EMC module

EF...-503 EMC modules are compact **submounted filters** for the mains and output sides of MOVITRAC® 31C frequency inverters. Submounting between the rear panel and the inverter does not require additional switch cabinet space.

EMC modules are used to suppress the emission of interference on the mains and output sides of frequency inverters. When installed in compliance with EMC requirements (→ MOVITRAC® 31C Catalog) class B limit (EN 55011) is met.

### Technical data:

EMV-Modul-Typ	EF014-503	EF030-503	EF075-503	EF220-503	EF450-503
Part number	826 384 1	826 385 X	826 386 8	826 553 4	826 554 2
Rated voltage $V_N$	3 x 230 V <sub>AC</sub> -10% ... 3 x 500 V <sub>AC</sub> +10%				
Voltage drop in the filter (at rated current)	< 1%				
Rated through current $I_N$	5 A <sub>AC</sub>	10 A <sub>AC</sub>	20 A <sub>AC</sub>	60 A <sub>AC</sub>	115 A <sub>AC</sub>
Rated frequency $f_N$	50/60 Hz				
Leakage current $\Delta I$	< 12 mA			< 110 mA	< 220 mA
Power loss (under rated conditions) $P_{loss}$	12 W	16 W	20 W	69 W	216 W
Emission given EMC-compliant installation	meets class B limit to EN 55011 and EN 55014, complies with EN 50081 - Parts 1 and 2				
Ambient temperature $\vartheta_{amb}$	-25° C...+45° C (derating above +45° C: 3% I <sub>N</sub> per K up to max. 60° C)				
Enclosure	IP 20 (EN 60529)				
Power and motor connection	screw terminals 4 mm <sup>2</sup> (AWG10)			25 mm <sup>2</sup> (AWG4)	35 mm <sup>2</sup> (AWG2)
Inverter connection	screw terminals 4 mm <sup>2</sup> (AWG10)			conductor end ring	conductor end sleeve
Only for use with MOVITRAC® 31C	Size 0	Size 1	Size 2	Size 3	Size 4
...-503	005/007/011/014	008/015/022/030	040/055/075	110/150/220	300/370/450
...-233	005/011	008/015/022	037	055/075	-

For details of maximum permissible motor cable lengths please refer to the MOVITRAC® 31C Catalog (→ Sec. Power and motor cables).

Unshielded motor cables suffice to meet class B limit (EN 55011). Shielded motor cables may also be used. In this case the shield must be connected to PE at both ends.

## Installation notes

- **EF014/030/075-503:** The EMC module is mounted on the conductive installation surface in the switch cabinet together with the MOVITRAC<sup>®</sup> 31C unit, using the enclosed screws (included in the scope of delivery\*).
- \* EF014-503: 2 ea. M5x50; EF030-503 and EF075-503: 4 ea. M6x60.
- **EF220/450-503:** No fastening screws enclosed. The EMC module is installed on the conductive installation surface in the switch cabinet with 4 screws, then the MOVITRAC<sup>®</sup> 31C unit is screwed onto the EMC module using 4 M6 screws.

**EF014-503 with MOVITRAC<sup>®</sup> 31C Size 0**

MOVITRAC<sup>®</sup> 31C connection  
Power section terminals X1:1...X1:6



Connection Mains and Motor

**EF075-503 with MOVITRAC<sup>®</sup> 31C Size 2 (also applies to EF030-503)**

Connection Power supply Motor



MOVITRAC<sup>®</sup> 31C connections  
Power section terminals X1:1...X1:6

Connection Mains Motor

**EF220-503 with MOVITRAC<sup>®</sup> 31C Size 3 (also applies to EF450-503)**



MOVITRAC<sup>®</sup> 31C connection  
Power section terminals X1:1...X1:6



**Important:**

The connection between terminals 1...6 of the EMC module and terminals X1:1...X1:6 of the MOVITRAC® 31.. power section should be kept as short as possible.

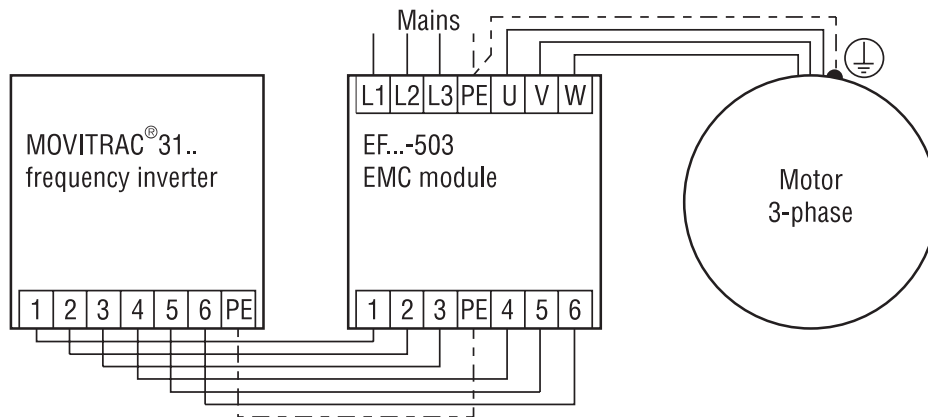


Fig. 2: Wiring diagram

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**Dimensions EF...-503:**

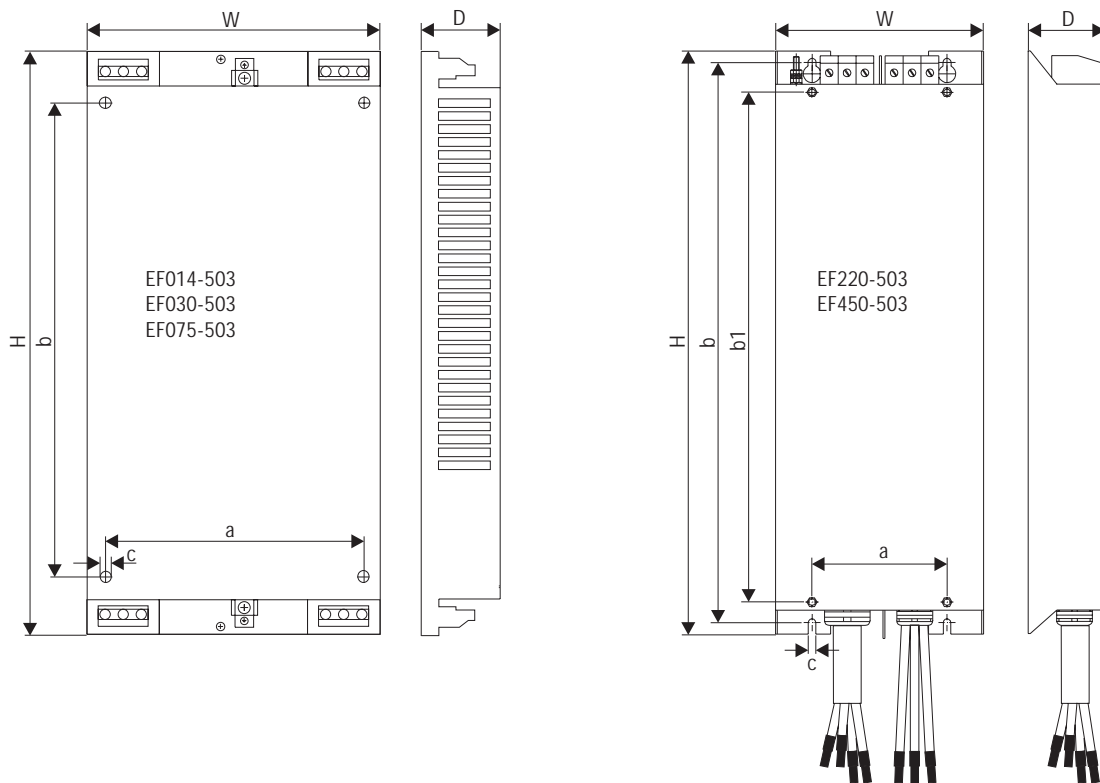


Fig. 3: Dimension drawings EF...-503

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All dimensions in mm (in)

EMC module type	Main dimensions			Mounting			Hole size c	Weight [kg (lb)]
	W	H	D	a	b	b1		
EF014-503	105 (4.13)	230 (9.06)	45 (1.77)	-	175 (6.89)	-	6 (0.24)	0.9 (1.98)
EF030-503	165 (6.50)	285 (11.22)			265 (10.43)			1.4 (3.09)
EF075-503	170 (6.69)	338 (13.31)			51 (2.01)			2.1 (4.63)
EF220-503	220 (8.66)	464 (18.27)	70 (2.76)	142 (5.59)	440 (17.32)	387 (15.24)	7 (0.28)	13 (28.67)
EF450-503		614 (24.17)			81 (3.19)			590 (23.23)

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