



Variable speed drives
VLB3

Product designation

Product type designation

General characteristics

Rated power supply voltage		Three phase 400...480VAC 50/60Hz
Rated output voltage	VAC	Three-phase 0... 480VAC 0-599Hz
Rated output current	A	40 (heavy load) / 48 (standard load)
Rated output power	kW	18.5 (Heavy load) / 22 (Standard load)
Rated output power	HP	25 (Heavy load) / 30 (Standard load)
EMC filter		Built-in EMC suppressor cat. C2
Communication port		Built-in RS485, Modbus RTU protocol

Technical features

Input type		Three phase
Rated mains voltage	VAC	400...480
Operating mains voltage range	VAC	340...528
Rated mains frequency	Hz	50/60
Operating mains frequency range	Hz	45...65
Rated mains current without mains choke		48.4 (heavy load)
Rated mains current with mains choke		36 (heavy load) / 43 (standard load)
Output type		three-phase
Output voltage range	VAC	0...480
Output frequency range	Hz	0...599
Current overload	%/s	150% for 60s; 200% for 3s
Apparent output power		27 (heavy load) / 32 (standard load)
Power loss		4kHz: 450W (heavy load) / 533 (standard load)
Brake chopper		Yes

Switching frequency				2...16kHz
Max motor cable length	Shielded	Without EMC category	m	100
		Category C1	m	3
		Category C2	m	20
		Category C3	m	35
		Unshielded		
		Without EMC category	m	200

Functions

Motor control modes	V/f linear, quadratic torque, sensorless vector control, ECO mode, servo control with encoder feedback, multipoint V/f curve, V/f closed loop control with encoder feedback, torque setpoint, sensorless control for synchronous motors up to 22kW
Speed reference signals	External potentiometer 0...10kΩ Voltage signals: 0...10VDC or -10...+10VDC Current signals: 0/4...20mA Buttons on front keyboard Door-mount installation kit 15 preset speeds via digital inputs Motor potentiometer Fieldbus
3-wire control	Yes
S-shape curves	Yes
Slip compensation	Yes
Flying restart	Yes
Access to DC bus	Yes
DC braking	Yes
DC injection at start	Yes
PID control	Yes, with sleep and rinse function
Sequencer (programmable frequency/time cycles)	Yes
Preset speeds	Yes

Motorpotentiometer	Yes
Different parameter configuration sets	Yes
Parameters changeover function	Yes
Favorite parameters menu	Yes
Autotuning	No
Safe torque Off (STO) safety function	Optional
PTC probe input	Yes

Protections	Overcurrent Output short circuit and earth/ground leakage
	Overvoltage Undervoltage Phase loss Motor heat overload (i2t) Overspeed Speed reverse

Special funct.	Multi-pump PID control (1 main pump frequency regulated + 2 auxiliary pumps activated in direct mode in case of necessity)
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Input and Output

Number of digital input	n°	5
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Digital input type	Selectable PNP or NPN logic
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Number of digital output	n°	2
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Digital output arrangement	1 relay output with changeover contact (C/O-SPDT) + 1 digital output
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Output contacts ratings	Relay output: 3A 250VAC Digital output: 100mA max 30VDC
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Number of analog input	n°	2
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Analog input type	Configurable 0/2...10VDC, -10...+10VDC, 0...5VDC, 0/4...20mA
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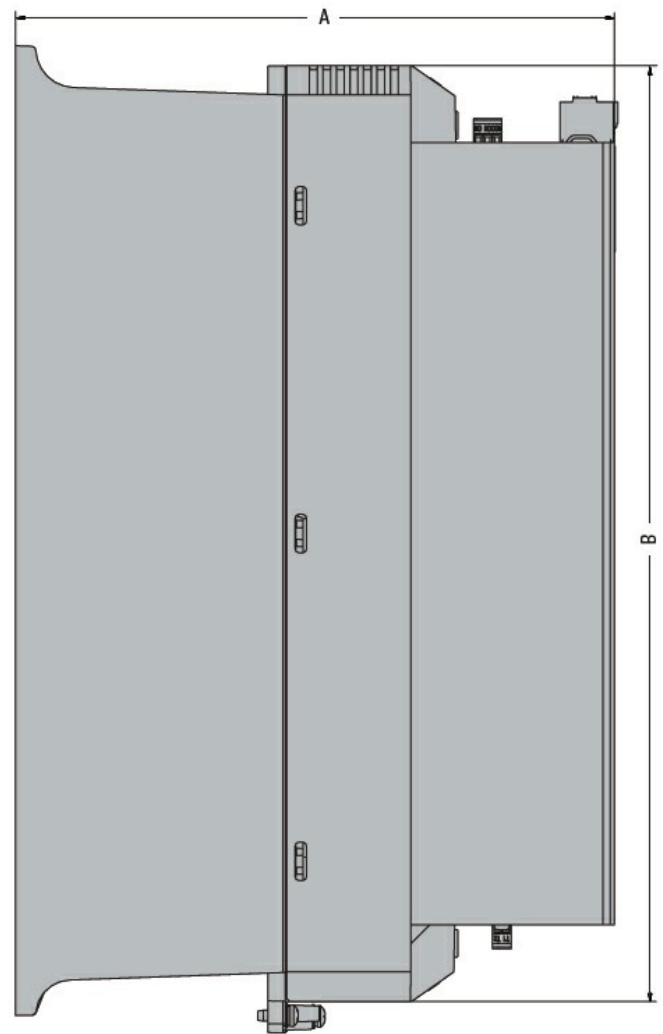
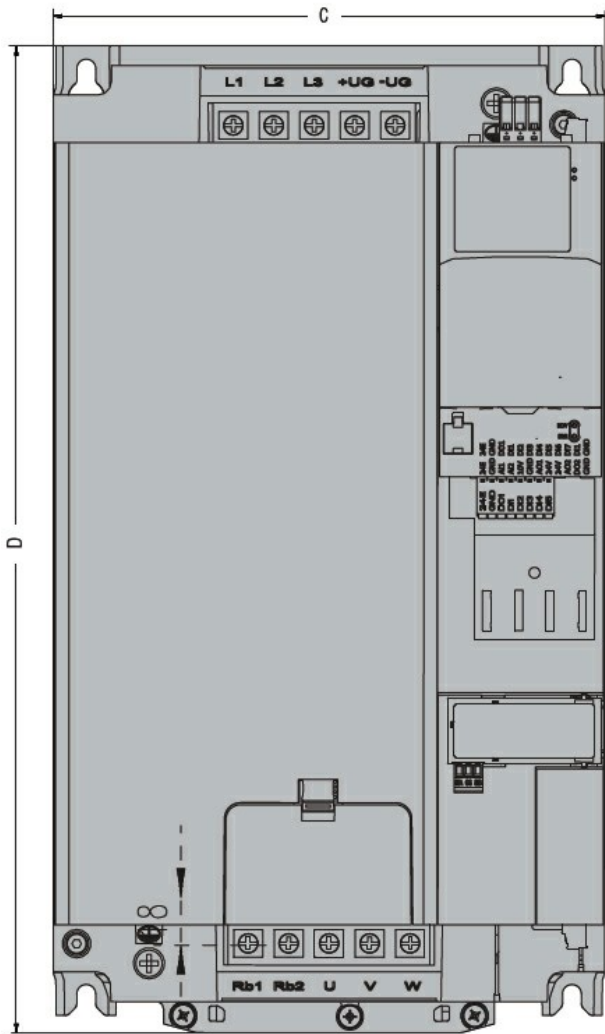
Number of analog output	n°	1
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Analog output type	configurable as 0...10VDC, 0...5VDC, 2...10VDC, 0/4...20mA
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Ambient conditions

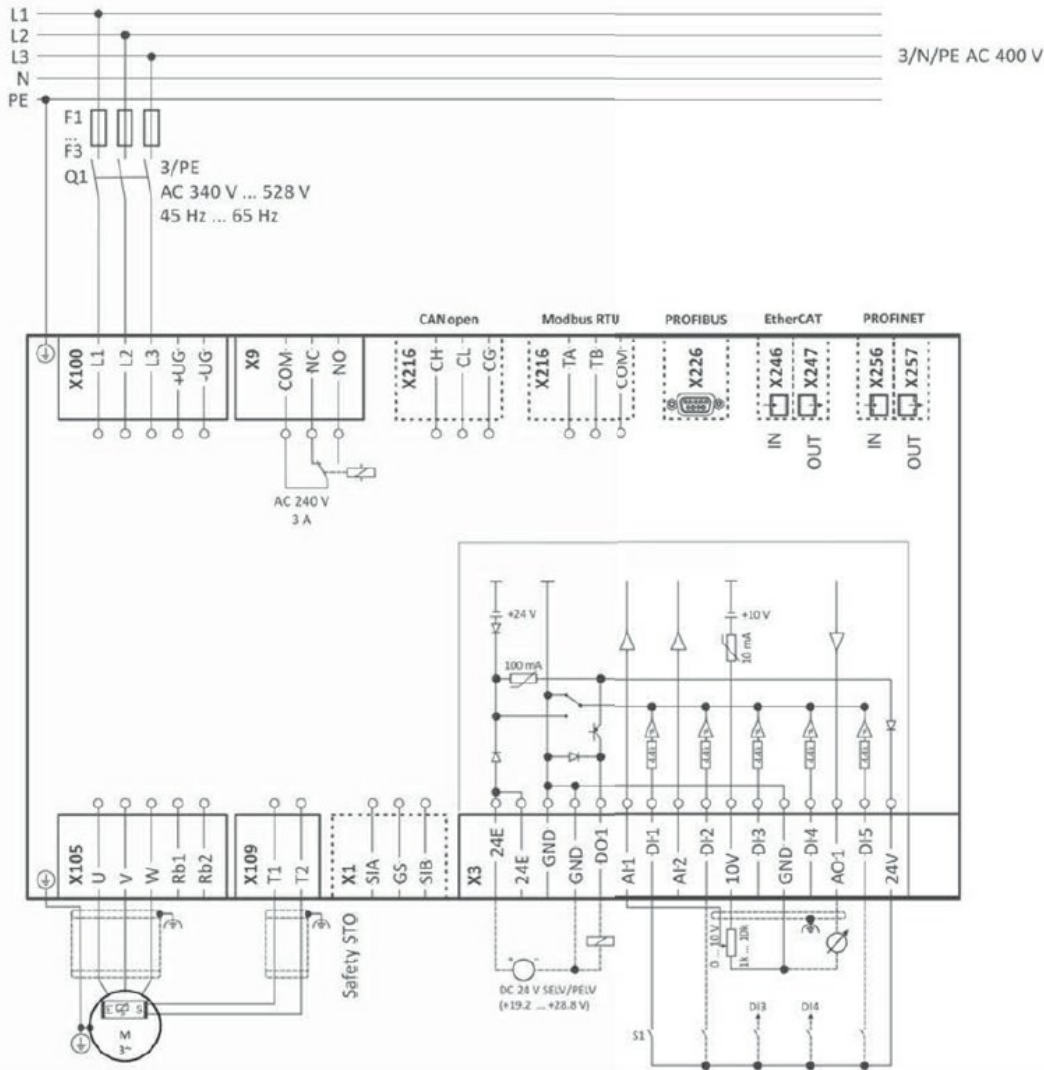
Temperature	Operating temperature	min	°C	-10
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	max	°C	+55
			switching frequency 2 or 4kHz: 2.5%/°C over 45°C
			switching frequency 8 or 16kHz: 2.5%/°C over 40°C
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Storage temperature			
	min	°C	-25
	max	°C	+60
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Relative humidity		%	5...95% (with no condensing)
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Max altitude		m	4000m (over 1000m derate the rated current by 5%/1000m)
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Maximum Pollution degree			2
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Overvoltage category			III up to 2000m altitude (II above 2000m)
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Housing			
Installation position			Vertical
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IP degree of protection			IP20
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Dimensions (W x H x D)		mm	204.5 x 366 x 222
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Weight		Kg	10.65
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Dimensions			



TYPE	A	B	C	D
VLB3 0150 A480	222 (8.74")	347 (13.66")	204.5 (8.05")	366 (14.41")
VLB3 0185 A480	222 (8.74")	347 (13.66")	204.5 (8.05")	366 (14.41")
VLB3 0220 A480	222 (8.74")	347 (13.66")	204.5 (8.05")	366 (14.41")
VLB3 0300 A480	230 (9.05")	450 (17.72")	250 (9.84")	520 (20.47")

Wiring diagrams



Certifications and compliance

Compliance

CSA 22.2 n°274
EN 61800-5-1
UL61800-5-1

Certificates

CSA
cULus
EAC
RCM

ETIM classification

ETIM 8.0

EC001857 -
Frequency
converter =< 1 kW