

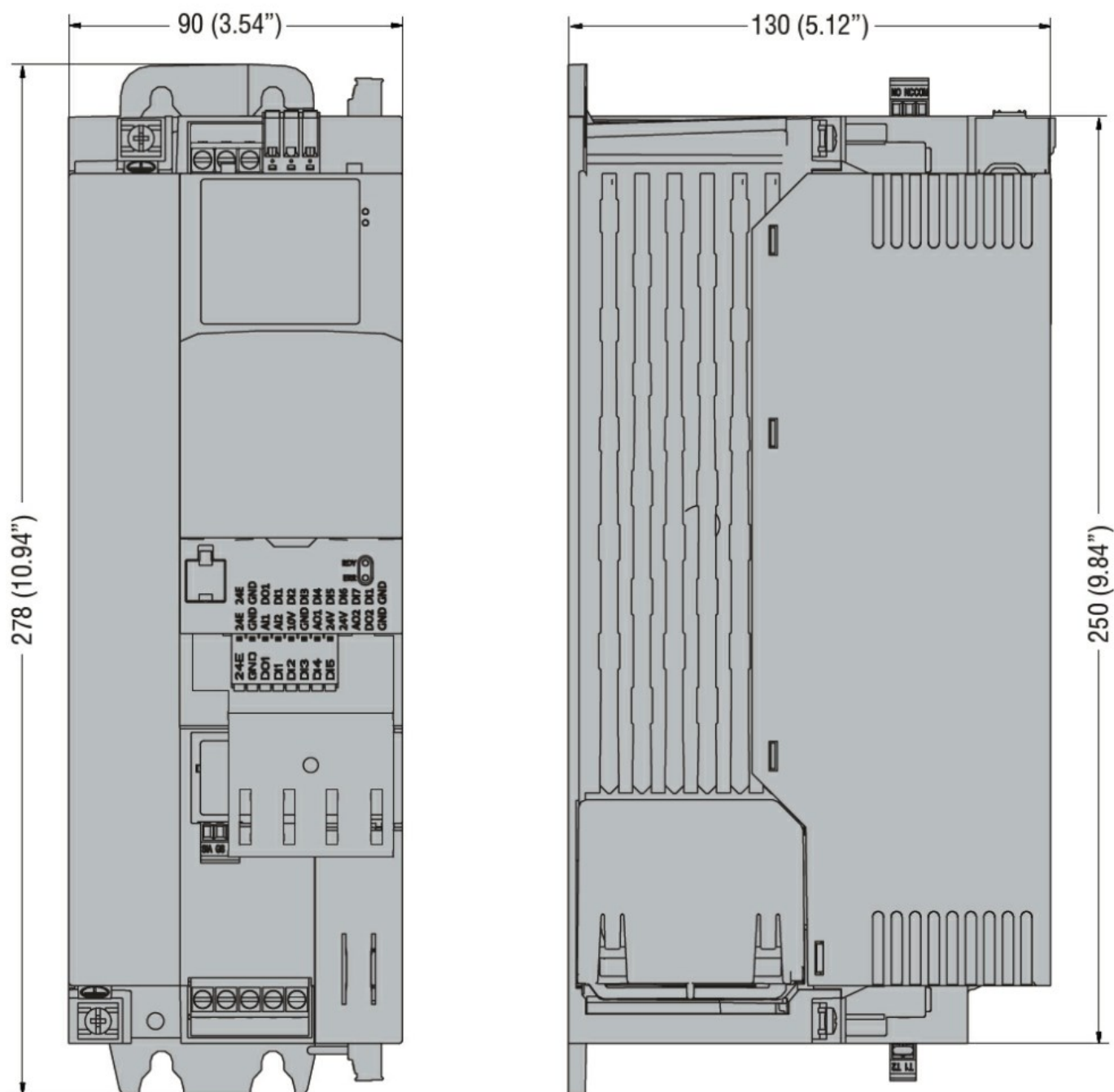


|                                         |  |                                                        |                                             |
|-----------------------------------------|--|--------------------------------------------------------|---------------------------------------------|
| Product designation                     |  | Variable speed drives                                  |                                             |
| Product type designation                |  | VLB3                                                   |                                             |
| General characteristics                 |  |                                                        |                                             |
| Rated power supply voltage              |  | 400...480VAC<br>50/60Hz                                |                                             |
| Rated output voltage                    |  | VAC                                                    | Three-phase 0...<br>480VAC 0-599Hz          |
| Rated output current                    |  | A                                                      | 13                                          |
| Rated output power                      |  | kW                                                     | 5.5                                         |
| Rated output power                      |  | HP                                                     | 7.5 (Heavy load) /<br>10 (Standard<br>load) |
| EMC filter                              |  | Built-in EMC<br>suppressor cat.<br>C2                  |                                             |
| Communication port                      |  | RS485, Modbus-<br>RTU                                  |                                             |
| 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 |  | 17.2 (heavy load)<br>/ 18.3 (standard<br>load)         |                                             |
| Rated mains current with mains choke    |  | 12.4 (heavy load)<br>/ 14.5 (standard<br>load)         |                                             |
| Output type                             |  | Three-phase                                            |                                             |
| Output voltage range                    |  | VAC                                                    | 0...480                                     |
| Output frequency range                  |  | Hz                                                     | 0...599                                     |
| Current overload                        |  | %/s                                                    | 150% for 60s;<br>200% for 3s                |
| Apparent output power                   |  | 8.7 (heavy load) /<br>10.5 (standard<br>load)          |                                             |
| Power loss                              |  | 4kHz: 145W<br>(heavy load) /<br>173 (standard<br>load) |                                             |
| Brake chopper                           |  | Yes                                                    |                                             |
| Switching frequency                     |  | 2...16kHz                                              |                                             |
| Max motor cable length                  |  |                                                        |                                             |
| Shielded                                |  | Without EMC category                                   | m 100                                       |

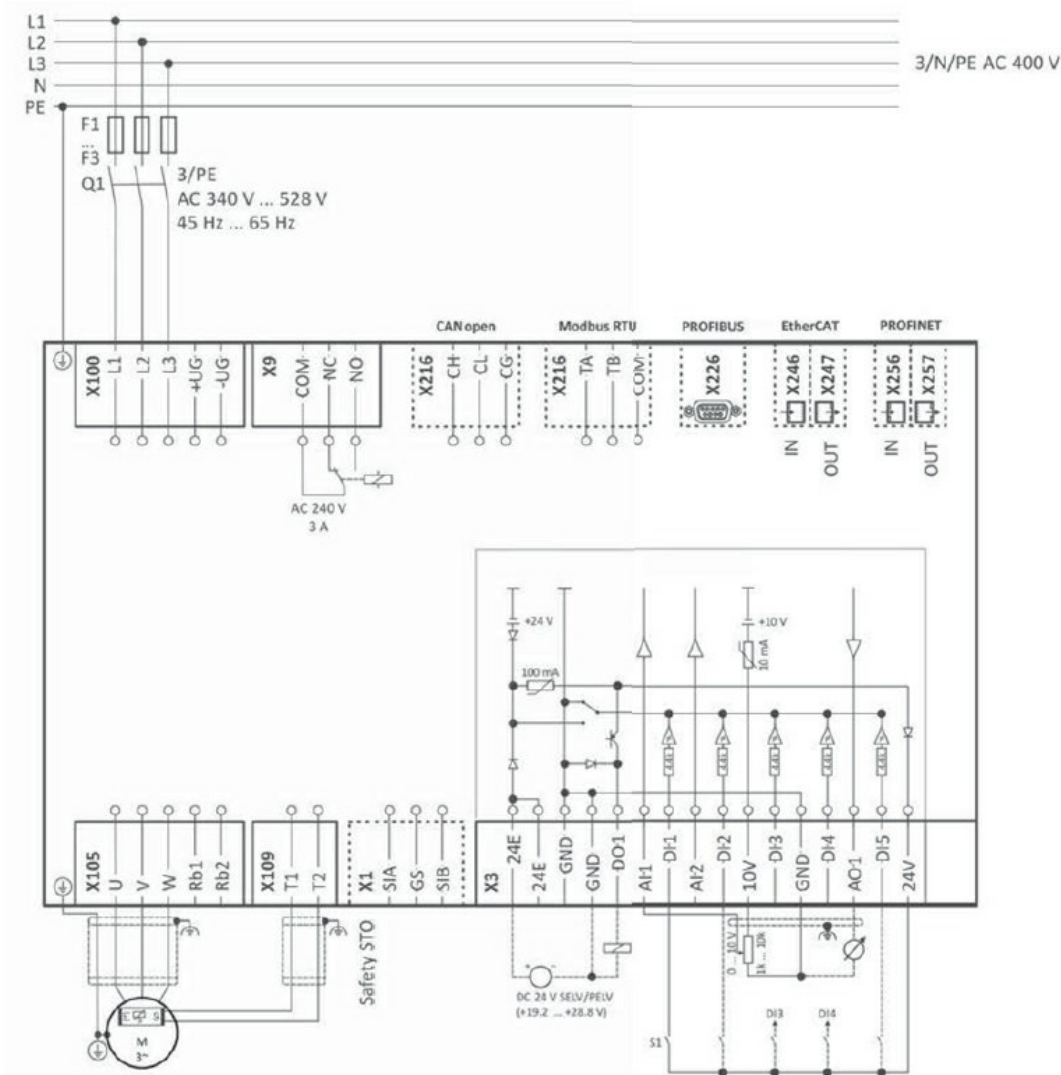
|                                                |                                                                                                                                                                                                                      |   |     |
|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-----|
|                                                | Category C1                                                                                                                                                                                                          | m | 3   |
|                                                | Category C2                                                                                                                                                                                                          | m | 20  |
|                                                | Category C3                                                                                                                                                                                                          | m | 35  |
| Unshielded                                     |                                                                                                                                                                                                                      |   |     |
|                                                | Without EMC category                                                                                                                                                                                                 | m | 200 |
| <b>Functions</b>                               |                                                                                                                                                                                                                      |   |     |
| 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             |   |     |
| 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 |   |     |
| 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<br>Output short circuit and earth/ground leakage<br>Overvoltage<br>Undervoltage<br>Phase loss<br>Motor heat overload (i2t)<br>Overspeed<br>Speed reverse |    |     |
| Special funct.             | Multi-pump PID control (1 main pump frequency regulated + 2 auxiliary pumps activated in direct mode in case of necessity)                                           |    |     |
| Input and Output           |                                                                                                                                                                      |    |     |
| Number of digital input    | Nr.                                                                                                                                                                  | 5  |     |
| Digital input type         | Selectable PNP or NPN logic                                                                                                                                          |    |     |
| Number of digital output   | Nr.                                                                                                                                                                  | 2  |     |
| Digital output arrangement | 1 relay output with changeover contact (C/O-SPDT) + 1 digital output                                                                                                 |    |     |
| Output contacts ratings    | Relay output: 3A 250VAC<br>Digital output: 100mA max 30VDC                                                                                                           |    |     |
| Number of analog input     | Nr.                                                                                                                                                                  | 2  |     |
| Analog input type          | Configurable 0/2...10VDC, -10...+10VDC, 0...5VDC, 0/4...20mA                                                                                                         |    |     |
| Number of analog output    | Nr.                                                                                                                                                                  | 1  |     |
| Analog output type         | configurable as 0...10VDC, 0...5VDC, 2...10VDC, 0/4...20mA                                                                                                           |    |     |
| Ambient conditions         |                                                                                                                                                                      |    |     |
| Temperature                | Operating temperature                                                                                                                                                |    |     |
|                            | min                                                                                                                                                                  | °C | -10 |
|                            | max                                                                                                                                                                  | °C | +55 |

|                          |  |                  |                                                                                                                         |
|--------------------------|--|------------------|-------------------------------------------------------------------------------------------------------------------------|
|                          |  | Current derating | switching<br>frequency 2 or<br>4kHz: 2.5%/°C<br>over 45°C<br>switching<br>frequency 8 or<br>16kHz: 2.5%/°C<br>over 40°C |
| Storage temperature      |  |                  |                                                                                                                         |
|                          |  | min              | °C                                                                                                                      |
|                          |  | max              | °C                                                                                                                      |
|                          |  |                  | -25                                                                                                                     |
|                          |  |                  | +60                                                                                                                     |
| Relative humidity        |  |                  | %                                                                                                                       |
|                          |  |                  | 5...95% (with no<br>condensing)                                                                                         |
| Max altitude             |  |                  | m                                                                                                                       |
|                          |  |                  | 4000m (over<br>1000m derate<br>the rated current<br>by 5%/1000m)                                                        |
| Maximum Pollution degree |  |                  | 2                                                                                                                       |
| Overvoltage category     |  |                  | III up to 2000m<br>altitude (II above<br>2000m)                                                                         |
| Housing                  |  |                  |                                                                                                                         |
| Installation position    |  |                  | Vertical                                                                                                                |
| IP degree of protection  |  |                  | IP20                                                                                                                    |
| Dimensions (W x H x D)   |  | mm               | 90 x 278 x 130                                                                                                          |
| Weight                   |  | Kg               | 2.45                                                                                                                    |
| Dimensions               |  |                  |                                                                                                                         |



## Wiring diagrams



## Certifications and compliance

## Compliance

CSA 22.2 n°274

EN 61800-5-1

UL61800-5-1

## Certificates

CSA

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cULuS

EAC

RCM

## ETIM classification

ETIM 8.0

EC001857 -  
Frequency  
converter  $\leq 1$  kV