



|   |  |  |
|---|--|--|
| Product designation                     | Variable speed drives                                  |  |
| Product type designation                | VLB3   |  |
| <b>General characteristics</b>          |  |  |
| Rated power supply voltage              | 400...480VAC<br>50/60Hz                                |  |
| Rated output voltage                    | VAC  | Three-phase 0...<br>480VAC 0-599Hz         |
| Rated output current                    | A  | 16.5                                       |
| Rated output power                      | kW   | 7.5  |
| Rated output power                      | HP   | 10 (Heavy load) /<br>15 (Standard<br>load) |
| EMC filter                              | Built-in EMC<br>suppressor cat.<br>C2                  |  |
| Communication port                      | RS485, Modbus-<br>RTU                                  |  |
| <b>Technical features</b>               |  |  |
| 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 | 20 (heavy load) /<br>28 (standard<br>load)             |  |
| Rated mains current with mains choke    | 15.7 (heavy load)<br>/ 22 (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                   | 11 (heavy load) /<br>15 (standard<br>load)             |  |
| Power loss                              | 4kHz: 185W<br>(heavy load) /<br>253 (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 | 50 |

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             |
| 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 |
|-------------------------|-----|---|

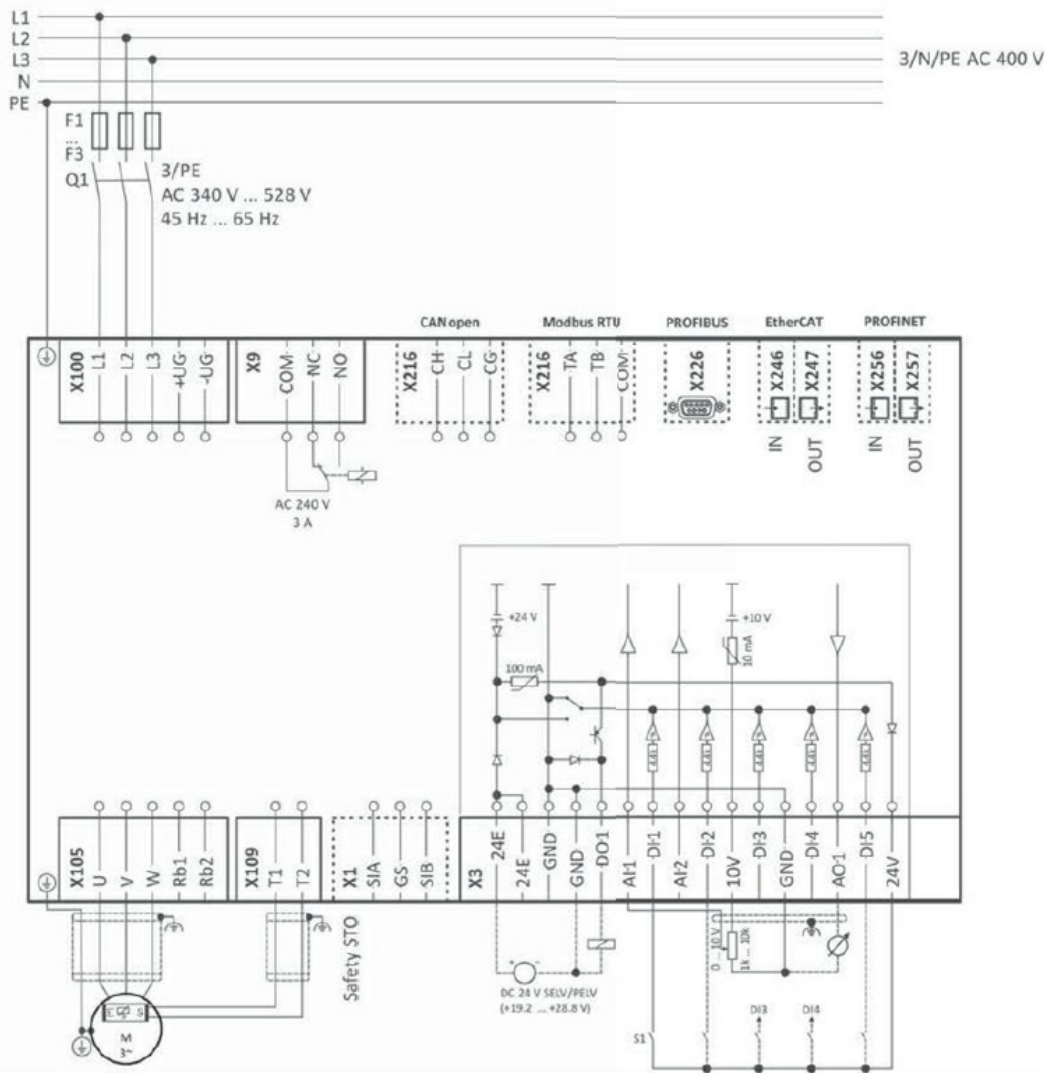
|                    |  |
|--------------------|--|
| Analog output type | configurable as 0...10VDC, 0...5VDC, 2...10VDC, 0/4...20mA |
|--------------------|--|

**Ambient conditions**

|             |                       |     |    |     |
|-------------|-----------------------|-----|----|-----|
| Temperature | Operating temperature | min | °C | -10 |
|             |                       | max | °C | +55 |

|                             |                     |    |   |
|-----------------------------|---------------------|----|---|
|                             |                     |    | switching frequency 2 or 4kHz: 2.5%/°C over 45°C        |
|                             | Current derating    |    | switching frequency 8 or 16kHz: 2.5%/°C over 40°C       |
|                             | Storage temperature |    |   |
|                             | min                 | °C | -25   |
|                             | max                 | °C | +60   |
| Relative humidity           |                     | %  | 5...95% (with no condensing)                            |
| Max altitude                |                     | m  | 4000m (over 1000m derate the rated current by 5%/1000m) |
| Maximum Pollution degree    |                     |    | 2   |
| Overvoltage category        |                     |    | III up to 2000m altitude (II above 2000m)               |
| <b>Housing</b>              |                     |    |   |
| Installation position       |                     |    | Vertical  |
| IP degree of protection     |                     |    | IP20  |
| Dimensions (W x H x D)      |                     | mm | 120 x 305 x 130   |
| Weight                      |                     | Kg | 3.95  |
| <b>Dimensions [mm (in)]</b> |                     |    |   |





**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