



Variable speed
drives
VLB3

Product designation

Product type designation

General characteristics

| | | |
|----------------------------|-----|--|
| Rated power supply voltage | | 400...480VAC 50/60Hz |
| Rated output voltage | VAC | Three-phase 0... 480VAC 0-599Hz |
| Rated output current | A | 47 |
| Rated output power | kW | 22 |
| Rated output power | HP | 30 (Heavy load) / 40 (Standard load) |
| EMC filter | | Built-in EMC suppressor cat. C2 |
| Communication port | | RS485, Modbus- 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 with mains choke | | 42 (heavy load) / 55 (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 | | 32 (heavy load) / 38 (standard load) |
| Power loss | | 4kHz: 520W (heavy load) / 623 (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 |
| 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 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) |
|----------------|--|

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

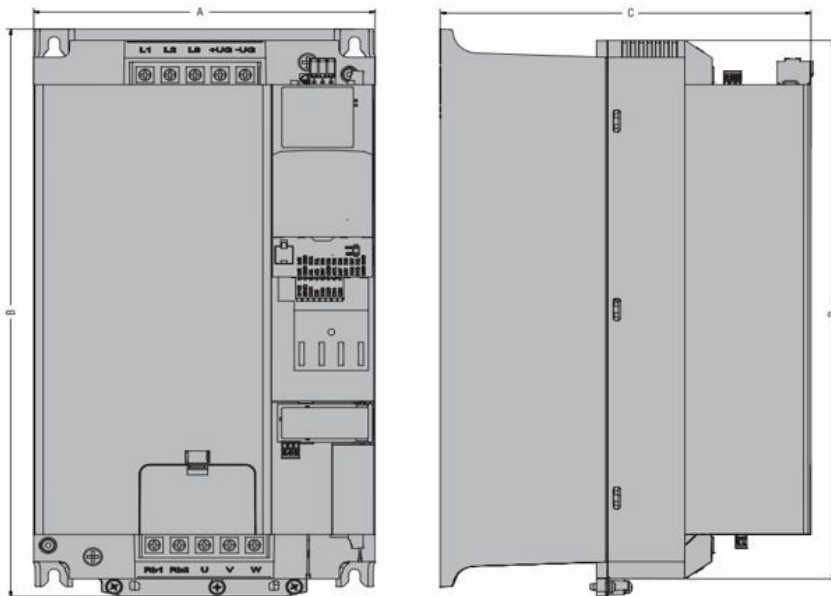
| | |
|--------------------|--|
| Analog output type | configurable as 0...10VDC, 0...5VDC, 2...10VDC, 0/4...20mA |
|--------------------|--|

Ambient conditions

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

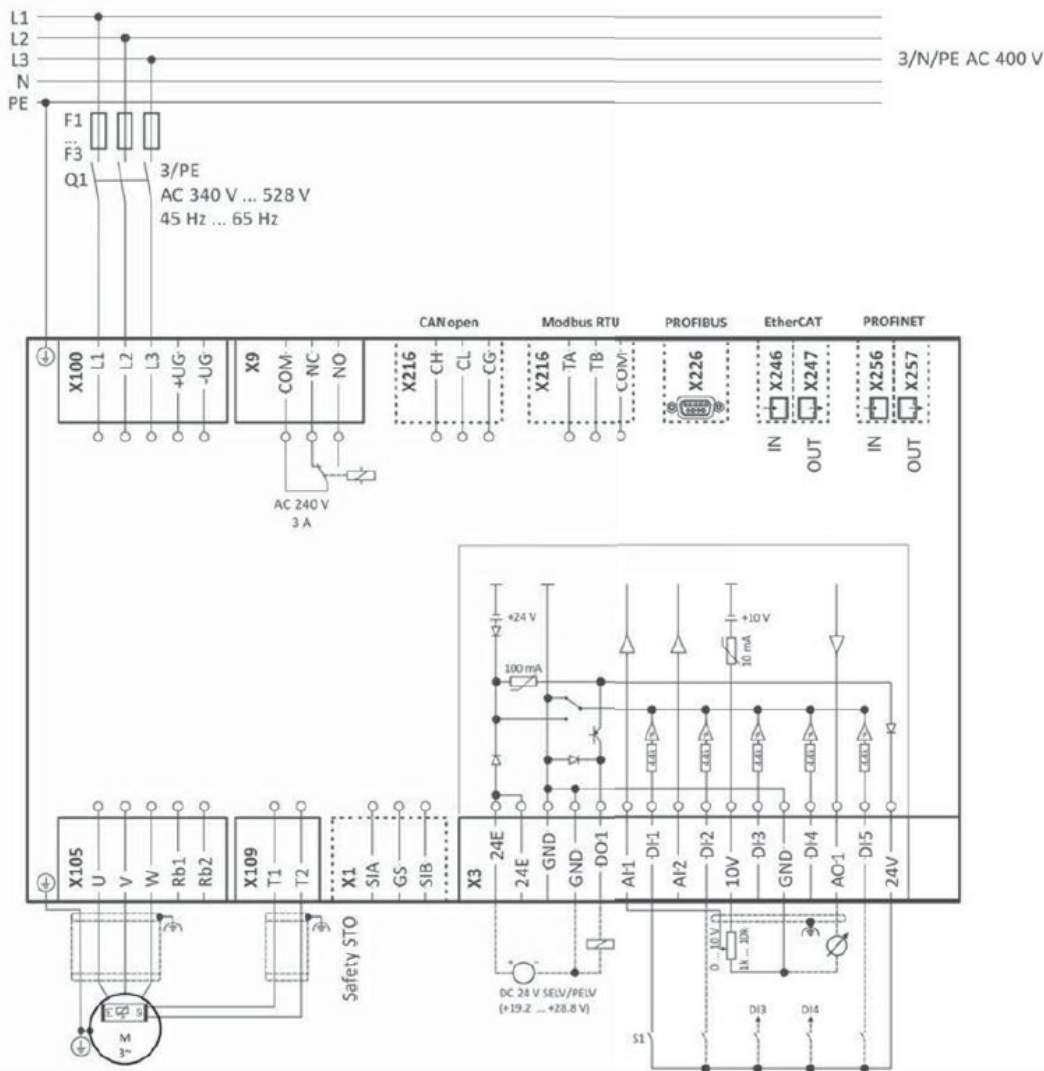
| | | | |
|--------------------------|---------------------|------------|---|
| | | | switching frequency 2 or 4kHz: 2.5%/°C over 45°C switching frequency 8 or 16kHz: 2.5%/°C over 40°C |
| | Current derating | | |
| | Storage temperature | | |
| | | min max | °C °C -25 +60 |
| Relative humidity | | | % 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) |
| Housing | | | |
| Installation position | | | Vertical |
| IP degree of protection | | | IP20 |
| Dimensions (W x H x D) | | | mm Batch <=D 204.5 x 366 x 222 Batch >=E 180 x 384 x 165 |
| Weight | | | Kg 10.65 |

Dimensions [mm (in)]



| | | | | |
|---------------------|-------|-----|-----|-----|
| Batch number | A | B | C | D |
| letter D or lower | 204,5 | 366 | 222 | 347 |
| letter E or greater | 180 | 384 | 165 | 342 |

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