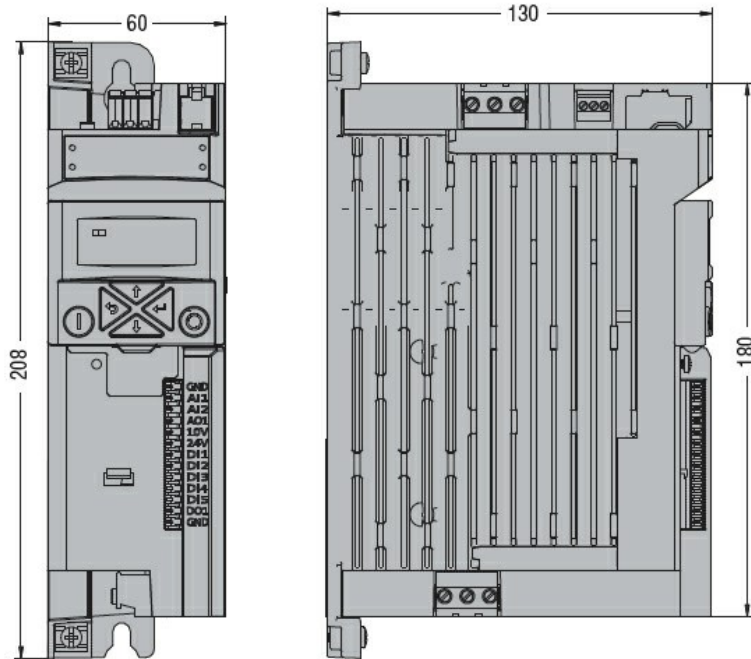




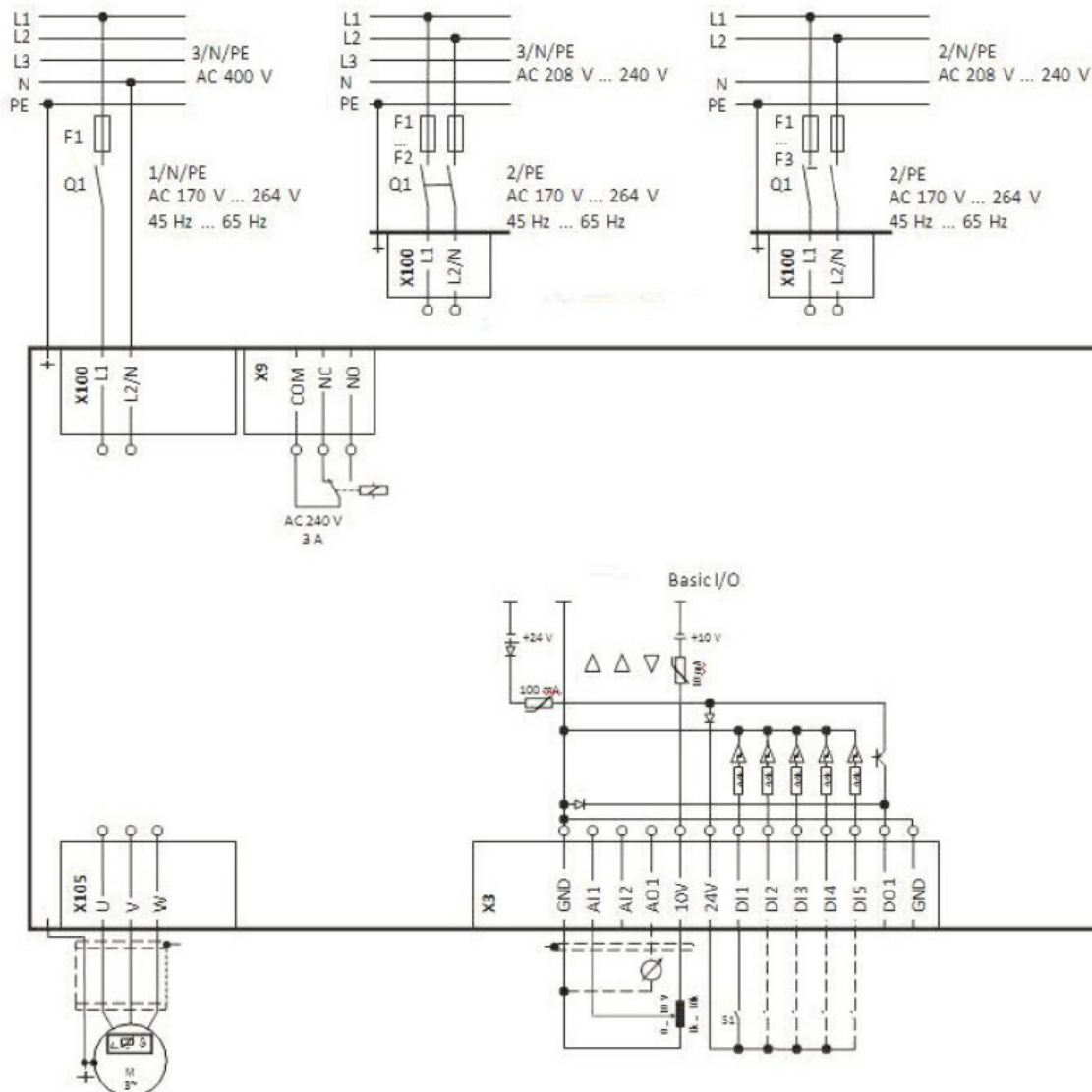
|                                         |  |                      |                                                                               |
|-----------------------------------------|--|----------------------|-------------------------------------------------------------------------------|
| Product designation                     |  |                      | Variable speed drives                                                         |
| Product type designation                |  |                      | VLA1                                                                          |
| General characteristics                 |  |                      |                                                                               |
| Rated power supply voltage              |  |                      | 200...240VAC<br>50/60Hz                                                       |
| Rated output voltage                    |  | VAC                  | Three-phase<br>0...240VAC 0-599Hz                                             |
| Rated output current                    |  | A                    | 4.2                                                                           |
| Rated output power                      |  | kW                   | 0.75                                                                          |
| Rated output power                      |  | HP                   | 1                                                                             |
| EMC filter                              |  |                      | Built-in EMC<br>suppressor cat.<br>C2                                         |
| Communication port                      |  |                      | None                                                                          |
| Technical features                      |  |                      |                                                                               |
| Input type                              |  |                      | Single-phase                                                                  |
| Rated mains voltage                     |  | VAC                  | 200...240                                                                     |
| Operating mains voltage range           |  | VAC                  | 170...264                                                                     |
| Rated mains frequency                   |  | Hz                   | 50/60                                                                         |
| Operating mains frequency range         |  | Hz                   | 45...65                                                                       |
| Rated mains current without mains choke |  |                      | 10                                                                            |
| Rated mains current with mains choke    |  |                      | 8.8                                                                           |
| Output type                             |  |                      | Three-phase                                                                   |
| Output voltage range                    |  | VAC                  | 0...240                                                                       |
| Output frequency range                  |  | Hz                   | 0...599                                                                       |
| Current overload                        |  | %/s                  | 150% for 60s,<br>200% for 3s                                                  |
| Power loss                              |  |                      | 33W                                                                           |
| Brake chopper                           |  |                      | No                                                                            |
| Switching frequency                     |  |                      | 2...16kHz                                                                     |
| Max motor cable length                  |  |                      |                                                                               |
| Shielded                                |  | Without EMC category | m 50                                                                          |
|                                         |  | Category C2          | m 20                                                                          |
| Functions                               |  |                      |                                                                               |
| Motor control modes                     |  |                      | V/f linear,<br>quadratic torque,<br>sensorless<br>vector control,<br>ECO mode |

|                                                |                                                                                                                                                                                                               |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Speed reference signals                        | External potentiometer<br>0...10kΩ Voltage signals: 0...10VDC Current signals: 0/4...20mA Buttons on front keyboard<br>Door-mount installation kit 15 preset speeds via digital inputs<br>Motor potentiometer |
| 3-wire control                                 | Yes                                                                                                                                                                                                           |
| S-shape curves                                 | Yes                                                                                                                                                                                                           |
| Slip compensation                              | Yes                                                                                                                                                                                                           |
| Flying restart                                 | Yes                                                                                                                                                                                                           |
| Access to DC bus                               | No                                                                                                                                                                                                            |
| 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          | No                                                                                                                                                                                                            |
| PTC probe input                                | No                                                                                                                                                                                                            |
| 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)                                                                                    |
| <b>Input and Output</b>                        |                                                                                                                                                                                                               |
| 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          |                       |                  |    | Analog input 1: configurable 0/2...10VDC, 0...5VDC, 0/4...20mA Analog input 2: configurable 0/2...10VDC or 0...5VDC |
| Number of analog output    | Nr.                   |                  |    | 1                                                                                                                   |
| Analog output type         |                       |                  |    | configurable as 0...10VDC, 0...5VDC, 2...10VDC, 0/4...20mA                                                          |
| <b>Ambient conditions</b>  |                       |                  |    |                                                                                                                     |
| Temperature                |                       |                  |    |                                                                                                                     |
|                            | Operating temperature |                  |    |                                                                                                                     |
|                            |                       | min              | °C | -10                                                                                                                 |
|                            |                       | max              | °C | +55                                                                                                                 |
|                            |                       | Current derating |    | 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               |    | 60 x 208 x 130                                                                                                      |
| Weight                     |                       | Kg               |    | 0.95                                                                                                                |
| <b>Dimensions</b>          |                       |                  |    |                                                                                                                     |



## Wiring diagrams



## Certifications and compliance

Compliance

CSA 22.2 No. 274

EN 61800-5-1

UL61800-5-1

Certificates

cULus

EAC

RCM

ETIM classification

ETIM 8.0

EC001857 -  
Frequency  
converter =< 1 kV