



### Main

|                           |                         |
|---------------------------|-------------------------|
| Range                     | VarPlus                 |
| Product name              | VarPlus Logic           |
| Device short name         | VPL12                   |
| Product or component type | Power factor controller |

### Complementary

|  |   |
|--|---|
| Number of step output contacts                         | 12  |
| [Us] rated supply voltage                              | 90...550 V AC<br><= 999 kV AC with external VT  |
| Measurement current                                    | 0...5 A   |
| Measurement voltage                                    | 90...550 V AC 50/60 Hz  |
| Operating mode   | Manual or automatic   |
| Number of quadrant operation for generator application | 4   |
| Device connection                                      | Communication protocol: Modbus interface: RS485   |
| Input function   | 1 dry contact (switch for cos phi 2.  |
| Colour code  | Front : dark grey (RAL 7016)  |
| Display type   | Backlit LCD   |
| Display size   | 56 x 25 mm  |
| Function available                                     | Automatic initialisation<br>Automatic detection<br>Manual programming<br>Advanced programming (expert)<br>Any step sequence   |
| Metering type  | Power factor and displacement PF (signed, four quadrant)<br>Total current harmonic distortion THD (I)<br>Power factor average over lifetime<br>Temperature maximum<br>Phase current I1, I2, I3 RMS on load<br>Active power P, P1, P2, P3 on load<br>Reactive power Q, Q1, Q2, Q3 on load<br>Apparent power S, S1, S2, S3 on load<br>Voltage U21, U32, U13, V1, V2, V3 on load |
| Type of measurement                                    | Ambient temperature inside the cubicle<br>Capacitor current overload Irms/I1<br>Cos φ   |

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

|                                |   |
|--------------------------------|---|
|                                | Operating time<br>Power factor<br>Individual voltage harmonic<br>Tan $\phi$   |
| Information displayed          | Individual step size in kVAr<br>Number of switching cycles per step<br>Remaining step capacity in %   |
| Data recording                 | 5 alarms  |
| Type of alarms                 | Step power loss (< 75 %) / Action: message and alarm contact + step blocked<br>Step faulty / Action: message and alarm contact + step blocked<br>High current (> 6 A CT) / Action: message and alarm contact<br>Hunting (unstable regulation) / Action: message and alarm contact + step blocked<br>Low current (< 15 mA CT) / Action: message and alarm contact<br>Capacitor current overload (Irms/I1) (> 130 % I1) / Action: message and alarm contact + step switched off<br>Overtemperature (50 °C) / Action: message and alarm contact + step switched off<br>Overtemperature (30 °C) / Action: fan switch<br>Overvoltage (+/- 10 %) / Action: message and alarm contact + control stopped<br>Total harmonic distortion (> 7 %) / Action: message and alarm contact + step switched off<br>Overcompensation / Action: message and alarm contact |
| Operational Hours alarm        | 100000 h without maintenance  |
| Operational counter alarm      | 65000 cycles without maintenance  |
| Input type                     | Current input CT...X/5 A and X/1 A<br>Insensitive to CT polarity<br>Insensitive to phase rotation polarity<br>Phase to neutral<br>Phase to phase  |
| Output type                    | Control relay : 0.2 A 110 V DC<br>Control relay : 1 A 48 V DC<br>Control relay : 2 A 400 V AC 50/60 Hz<br>Control relay : 1 A 24 V DC<br>Control relay : 5 A 250 V AC 50/60 Hz<br>Control relay : 5 A 120 V AC 50/60 Hz<br>Fan : 5 A 250 V AC 50/60 Hz<br>Fan : 1 A 48 V DC<br>Alarm relay : 5 A 250 V AC 50/60 Hz<br>Alarm relay : 1 A 48 V DC   |
| Maximum at the common terminal | 10 A  |
| Settings operating mode        | Automatic<br>Manual   |
| Type of setting                | Choice of stepping programs : linear<br>Step configuration programming : auto<br>Step configuration programming : fixed<br>Target cos phi : dual cos $\phi$<br>Choice of stepping programs : auto<br>Choice of stepping programs : LIFO<br>Delay between 2 successive switch on the same step : 5...1200 s<br>Step configuration programming : off<br>Target cos phi : 0.7 inductive...0.7 capacitive   |
| Measurement accuracy           | Voltage +/- 1 %<br>Current +/- 1 %<br>Frequency +/- 1 %<br>Energy (P,Q,S) +/- 2 %<br>Cos $\phi$ +/- 2 %<br>Total voltage harmonic distortion THD (U) +/- 2 %<br>Individual voltage harmonic +/- 3 %<br>Temperature +/- 3 °C   |
| Time delay range               | 1...6500 s for on reconnection<br>1...6500 s for on response  |
| Provided equipment             | User manual   |
| Mounting mode                  | Flush-mounted   |
| Mounting support               | 1...3 mm panel  |
| Mounting location              | In cabinet  |
| Cut-out dimensions             | 138 x 138 mm  |
| Height                         | 144 mm  |
| Width                          | 144 mm  |
| Depth                          | 58 mm   |

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|----------------|--------|
| Product weight | 0.6 kg |
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## Environment

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|---------------------------------------|---|
| Standards                             | EN 61010-1<br>IEC 61000-6-2<br>IEC 61000-6-4<br>UL 61010-1<br>IEC 61326-1 |
| Product certifications                | CE<br>EAC<br>NRTL<br>CNRTL  |
| IP degree of protection               | Rear face : IP20<br>Front face : IP41                                     |
| Operating altitude                    | <= 2000 m   |
| Ambient air temperature for operation | -20...60 °C   |
| Ambient air temperature for storage   | -40...85 °C   |

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