Product data sheet
Characteristics

VPL12N
Power Factor controller - VarPlus Logic - VPL 12

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
<= 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
Switch: 1 x dry contact

Colour code
Front: dark grey RAL 7016

Display type
Backlit LCD

Display size
56 x 25 mm

Function available
Manual programming
Automatic initialisation
Automatic detection
Advanced programming (expert)
Any step sequence

Metering type
Power factor and displacement PF (signed, four quadrant)
Total current harmonic distortion THD (I)
Power factor average over lifetime
Temperature maximum
Phase current I1, I2, I3 RMS on load
Active power P, P1, P2, P3 on load
Reactive power Q, Q1, Q2, Q3 on load
Apparent power S, S1, S2, S3 on load
Voltage U21, U32, U13, V1, V2, V3 on load

Type of measurement
Capacitor current overload Irms/I1
Individual voltage harmonic
Power factor

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

Oct 20, 2019
### Information displayed
- Number of switching cycles per step
- Individual step size in kVAr
- Remaining step capacity in %

### Type of alarms
- Step power loss (< 75 %) / Action: message and alarm contact + step blocked
- Step faulty / Action: message and alarm contact + step blocked
- High current (> 6 A CT) / Action: message and alarm contact
- Hunting (unstable regulation) / Action: message and alarm contact + step blocked
- Low current (< 15 mA CT) / Action: message and alarm contact
- Overcompensation / Action: message and alarm contact
- Capacitor current overload (Irms/I1) (> 130 % I1) / Action: message and alarm contact + step switched off
- Overtemperature (50 °C) / Action: message and alarm contact + step switched off
- Overvoltage (+/- 10 %) / Action: message and alarm contact + control stopped
- Total harmonic distortion (> 7 %) / Action: message and alarm contact + step switched off

### Data recording
- 5 alarms

### Operational Hours alarm
- 100000 h without maintenance

### Operational counter alarm
- 65000 cycles without maintenance

### Input type
- Phase to phase
- Phase to neutral
- Insensitive to CT polarity
- Insensitive to phase rotation polarity
- Current input CT...X/5 A and X/1 A

### Output type
- Control relay: 0.2 A 110 V DC
- Control relay: 1 A 48 V DC
- Control relay: 2 A 400 V AC 50/60 Hz
- Control relay: 1 A 24 V DC
- Control relay: 5 A 250 V AC 50/60 Hz
- Control relay: 5 A 120 V AC 50/60 Hz
- Fan: 5 A 250 V AC 50/60 Hz
- Fan: 1 A 48 V DC
- Alarm relay: 5 A 250 V AC 50/60 Hz
- Alarm relay: 1 A 48 V DC

### Maximum at the common terminal
- 10 A

### Settings operating mode
- Automatic
- Manual

### Type of setting
- Choice of stepping programs: auto
- Choice of stepping programs: LIFO
- Choice of stepping programs: linear
- Delay between 2 successive switch on the same step: 5...1200 s
- Step configuration programming: auto
- Step configuration programming: off
- Step configuration programming: fixed
- Target cos phi: 0.7 inductive...0.7 capacitive
- Target cos phi: dual cos φ

### Measurement accuracy
- Voltage +/- 1 %
- Current +/- 1 %
- Frequency +/- 1 %
- Energy (P,Q,S) +/- 2 %
- Cos φ +/- 2 %
- Total voltage harmonic distortion THD (U) +/- 2 %
- Individual voltage harmonic +/- 3 %
- Temperature +/- 3 °C

### Time delay range
- 1...6500 s (on reconnection)
- 1...6500 s (on response)

### Provided equipment
- User manual

### Mounting mode
- Flush-mounted

### Mounting support
- Panel - thickness: 1...3 mm

### Mounting location
- In cabinet

### Cut-out dimensions
- 138 x 138 mm

### Height
- 144 mm

### Width
- 144 mm

### Depth
- 58 mm
### Net weight
0.6 kg

### Environment

<table>
<thead>
<tr>
<th>Standards</th>
<th>IEC 61000-6-4</th>
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<td>UL 61010-1</td>
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<tr>
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<td>EN 61010-1</td>
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<td>IEC 61000-6-2</td>
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<td>IEC 61326-1</td>
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<table>
<thead>
<tr>
<th>Product certifications</th>
<th>EAC</th>
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<td>NRTL</td>
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<td>CE</td>
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<table>
<thead>
<tr>
<th>IP degree of protection</th>
<th>Front face: IP41</th>
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<tbody>
<tr>
<td></td>
<td>Rear face: IP20</td>
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<table>
<thead>
<tr>
<th>Operating altitude</th>
<th>&lt;= 2000 m</th>
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<tbody>
<tr>
<td>Ambient air temperature for operation</td>
<td>-20…60 °C</td>
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<tr>
<td>Ambient air temperature for storage</td>
<td>-40…85 °C</td>
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### Offer Sustainability

<table>
<thead>
<tr>
<th>REACh Regulation</th>
<th>REACh Declaration</th>
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<tbody>
<tr>
<td>REACh free of SVHC</td>
<td>Yes</td>
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<tr>
<td>EU RoHS Directive</td>
<td>Compliant</td>
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<tr>
<td></td>
<td>EU RoHS Declaration</td>
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| China RoHS Regulation   | China RoHS declaration |
|                        | Product out of China RoHS scope. Substance declaration for your information |

<table>
<thead>
<tr>
<th>WEEE</th>
<th>The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins</th>
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