

The Varlogic N controllers permanently measure the reactive power of the installation and control connection and disconnection of capacitor steps in order to obtain the required power factor.



Varlogic NR6/NR12



Varlogic NRC12

## Technical data

### ■ general data

- operating temperature: 0...60 °C
- storage temperature: -20° C...60 °C
- colour: RAL 7016
- standard:
  - EMC: IEC 61326
  - electrical: IEC/EN 61010-1.
- panel mounting
- mounting on 35 mm DIN rail (EN 50022)
- protection class in panel mounting:
  - front face: IP41
  - rear face: IP20.
- display:
  - NR6, NR12 type: backlighted screen 65 x 21 mm
  - NRC12 type: backlighted graphic screen 55 x 28 mm.
- languages: English, French, German, Portuguese, Spanish
- alarm contact
- temperature internal probe
- separate contact to control fan inside the power factor correction bank
- access to the history of alarm.

### ■ inputs

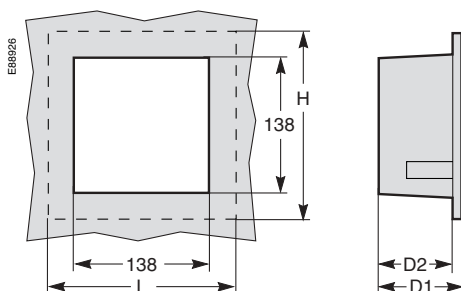
- phase to phase or phase to neutral connection
- insensitive to CT polarity
- insensitive to phase rotation polarity
- current input:
  - NR6, NR12 type: CT... X/5 A
  - NRC12 type: CT... X/5 A et X/1 A.

### ■ outputs

- potential free output contacts:
  - AC : 1 A/400 V, 2 A/250 V, 5 A/120 V
  - DC : 0,3 A/110 V, 0,6 A/60 V, 2 A/24 V.

### ■ settings and parameters

- target cos  $\varphi$  setting: 0,85 ind...0,9 cap
- possibility of a dual cos  $\varphi$  target (type NRC12)
- manual or automatic parameter setting of the power factor controller
- choice of different stepping programs:
  - linear
  - normal
  - circular
  - optimal.
- main step sequences:
  - 1.1.1.1.1.1
  - 1.2.2.2.2.2
  - 1.2.3.4.4.4
  - 1.1.2.2.2.2
  - 1.2.3.3.3.3
  - 1.2.4.4.4.4
  - 1.1.2.3.3.3
  - 1.2.4.8.8.8
- personalized sequences for NRC12 type
- delay between 2 successive switch on of a same step:
  - NR6, NR12 type: 10 ... 600 s
  - NRC12 type: 10 ... 900 s
- step configuration programming (fixed/auto/disconnected) (NRC12 type)
- 4 quadrant operation for generator application (NRC12 type)
- manual control for operating test.



Varlogic NR6, NR12, NRC12

## Dimensions

Varlogic N	Dimensions (mm)				Weight (kg)
	H	L	D1	D2	
Varlogic NR6/NR12	150	150	70	60	1
Varlogic NRC12	150	150	80	70	1

Type	Number of step output contacts	Supply voltage (V) network 50-60 Hz	Measuring voltage (V)	ref.
NR6	6	110-220/240-380/415	110-220/240-380/415	52448
NR12	12	110-220/240-380/415	110-220/240-380/415	52449
NRC12	12	110-220/240-380/415	110-220/240-380/415-690	52450

Varlogic N accessories	ref.
Communication RS485 Modbus set for NRC12	52451
Temperature external probe for NRC12 type. In addition to internal probe, allows measurement at the hottest point inside the capacitor bank. Better tuning of alarm and/or disconnection level.	52452

Information supplied	NR6/NR12	NRC12
Cos $\varphi$	■	■
Connected steps	■	■
Switching cycles and connected time counter	■	■
Step configuration (fixed step, auto, disconnected)		■
Step output status (capacitance loss monitoring)		■
Network technical data: load and reactive currents, voltage, powers (S, P, Q)	■	■
Ambient temperature inside the cubicle	■	■
Total voltage harmonic distortion THD (U)	■	■
Total current harmonic distortion THD (I)		■
Capacitor current overload $I_{rms}/I_1$		■
Voltage and current harmonic spectrum (orders 3, 5, 7, 11, 13)		■
History of alarms	■	■

Alarms	Threshold	Action	NR6/NR12	NRC12
Low power factor		message and alarm contact	■	■
Hunting (unstable regulation)		message and alarm contact disconnection (2)	■	■
Abnormal cos $\varphi$	< 0.5 ind or 0.8 cap	message and alarm contact	■	■
Overcompensation		message and alarm contact	■	■
Overcurrent	> 115 % $I_1$	message and alarm contact	■	■
Voltage low	< 80 % $U_0$ within 1 s	message and alarm contact disconnection (2)	■	■
Overvoltage	> 110 % $U_0$	message and alarm contact disconnection (2)	■	■
Overtemperature	$\theta \geq \theta_0$ ( $\theta_0 = 50$ °C max)(1)	message and alarm contact disconnection (2)	■	■
	$\theta \geq \theta_0 - 15$ °C	fan switch disconnection (2)	■	■
Total harmonic distortion	> 7 % (1)	message and alarm contact disconnection (2)	■	■
Capacitor current overload ( $I_{rms}/I_1$ )	> 1.5 (1)	message and alarm contact disconnection (2)		■
Capacitor capacitance loss	- 25 %	message and alarm contact disconnection (2)		■
Low current	< 2,5 %	message	■	■
High current	> 115 %	message	■	■
Under voltage	5 % $U_0$	message		■

$U_0$ : input voltage (measurement)

(1): alarm threshold values can be modified according to the installation

(2): capacitor steps are automatically reconnected after fault clearance and a safety delay