Products

Monitoring engineering

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QUALITÄTSMANAGEMENT SYSTEM

DQS Zertifiziert nach
DIN EN ISO 9001: 2000
Reg.-Nr.67542-01

DN3PW
3-Phases
Voltage monitoring with an adjustable reaction time

10ms – 100ms

Product information DN3PW

Safety regulations

- The unit may only be installed and operated by those who are qualified electrical engineers or have received sufficient training and are familiar with both these instructions and the current regulations for safety at work and accident prevention. Follow VDE, EN as well as local regulations especially as regards preventative measures.
- Transport, storage and operating conditions should all conform to EN 60068-2-6. See technical details.
- Any guarantee is void following unauthorised modifications.
- The unit should be cabinet mounted, otherwise dampness or dust could lead to functional impairment. Adequate fuse protection must be provided on all output contacts especially with capacitive and inductive loads.
- The unit must be disposed of properly when it reaches the end of it service life.
- The unit must be installed in closed cabinet
- The unit must be installed following the specification of VDE 0106 part 100 regarding the required distances.

Intended usage

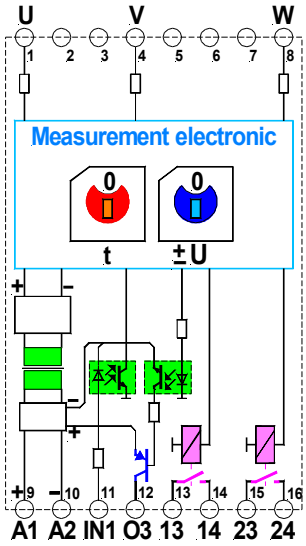
The 3-phase monitor DN3PW is used to control the 3-phases power supply net of a plant.
Testing base:
2006/95/EWG „Low voltage recommendation"
2004/108/EG „EMV-recommendation“EN 55011 +A1, EN 61000-6-2
DIN EN 60947-5-1

Unit description

The 3-phase monitor DN3PW is mounted in a 22,5mm housing, which can be clipped on a 35mm DIN Rail.
The unit is equipped with spring loaded terminals. The terminals are pluggable.

U, V und W: measuring inputs
3 x 400V AC

Block diagram



Galvanic isolation

IN1: Input for special function

A1/ A2: power supply/ 24V DC

O3: PNP output/ 1A

13, 14, 23, 24: outputs/ 1A

Functions Description:
The **DN3PW** constantly monitors the actual voltage of the 3-phases of a power net.
If the supply voltage of 24V DC is applied to terminals A1 and A2 , all three phases of the net must be present at the input terminals **U**, **V** and **W**. If this condition is met, all three LED indicators (**K1, POWER, K2**) will light.
After a delay of 3 seconds the output relay contacts **13, 14, 23, 24** will close and the semiconductor output O3 will switch on to 24VDC.
If during power on, one ore more of the three phases are missing, all three LED will flash .
If during operation one or more phases are dropping out, output O3 will switch off and the output relay contacts **13, 14, 23, 24** open with the adjusted off-delay reaction time. The LED's **K1** and **K2** will go dark.
The outputs will stay off for at least 500ms even, if all phases have returned earlier to their correct value. The LED **K2** will stay dark, indicating there was a phase drop. To reset the LED K2 the power supply of the unit must be disconnected for at least 1s.

Adjustment of off-delay reaction time
The reaction time will be adjusted in the unit. The value of the time can be adjusted between 10ms and 100ms.
This is possible via the red switch inside the unit. There are 16 switch positions.
In the switch position 0 the time is 10ms. The time increases with 6ms steps. Look at table.
Normally the unit is adjusted with step 1. Other adjustments are always possible.

Step	Reaction time	Step	Reaction time
0	10ms	8	58ms
1	16ms	9	64ms
2	22ms	A	70ms
3	28ms	B	76ms
4	34ms	C	82ms
5	40ms	D	88ms
6	46ms	E	94ms
7	52ms	F	100ms

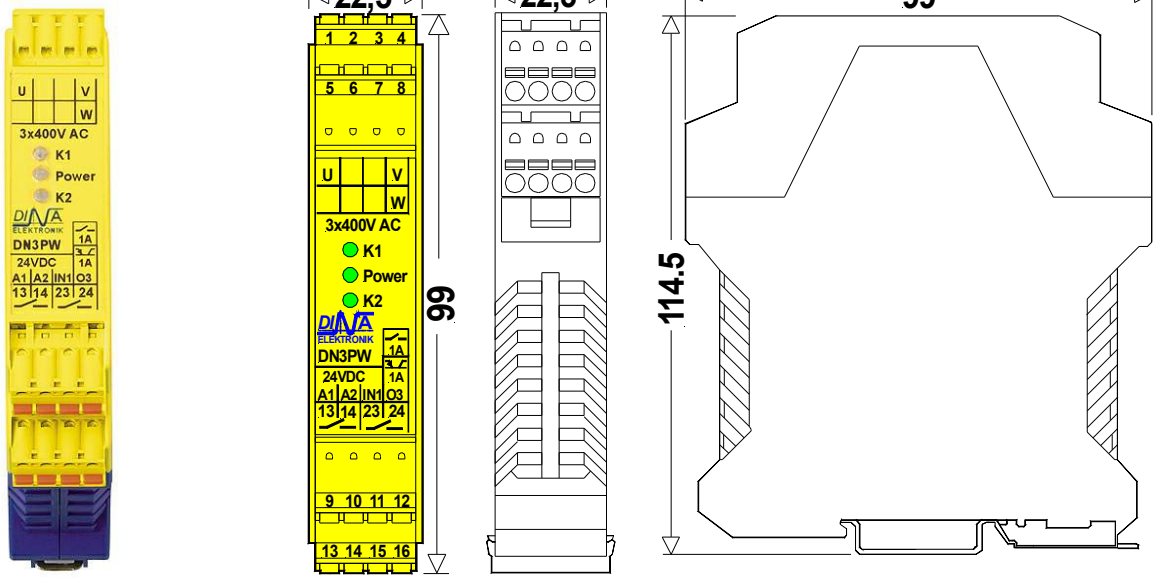
Product information DN3PW

Adjustment of the tolerance of the measurement voltage
The voltage tolerance will be adjusted in the unit.
This is possible via the blue switch inside the unit. There are 16 switch positions.
Voltage fluctuations of one or more phases within the tolerance cause no switch-off of the outputs.
Voltage fluctuations of one or more phases out of the tolerance cause switch-off of the outputs. Look at table.

Step	Tolerance	Step	Tolerance
0	-	8	ca. 76V
1	ca. 10V	9	ca. 85V
2	ca. 19V	A	ca. 95V
3	ca. 29V	B	ca. 105V
4	ca. 38V	C	ca. 115V
5	ca. 48V	D	ca. 124V
6	ca. 57V	E	ca. 133V
7	ca. 67V	F	ca. 143V

Important notice:
After the switch-on of the power supply the equipment learns the actual measurement voltage of the phases.
This act will be repeated every 6s.
Please avoid to use step 0. Normally the unit is adjusted with step 4. Other adjustments are always possible.

Dimensions



Technical data

Input data	
Operating voltage U_B	24V DC -15 +10%
Power consumption at U_B	2,4W
Range of inputs voltage at U, V, W	200V AC to 550V AC
Maximal current in U, V, W at 600V AC	0,2 mA each
Output data	
Minimal switch current of contacts 13-14, 23-24	10mA
Switching Capability of 13-14, 23-24	1A, 24V DC
Contact material	AgNi10
Contact current protection	5A fuse
Maximum switching cycle	360 cycles/h at max. switching current
Switching Capability of O3	1A, 24V DC
Reaction time	< 10ms
Surge voltage strength between measuring inputs and the other clamps	4KV, pollution degree 2
Enviroment data	
Operating temperature	-10 to +60°C DIN IEC 60068-2-3: 1986
Storage temperature	-40 to +85°C DIN IEC 60068-2-3: 1986
Vibration resistance in all 3 levels	Sine 10 – 55Hz, 0,35mm, 10 cykles, 1 Octave/min
On-time	100%
Isolation	DIN EN 50178, safe isolation
Protection class	
Only for installation in a closed cabinet with min. protection class	**IP 54**