

Evaluating analogue signals P1K




The P1K comparator is used to compare voltage signals with a reference value.

Features

- Response triggered when voltage exceeds the switching threshold
- Suitable for use with true power monitors
- Analogue input 0 ... 9.9 V
- Offset setting
- Digital setting
- Output signal can be either latching or non-latching
- Operates to normally energised or normally de-energised mode.

Approvals

	P1K
	●

Technical Details	P1K
Electrical data	
Supply voltage	AC: 24, 42, 48, 100, 110, 115, 120, 127, 230, 240 V
Tolerance	85 ... 110 %
Power consumption	Approx. 3.5 VA
Switching capability in accordance with EN 60947-4-1, 10/91	AC1: 240 V/5 A/1200 VA DC1: 24 V/5 A/250 W
Output contacts	2 auxiliary contacts (1 N/O + 1 N/C)
Contact fuse protection in accordance with EN 60947-5-1, 10/91	6 A quick or 4 A slow
Measuring circuit	
Response value	0 ... 9.9 VDC
Release value	$U_{on} -1 ... 30 \%$
Max. overload	+14.8 V (current flow 3 mA) - 12 V DC (current flow 3 mA)
Response delay	0.1 ... 3 s adjustable
Memory time offset	Min. 200 ms
Mechanical data	
Max. cable cross section of external conductor	2 x 2.5 mm ² Single-core or multi-core with crimp connector
Torque setting for connection terminals	1.2 Nm (screws)
Dimensions (H x W x D)	75 x 45 x 110 mm
Weight	300 g

Description

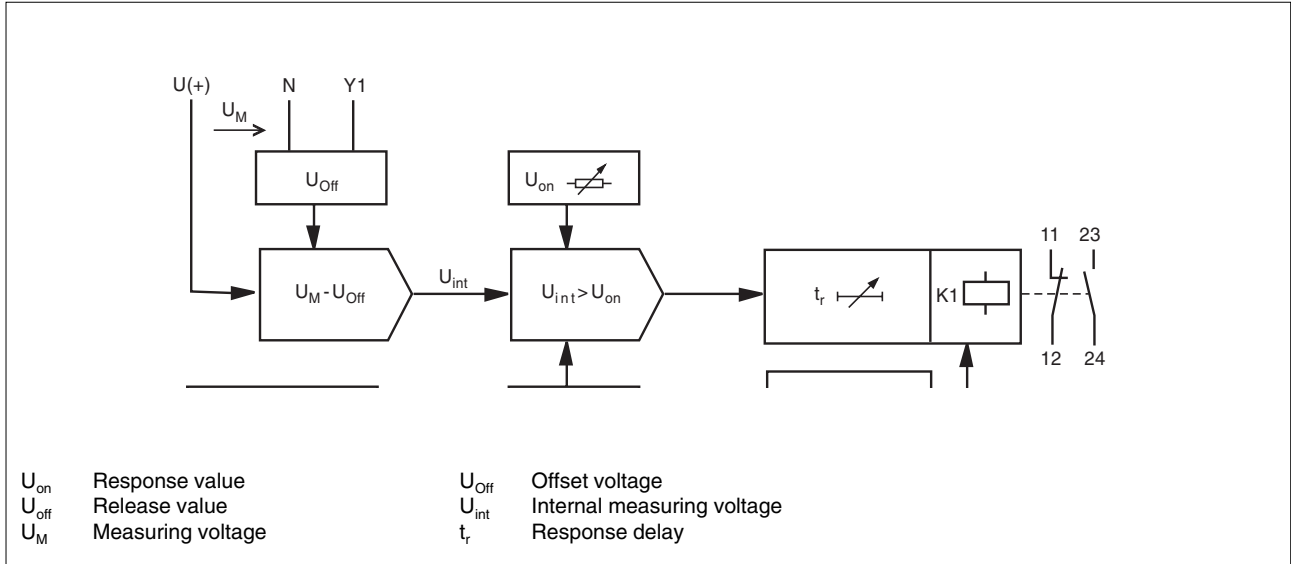
The P1K is enclosed in a P-75 housing. There are 10 versions available for AC operation. Features:

- Relay outputs: 2 auxiliary contacts (1 N/O and 1 N/C)
- Digitally adjustable response value from 0 ... 99 % of the nominal value
- Adjustable response delay
- Adjustable start-up suppression time
- Automatic or manual reset
- LED for status display
- Versions available for digital or analogue remote control operation

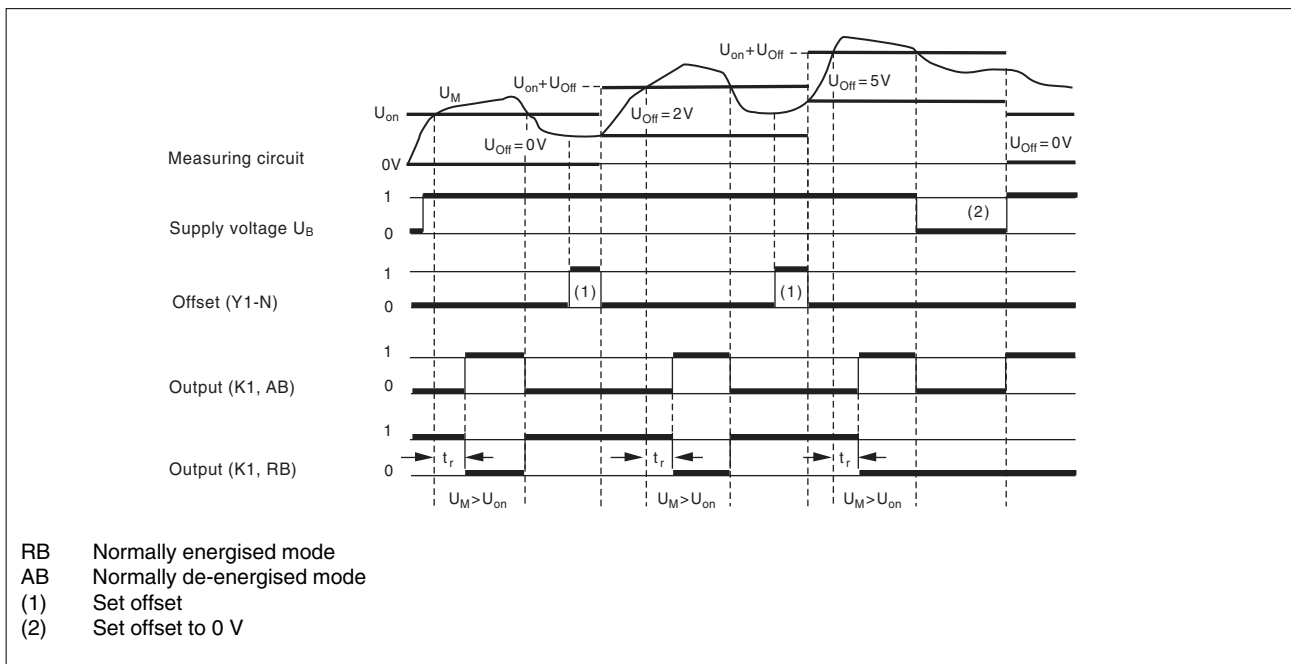
The P1K is used to compare true and set values. The output relay switches if the measuring voltage exceeds the response value. The release value is adjustable from 1 to 30 %. If the measuring voltage falls below the release value, the output relay returns to its original position. The offset function causes the unit to operate using differential evaluation. This offsets the response value. If the permitted voltage range is reached once more the device will start automatically if set to automatic reset. If manual reset is used, the supply voltage must be interrupted using an external reset button.

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Block diagram

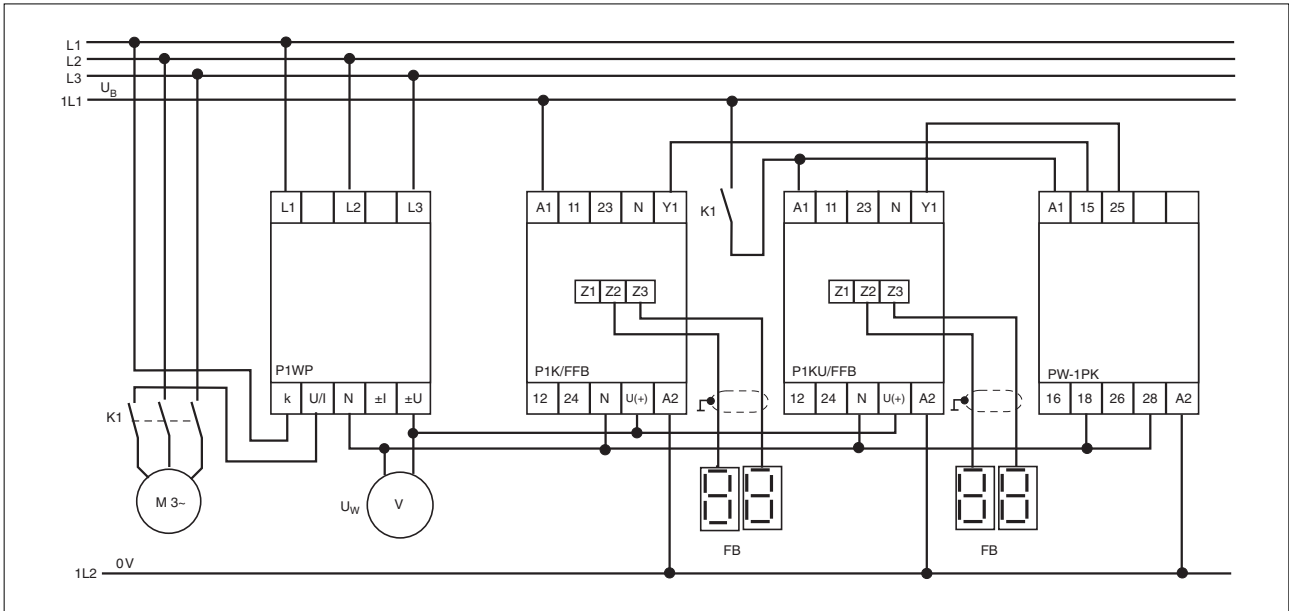


Timing diagram



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Connection example



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General Data

Unless stated otherwise in the technical details for the specific unit.

Electrical data

AC frequency range	50 ... 60 Hz
DC residual ripple	160 %
Contact material	AgCdO
Continuous duty	100 %

Environmental data

EMC	EN 50 081-1, 01/92; EN 50.082-2, 03/95
Vibration in accordance with EN 60068-2-6, 04/95	Frequency: 10 ... 55 Hz, Amplitude: 0.35 mm
Climatic suitability	IEC 60068-2-3, 1969
Airgap creepage	DIN VDE 0110-1, 04/97
Ambient temperature	-10 ... +55 °C
Storage temperature	-40 ... +85 °C

Mechanical data

Torque setting for connection terminals	0.6 Nm (screws)
Mounting position	Any
Housing material	Thermoplastic Noryl SE 100
Protection types	Mounting: IP 54 Housing: IP 40 Terminals: IP 20

Order references

Order references key

U_B Supply voltage
 R_i Internal resistance
Remote c. Remote control

Type	U_B	R_i	Order no.
P1K	110 VAC	6.3 k Ω	490 230
P1K	120 VAC	6.3 k Ω	490 240
P1K	230 VAC	250 k Ω	490 251
P1K	230 VAC	6.3 k Ω	490 250
P1K	240 VAC	6.3 k Ω	490 255
P1K	24 VAC	6.3 k Ω	490 200
P1K	42 VAC	6.3 k Ω	490 210

Type	U_B	R_i	Remote control	Order no.
P1K-FFB	24 VAC	6.3 k Ω	digital	490 300
P1K-FFB	115 VAC	6.3 k Ω	digital	490 335
P1K-FFB	230 VAC	6.3 k Ω	digital	490 350
FB decoding switch 2 dec P1U (Remote control for P1K digital)				209 470
P1K-FFB	110 V AC	10 k Ω	analogue	490 338
P1K-FFB	230 VAC	10 k Ω	analogue	490 339
FB F11 (remote control for P1K analogue)				326 903