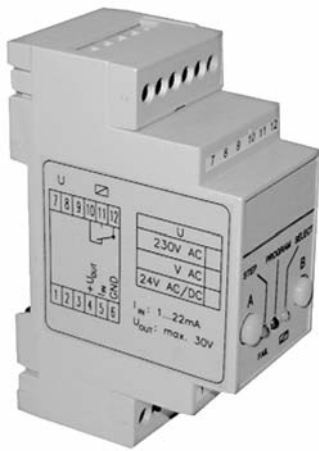


# MULTIFUNCTION LIMIT SWITCH PKK

251



- Galvanic isolation
- Intrinsically safe version
- 4... 20 mA input
- Relay output
- Power supply for transmitter
- Programmable parameters
- Rail mounted version
- Cable state monitoring

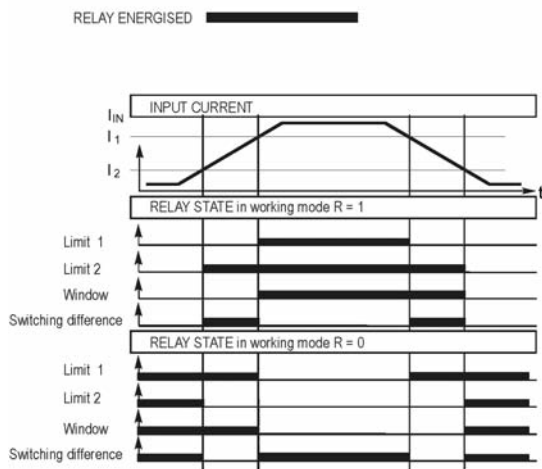
## GENERALITIES

PKK-312 series is a 4 ... 20 mA current controlled limit switch featuring galvanic isolation also available as an intrinsically safe unit. The value of the input signal will be compared in the unit with the set (teached) value and the state of the galvanically isolated relay changes in accordance with the comparison mode programmed. The double throw output relay can be programmed for the following functions:

- Limit switch (high or low fail safe)
- ON-OFF control with selectable switching difference.
- Window comparison operation mode with energised or de-energised relay state.
- Monitoring of discontinuity or short-circuit of the cable.

Instead of the 4 ... 20 mA current a dry contact can also be connected to the input. The state of this contact will be copied and the output signal will be galvanically isolated. The circuitry incorporated in the PKK-312 enables delayed switching, a switching delay of 0.1, 1, 2, and 5 can be selected. The PKK-312-8 Ex is a special version, engineered to co-operate with Ex rated vibrating fork level switch, as an intrinsically safe power supply and amplifier unit.

## RELAY STATE DIAGRAM



Relay operating modes can be programmed by the press buttons on the front panel taking into consideration the indications of the bi-colour LEDs. One of the most important parameters is the operating mode of the relay „R“. If R = 1 the output relay will be energised when the input current is over the value set by teaching. If R = 0 the output relay will be de-energised when the current value is over the value set by teaching. By the help of this parameter the characteristic (normal or inverse) of the ON - OFF control can be decided e.g. depending on the need for emptying or filling in connection with level control as well as heating or cooling control if used for temperature control.

## ORDER CODE

Type	Code	
230 V AC	251 224	1
110 V AC (on request)	-	2
24 V AC (on request)	-	3
24 V AC / DC	251 227	4
230 V AC Ex	251 228	5
110 V AC Ex (on request)	-	6
24 V AC / DC Ex	251 230	7
24 V AC / DC Ex **	251 231	8
24 V AC Ex (on request)	-	9

PKK - 312   - Ex\*

\* Ex models should be marked with Ex

\*\* For DC powered, 2 wire:  
**NIVOSWITCH Ex** vibrating fork

← APPROVAL PENDING

**BAMO MESURES**

22, Rue de la Voie des Bans - Z.I. de la Gare - 95100 ARGENTEUIL  
Tél : (+33) 01 30 25 83 20 - Web : [www.bamo.fr](http://www.bamo.fr)  
Fax : (+33) 01 34 10 16 05 - E-mail : [info@bamo.fr](mailto:info@bamo.fr)

**MULTIFUNCTION  
LIMIT SWITCH  
PKK**

08-04-2010

251 11 02 B

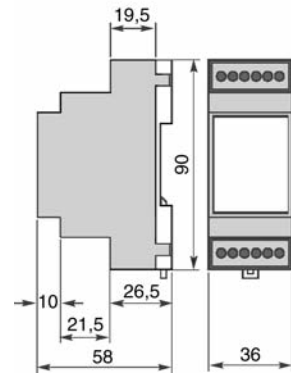
**RE**

**251-02/3**

**GENERAL DATA**

Nominal input current range	1...22 mA	
Accuracy of switching level/threshold level	± 0,1 mA	
Discontinuity threshold/Lower value fault current	3,7 mA	
Short circuit threshold/Upper value fault current	22 mA	
Input impedance	10 Ω	
Input overload capability	100 mA (permanent)	
Damping	0.1 s - 1 s - 2 s - 5 s (selectable)	
Relay	Output	SPDT (1)
	Rating	250 V AC, 8 A, AC 1
	Insulation strength	4000 V 50 Hz
	Electrical / Mechanical life time	10 <sup>5</sup> / 2 x 10 <sup>6</sup> switching
Electrical connection	max. 2,5 mm <sup>2</sup> twisted or max. 4 mm <sup>2</sup>	
Mechanical connection	DIN EN 50022-35 rail mounted	
Ingress protection	IP 20	
Ambient temperature	- 10 °C ... + 55 °C	
Mass	0,210 kg	

**DIMENSIONS**



**SPECIAL DATA**

Ex TYPE	PKK-312-5 Ex	PKK-312-6 Ex	PKK-312-9 Ex	PKK-312-7 Ex	PKK-312-8 Ex
Power supply range	230 V AC ±10 % 50...60 Hz	110 V AC ±10 % 50...60 Hz	24 V AC ±10 % 50...60 Hz	24 V AC ±10 % 50...60 Hz 24 V DC ±15 %	
Power consumption	< 2,5 V A			< 2,5 V A / < 2,5 W	
Switching levels	2 values in the range of 1...22 mA				10,5 mA 12,5 mA
Ex protection mark	II (1) G [EEx ia] IIB			II (1) G [EEx ia] IIC	
Intrinsically safe maximum values	U <sub>0</sub> < 28,4 V ; I <sub>0</sub> < 140 mA ; P <sub>0</sub> < 1,1 W ; L <sub>0</sub> < 6 mH ; C <sub>0</sub> < 50 nF			U <sub>0</sub> < 28,4 V ; I <sub>0</sub> < 80 mA ; P <sub>0</sub> < 0,6 W ; L <sub>0</sub> < 4 mH ; C <sub>0</sub> < 50 nF	
Output load capability	I <sub>T</sub> = 22 mA when U <sub>OUT</sub> = 12 V			I <sub>T</sub> = 22 mA when U <sub>OUT</sub> = 15 V	
Protection class	Class II			Class III	

Standard type	PKK-312-1	PKK-312-2	PKK-312-3	PKK-312-4
Power supply range	230 V AC ±10 % 50...60 Hz	110 V AC ±10 % 50...60 Hz	24 V AC ±10 % 50...60 Hz	24 V AC ±10 % 50...60 Hz 24 V DC ±15 %
Power consumption	< 2,7 V A			< 2,5 W
Switching levels	2 values in the range of 1...22 mA			
Output load capability	U <sub>0</sub> = 30 V I <sub>MAX</sub> = 70 mA U <sub>OUT min</sub> = 16 V			U <sub>0</sub> = 24V I <sub>MAX</sub> = 80 mA U <sub>OUT min</sub> = 23 V
Protection class	Class II			Class III

**WIRING**

