

Thank you for choosing NIVELCO product.
We are sure that you will be satisfied throughout its use.

UNICONT

PKK-312
 CURRENT CONTROLLED SWITCH
 User's manual



Manufacturer:
NIVELCO Process Control Co.
 H-1043 Budapest, Dugonics u. 11.
 Phone: (36-1) 889-0100, Fax: (36-1) 889-0200
 E-mail: sales@nivelco.com www.nivelco.com

1. APPLICATION

The **UNICONT PKK-312-□** series are 4-20 mA current controlled limit switches. The relay output of the units switch at the current limit values (taught to the unit), depending on the limits, switching difference or window comparator modes selected by programming. Error status indication can be programmed that the relay gets energised or de-energised when detecting any failure. Failure may be represented by discontinuity of cable / lower value fault current or short circuit / upper value error current.

The unit is suitable for powering all NIVELCO manufactured 2-wire (4-20 mA) transmitters. Some models of this series meet the requirements of intrinsically safe operation.

UNICONT PKK-312-8 Ex unit is able without any further programming to monitor the DC powered, 2-wire NIVOSWITCH Ex type vibrating fork's output current changes between the freely vibrating and the immersed states.

2. TECHNICAL DATA

2.1 GENERAL DATA

TYPE	PKK-312-□
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	maximum 100 mA (permanent)
Damping	0.1 s; 1 s; 2 s; 5 s selectable
Relay	– Output
	– Rating
	– Insulation strength
	– Electrical / Mechanical life time
Electrical connection	max. 2.5 mm ² twisted or maximum 4 mm ² single cable
Mechanical connection	EN 60715 rail mounted
Ingress protection	IP 20
Mass	≈ 0.21 kg

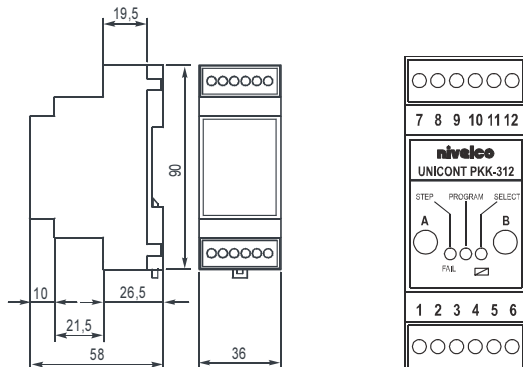
2.2 SPECIAL DATA

TYPE	EX APPROVED MODELS				ORDINARY MODELS			
	PKK-312-5 Ex	PKK-312-6 Ex	PKK-312-7 Ex	PKK-312-8 Ex	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 DC ±15%		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 VA		< 2,5 VA	< 2,5 W	< 2,7 VA		<2,5 W	
Safety maximum voltage	Um=253 V AC				-			
Switching levels	2 values in the range of 1 ... 22 mA			10,5 mA; 12,5 mA	2 values in the range of 1 ... 22 mA			
Ex protection mark	 II (1) G [Ex ia Ga] IIB  II (1) D[Ex ia Da] IIIC		 II (1) G [Ex ia Ga] IIC  II (1) D[Ex ia Da] IIIC		-			
Intrinsically safe maximum values	U ₀ < 28,4 V; I ₀ < 140 mA; P ₀ < 1,1 W; L ₀ < 6 mH; C ₀ < 50 nF		U ₀ < 28,4 V; I ₀ <80 mA; P ₀ < 0,6 W L ₀ < 4 mH; C ₀ < 50 nF		-			
Output load capability	I _T = 22 mA when U _{OUT} ≈ 12 V		I _T =22 mA when U _{OUT} ≈ 15 V	-	U ₀ = 30 V I _{MAX} = 70 mA U _{OUT min} = 16 V			U ₀ =24 V I _{MAX} = 80 mA U _{OUT min} = 23 V
Protection class	Class II		Class III		Class II			Class III
Ambient temp.	-25 °C ... +55 °C				-25 °C ... +55 °C			

2.3 ACCESSORIES

- User's Manual
- Warranty Card
- Declaration of Conformity

2.4 DIMENSIONS



2.5 ORDER CODE

P K K - 3 1 2 - □ Ex*

POWERING / EX	CODE
230 V AC	1
110 V AC	2
24 V AC	3
24 V AC / DC	4
230 V AC Ex	5
110 V AC Ex	6
24 V AC / DC Ex	7
24 V AC / DC Ex	8**

* The order code of an Ex version should end in 'Ex'

** For DC powered, 2-wire **NIVOSWITCH Ex** vibrating fork of NIVELCO

3. INSTALLATION

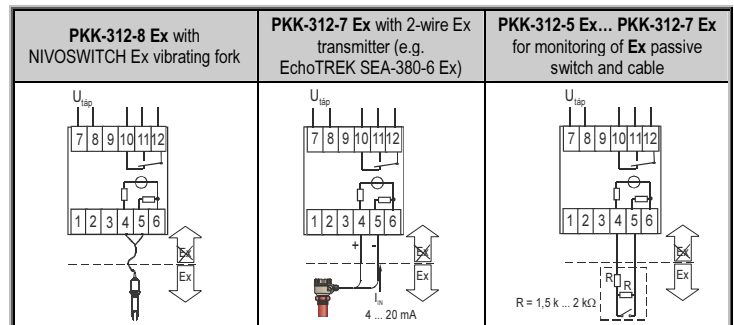
UNICONT PKK-312-□ should be mounted on EN 60715 rail.

NOTE!

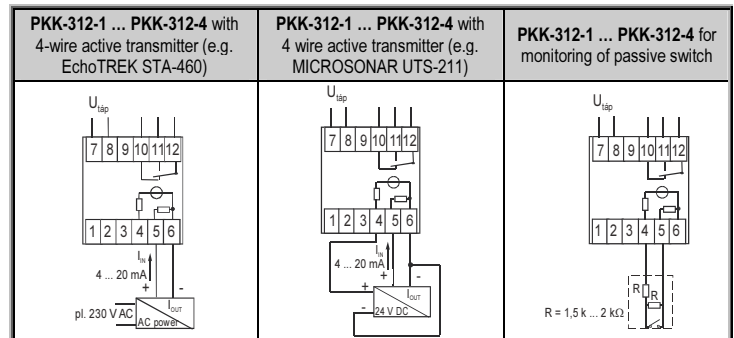
Prior to the installation make sure that the input current values can be provided by the loop of the application. If not, teaching of the current values has to be carried out before installation and wiring. (See Point 5 "Teaching current value of tripping point")

4. WIRING

4.1 EX MODELS



4.2 ORDINARY MODELS



5. INSTALLATION AND SETTING UP

After 3 s from power up the unit begins to work with the signals as per table of WORKING STATUS.

WORKING STATUS		
LED	Indication	Interpretation
⊠ (SELECT)	GREEN	Relay energised R=1
	RED	Relay de-energised R=0
	SIMULTANEOUS RED BLINKING OF BOTH LED	Memory failure, Relay state sustained
FAIL (STEP)	GREEN	No cable fault/No fault current. No cable monitoring
	RED	Cable fault, or, fault current

