



Description

Revolution counter **RPM-APIN** has two NPN proximity sensors for measuring turns (1÷59.999 turns) and detecting rotation direction. It has one input for tachogenerator's signal (3÷60VAC) but its rotation direction can not be detected. RPM-APIN has two relays for rotation commands and one relay for reverse rotation detection. Three LEDs show the status of the relays.

The number of shaft's teeth and the set points of the relays can be adjusted through parameters. The set points refer to the number of turns over which the relays are activated. RPM-APIN can be connected to PC through RS485 (ModBus) network for monitoring indications and relay's status. Also it is suitable for severe vibration conditions (tested in all axis for endurance 30Hz, amplitude 40m/s² for 120min), e.g. on diesel engines, air compressors, etc.



Managing the parameters

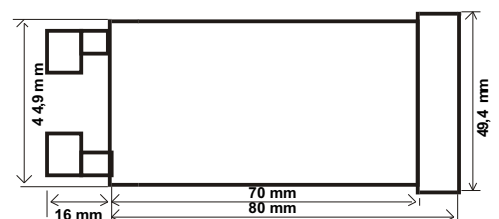
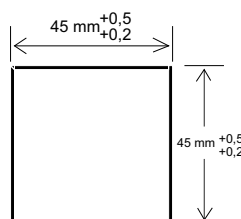
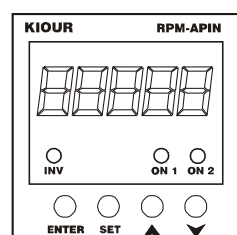
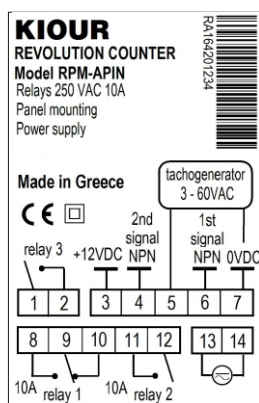
Password of device: The access and the inspection of parameters value is permitted. To change the parameters value enter the value **22** in the parameter **Cod**. By pressing **[ENTER]** the first parameter is displayed, **Cod**. With the arrows scroll into the parameters menu. By pressing **[SET]** the parameter's value is displayed and the unit's display is flashing. With the arrows set the unit's value from 0 to 9. By pressing **[SET]** the dozen's display is flashing and with the arrows set this value from 0 to 9. All the digits are set with the same way as described. By pressing **[ENTER]** the parameter's name is displayed. By pressing **[ENTER]** again exit the parameter's menu.

Parameters table

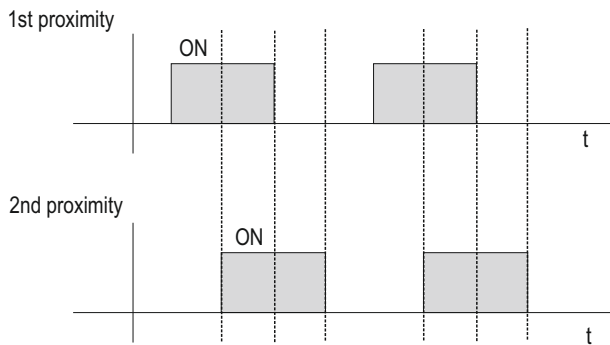
		description	min	max	def	UOM
1	Cod	code = "22" allows access to all parameters	0	255	0	
2	too	number of shaft's teeth selection	1	59.999	1	
3	r1	number of turns for set point of relay 1	1	59.999	100	
4	r2	number of turns for set point of relay 2	1	59.999	1000	
5	rAL	out of order				
6	rAH	out of order				
7	PrS	If PrS=1 , the status of the proximities is displayed with dots. The status of the 1st proximity is displayed in the unit's digit dot and the status of the 2nd proximity is displayed in the hundred's digit dot. If PrS=0 , the dots are not displayed.	0	1	0	
8	d1	out of order				
9	d2	out of order				
10	U 1	out of order				
11	U 2	out of order				
12	U 3	out of order				
13	U 4	out of order				
14	tir	response time of the device in network mode for monitoring	20	70	20	msec
15	Add	address of the device in network mode	0	250	0	

		alarms
1	PF 1	1st proximity's connection failed or tachogenerator's connection failed
2	PF 2	2nd proximity's connection failed

Diagram connections - dimensions



Operation and placement of proximity sensors



Both proximities must be placed so as to read the metal object with a difference of 90° . By adjusting the parameter **PrS**, the ON status of the proximity is displayed in order to help us with their set up. If the rotation indication is not the desired one, we toggle the signal connection of the proximities.

If the revolution counter starts counting and suddenly turns to zero, this indicates that the activation frequency of the proximity is higher than its operation frequency. Then the solutions are:

1. replace the proximity with a higher operation frequency
2. reposition the proximity so as to read in smaller perimeter
3. increase the metallic surface which the proximity reads

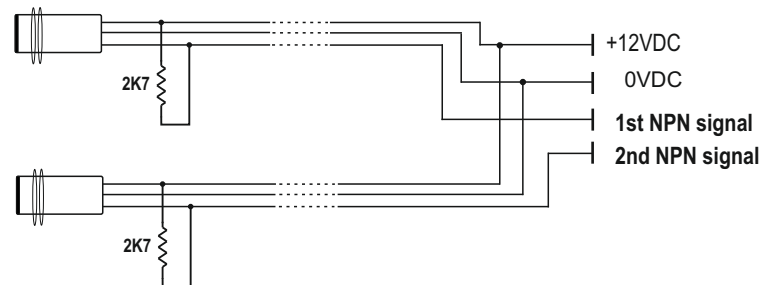
Set up the proximities

To operate the proximities and detect the cut line, add a 2K7 resistor close to the proximity sensor connecting the +12VDC line with the signal line (see the sketch on the right).

When the cut line is detected either on the proximity's signal or on the tachogenerator's signal, a visual alarm indication starts flashing (see the alarm's table). The alarm is automatically deactivated when connectivity is re-established.

In case the 2nd proximity sensor that detects the reverse rotation is not required, the proximity's signal should be short circuit to +12VDC (terminal blocks 4-3).

When tachogenerator's signal is connected, both proximity sensors **should be plugged off** and the 2nd proximity's signal should be short circuit to +12VDC (terminal blocks 4-3).

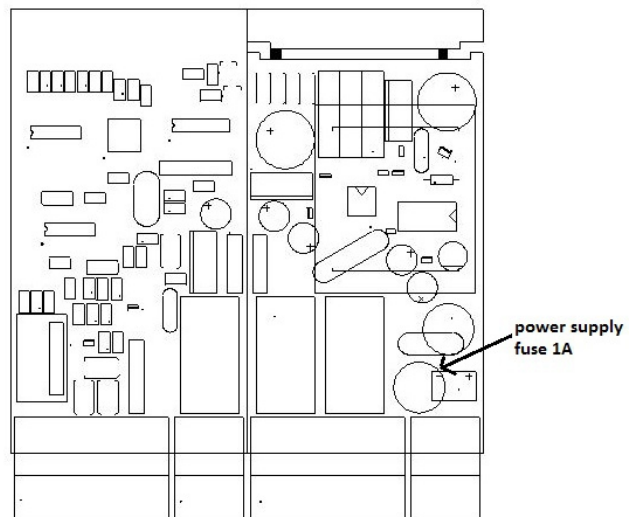


Technical specifications

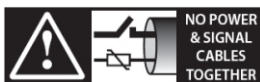
Power supply: 230VAC $\pm 10\%$ 50/60Hz or 24VAC $\pm 10\%$ or 24VDC $+30\% / -10\%$
 Maximum power consumption: 3W
 Internal power supply fast blow fuse: 1A
 Suitable for severe vibration conditions (tested in all axis for endurance 30Hz, amplitude 40m/s^2 for 120min), e.g. on diesel engines, air compressors, etc.
 Two inputs for NPN proximities (three cables) with voltage output +12VDC
 Accuracy: $0.5\% \pm 1$ digit
 Three internal relays 250VAC 10 A resistive load
 Operating temperature: -15°C to $+70^\circ\text{C}$
 Storage temperature: -20°C to $+80^\circ\text{C}$
 The device is mounted through panel hole with dimensions 45x45mm
 Connection with plug in terminal blocks
 IP protection rating: IP54 front side. To be installed in an enclosure which provides protection against solid foreign objects and liquids at least IP54.
 Equipment class: Class II
 Internal audible alarm is not included (buzzer)

Internal fuse

Internal power supply fast blow fuse: 1A



ATTENTION to prevent electrostatic discharges at the side slots of the device and insertion of sharp objects



ATTENTION: separate the signal cables from the power supply cables to prevent electromagnetic disorders. Signal cables must never be in the same pipe with the power supply cables.



Read and keep these instructions. The device is under a two year good operation guarantee. The guarantee is valid provided the manual instructions have been applied. The device check and service must be performed by an authorized technician. The guarantee covers only the replacement or the service of the device.