



**P44-RPM2**  
**RPM Monitor (2 relay)**

10-9999RPM  
Operating instructions  
and  
Guarantee Certificate

[www.icon-electronics.com](http://www.icon-electronics.com)

**Description:**

This device is used to monitor pulses received per minute (RPM).





A 10V – 24V DC supply is incorporated for use with **NPN** proximity / photo switches. A pre-settable pre-scaler of 1 - 10 is included in case a single RPM is represented by up to 10 pulses. With this function, the device will read the “pre scale” amount of pulses before calculating the RPM value. The two relays are controller via individual Upper, Lower and Hysteresis settings.

**Operation:**

The relay/s remains energised while the RPM value is below the upper, and above the lower set point. If the RPM drops below, or rises above the set point values, the relay will de-energise until the RPM rises or drops by the adjustable hysteresis amount. The display will indicate Hi or Lo during fault conditions (this may be disabled). If the RPM value is below 10, “Er.Lo” is displayed, and if the RPM is above 9999, “Er.Hi” is displayed. The start-up timer may be used to allow the RPM value to rise to the correct level before monitoring starts. The reaction delay timer is used in case fault conditions may be tolerated for short periods of time. If the fault is removed before this timer runs out, the relay remains energised. If the latch pins are shorted, the relay will remain de-energised until the short is removed. See description of the different functions for further details. The settings may be locked or reduced to stop unauthorized personnel from making changes.

**Menu functionality:**

Press the menu “” button repeatedly until the desired setting is reached.

The “” and “” buttons are used to change the value. “” will display the next menu item. To exit the menu hold “” button for 3 seconds.

**Adjustable parameters:**

·Upper limit for relay 1 “HI 1” (default: disabled)

The relay de-energises if the RPM rises above this value. It will re-energise if the RPM drops below this value by the hysteresis amount. (if the latch pins are NOT shorted)

·Lower limit for relay 1 “Lo 1” (default: disabled)

The relay de-energises if the RPM drops below this value. It will re-energise if the RPM rises above this value by the hysteresis amount. (if the latch pins are NOT shorted)

·Hysteresis for relay 1 (“HyS.1”) (default:1 RPM)

Once the relay has de-energised, the RPM must change in the opposite direction by this amount (of RPM) before it will re-energise.

·Upper limit for relay 2 “HI 2” (default: disabled)

·Lower limit for relay 2 “Lo 2” (default: disabled)

·Hysteresis for relay 2 (“HyS.2”) (default:1 RPM)

·Start-up delay (default 1.0 sec)

At start-up, the relay is energised. Monitoring will only start once this amount of time has lapsed.

·Reaction Delay (default 0 sec)

Once monitoring has started, fault conditions will be tolerated for this period of time before the relay is de-energised.

·Relay fault Indication (default: on)

Use this setting to disable the relay fault messages (“r1.Hi”, “r1.Lo”, “r2.Hi”, “r2.Lo”, “-r1-”, “-r2-”) from being displayed.

·Display 2 indication (default: Relay 1 HI parameter)

Set the parameter to be displayed on the lower display. “HI 1”, “Lo 1” or off.

·Pre scale (“P.SCL”) (default:1)

This value must correspond to the number of pulses received per RPM.

·Reset (“rEst)

By selecting this option, all values are reset to default.

**Example:**

Set the device to count 3 pulses per RPM. De-energise relay 1 if the RPM rises above 300, or drops below 100. Set the Hysteresis to 10 RPM. Press "⏪" repeatedly to display "HI 1". Now use the ▲&▼ to adjust the value to 300. Press "⏪" to display "Lo 1". Now use the ▲&▼ to adjust the value to 100. Press "⏪" to display "HYS.1". Now use the ▲&▼ to adjust the value to 10. Press "⏪" to display "P.SCL". Now use the ▲&▼ to adjust the value to 3. Press and hold "⏪" to exit the menu.

**Notes:**

- Certain settings are reset to default when the device is re-configured. Before commissioning, re-check all settings to ensure they are correct.
- The relay(s) will not energise if the input voltage is below the operating voltage.

**Menu options:**

Exit the menu before making the following adjustments.

**1. Lock / unlock parameters: (default: unlocked)**

Press "BACK"(▼), then "ENTER"(⏩) and hold the 2 buttons until the desired option is displayed. The display cycles between "Loc" (no changes allowed) & "u.Loc" (parameters may be adjusted)

**2. Full / reduced menu (default: Full)**

Press "SELECT" (▲), then "ENTER" (⏩) and hold the 2 buttons until the desired option is displayed. The display cycles between "rEdu" (limited menu) & "Full" (all parameters are accessible)

**3. Access Code: (default: no code)**

Once options 1 & 2 are set as required, Press "BACK" (▼) and "SELECT" (▲) simultaneously until "CODE" is displayed. Now use the "+" (▲) & "-" (▼) to enter a code.

(1-9999) Once a code is entered, access to options 1 & 2 is not permitted. To clear the code, re-enter the same code again. If the code is forgotten. Press and hold "+" (▲) & "-" (▼) until "CODE" is displayed while re-applying power to the device. To exit without setting a code, press "Enter" while "CodE" or "diSA" is displayed.

**Specifications:**

Input RPM: 10 - 9999  
 Pre-scale: 1-10 pulses  
 Accuracy: ±.05%  
 Display Resolution: 1 Rpm  
 Input voltage: ±15% of rated voltage  
 Response time: RPM 10 to 60: 2 to 12 Sec ,  
 RPM 60 to 120: 1 to 2 sec,  
 RPM > 120: 1 sec

Pulse source type: Normally Open 3-wire **NPN proximity switch**

**12 Month guarantee:**

Our product is guaranteed for a 12 (twelve) month period from date of purchase. This guarantee is valid for defects arising from failure during specified conditions. This guarantee does not cover damage due to abuse, tampering or improper installation. Our company does not accept liability for any consequential damage or loss arising from product malfunction. Should this product prove to be defective, kindly return it for inspection or repair. For further information contact your nearest distributor.

**Relay specifications:**

Contact rating: 10A 250 VAC 2500VA (Resistive)  
 Mechanical life: 30 million operations  
 Electrical life: 250 000 operations (at maximum load)

