Icon Electronics

D4-RPM1 / P49-RPM1
RPM monitor

Operating instructions
and
Guarantee Certificate

www.icon-electronics.com

Description:

This device is used to monitor RPM. (pulses received per minute). 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 relay remains energised while the RPM value is below the upper set point, 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 mount. The display will indicate "Hi" or "Lo" during fault conditions. 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 parameters may be locked or reduced to stop unauthorized personnel from making changes.

Menu operation:

Press the "MENU" button repeatedly until the desired setting is reached, press "SELECT" to display the current value of the selected setting, or sub menu (if applicable). The "+" and "-" buttons are used to change the value. "ENTER" will return the device to the menu. The "BACK" button will exit the menu.

Adjustable parameters:

- Upper limit "HI " (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 "Lo " (default: disabled)
  The relay de-energises if the RPM drops below this value. It will re-energise if the RPM rises below this value by the hysteresis amount.
  (if the latch pins are NOT shorted)
- Hysteresis ("HySt") (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.
- Pre scale ("P.SCL") (default:1)
  This value must correspond to the number of pulses received per 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.
- Reset ("rESt)
  By selecting this option, all values are reset to default.

Lock adjustment & full / reduced menu:

(these settings are not changed via the menu)

When NOT in a menu or sub-menu, press and hold "+" and "-". After 3 seconds the display will show "----". If the keys are released at this point, the lock settings feature will be activated (settings may be viewed, but not changed). If the keys are held for an additional 2 seconds, the display will show "_____". The full menu will be activated. To toggle the lock feature, or full / reduced menu, repeat the above procedure.

Example:

Set the device to count 3 pulses per RPM. De-energise the relay if the RPM rises above 300, or drops below 100. Set the Hysteresis to 10 RPM.

Press "MENU" to display "HI ". Press "SELECT" to display the current upper set point. Use the "+" and "-" buttons to change the value to 300. Press "ENTER". "to display "Lo ". Press "SELECT" to display the current lower set point. Use the "+" and "-" buttons to change the value to 100. Press "ENTER". "HYSt " is displayed. Press "SELECT" to display the current hysteresis value. Change it to 10 RPM. Press "ENTER". "to display "P.SCL ". Press "SELECT" to display the current pre-scale value. Change it to 3. Press "ENTER", Press "BACK".

Please Note:

- As a power saving feature, the display dims if settings are not being made.
- 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 will not energise if the input voltage is below the operating voltage.
- Once the device has been commissioned, we recommend that the unit be set to the reduced menu.
- "Er.Lo" is displayed whenever the input RPM is below 10.

Specifications:

Input RPM:	10 - 9999
Pre-scale:	1-10 pulses
Accuracy:	±0.05%
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 NPN proximity

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 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)