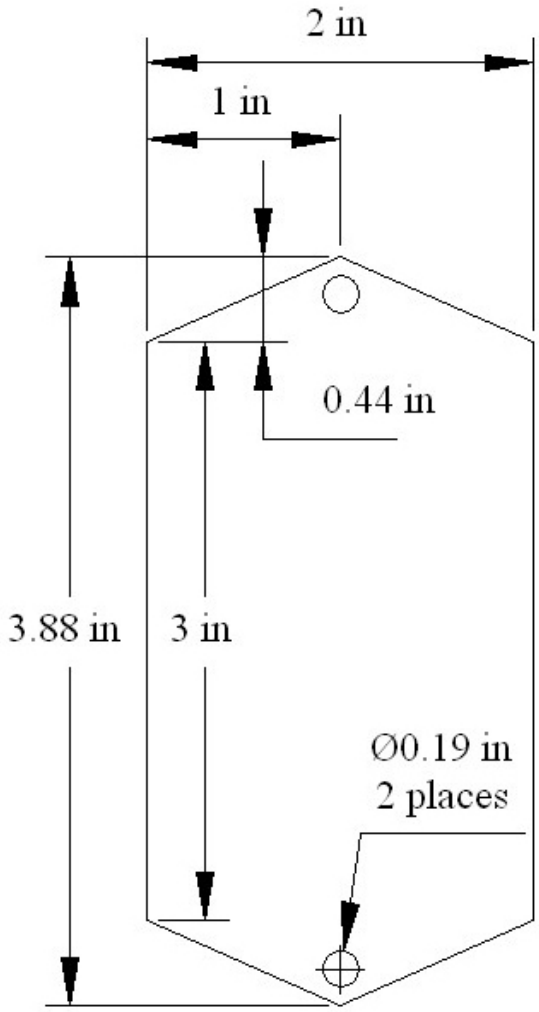
Model RT-02 Manual

Introduction:



The RT-02 Runtime Statistics Meter measures the equipment's on/off state, percent on time, number of operating cycles and total running time. No wiring is required to install the RT-02. An inductive sensor that detects alternating magnetic fields is connected to the display with a flexible cable. The sensor can be permanently or temporarily affixed to a steel case using the sensor's magnetic base. The sensor works with either fixed speed or variable frequency drive motors, single or multi-phase motors of any HP rating and can monitor solenoid-operated valves, relays and transformers. Close proximity to the coil portion of these devices is typically required. The measurements are displayed in an alternating fashion on an LCD display. Sufficient ambient light is required to view the display. The display's batteries are accessible from the back of the display by removing the lid. The unit's measured statistics are reset to zero on power off by inserting the supplied Reset / Off key. The unit operates continuously when the key is removed from the Reset / Off jack. If desired, the display can be secured to a flat surface using its two mounting ears and number 8 screws.

Specifications

LCD Display:	Five 0.4″ high digits
Display Rotation Rate:	4 Seconds interval for each of the three fields
Display Fields:	P = Percent Runtime for last 24 hours (00.00 to 100.0 percent) C = On/Off Cycle Count (0 to 9999). Count holds at 9999 A = Accumulated Runtime (0 to 999.9, then 1000 to 9999 hours). Runtime holds at 9999
"Equipment Energized" indicator:	A colon appears after the leftmost character
"Energized" indicator update interval:	2 seconds
minimum detectable cycle time interval:	1 second or less
Physical Size (Display Module):	2″ wide x 3.88″ long x 1.5″ deep
(Inductive Sensor Module):	1″ high x 0.8″ square
Sensor attachment:	Magnetic disk
Sensor-to-Display cable:	30″ long (Other lengths available)
Operating Power:	Three self-contained replaceable "AA" batteries
Battery Life:	1-2 years, typical
Storage and Operating Conditions:	0 to 125°F, non condensing humidity. Not water, chemical or impact resistant.
Warranty:	Repair or replacement 3 years from date of purchase for manufacturing defects or non abused component failures other than batteries.

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Installation:

1) The unit is shipped, and should be stored while not in use, with the key installed.
2) Remove the key to power on the unit and store the key where it can be found for later use.

3) While the monitored equipment is in operation, stick the inductive sensor to the steel equipment frame or cover, with the magnetic hold-down disk. Choose a location that is in close proximity to the AC magnetic fields produced by the device being monitored. Horizontal mounting surfaces are preferred, but not required. The display registers that the equipment is operating by showing a colon between the first and second leftmost digits in all display modes.

   Example:

   P:00.00 (On state)

   P 00.00 (Off state)

4) Try different sensor locations until the display indicates the equipment is on.
5) Once the display indicates the equipment is on, ensure that the sensor is appropriately positioned for reliable detection by raising the sensor about 1/4" from the surface on which it has been attached. The colon should remain, confirming that the sensor is operating reliably. If the Cycle Counter display increments while the equipment is not turning on and off, the sensor is in an unreliable location. Confirm that the colon disappears when the equipment is off. Failure of the colon to indicate that the equipment is off could be due to large ambient magnetic fields from other nearby devices and a new sensor location further away from them must be found.
6) Once a reliable sensing location has been established, fix the sensor to the equipment at that location. If the sensor moves due to shock or vibration, supplement the magnetic disk's holding power with adhesive or clamps to secure it in place.
7) After approximately six minutes of operation, the percent runtime and accumulated runtime fields will have advanced in value.
8) Place or mount the display so that it is secure, can easily be read, is protected from moisture, chemicals and mechanical abuse, and it will not apply tension to the sensor cable.

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Using the RT-02:

1) Reset or turn off the unit by inserting the reset key into the reset jack, and turn it on and start measuring by removing the key. This will clear any measurements acquired while installing or from previous use.
2) After removing the reset key; all three display fields will briefly display with values of 00000 and appropriate decimal points, then all character segments will momentarily be turned on. After that, the unit will commence normal operation.
3) When the monitored equipment turns on, the colon appears and within 12 seconds the fields will begin updating with new information, e.g.:

P: 0 3.6 7	The *P* field displays the percent monitored equipment runtime usage during the last 24 hour interval. Its reading is updated every 12 seconds and has a resolution of 0.33%. This reading starts at 0 after reset, or 24 hours of monitored equipment non operation. The percentage will not reach a stable value (if possible) until 24 hours after RT-02 reset, or when the equipment was turned on. Continuous operation will increment to 100.0% after 24 hours.
C: 0 0 8 5	The *C* field displays the number of monitored equipment operating cycles the RT-02 has sensed. Up to 9999 cycles are registered. This data increments with each on /off transition. Accumulation stops at 9999 cycles and that value will continue to display until the RT-02 is reset.
A: 0 1 0.3	The *A* field displays the monitored equipment accumulated run time since the last RT-02 reset, with a precision of one-tenth of an hour and a range from 0 to 999.9 hours until 999.9 hours have been accumulated. After that, the decimal point is removed and field displays a precision of 1 hour and a range from 1000 to 9999 hours. Accumulation stops at 9999 hours and that value will continue to display until the RT-02 is reset.

Battery Replacement:

The display will dim as the batteries approach the end of their useful life. Removing the batteries to change them will reset the unit. It is prudent to change the batteries of a unit that had previously been in operation, when the combined previous operation plus required future operation exceeds one year. Open the cover of the RT-02 by unscrewing the two oval head screws located on the rear cover. The small semicircular cutout in the side of the case just above the bottom (bottom middle of the picture) can be used to provide access for lifting off the rear cover. The battery holder that is attached to the inside of the back cover now becomes accessible. When replacing the three AA batteries take care not to apply excessive tension on the two wires from the battery pack. High quality alkaline batteries such as the Eveready "Energizer", Duracell or equivalent are recommended as replacements. Carefully observe the correct battery polarity graphics, which are molded into the battery holder to avoid destroying the unit. Reinstall the rear cover once battery replacement is completed.

Customer Support:

If you require assistance, contact us by:

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