ABOUT THIS MANUAL

This manual explains how to install, operate and maintain the Badger Meter® Model ER-6/R electronic register.

The troubleshooting section lists the most common problems that may be encountered, their most likely cause and the recommended solutions.

PRODUCT DESCRIPTION

The ER-6 register is a remote totalizer designed for use with all Badger Meter product lines.

The supertwist LCD display with 8 digits for totalizing, provides easy viewing at a glance. For conditions where ambient light is poor, the display can be backlit by connecting an external DC (10…28V DC) power supply. A single unit can accept NPN or dry contact inputs for low or high speed applications.

The ER-6/R register is powered by one replaceable 3V Lithium battery. You can install a new battery before removing the old one, thereby retaining count total. A low battery indicator appears on the screen to provide a warning a couple of weeks before the end of battery life. If two batteries are used simultaneously, the individual expected life doubles to 10 years.

INSTALLATION

Panel Installation

Place the unit in the panel through a 33 mm × 68 mm cutout. Slide the included gasket over the rear of the unit, then slide the panel mount bracket into place so that the 4 tabs catch in the grooves on the top and the bottom of the unit (the bracket should be oriented so that the tabs are on the side nearest the panel). Use the provided panel mount screws to tighten the bracket until there is a secure seal against the gasket. Do not over tighten.
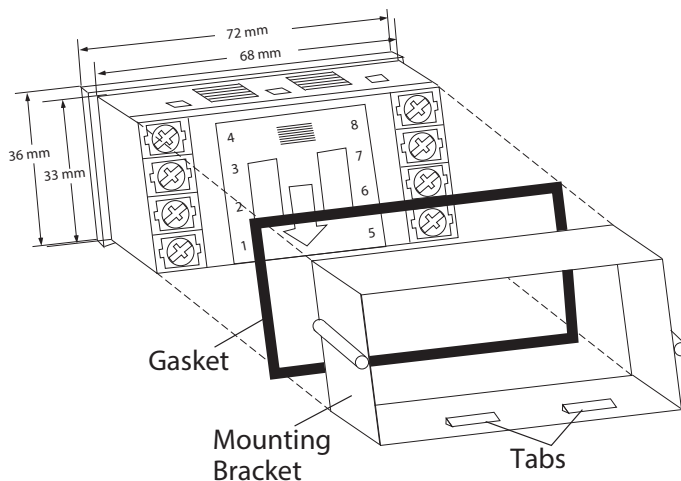

Battery Installation/Replacement

The ER-6/R register is shipped with one battery, which is not installed. Remove the battery cover by pushing inward and down. Install the battery in one of the two slots. The unit runs on a single battery, and the second slot is provided to allow for installing a new battery before removing the old one, retaining count total. The unit can also be run on two batteries to extend the battery life to 10 years. Once the battery is in place, the unit goes into a self-test mode, and all the segments on the LCD display illuminate. To exit the self-test mode, press **RST**, which then displays the model number (0). Press **RST** again to ready the unit for operation.
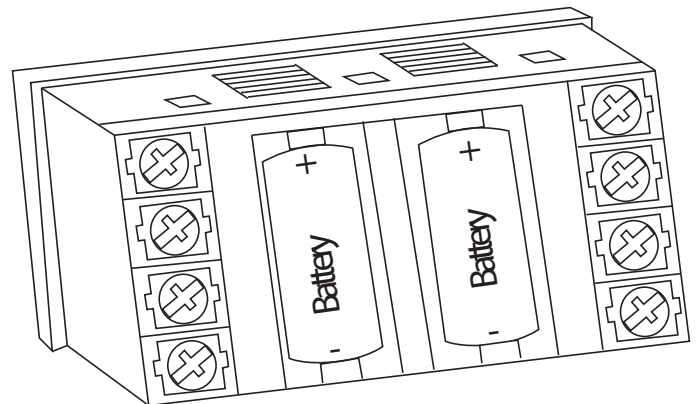

Figure 2: Battery installation

Figure 1: Panel installation

WIRING INSTRUCTIONS

Wiring Terminals
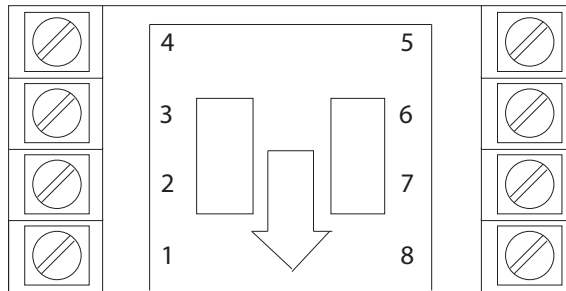
Figure 3: Wiring terminals

Terminal	Function	Operation
1	DC common	—
2	Count input	—
3	—	Not used
4	Remote reset	Resets count value when switched to common.
5	Front panel reset enable	Enables count value to be reset by using the front panel Reset key.
6	—	Not used
7	—	Not used
8	DC supply input	10…28V DC for backlighting.

Table 1: Wiring terminals

The ER-6/R register is shipped with one lead wire attached to terminal 5. To enable front panel Reset, attach the other end of the lead to terminal 1.

Transmitter Connections

For connecting to Badger Meter transmitters, refer to the literature for your specific transmitter and to *Table 2* below. The **Connections** column refers to the wires on the transmitter. The numbers in parenthesis refer to the terminal numbers on the ER-6/R register. Connect the wire coming from the transmitter to the corresponding terminal number for the ER-Series Remote models.

Transmitter	Connections	
MS-E1	Black (1)	Red (2)
MS-E5	Black (1)	Red (2)
PFT-1E	Terminal 6 (1)	Terminal 5 (2)
PFT-4E	Terminal 6 (1)	Terminal 5 (2)
PM-5	Black (1)	Red (2)

Table 2: Transmitter connections

OPERATION

Figure 4: Total display

Total Display

Total Display indicates the present count value, which is equal to the number of pulses received since the last reset.

Reset Key

While the *Total Value* displays, press **RST** to reset the value to zero.

TROUBLESHOOTING

Problem	Possible Causes	Remedies
Screen is blank	Battery is dead.	Replace battery.
Will not count	1. Broken or defective wiring. 2. Improperly connected. 3. Transmitter defective.	1. Check wiring. 2. Check connections. 3. Repair or replace transmitter.
Cannot reset from front panel	Reset enable is active.	Check connection between terminals 1 and 5.
Erroneous readings	Defective transmitter.	Repair or replace transmitter.

Table 3: Troubleshooting

For further assistance, call our Technical Support Staff at 1-800-876-3837.

SPECIFICATIONS

Count Input (Terminal 2)	
Type	NPN signal, contact closure
Count speed	NPN, 280 Hz maximum, Contact, 95 Hz maximum
Logic	Low < 1.0V DC, High > 2.0V DC
Minimum pulse width	NPN,1.78 µs, Contact, 5 ms
Maximum input	28V DC
Impedance	1 Meg to battery
Front Panel Reset Enable (Terminal 5)	
Type	NPN signal, contact closure; level sensitive
Maximum input	28V DC
Remote Reset Input (Terminal 4)	
Type	NPN Signal, Contact closure; edge sensitive
Frequency response	30 Hz (50% duty cycle)
Maximum input	28V DC
Operating Temperature	
Indicator	32…140° F (0…60° C)

Power Source	
Type	Single 3V Lithium battery
Replacement part #	62576-001
Battery life expectancy	5 years
Low power indicator	"Low Bat" flashes on display approx. 2 weeks prior to end of battery life
Display	
Type	Supertwist LCD for use with or without backlighting
Number	8 digits
Height	12 mm (0.472 in.)
Backlighting	Green Illumination over whole viewable area with a 10…28V DC supply (Terminal 8)
Physical	
Dimensions	36 mm × 72 mm, 38 mm deep (1.417 in. × 2.835 in., 1.496 in. deep)
Mounting	Panel mount (mounting bracket supplied) 33 mm × 68 mm (+ 0.3 mm) panel cutout 1.299 in. × 2.677 in., (+ 0.012 in.) panel cutout
Connections	Up to 8 screw terminals
Weight	Approximately 13 ounces

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