

LM Series



MCU (Microcontroller Unit) LCD Hour Meter

DESCRIPTION

Honeywell's MCU (microcontroller unit) LCD (liquid crystal display) Hour Meters, LM Series, are sealed digital instruments designed to monitor and record elapsed running time, normally displayed in hours and tenths of hours. These devices are used to log running time of equipment used in transportation applications to assure proper maintenance of expensive machines or systems. This maintenance typically involves replacing, changing, or checking parts, belts, filters, oil, and lubrication of heavy duty equipment, or running condition of engines, motors, and blowers, to name a few.

These devices feature a 40-year memory data retention (without power) to provide customers with a long data retention capability within their desired application. The large 7 mm display eases readability and offers backlight options and a running indicator.

Sealing to IP67 provides enhanced durability. The hour meter also features a long reset time to offer customers the protection against malfunction of reset.

The LM Series offers customization options including the customer's logo, Honeywell logo, or a black face, as well as numerous customizable port options.

FEATURES AND BENEFITS

- **Backlight and large 7 mm display** ease readability
- **Digital, microcontrol unit LCD**
- **Durable design** of mounting assembly
- **IP67 environmental sealing** provides enhanced durability
- **Customizable** with customer's logo, as well as numerous customizable port options
- **Function types**, including hour meter (measures time) or counter (measures number of instances, starts, etc.)
- **Fast delivery of samples and products** due to Honeywell's integrated supply chain and global design center
- **Shock and vibration resistance** allow for use in a wide variety of tough applications
- UL/CE approvals

POTENTIAL APPLICATIONS

Transportation

- Agricultural vehicles
- Blowers
- Engines
- Heavy-duty construction vehicles
- Heavy-duty trucks
- Material-handling equipment
- Mowers

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PERFORMANCE SPECIFICATIONS

Characteristic	Measure
Digital range	0 to 99,999.9 hours
Digital height	7 mm
Backlight color	Blue (default)
View angle	12 o'clock
Running indicator	Yes
Accuracy	±200 ppm/hour
Operating voltage range	9 V to 64 V
Sealing	IP67 (front); IP66 (rear)
Shock	55 g per SAE J1378 75 g per MIL-M-3917D
Vibration	20 g per SAE J1378 10 g per MIL-M-3917D
Humidity	95 % non-condensing at 38 °C [100.4 °F]
Operating temperature	-40 °C to 85 °C [-40 °F to 185 °F]
Storage temperature	-50 °C to 90 °C [-58 °F to 190 °F]
Transient immunity	Load dump – yes Inductive – yes EMI – yes Reverse polarity – yes
Power consumption	0.8 mA @ 12 Vdc
Panel mounting	Snap-in
Case sealing technique – front	Ultrasonic weld
Case sealing technique – rear	Sealant on terminals
Start time	<1 s; if including all “8” check, then >1 s
Material – case	Makroblend
Material – lens	Lexan
Case depth	1.35 in (including terminals)
Termination	1/4 in blades; 3/16 in blades

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PRODUCT NOMENCLATURE

LM	—	H	H	F	A	S	—	H	XX
Type		Function Type	Shape and Bezel	Connector Definition	Terminal Type	Voltage Range		Logo Type	Modification Code
LM Series MCU (Microcontroller Unit) LCD Hour Meter		H Hour meter	H Shape: Diamond Bezel: Black	F + : Positive - : Negative B : Backlight (blue) E : Enable	A 1/4 in blade	S 9 V to 64 V		H Honeywell	Multiple packaging and component options are available, including bulk packing, box marking, wires, and fastening. For more details, contact your Honeywell sales representative or an authorized Honeywell Distributor.
		C Counter	S Shape: Standard	+ : Positive - : Negative R : Reset E : Enable	C 3/16 in blade			N No logo	
			B Shape: Round Bezel: Black					1 Customer's logo #1	
			W Shape: Round Bezel: White					2 Customer's logo #2	
			D Shape: Diamond Bezel: None						
			C Shape: Rectangle	2 + : Positive - : Negative					

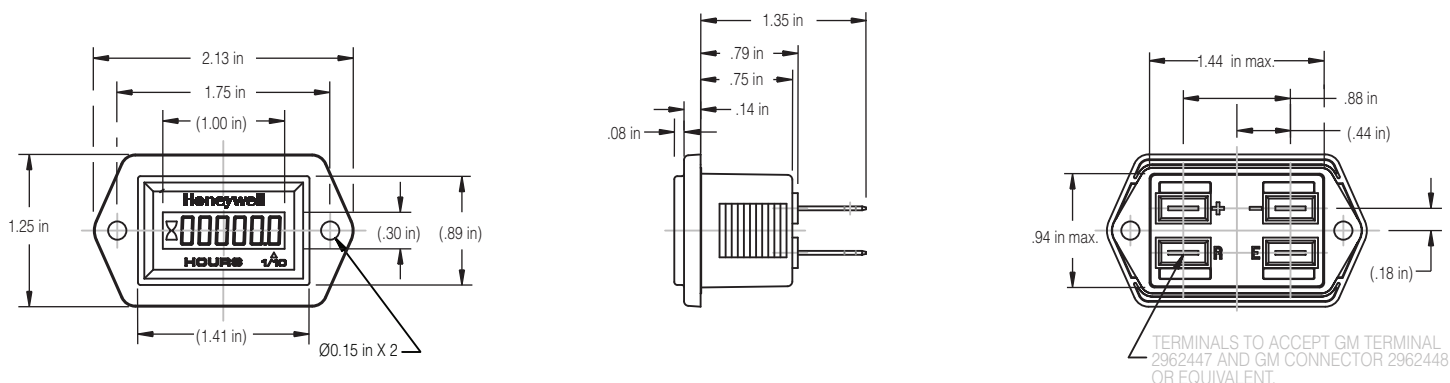
NOTE: If in the future, the customer has a specific backlight color requirement, Honeywell can customize to meet the customer's needs.

STANDARD LISTINGS

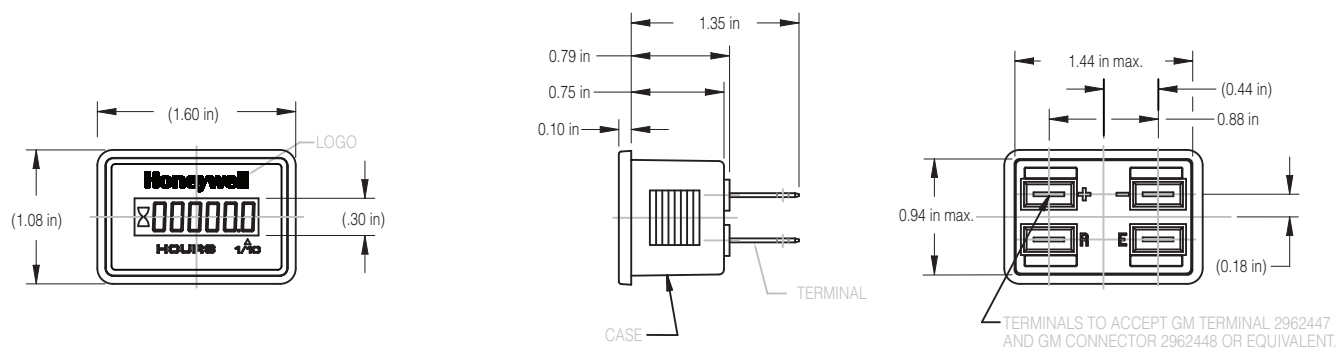
Part number	Description
LM-HHFAS-HXX	Honeywell LM Series Hour Meter in a diamond shape with black bezel, four 1/4 inch blade terminals (positive, negative, backlight, enable), 9 V to 64 V voltage range, and the Honeywell logo on the face
LM-HB2AS-2XX	Honeywell LM Series Hour Meter in a round shape with black bezel, two 1/4 inch blade terminals (positive, negative), 9 V to 64 V voltage range, and the customer's logo on the face
LM-CW4AS-HXX	Honeywell LM Series Counter in a round shape with white bezel, four 1/4 inch blade terminals (positive, negative, reset, enable), 9 V to 64 V voltage range, and the Honeywell logo on the face
LM-CS3CS-2XX	Honeywell LM Series Counter in the standard shape, three 3/16 inch blade terminals (positive, negative, enable), 9 V to 64 V voltage range, and the customer's logo on the face
LM-HD2AS-NXX	Honeywell LM Series Hour Meter in a diamond shape with no bezel, two 1/4 inch blade terminals (positive, negative), 9 V to 64 V voltage range, and no logo on the face
LM-HC3CS-HXX	Honeywell LM Series Hour Meter in a rectangle shape, three 3/16 inch blade terminals (positive, negative, enable), 9 V to 64 V voltage range, and the Honeywell logo on the face

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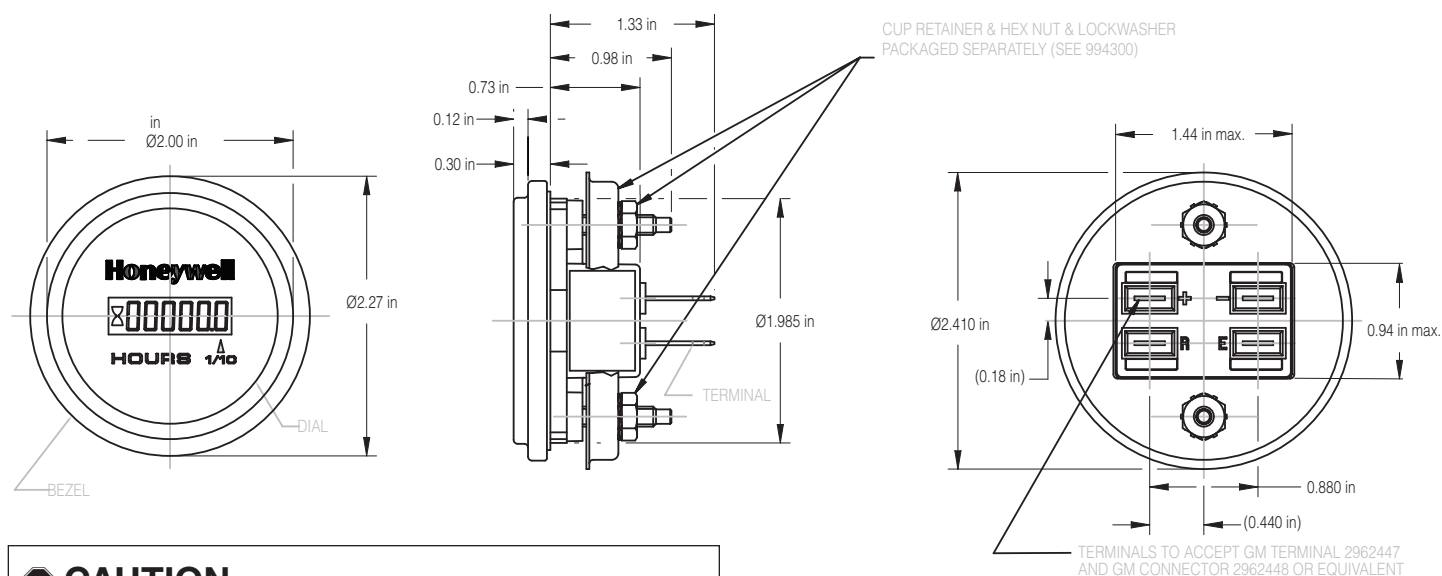
DIAMOND-SHAPED DIMENSIONS



STANDARD-SHAPED DIMENSIONS



ROUND-SHAPED DIMENSIONS

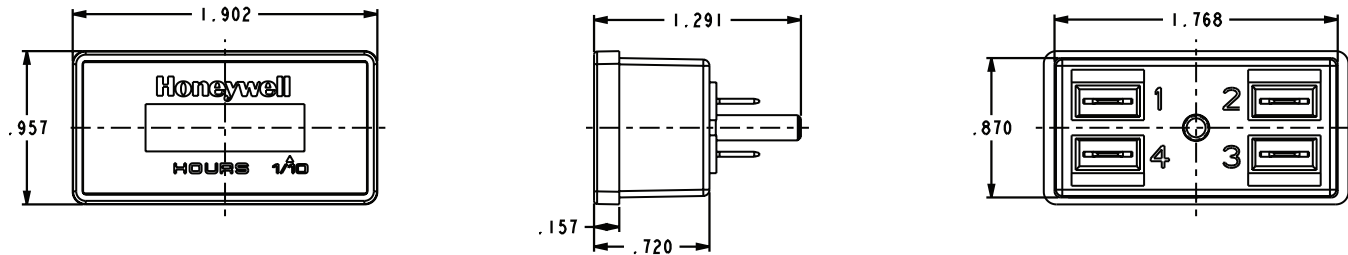


CAUTION

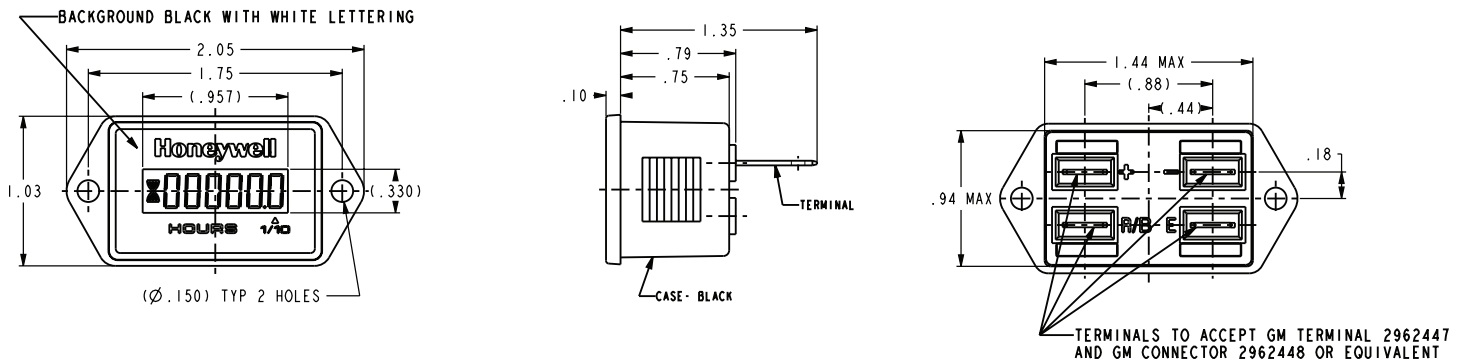
Be cautious when working around and connecting to the LM Series' terminals, especially those other than the positive terminal (+) as there is no electrical protection on the negative (-), reset, enable, and/or backlight terminals.

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RECTANGLE-SHAPED DIMENSIONS



DIAMOND-SHAPED (NO BEZEL) DIMENSIONS



Warranty. Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

Find out more

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact your local sales office. To learn more about Honeywell's sensing and control products, call **+1-815-235-6847/1-800-537-6945**, visit **sensing.honeywell.com**, or e-mail inquiries to **info.sc@honeywell.com**

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WARNING

MISUSE OF DOCUMENTATION

- The information presented in this datasheet is for reference only. DO NOT USE this document as product installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

WARNING

PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

Honeywell