

## Excellent Integrated System Limited

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[Murata Power Solutions Inc.](#)  
[DMS-20PC-1-LM-C](#)

For any questions, you can email us directly:

[sales@integrated-circuit.com](mailto:sales@integrated-circuit.com)



## DMS-20PC-1-LM

### Self-Powered 3 Digit, LED Display AC Line Voltage Monitors



#### FEATURES

- Plugs directly into USA-style wall outlets
- Screw terminals for panel mounting
- Small 1.38" x 0.88" x 1.0" packages
- Large, easy-to-read, red, blue or green LED displays
- Fully encapsulated for harsh environments
- Half-wave averaging, rms calibrated
- UL, CSA and IEC1010-1 certified
- Very low cost!

#### Functional Specifications

##### Input

Voltage Range ①	85-264Vrms
UL/IEC61010-1	Measurement Category II
Frequency Range ①	47-63Hz
Current Consumption	50mArms (max.)

##### Performance

Sampling Rate	2.5 readings/second
Measurement Type	Half-wave average, rms calibrated for sinusoidal input
Accuracy @ +25°C	±1V (typ.), ±2V (max.)
Temperature Drift (-25 to +60°C)	±0.15 Volts/°C (max.)

##### Mechanical

Dimensions	1.38" x 0.88" x 1.00"
Display Type	3 digit, red LED, 0.37"/9.4mm
Weight	1 ounce (28 grams)
Case Material	Polycarbonate
6-32 screw torque	6-8 in-lb (0.7 – 0.9N-m)

##### Environmental

Operating Temperature	-25 to +60°C
Storage Temperature	-40 to +75°C
Humidity (Non-condensing)	0 to 95%

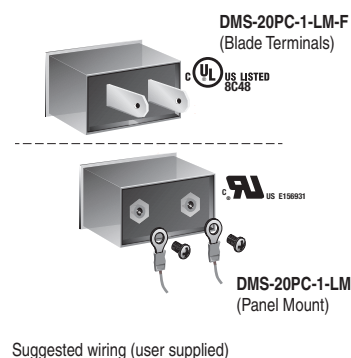
① Operation and accuracy at inputs above or below these ranges are not specified.



Murata Power Solutions' DMS-20PC-1-LM is a component-size, self-contained, low-cost ac voltmeter for true line measurements. It requires no additional components or auxiliary power. Simply plug it into any wall outlet and instantly read voltages from 85 to 264Vac (47-63Hz). The large (0.37"/9.4mm), bright red, blue or green LED display makes the DMS-20PC-1-LM easily readable under any lighting conditions.

DMS-20PC-1-LM employs half-wave sinusoidal averaging (rms calibrated) and has a display resolution of 1Vac over its full input range. Packaged in a red-filter case with built-in bezel, the meter is fully encapsulated for ruggedness. All units are overvoltage protected to 300Vac.

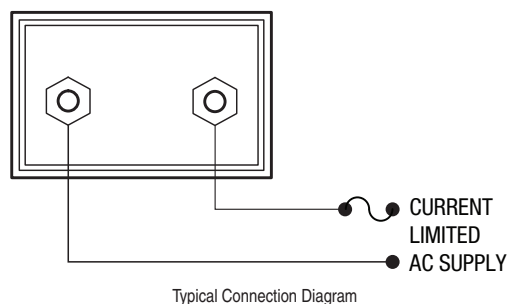
This low-cost meter is ideal for industrial, laboratory, office and field-service applications. Its miniature size is perfect for design into high-end consumer electronics, laboratory instrumentation and other products requiring accurate ac line monitoring.



#### Ordering Information

DMS-20PC-1-LM-C	Red LED with threaded standoffs ②
DMS-20PC-1-LM-B-C	Blue LED with threaded standoffs ②
DMS-20PC-1-LM-G-C	Green LED with threaded standoffs ②
DMS-20PC-1-LM-F-C	Red LED with blade terminals
DMS-20PC-1-LM-BF-C	Blue LED with blade terminals
DMS-20PC-1-LM-GF-C	Green LED with blade terminals
DMS-20-CP	Optional panel cutout punch
DMS-BZL3-C	Optional panel mount bezel
DMS-BZL4-C	Optional panel mount bezel with sealing gasket

② Brass screws (6-32 thread) and a panel-mount retaining clip are supplied with meter.



Typical Connection Diagram

**Power Supply Polarity, Grounding, Fusing, and Wiring**

**1. Polarity and Grounding:**

DMS-20PC-1-LM's two ac-supply input terminals are not polarity sensitive, that is, they have no "AC LO" or "AC HI" designations. These units do not include nor require a connection to earth/chassis ground. All ac-supply wiring must be rated for the voltages and currents they will conduct and comply with any code or application-mandated requirements pertaining to the user's specific installation. Additional model-specific information is provided below.

**2. UL Recognized Panel Mount Models with Screw Terminals:**



DMS-20PC-1-LM AC voltmeters are not internally fused. The supply wires feeding these voltmeters must be fused with a 0.25A/250V time delay/time lag fuse, in accordance with applicable regulatory codes. The rear threaded stand-off input-terminals are to be used only for powering the voltmeter's internal circuitry; they must not be used to supply power to external loads. The recommended wire size is 16AWG to 20AWG (1.31mm<sup>2</sup> to 0.52mm<sup>2</sup>) stranded copper wire. Wires must be properly stripped and attached to the threaded standoffs such that their insulation is not pinched by the supplied 6-32 screws. Rated tightening torque for the 6-32 screws is 7 to 8 pound-inches (0.8 to 0.9N-m). 300V UL rated wire suitable for the intended application is required.

**3. UL Listed Models with "Plug-in" Blade Terminals:**



Plug-in DMS-20PC-1-LM-XF models are not internally fused and must be protected by an external current limiting circuit breaker or fuse in accordance with applicable regulatory codes. These models are designed to be plugged into NEMA 1-15R, NEMA 5-15R, and NEMA 5-20R receptacles.

**4. Description of the safety marks:**



Caution, risk of electrical shock



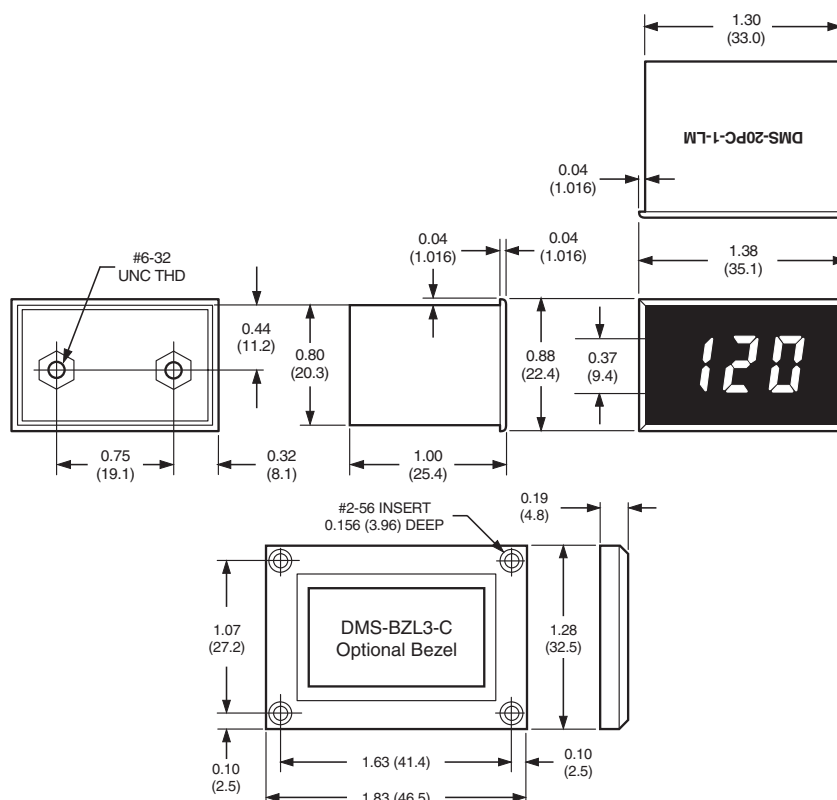
Caution, risk of danger



Equipment is protected throughout by double or reinforced insulation

**5. Cleaning Instructions: Gently clean with dry cloth only.**

**6. Caution: if the equipment is used in a manner not specified by Murata Power Solutions, the protection provided by the equipment may be impaired.**



Dimensions in inches (millimeters)  
Tolerances: 2 PL Dec  $\pm 0.02$  ( $\pm 0.51$ )  
3 PL Dec  $\pm 0.010$  ( $\pm 0.254$ )  
Recommended panel cutout dimensions:  
1.336 (33.93)W  $\times$  0.838 (21.29)H  
Internal corner radii 0.032 (0.81) Max.

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ISO 9001 and 14001 REGISTERED



**This product is subject to the following operating requirements and the Life and Safety Critical Application Sales Policy:**  
Refer to: <http://www.murata-ps.com/requirements/>

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