

**OBSOLETE PRODUCT**

Contact Factory for Replacement Model



**FEATURES**

- Instant response with no overshoot.
- Rugged all solid state with no moving parts.
- Self-illuminated 20-LED Bar display.
- Adjustable input range +0.1 to +2.4 Vdc full scale.
- Internal pads for DIP Relay Controller from TTL comparators.
- Low Cost, \$39.00 in singles.

**TYPICAL APPLICATIONS**

- Level Controller, Trend Meter, Rate Indicator.
- Setpoint Alarm.
- 20-Step Meter Relay, Noise Level, Pollution Effluent, Belt Speed, high resolution meter using offset zero control.
- Component sorting and grading.

Display filters with alternate unit screening are available on special order.

**DESCRIPTION**

The DBM-20 Bar Meter/Controller is a panel-mounted, self-illuminated 20 segment red LED (Light Emitting Diode) bar display. It accepts a dc or slowly varying input signal, converts that signal to digital form and displays it in the form of a progression of lighted LED segments arranged to shape a single bar graph.

The DBM-20 Bar Meter/Controller can be used in several applications such as a level controller, trend meter, rate indicator, or as a 5% resolution meter using offset zero control. The DBM-20 controls external circuitry by providing a TTL output which can be user-wired from any LED to a rear finger connector. Internal pads are available for circuits such as a DIP Relay Controller from TTL comparators and a driver IC, supplied by the user.

An adjustable input range from +0.1 to +2.4 Vdc full scale is also featured on the DBM-20. In addition, there is a high input impedance (100 K $\Omega$ , minimum) and a low input bias current (10 nA, typical). The DBM-20's input configuration is single-ended unipolar.

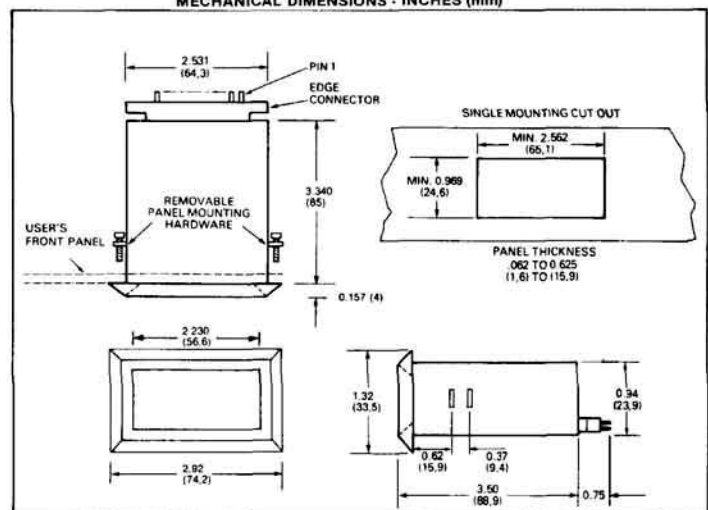


Normally supplied without bezel labels or logos.

There are no moving parts due to the DBM-20's completely solid-state design. Also, the meter displays an instant response with no overshoot. The user has a choice of either a Bar mode display or Dot mode display. In the Bar mode, all LED's will light up from the left of the display up to the high end of the input signal. In the Dot mode, only the LED at the high end of the input signal will light.

A red optical display filter has 20-unit graduation markings in white. The filter may be changed by opening the housing from the rear. The low-profile housing is a rugged, black polycarbonate case that is impact and solvent resistant. Its dimensions are 2.53"W x 3.34"D, x 0.94"H. Panel mounting cutout dimensions are 2.56"W x 0.97"H.

MECHANICAL DIMENSIONS - INCHES (mm)



DBM-20 Bar Meter/Controller

**SPECIFICATIONS (Typical at +25°C, unless noted)**

**INPUT CHARACTERISTICS**

**Input Voltage Range**

Adjustable +100 mVdc to +2.4 Vdc Full Scale, Unipolar (R3 at rear of instrument sets the Full Scale).

**Optional Ranges**

Up to +1000 Vdc. Easily adaptable for 4-20 mA current loop. Note: Optional ranges require installation of extra components by the user inside the DPM. This is also available on special order in OEM quantities from Dattel-Intersil.

**Input Impedance**

100 KΩ min.

**Input Bias Current**

10 nA typ, 50 nA max.

**Input Configuration**

Single-ended.

**Input Offset Voltage**

Solder-gapped to signal ground. May be adjustable 0 to +1.25 Vdc with addition of a 1 KΩ user-installed pot.

**LED Trip Point Nonlinearity**

0.5% typ, 2% max.

**Input Overvoltage**

±35V max.

**Temperature Coefficient**

1% of Full Scale, 0 to +50°C.

**DISPLAY**

**Type**

20 self-illuminated red light-emitting diodes (LED). Segment size .20"H x .07"W.

**Modes**

**Bar:** All LED's light starting from the display left side, according to the input voltage (Connect pins L and F).

**Dot:** Only one LED lights starting from the left side according to the input voltage (leave pin F unconnected).

**INPUT/OUTPUT CONNECTIONS**

**Pin A**

Power and Signal Common.

**Pin F**

Dot/Bar Control (Dot mode: Leave pin F unconnected). Bar Mode: Connect Pin F and L.

**Pin J**

Signal Input.

**Pin L**

+5 Vdc Power Input

**Pins B, C, D, E, H, K**

Connected to drilled internal PCB pads for user circuits.

**PHYSICAL**

**Input/Output Connector**

Edgeboard PC type using bottom side only. 10-pins, 0.156" centers, Dattel-Intersil model 58-2073082 or equivalent (not included; please order with the meter).

**Case Material**

Black polycarbonate plastic, impact and solvent resistant.

**Case Outline Dimensions (Less Bezel)**

2.53"W x 3.25"D x 0.94"H  
(64,3 x 82,5 x 23,8 mm).

**Front Panel Mounting Cutout**

2.56"W x 0.97"H min.  
(65,1 x 24,6 mm). Thickness range .062" to 0.625"  
(1,6 to 15,9).

**Bezel Dimensions**

1.32"H x 2.92"W x 0.157" Thick front panel relief.  
(33,5 x 74,2 x 4 mm)

**User Circuits**

3 Internal uncommitted 14-pin DIP pads are drilled for user circuits such as DIP relays and a driver IC.

**Power Required**

+5 Vdc ±.25 Vdc at 250 mA typ, regulated (unregulated power supplies cannot be used because of display switching currents).

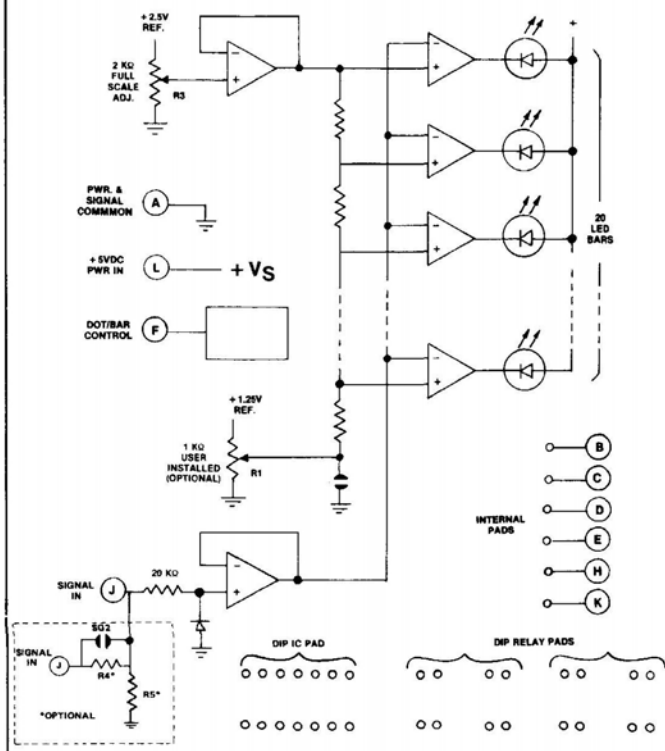
**Operating Temperature Range**

0 to +50°C.

**Storage Temperature Range**

-25°C to +85°C.

**DBM-20 EQUIVALENT SIMPLIFIED BLOCK DIAGRAM**



**ORDERING GUIDE**

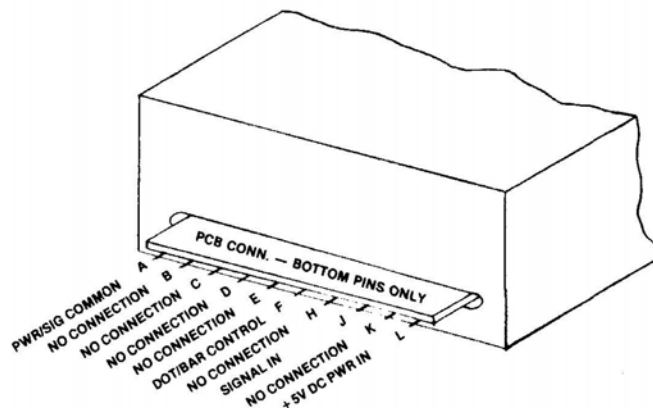
**Model**

DBM-20

UPA-5/500 AC to 5V Power Adapter  
(not included)

58-2073082 Connector,  
10-pins (not included)

**INPUT CONNECTIONS METER REAR VIEW**



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