



FEATURES

- Super-bright LED displays are readable in direct sunlight!
- Autodim circuitry automatically adjusts display brightness
- Includes external brightness adjustment
- Large (0.56"/14.2mm) easy-to-read red LED display
- High reliability alternative to LCD displays
- Ideal for automotive, industrial, and marine applications
- Encapsulated package mounts in panels or pc-boards
- Miniature housing: 2.17" x 0.92" x 0.56" (55mm x 23mm x 14mm)
- 4 differential input ranges provide ± 1 count accuracy
- Single +5V supply; Less than 1-Watt power consumption
- 0 to +60°C operating temperature range

C&D Technologies' new DMS-30DR Series are the first digital panel meters to offer LED displays that are readable in direct sunlight—no special filters or shading devices are required. Their Autodim circuit automatically adjusts the display's brightness to suit viewing environments ranging from total darkness to full, brilliant sunlight. A user-accessible brightness adjustment pin enables custom intensity settings or display matching in multiple display applications. Washed out, hard-to-read digital readouts are a thing of the past!

Until now, users whose instrumentation required daylight visibility had to settle for less reliable LCD display technology. However, in order to remain legible in low ambient light, LCDs require complex, power-hungry backlighting circuitry. And, these displays typically suffer from very narrow viewing angles. In contrast, DMS-30DR Series LED-based displays' power consumption drops as ambient light decreases, and their viewing angle extends to nearly 180 degrees vertically and horizontally.

All models operate from a single +5V supply, and draw as little as 7mA when operated in total darkness—that's less than 1/10 Watt. At maximum brightness power consumption is typically less than 200mA (1 Watt). DMS-30DR voltmeters are available in four differential input voltage ranges: $\pm 200\text{mV}$, $\pm 2\text{V}$, $\pm 20\text{V}$ and $\pm 200\text{V}$. Input impedance is 1,000 megohms for the $\pm 200\text{mV}$ and $\pm 2\text{V}$ inputs and 1 megohm for the $\pm 20\text{V}$ and $\pm 200\text{V}$ inputs. CMRR for all devices is 86dB, and inputs are overvoltage protected to $\pm 250\text{V}$. Each meter incorporates a precision, ultra-stable voltage reference and is factory calibrated prior to encapsulation.

The small size (2.17" x 0.92" x 0.56") of DMS-30DR meters is achieved by integrating their display, Autodim display drivers, light sensor, reference circuit, and A/D converter into in a rugged epoxy-encapsulated assembly. The device's 12-pin, component-like, DIP package is both vibration and moisture proof, making them ideal for harsh environments. Each package incorporates a built-in color filter and bezel, and is easily mounted in either panels or pc boards.

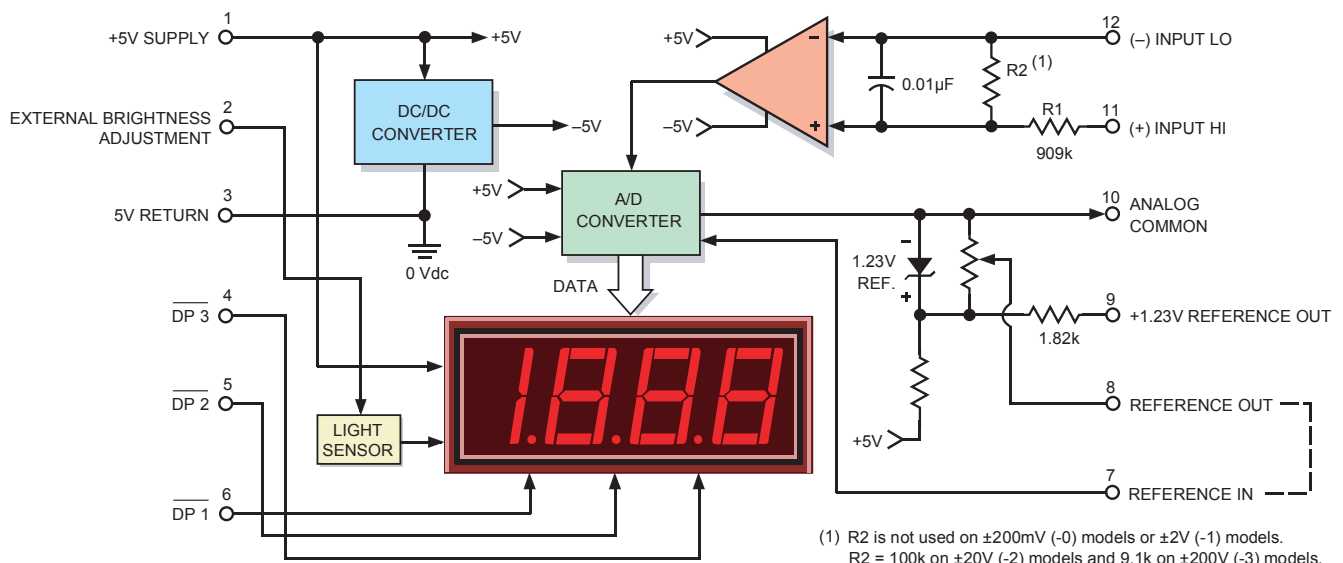


Figure 1. DMS-30DR Simplified Schematic

Performance/Functional Specifications

Typical at T_A = +25°C and supply voltage = +5.0V.

	Min.	Typ.	Max.	Units
Supply Voltage	4.75	5.00	5.25	Vdc
Sampling Rate	2.5 Samples per second			
Input Overvoltage	±250	-	-	Vdc
Supply Current				
In Full Sunlight	-	150	225	mAdc
Total Darkness	-	7	15	mAdc
Input Impedance				
DMS-30DR-0, -1	100	1000	-	MegΩ
DMS-30DR-2, -3	0.8	1.0	-	MegΩ
Accuracy				
All Models	-	±1	±3	Counts
Temperature Drift (0 to +60°C)	-	0.15	0.3	Cnt/°C
Physical/Environmental				
Display Type and Size	3½ Digit Red LED, 0.56" High Digits			
Operating Temperature	0	-	+60	°C
Storage Temperature	-40	-	+75	°C
Weight	0.75 ounces (21 grams) nominal			

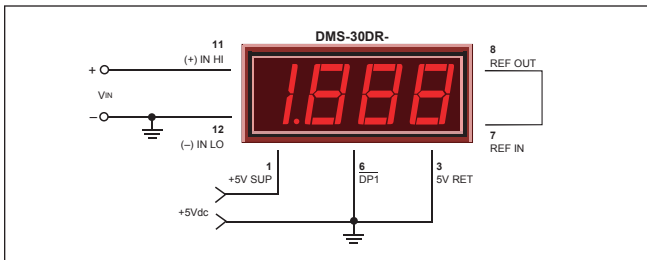


Figure 2. Single-Ended Input Configuration

Ordering Information

DMS-30DR-1-R

PATENT PENDING

Input Range:

- 0 = ±200mV
- 1 = ±2V
- 2 = ±20V
- 3 = ±200V

LED Color:
R = Red

Accessories:

- DMS-EB** Application/evaluation board
- DMS-30-CP** Panel cutout punch

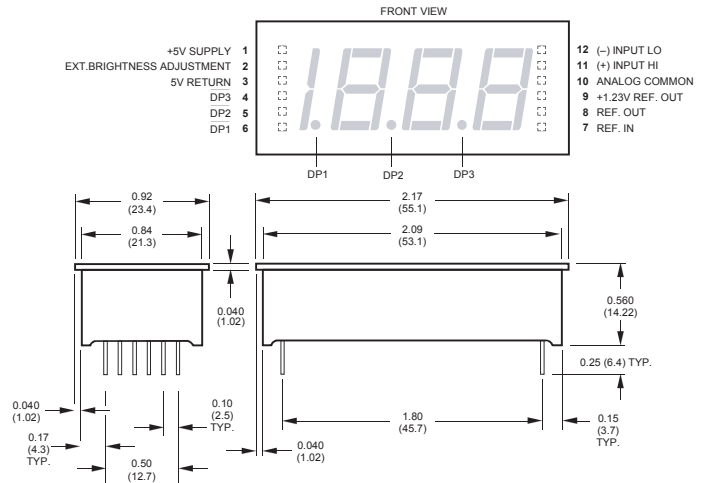
A panel-mount DMS-BZL2 is supplied with each unit.

Mechanical Specifications Inches (mm)

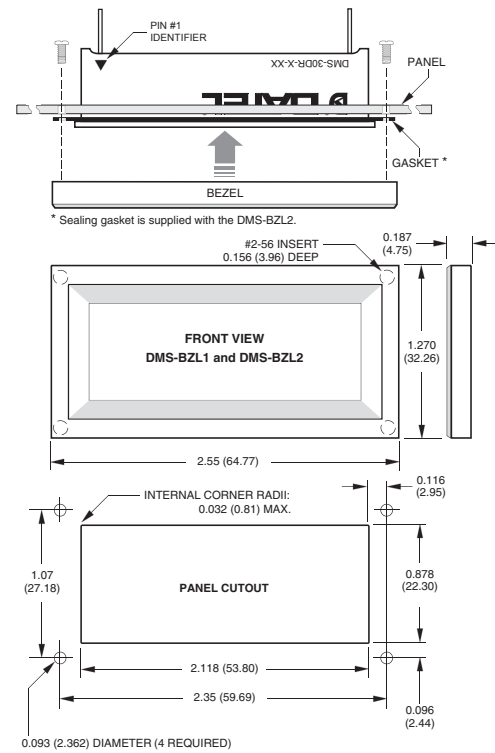
TOLERANCES: 2 PL DEC ±0.02 (±0.51)
3 PL DEC ±0.010 (±0.254)

LEAD DIMENSIONS: 0.025 (0.635) x 0.025 (0.635) NOMINAL

RECOMMENDED PC BOARD FINISHED HOLE DIAMETER:
0.042 ±0.003 (1.067 ±0.076)



Bezel Assembly and Panel Cutout



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