

DPM R312-R412 Series Digital Panel Meter

Operating Instructions Manual

Skus Numbers: 12G472, 12G473, 12G474, 12G475, 12G476, 12G477, 12G484, 12G485, 12G488, 12G489, 12G493, 12G494, 12G498, 12G503, 12G505, 12G507, 12G509, 12G512, 12G513.

Main Features

- R312 Indicates 3 & ½ Digit Display (means 0-1999)
- R412 Indicates 4 & ½ Digit Display (means 0-19999)
- Aux. Supply - 85-250VAC
- Easy Installation by Using Stackable Mounting Bracket
- 3-1/2 And 4-1/2 Digit, 0.5" (12.7mm) High LCD Display With Optional Negative Image, Bright Red Backlighting
- Limited Range Display Scaling and Adjustable Offset
- Easy Installation by Using Standard Screw Terminals
- Minimum Depth Indicator - Less than 2.5" (60mm) of Space Required Behind the Panel



These DPMs give high quality, accuracy and reliability in a compact, 60mm deep case.

All units have user-selectable decimal point, auto zero and limited scaling capabilities.

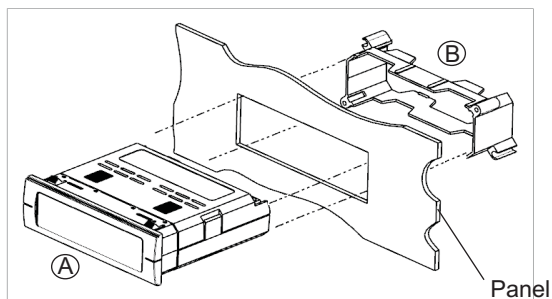
These DPMs offer a 3-1/2 and 4-1/2 digit, 0.5" (12.7mm) LCD display and also provide a bright red, negative image, backlight option.

For vertical or horizontal stacking of multiple indicators, a unique mounting bracket is provided.

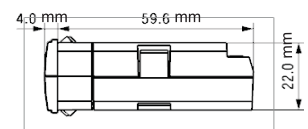
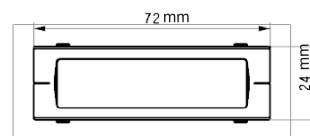
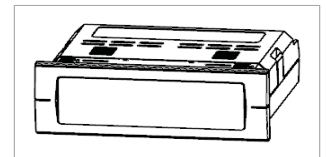
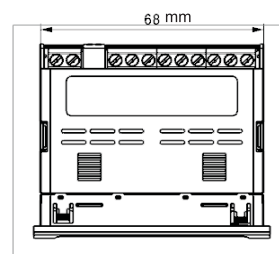
All DPM units possess a 3/64 DIN, high-impact plastic case.

The Standard units have a clear viewing window, and a red window is provided for the units with optional negative image, red backlighting have a red window.

Installation Details



Panel Cutout Details



Mounting Requirements

Insert the DPM (A) through the panel, and then slide the mounting bracket (B) onto the DPM. The mounting bracket allows DPM units to be stacked side-to-side or top-to-bottom and maintain the DIN standard panel arrangements in 24mm by 72mm multiples. Panel cutout instructions are provided under "stacking features" (for stacking multiple units).

Specifications

DISPLAY

Type: 7-segment LCD(Non backlight or negative image red)

Height: 0.5" (12.7mm)

Decimal point:

R312: 3-position selectable

R412: 4-position selectable

Over-range indication:

Most significant digit = "1"

Backlighting:

Optional negative image
red backlight

Polarity:

Auto with "-" indication, "+" implied

POWER REQUIREMENTS

AC Volt: 85-250VAC @40-440Hz

Power Consumption: (Non Fused)

85-250VAC: 2.5VA min/4VA max

Isolation:

250 Vrms Max

NOISE REJECTION

CMRR: 86dB typical

ENVIRONMENTAL

Operating Temperature:

0 to 55°C

Storage Temperature:

10 to 60°C

Relative Humidity:

0 to 85% non condensing @ 40°C

Temperature Coefficient:

(0.2% of reading ±0.5 digits)/°C

Warmup time:

Less than 20 minutes

ANALOG TO DIGITAL CONVERSION

Technique:-

Integrating

Rate:-

3 samples/second-typical

MECHANICAL

Bezel:

0.95" x 2.84"
(24mm x 72mm)

Depth:

2.36" (60mm)

Panel Cutout:

0.88" x 2.68"
(22.2mm x 68mm)

Weight:

3.5oz (99.2g)

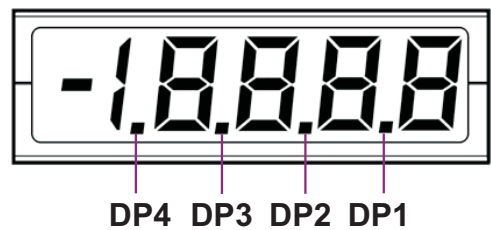
Case Material:

94-0,UL-rated, glass-filled thermoplastic

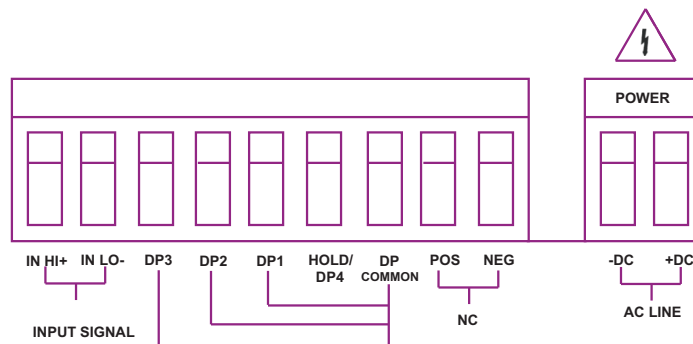
R312



R412



Connections



WARNING:

These instruments are designed for maximum safety to the operator when mounted in a panel according to instructions. They are not to be used unmounted or for exploratory measurements in unknown circuits.

Input Signal:

Connect the signal to be monitored to the **IN HI+** and **IN LO-** input terminals.

Input Power:

For AC power, connect the AC POWER LINE to the **AC LINE** inputs. For optional DC power, connect the DC Supply to the DC inputs. Observe polarity.

Decimal Point:

To select a decimal point, connect the appropriate DP input pin (DP1 - DP3) to the DP COMMON output. Unused DP inputs may remain unconnected (open).

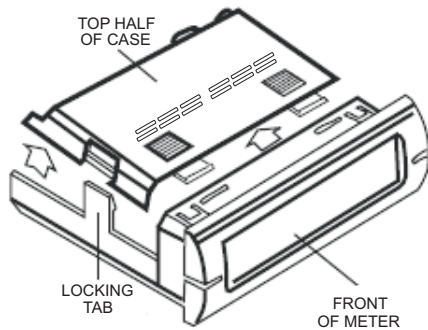
Hold Option:

Connect the DP COMMON output to the **HOLD** input. If this feature is not required, the HOLD pin may remain unconnected. Dp4 replace HOLD in R412.

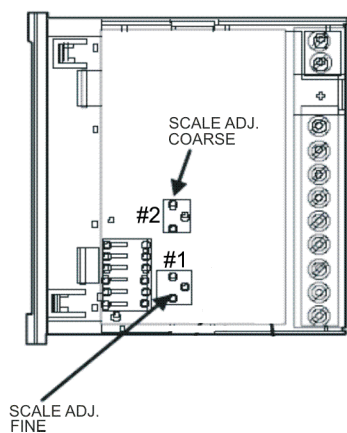
LCD Backlight Option:

Negative image, bright red backlighting is available in the R412. This illumination allows the unit to be read in Low light areas. Backlighting power is supplied by the R412, so no additional external power is Required.

Display Scaling



Spread the tabs on each side of the case, using a screwdriver or thumbnail to unlock the top half. Lift the rear of the top half and slide it away from the front of the meter.



Range Adjustment:

There are no optional connections required for limited range coarse and fine adjustments for display scaling.

A bounded range of scaling values can be set with the help of #2("Coarse" adjustment).

The meter can be scaled up to 2 times, or down to 1/2 the value of the input, or a maximum reading of 1.999, whichever is lower.

Example: A maximum reading of 1.999 counts can be set for a 2 volt input so you cannot double the 2 volts, but you can make a 1 volt input read 1.999. The #1,"fine" calibrator, allows for an approximate range of 1% of the "coarse" calibration.

Apply the full scale input to the meter. Adjust #2 to within 1% of the desired scaled value, then use #1 to obtain the final desired result.

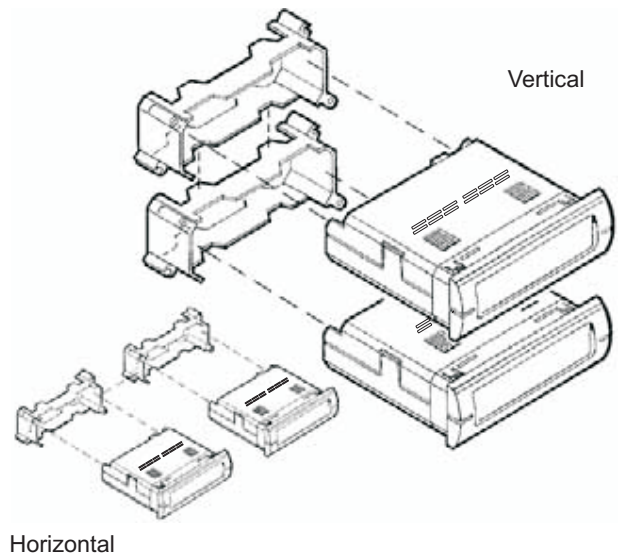
Note: Any physical damage to the Meter during calibration will void the warranty.

Stacking Features

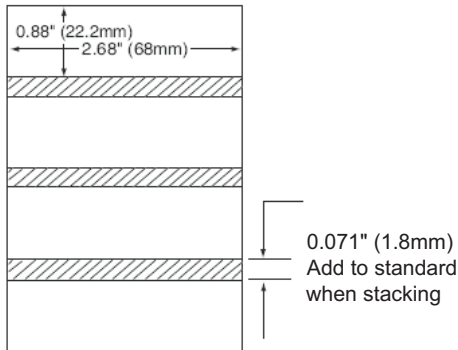
Multiple units can be mounted in a single opening, allowing perfect alignment by using mounting brackets, included with every DPM (which can be connected together).

To punch one hole for multiple units, be sure to adjust the standard panel cutout dimensions as shown here; otherwise the meters will not fit properly in the hole.

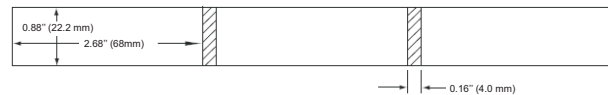
Mounting multiple units is quick and easy. Install the first meter (bottom unit first if stacking vertically). Position the next mounting bracket snugly against the first one, and slide the second meter into place. Repeat for remaining units.



Vertical Standard cutout



Horizontal Standard cutout



Ordering Information:

SKU Number	MODEL	Input Range	Accuracy	Display Span	Display	True RMS	Voltage Drop	Maximum Overload Allowed	Use With	Power Required
12G472	R312 AC Current	0 to 5A AC	+/-0.5% of reading +/-5count	0 to10/100/1000	Gray LCD	Yes	50 mVAC	6A AC	External 5A AC CT	85-250VAC
12G473				0 to 30/300	Gray LCD	Yes				85-250VAC
12G474				0 to 50/500	Gray LCD	Yes				85-250VAC
12G475				0 to 20/200	Gray LCD	Yes				85-250VAC
12G476				0 to10/100/1000	Red LCD	Yes				85-250VAC
12G477				0 to 50/500	Red LCD	Yes			85-250VAC	
12G493	R312 DC Current	0 to 50mVDC	+/-0.1% of reading +/-1Count	0 to 100ADC	Gray LCD		50 mVDC	6 A DC	External 50mVDC Shunt	85-250VAC
12G494				0 to 100ADC	Red LCD					85-250VAC
Input Impedence										
12G484	R312 AC Voltage	0 to 200VAC	+/-0.5% of reading +/-5count	1999	Gray LCD	Yes	1 M-ohm	200 VAC		85-250VAC
12G485					Red LCD	Yes				85-250VAC
12G488	R412 AC Voltage	0 to 270VAC	+/-0.5% of reading +/-5count	19999	Black LCD	Yes	1 M-ohm	270 VAC		85-250VAC
12G489					Red LCD	Yes				85-250VAC
12G505	R312 DC Voltage	0 to 200mVDC	+/-0.1% of reading +/-1Count	1999	Gray LCD		10 M-ohm	100 VDC		85-250VAC
12G498		0 to 20VDC			Gray LCD		10 M-ohm	250 VDC		85-250VAC
12G507		0 to 200VDC			Gray LCD		9.9 M-ohm	250 VDC		85-250VAC
12G503		0 to 20VDC			RED LCD		10 M-ohm	250 VDC		85-250VAC
12G509		0 to 200VDC			RED LCD		9.9 M-ohm	250 VDC		85-250VAC
12G512	R312 Frequency	20 - 199.9Hz	+/-0.2% of I/P +/-0.2Hz	20 to 199.9	Gray LCD					85-250VAC
12G513										

Safety Symbols



The WARNING sign denotes a hazard. It calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personal injury.



The CAUTION sign denotes a hazard. It calls attention to an operating procedure, practice, or the like, which, if not correctly adhered to, could result in damage to or destruction of part or all of the instrument.

LIMITED ONE-YEAR WARRANTY

If this product fails to perform satisfactorily due to a defect or poor workmanship within **ONE YEAR** from the date of purchase, return it to the place of purchase and it will be replaced free of charge. Incidental or consequential damages are excluded from this warranty.