

MODEL DP5D - UNIVERSAL DC DISPLAY



- HIGH ACCURACY 4½ DIGIT READOUT
- OPTIONAL CUSTOM UNITS OVERLAY W/ BACKLIGHT
- FOUR VOLTAGE RANGES (300 VDC Max)
- FIVE CURRENT RANGES (2A DC Max)
- ONE PASS FIELD SCALING
- 24V OUTPUT FOR TRANSMITTER POWER
- MAX AND MIN READING MEMORY
- 10 READINGS/SEC CONVERSION RATE
- TIME-INPUT INTEGRATOR
- PROGRAMMABLE FUNCTION KEYS
- PROGRAMMABLE DIGITAL CONTROL INPUT



UL RECOGNIZED
USA



UL RECOGNIZED
CANADA



EMC
COMPLIANT



NEMA 4X /
IP65



PARAMETER
LOCKOUT



FRONT PANEL
PROGRAMMABLE

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DOC # 04011

Product Features

The DP5D (Universal DC Input Meter) offers many features and performance capabilities to suit a wide range of industrial applications. The meter employs advanced technology for stable, drift free readouts. The 4½ digit Meter has four voltage inputs (300 VDC max) and five current inputs (2 A DC max). The built-in 24 VDC supply can be used to power transmitters.

The meter provides a Max and Min reading memory with programmable capture time. The capture time is used to prevent detection of false max and min readings which may occur during start-up or unusual process events.

The signal totalizer (integrator) can be used to compute a time-input product. This can be used to provide a readout of totalized flow, calculate service intervals of motors and pumps, etc. The totalizer can also accumulate batch weighing operations.

Once the meter has been configured, the parameter list may be locked out from further modification.

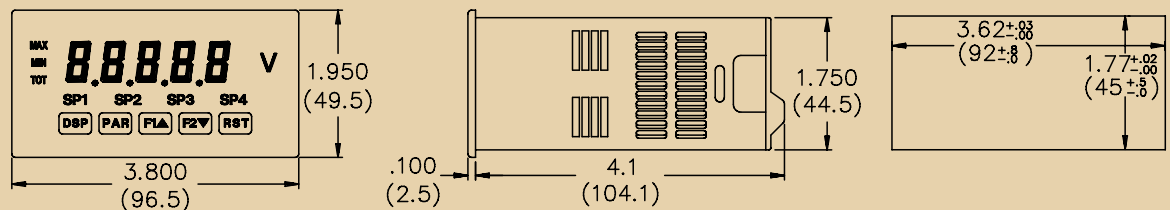
The meter has been specifically designed for harsh industrial environments. With NEMA 4X/IP65 sealed bezel and extensive testing of noise effects to CE requirements, the meter provides a tough yet reliable application solution.

UNITS LABEL KIT (PAXLBK)

Each meter has a units indicator with backlighting that can be customized using the Units Label Kit. The backlight is controlled in the programming.

Note: Users requiring Alarms, Outputs, and/or Communications should refer to the PAXD.

DIMENSIONS "In inches (mm)"



General Specifications

- DISPLAY:** 5 digit, 0.56" (14.2 mm) red LED, (-19999 to 99999)
- POWER:**
 - AC Versions (DP5D0000):**
 - AC Power: 85 to 250 VAC, 50/60 Hz, 15 VA
 - Isolation: 2300 Vrms for 1 min. to all inputs.
 - DC Versions (DP5D0010):**
 - DC Power: 11 to 36 VDC, 11 W
 - AC Power: 24 VAC, ± 10%, 50/60 Hz, 15 VA
 - Isolation: 500 Vrms for 1 min. to all inputs (50 V working).
- ANNUNCIATORS:**
 - MAX - maximum readout selected
 - MIN - minimum readout selected

- TOT - totalizer readout selected, flashes when total overflows**
Units Label - optional units label backlight
- KEYPAD:** 3 programmable function keys, 5 keys total
- UPDATE RATES:**
 - A/D conversion rate:** 10 readings/sec.
 - Step response:** 300 msec. max. to within 99% of final readout value (digital filter and internal zero correction disabled)**
 - 700 msec. max. (digital filter disabled, internal zero correction enabled)**
 - Display update rate:** 1 to 10 updates/sec.
 - Max./Min. capture delay time:** 0 to 3275 sec.

MODEL DP5D - UNIVERSAL DC DISPLAY

General Specifications

6. **EXCITATION POWER:**
Transmitter Power: 24 VDC, $\pm 5\%$, regulated, 50 mA max.
7. **TOTALIZER:**
Time Base: second, minute, hour, or day
Time Accuracy: 0.01% typical
Decimal Point: 0 to 0.0000
Scale Factor: 0.001 to 65,000
Low Signal Cut-out: -19,999 to 99,999
Total: 9 digits, display alternates between high order and low order readouts
8. **MEMORY:** Nonvolatile E²PROM retains all programmable parameters and display values.
9. **ENVIRONMENTAL CONDITIONS:**
Operating Temperature Range: 0 to 50°C
Storage Temperature Range: -40 to 60°C
Operating and Storage Humidity: 0 to 85% max. relative humidity non-condensing
Altitude: Up to 2000 meters

10. **CERTIFICATIONS AND COMPLIANCES:**
SAFETY
 EN 61010-1, IEC 1010-1
 UL Recognized Component, File #E179259
 Recognized to U.S. and Canadian requirements under the Component Recognition Program of Underwriters Laboratories, Inc.
- ELECTROMAGNETIC COMPATIBILITY**
 Immunity to EN 50082-2
 Emissions to EN 50081-2
11. **CONNECTIONS:** High compression cage-clamp terminal block
Wire Strip Length: 0.3" (7.5 mm)
Wire Gauge Capacity: One 14 AWG (2.55 mm) solid, two 18 AWG (1.02 mm) or four 20 AWG (0.61 mm)
12. **CONSTRUCTION:** This unit is rated for NEMA 4X/IP65 indoor use. IP20 Touch safe. Installation Category II, Pollution Degree 2. One piece bezel/case. Flame resistant. Synthetic rubber keypad. Panel gasket and mounting clip included.
13. **WEIGHT:** 7 oz. (200 g)

Input Specifications

1. **A/D CONVERTER:** 16 bit resolution ***
2. **DISPLAY MESSAGES:**
 "LOL" - Appears when measurement exceeds + signal range.
 "ULUL" - Appears when measurement exceeds - signal range.
 ". . . ." - Appears when display values exceed + display range.
 "- . . ." - Appears when display values exceed - display range.
3. **INPUT RANGES:**

Input Range	Accuracy* (18 to 28°C)	Accuracy* (0 to 50°C)	Impedance/Compliance	Max Continuous Overload	Resolution
± 200 mVDC	0.03% of reading +30 μ V	0.12% of reading +40 μ V	1.066 Mohm	100 V	10 μ V
± 2 VDC	0.03% of reading +0.3 mV	0.12% of reading +4 mV	1.066 Mohm	300 V	0.1 mV
± 20 VDC	0.03% of reading +3 mV	0.12% of reading +4 mV	1.066 Mohm	300 V	1mV
± 300 VDC	0.05% of reading +30 mV	0.15% of reading +40 mV	1.066 Mohm	300 V	10 mV
± 200 μ ADC	0.03% of reading +0.3 μ A	0.12% of reading +0.4 μ A	1.11 kohm	15 mA	10 nA
± 2 mADC	0.03% of reading +0.3 μ A	0.12% of reading +0.4 μ A	111 ohm	50 mA	0.1 μ A
± 20 mADC	0.03% of reading +3 μ A	0.12% of reading +4 μ A	11.1 ohm	150 mA	1 μ A
± 200 mADC	0.05% of reading +30 μ A	0.15% of reading +40 μ A	1.1 ohm	500 mA	10 μ A
± 2 ADC	0.5% of reading +0.3 mA	0.7% of reading +0.4 mA	0.1 ohm	3 A	0.1 mA

* After 20 minute warm-up. Accuracy is specified in two ways: Accuracy over an 18 to 28°C and 10 to 75% RH environment; and accuracy over a 0 to 50°C and 0 to 85%RH (non-condensing environment). Accuracy over the 0 to 50°C range includes the temperature coefficient effect of the meter.

** The meter periodically (every 12 seconds) imposes a 500 msec delay to compensate for internal zero drift. If the delay affects applications where step response is critical, it can be defeated. Set the display update to 10/sec to disable. In this case, add a zero error of 0.1% FS over the 0 to 50°C range.

*** Nominal Resolution. The internal resolution is the input range divided by 65,535.

4. **LOW FREQUENCY NOISE REJECTION:**
Normal Mode: > 60 dB @ 50 or 60 Hz $\pm 1\%$, digital filter off
Common Mode: >100 dB, DC to 120 Hz
5. **USER INPUT (Logic Level):** One software defined user input
Max. Continuous Input: 30 VDC
Isolation To Sensor Input Common: Not isolated
Response Time: 50 msec. max.
Logic State: Jumper selectable for sink/source logic
- | INPUT STATE | SINKING INPUTS | SOURCING INPUTS |
|-------------|-------------------------------|-------------------------|
| | 22 K Ω pull-up to +5 V | 22 K Ω pull-down |
| Active | $V_{IN} < 0.7$ VDC | $V_{IN} > 2.5$ VDC |
| Inactive | $V_{IN} > 2.5$ VDC | $V_{IN} < 0.7$ VDC |

6. **FIELD SCALING:**
Method: Key-in data or apply signal
Display Range: -19,999 to 99,999
Decimal Point: 0 to 0.0000

Ordering Information

TYPE	MODEL NO.	DESCRIPTION	PART NUMBERS
Meter	DP5D	Universal DC Input Panel Meter, AC Powered	DP5D0000
		Universal DC Input Panel Meter, DC Powered	DP5D0010
PAXLBK	PAXLBK	Units Label Kit Accessory	PAXLBK10