

**WORDS
FIRST**

LCD LOOP POWERED METER WITH SERIAL & USB I/O FOR I.S. - MIL-SPEC - NUCLEAR & HI-REL INDUSTRIAL

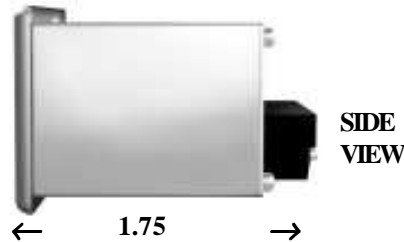
**MODEL
LPM**

4 1/2 DIGITS BACKLIT



Span

Zero



**SIDE
VIEW**

FEATURES:

- Full 4 1/2 Digits (.1.9.9.9.9) 1/2" High
- Loop Powered, Low Burden
- 100% Metal Housing Nickel Plated
- Captive Screw Terminal Connector
- Wide Zero & Span Adjustments
- Loop Powered Backlight
- NEMA 4X, EMI/RFI Gaskets
- RS232, 485 or USB I/O
- Remote Display With Serial Input
- No Input Reflected Noise
- Stand Alone/SCADA/DCS Use
- 28VDC Power For Transmitter
- Lifetime Warranty

4 1/2 DIGIT REFLECTIVE



REAR VIEW



**2.80" X 1.310" PANEL CUTOUT
BEZEL: 2.91 X 1.52"**

DESCRIPTION

OTEK's New **LPM** Series brings the latest technology to your process! The single I.C. A/D can perform all the functions by itself or when the Serial I/O option is included, it can become a microprocessor based DPM with Serial I/O, Scaling, Zero Offset, Peak & Hold, Decimal Point and more. And all **Loop Powered!**

You can also use the **LPM** as serial input **Remote Display**.

The **LPM** is available in several configurations:

1. **Loop Powered Stand Alone** with or without backlight.
Only 2 wires to connect!
2. **Externally Powered** (VDC) mA/V DPM
3. **U.S.B. Powered** Your PC provides the power (5VDC).
The compact metal case is Seismic Tested. The "EURO" screw connector is screwed to the case.

ADJUSTMENTS: Front panel adjustments; **Span** is on the left, **Zero** on the right.

BURDEN on your 4-20mA Loop is as low as 0.1V for externally powered models and as high as 5.5V for Loop Powered with backlight.

POWER FOR TRANSMITTER: 28VDC @ 20mA available on externally powered models (Options 1-8). See Note 7. Consumes 200mA @ 5VDC (1 Watt).

INTRINSICALLY SAFE Approval: Pending for CLI, Div. 1 & 2 GPS. A-G. See Note #5.

MIL-SPEC & NUCLEAR Qualified versions are built to your requirements. Contact **OTEK**.

The **HOUSING** is plastic or machined aluminum, nickel plated. **Sanitary & Explosion Proof** can be pipe, panel, wall or conduit mounted.

SPECIFICATIONS @ 25°C (Industrial Grade)

Loop Powered Models:

- Burden: 4.5V Max. With Red Backlight (7V for "S" Grade)
- 5.5V With Green Backlight
- Max. Input Current: 36mA, Max. Volts: 30V
- Min. Input Current: 3.6mA without μ Processor
- Accuracy & Linearity: $\pm 0.01\%$ of F.S. ± 1 Digit
- Span Adjustment: ± 3000 Counts of F.S. (10,000)
- Zero Adjustment: ± 3000 Counts of Zero (00000)
- Standard Calibration: 4-20 = 0-10000, Others On Request
- Serial I/O: RS232E (Parasitic)

Powered Models:

- Loop Burden: 1.0V @ 20mA; 50 Ohms (w/o microcontroller)
- Loop Burden: 0.1V @ 20mA; 5 Ohms (with microcontroller)
- Current Requirement @ 5V: 1mA + Backlight (20mA) (w/o microcontroller)
- Current Requirement @ 5V: 10mA + Backlight (20mA) (with microcontroller)
- Power Input: USB, 5VDC, 5-48VDC & 100-240VAC On Request

OTHER SPECIFICATIONS

- Display: LCD, 4 1/2 Digits 0.5", 6 O'Clock Viewing Angle
- Input Type: Differential & Single Ended. 10M For VDC
- Common Mode R.R.: 100dB @ 50/60 Hz
- Conversion Rate: 2 1/2/Second
- Step Response: 0.8 Sec. (0-90% of F.S)
- Common Mode Voltage: ± 2 VDC
- Op./Storage Temp: -10 + 60/ -20 + 70°C
- MTBF: >100,000 Hours
- Serial I/O: RS232/485/USB, 300-19, 2KBB (8N1)
- RS232 Power: Parasitic From RS232, when loop powered
- RH: 5-95% RH Non-Condensing
- Temperature Coefficient: 50PPM/°C
- Sanitary Case: To 250°F Steam Cleaning Compatible
- Explosion Proof For Class I, Div. 1 & 2 Certified
- Decimal Points Only Available in μ Processor Versions (Serial I/O)

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MADE
IN
USA



LPM SERIES

ORDERING INFORMATION 6-11-09

Model: LPM - 1 2 3 4 5 6 7 8



GRADE (1)

- I Industrial
- M Mil-Spec
- N Nuclear (Contact Otek)
- S Intrinsically Safe
- 9 Custom

INPUT TYPE (2)

- 0 4-20mA Loop Power
- 1 External Power 4-20mA
- 2 External Power 2mA F.S.
- 3 External Power 20mA F.S.
- 4 External Power 200mA F.S.
- 5 External Power 2V F.S.
- 6 External Power 20V F.S.
- 7 External Power 200V F.S.
- 8 ... External Power 2V Ratiometric
- 9 Custom
- R Serial Remote Display Only

POWER INPUT (2,3)

- 0 Non-Isolated Loop Powered
- 1 Non-Isolated 5VDC
- 2 Non-Isolated 6-14VDC
- 3 Non-Isolated USB Powered
- 4 Isolated 5VDC +/- 10%
- 5 Isolated 12VDC +/- 10%
- 6 Isolated 24VDC +/- 10%
- 7 Isolated 48VDC +/- 10%
- 8 Isolated 100-240VAC
- 9 Custom

RANGE/CALIBRATION

- 0 Standard
- 9 Custom

CASE STYLE (6)

- 0 Standard Metal
- 1 Standard Metal NEMA 4X
- 2 Sanitary
- 3 Explosion Proof
- 4 Plastic
- 9 Custom

POWER FOR TRANSMITTER (3)

- 0 None
- 1 Included

SERIAL I/O (5)

- 0 None
- 1 ... Parasitic (Loop Powered) RS232E
- 2 Non-Isolated Powered RS232D
- 3 Non-Isolated Powered RS485
- 4 Non-Isolated Powered USB
- 9 Custom (Specify)

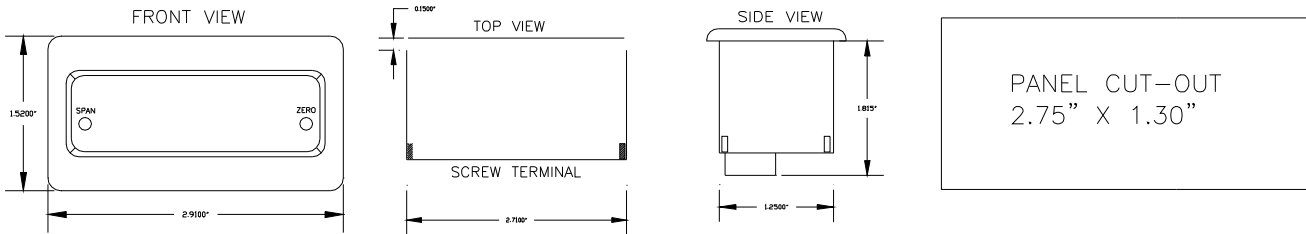
BACKLIGHT (4)

- 0 None
- 1 Positive Image Red
- 2 Positive Image Green
- 3 Negative Image Red
- 4 Negative Image Green
- 9 Custom

NOTES:

- Contact OTEK for M, N & S Grades. **"Intrinsically Safe"** by design. No Certificate Available Until Further Notice. Otek will build to certain MIL-standards but testing and confirmation of compliance, if required, will need to be done by a third party and at customer's expense.
- Inputs for VAC, RTD, TC, Hz Available on Request

- Power for transmitter (28VDC@20mA) NOT available with power input option 2 (6-14VDC in).
- Backlight Dimmest @ 4mA, Brightest @ 20mA. If Ext. Power Requires 10-40mA.
- Only RS232E is available with **Loop Powered**, others powered. Must have serial I/O to implement processor's functions (if required).
- Maximum of 3 Units Inside Sanitary Case. Specify Option 9 and Describe.



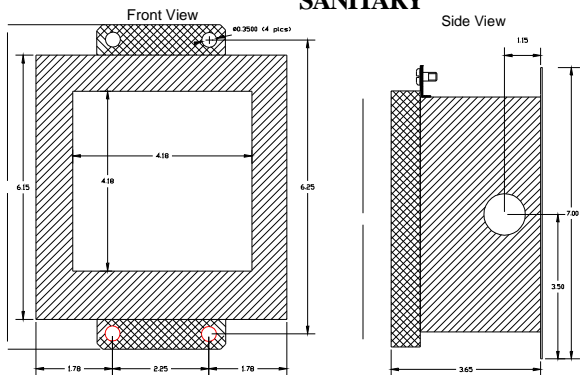
NOTES:

- Do Not Connect To Pins 1, 2 & 3 (For Special Functions Only)
- Standard Serial I/O Settings are 8N1, 9600Kb Baud Rate, Address and Decimal Point are serially programmable.

For Loop Powered Just Connect

"+ Loop" to Pin 6, "-Loop" to Pin 7. All Others See User's Manual at www.otekcorp.com/otekdwld/lpm-ledpmanual.pdf

SANITARY



EXPLOSION PROOF

