

NEW

LOOP POWERED (& USB POWERED) LCD BARGRAPH FOR I.S. - MIL-SPEC - NUCLEAR & H.D. INDUSTRIAL

MODEL LBD

FEATURES:

- RS232, 485, USB, I/O
- 101 Bars, & 4 1/2 Digits LCD Display
- Bi-Polar With Center Zero
- Optional Automatic Tricolor Backlight
- Fits Industry's Standard 5.7 X 1.77" Cutout
- **NEMA 3**, Front Panel, 2.5" Deep
- No Input Reflected Noise
- Remote Display With Serial Input
- Optional Relay or O.C.T. Outputs (4)
- Four Alarm Annunciators
- Stand Alone Or DCS/SCADA Use
- Replaces GE/Yokogawa 180; Prime, Signal, Int'l. Inst., Bowmar #1151, Westinghouse/Weschler VX251, Dixon/Ametek BB101, A & M/Weston, Triplet, Takemoto, NES and Other 6" Type But.
- Lifetime Warranted!
- See **EBD** For LED Version



SPECIFICATIONS @ 25°C

Loop Powered Models:

- Burden: 4.5V Max. (7V for "S" Version)
- Max. Input Current: 36mA
- Min. Input Current: 3.6mA
- Accu. & Lin.: ±0.05% of F.S.
- Span Adj.: ±3000 Counts of F.S.
- Zero Adj.: ±3000 Counts of Zero
- Standard Cal.: 4-20 = 0-10000/100%
- Serial I/O: RS232E

OTHER SPECIFICATIONS

- Viewing Angle: 6 O'Clock ± 45°
- Bars: 101 Each 1" Wide
- Digits (5) & Annunciators (4): 0.4" High
- Input Type: Differential & Single Ended.
- RS232E: Parasitic 300-9600KB
- **USB OR EXTERNALLY POWERED MODELS**
- Loop Burden: 1V @ 20mA, VinZ: 10MOhms
- Relays: 4 Ea. 1 Amp SPDT (200mA @ 5VDC) or O.C.T. 30V/100mA
- Backlight: Automatic/Manual Tricolor Red, Green, Orange (20mA @ 5VDC)
- Power For Transmitter: 30VDC @ 30mA (200mA) or
- Isolated Retransmission: 4-20mA, 500 Ohm Max.(200mA)
- Fully Loaded I @ 5VDC: 750mA

ENVIRONMENTAL:

- *Op/Storage Temp.: -10 + 70°C/-20 + 80°C
- *Humidity: 5-95RH Non-Condensing
- *MTBF: >100,000 Hours

DESCRIPTION

The Innovator & Leader on Automatic Tricolor Bargraphs, now offers you the latest technology for replacement and new applications. The New **LBD** Series uses a highly integrated ASIC/DSP and Nanowatt microcontroller along with a proven software package approved and used by the Military & Nuclear Industries on its popular **HI-Q** Series.

Use the **LBD** as a serial input **Remote Display**.

The **LBD** is available in 2 basic versions:

1. **Loop Powered:** Uses **NANOWATT** Technology for display, RS232E I/O and Automatic Tricolor Backlight.

2. **Externally Powered:**

ANALOG INPUTS: Industry's standard 4-20mA, mA and VDC are included. Custom signal conditioners for %RH, pH, TC, RTD, RMS, S-G and more are available on request.

MATH FUNCTIONS: RTD, TC & X-Y linearization plus Tare, Offset, Scale, Peak and more are programmable via simple commands. (Needs Serial I/O)

CONTROL OUTPUTS: 4 each relays or 4 open collector transistors for High, High-High, Low and Low-Low Control. (Needs Serial I/O)

ANALOG OUTPUT: Optional isolated 0-1mA, 4-20mA, 0-20mA or 0-5VDC with 16 Bit resolution. (Needs Serial I/O)

SERIAL I/O: Standard is RS232 with optional RS485 or **USB**. You can even power the **LBD** via the **USB** port (2W Max.).

POWER INPUT: Standard is 5VDC with optional isolated 10-75VDC, 100-240VAC or USB powered.

POWER OUTPUT FOR 4-20mA TRANSMITTER: Only available with **External Power** either non-isolated 28VDC @ 20mA or isolated 30V @ 20mA. See Control Outputs and Note 7.

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MADE
IN
USA



LBD SERIES

PRELIMINARY ORDERING INFORMATION 1-6-10

Model: LBD- LBD

GRADE (1)

I Industrial

M Mil-Spec

N Nuclear (Contact Otek)

S Intrinsically Safe

9 Custom

INPUT TYPE FULL SCALE (2)

0 Loop Powered 4-20mA

1 Loop Powered 10-50mA

2 4-20mA External Power

3 10-50mA External Power

4 ±1.0VDC External Power

5 ±10VDC External Power

6 ±100VDC External Power

7 ±1mADC External Power.

8 ±10mADC External Power

9 Custom

R None, Remote Display

POWER INPUT (3)

0 Loop Powered

1 Non-Isolated 5VDC

3 Isolated 10-32VDC

4 Isolated 18-75VDC

5 Isolated 100-240VAC

6 USB Powered

9 Custom

RANGE/CALIBRATION

0 Standard

9 Custom

SCALE PLATE

0 Standard (0-100%)

9 Custom

HOUSING (7)

0 Plastic Without Trim Plates

1 Plastic With Trim Plates

2 Metal Without Trim Plates

3 Metal With Trim Plates

CONTROL OUTPUTS (6)

0 None

1 (200mA) Relays (4 ea.)

2 (20mA) Open Collector Xtrs. (4 ea.)

3 (200mA) Retransmission (4-20mA)

4 (200mA) 30VDC For Transmitter

5 (400mA) Relays & 4-20mA Out

6 (220mA) O.C.T. & 4-20mA

7 (400mA) Relays & 30VDC Out

8 (220mA) O.C.T. & 30VDC Out

9 Custom

A Non-Isol. 28VDC for Transmitter

B Non-Isol. 28VDC and Relays

D Non-Isol. 28VDC & O.C.T.

E Non-Isol. 28VDC & 4-20mA Out

SERIAL I/O (5) (3)

1 (None) Parasitic RS232E

2 (10mA) Standard RS232D

3 (10mA) RS485

4 (10mA) USB

5 (200mA) Ethernet

9 Custom (Specify)

TRICOLOR (RGY) BACKLIGHT (4)

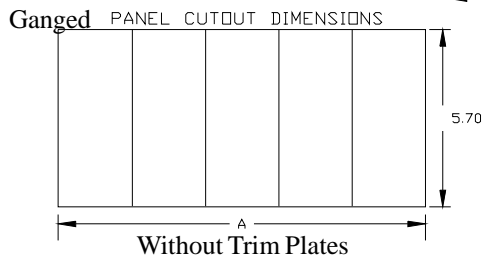
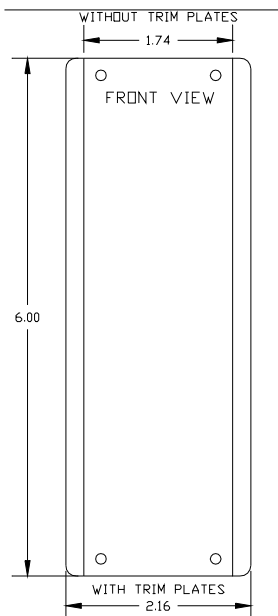
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1 Included

NOTES: *=Options Power Consumption @5VDC

- Contact OTEK for M, N & S Versions. Contact OTEK. I.S. "Compliant By Design", No Certifi-cate 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.
- Not All Input Signals & Power Inputs Are Available With I.S. Grade. Contact OTEK for other ranges and signal conditioners and use #9.
- USB Powered is limited to 0.5A @ 5V (V2.0). Contact OTEK for maximum loading. Requires Serial I/O.
- Standard Viewing Angle: "Straight On". Backlight requires Serial I/O.
- Only Option 1, Parasitic **RS232E** is available with **Loop Powered** Version. Only Zero & SPAN adjustments are available without Serial I/O.
- Power transmitter either **Non-Isolated** (Options A, B, D or E). Isolated (Options 4, 7 or 8) but can not have retransmission (4-20mA Out).

MECHANICAL INFORMATION



DIMENSION	+0.03	+0.76
"A"	-0.00	-0.00
# UNITS	INCHES	mm
1	1.77	44.96
2	3.52	89.41
3	5.26	133.60
4	6.99	177.55
5	8.73	221.74

Plastic Trim Plates P/N 50-LBD-2
Metal Trim Plates P/N 50-119-2

SIDE VIEW

