WORLD'S FIRST

LOOP POWERED "SWITCHBOARD" BARGRAPH WITH SERIAL I/O FOR: *I.S. *MIL-SPEC *NUCLEAR AND HI-REL INDUSTRIAL APPLICATIONS

MODEL LSB

Bars ***Needles***

FEATURES:

- Parasitic RS232E
- 101 Bars & 4 1/2 Digits LCD Display
- 101 Needles & 4 1/2 LCD Digits
- Loop or External Powered
- Bi-Polar With Center Zero
- Optional Automatic Tricolor Backlight
- Fits 3.375" & 90mm Cutout
- Replaces Any Analog Loop Powered Meter
- Power For Transmitter

DESCRIPTION

In 1975 **OTEK** introduced the World's First Loop Powered DPM. In 1979, The First Loop Powered Bargraph. In 1996 the Automatic Tri-Color Bargraph and in 2004 the World's First Loop Powered Serial I/O DPM. Now **OTEK** brings you the ***World's First Loop Powered Switchboard Style Bargraph*** to complement its New Edgewise Loop Powered Bargraph (**LBD**), the **LPI** (Loop Powered Isolator) and the **LPT** (Loop Powered R.F. Wireless Transmitter) - **Just Released!**

Now you can power your transmitter (4-20mA) from the **LSB**! All you need is 5-48VDC or 90-265VAC power. The New **LSB** shares the same housing as our successfull **HI-Q123**, **HI-Q124** & **HI-QTBS** but without the rear module. This means **Nothing Behind The Panel!** Just 1" on the front and thanks to **NANOTECHNOLOGY** we have internal space to spare for future growth and your custom needs. The **LSB** is available with 101 segments (bars) or 101 needles. Loop Powered or externally powered, with or without automatic tricolor backlight controlled by the 4 indicating alarms. The **LSB** is fully configurable for many functions (See User's Manual at www.otekcorp.com/otekdwnld/lsbmanual.com). Standard calibration and configuration (unless otherwise specified) is:

a. Left Zero, 4-20mA or 0-2V = 0 - 10,000 counts and 100 bars or 0-1,000 counts and 100 needles.
b. Alarm Annunciators (bars only) set for: 25, 50, 75 & 100% of Scale.
c. Backlight: Red: 0-10%, Orange: 11-20%, Green: 21-80%, Orange: 81-90%, Red: 91-100%. But, if you need to change it, just plug in a handheld terminal into the RJ11-4 connector just below the display (not shown).

Warranty: Lifetime Ltd.

IF YOU DON'T SEE IT ASK FOR IT!

520-748-7900
FAX: 520-790-2808
E-MAIL:sales@otekcorp.com
http://www.otekcorp.com

OTEK CORP.
SINCE 1974

4016 E. TENNESSEE ST.
TUCSON, AZ. 85714 U.S.A.
MADE IN USA

LSB SERIES

SPECIFICATIONS @ 25^{0}C (Industrial Grade)

Loop Powered Models:

- Burden: 5.5V Max. (7V for "S" Grade)
- Max. Input Current: 36mA, Max Volts: 30VDC
- Min. Input Current: 3.6mA
- Accuracy & Linearity: ±0.05% 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

Externally Power Models:
Choice of 5, 12, 24 or 48VDC isolated input or 90-265VAC 47/63Hz isolated input.

OTHER SPECIFICATIONS

- Bars: 101 3/8" Wide & 4 1/2 Digits (19999) or 101 Needles 1.5" Long & 4 1/2 Digits
- Digits (5) & Annunciators (4): 0.4" High
- Power For Transmitter: 28VDC@20mA (requires 1 Watt Power Input)
- Input Type: Differential & Single Ended. 10MΩ For VDC
- All Configurations via Serial Port For Added Security
- 5VDC Powered: 40mA @ 5V
- Zero & Span Adjustments: On Rear (See Note 5) or Via Serial Port
- Z in For V: 10 MEG Ohms
- Z in For 2mA: 100 Ohms

GRADES: 4 grades are available, all with the same high reliability and tested and approved for:
I Industrial, **M** to specific Mil-Specs, **N** Nuclear to 10CFR50B and **S** Intrinsically Safe for Class I Div. 1.(See Note 1) Contact **OTEK** for more details.

HOUSINGS: Either plastic, metal, explosion proof or sanitary to 250^{0}F Steam cleaning.

ENVIRONMENTAL:

*Op/Storage Temp.: -10 + 70^{0}C/-20 + 80^{0}C
*Humidity: 5-95RH Non-Condensing
*MTBF: >100,000 Hours

ORDERING INFORMATION (7-13-07)

Model: LSB- 1 2 3 4 5 6 7

GRADE (1)
- I ..... Industrial
- M ..... Mil-Spec
- N ..... Nuclear
- S ..... Intrinsically Safe
- 9 ..... Custom (Specify)

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 (4) (6)
- 0 ..... Loop Powered
- 1 ..... Non-Isolated 5VDC
- 2 ..... Isolated 5VDC ±10%
- 3 ..... Isolated 12VDC ±10%
- 4 ..... Isolated 24VDC ±10%
- 5 ..... Isolated 48VDC ±10%
- 6 ..... Isolated 90-265VAC
- 7 ..... Non-Isolated USB Powered
- 9 ..... Custom (Specify)

DISPLAY TYPE (3)
- 0 ..... Bars Reflective
- 1 ..... Bars BackLighted
- 2 ..... Needles Reflective
- 3 ..... Needles Backlighted
- 9 ..... Custom

HOUSING & MOUNTING (5)
- 0 ..... Plastic & 3.375"
- 1 ..... Plastic & 90mm
- 2 ..... Metal & 3.375"
- 3 ..... Metal & 90mm
- 4 ..... Explosion Proof
- 5 ..... Sanitary
- 9 ..... Custom

CONTROL OUTPUTS (7) (*) (8)
- 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 & Relays
- D ..... Non-Isol. 28VDC & O.C.T.
- E. ..... Non-Isol. 28VDC & 4-20mA Out

SERIAL I/O (4)
- 0 ..... None
- 1 ..... Parasitic (Loop Powered) RS232E
- 2 ..... Powered RS232D
- 3 ..... Powered RS485
- 4 ..... Powered USB
- 9 ..... Custom (Specify)

CF = Consult Factory

NOTES: * = Options Power Consumption @5VDC

1. Contact OTEK for applicable specs for M, N & S Grades. "S" Grade Intrinsically Safe By Design. Agency approval on request.
2. Specify input range and calibration for Options 2, 3 or 9
3. Standard calibration and configuration - See Description **OTEK** will configure the **LSB** for any standard configuration at no charge at time of shipping. Reconfiguration charge is $50.00/unit minimum. Specify yours when ordering or use our commands. See User's Manual.
4. The **LSB** lends itself to many variations and I/O. Contact OTEK for your custom power input, serial I/O and control outputs.
5. Option AL Zero and SPAN adjustments on front on Options 0-3. No NEMA 4X Rating. Use #9 on Digit 9 and specify.
6. Power for transmitter only available with externally powered models.
7. USB Powered is limited to 0.5A @ 5V (V2.0). Contact OTEK for maximum loading. Requires Serial I/O.
8. Power For Transmitter: Non-Isolated: Options A, B, D or E. Isolated: (Options 4, 7 or 8) can Not Have Retransmission (4-20mA Out) and power for transmitter simultaneously. 4-20mA is standard, others on request.