

## Programmable LED Digital Panel Meter with Color Coded digits replaces older DB-40 instruments

HI-Q126

### FEATURES:

- ◆ 18 bit Delta-Sigma A/D converter
- ◆ 5VDC, 10-32VDC or 90-265VAC Power, 10 Watts maximum
- ◆ Optional Isolated 16 Bit analog output (4-20mA or 0-5VDC)
- ◆ Optional Four 10A Relays or 8- $\frac{1}{4}$ amp open collector transistor outputs
- ◆ Optional Isolated RS-232C/422/485 Serial communications
- ◆ Optional Isolated excitation to power your Sensors/Transducers
- ◆ 1, 2 or 3 analog input channels. Control the bargraph separately or perform complex math functions.
- ◆ Menu Driven Keypad programmable as soft keys for changes ON-THE-FLY
- ◆ Industrial NEMA 4X Rated Front Panel
- ◆ Math Functions: +, -, x,  $\div$ ,  $\sqrt{\quad}$  & More, user definable polynomials and 25 point linearization tables
- ◆ Color coded displays with 6 full digits each.



The HI-Q126 Digital Panel Meter, with its 3 independent displays, is perfect for showing your required process variables. The numeric displays are color coded for easy recognition and each has a full 6 digit readout. With the free configuration software, the HI-Q126 is ready to work for you within minutes. All displays are fully scalable to any engineering units from -199,999 to +999,999. Programmable decimal point location, alarm indicators, display flashing / dimming and serial retransmission make this the #1 choice for local readouts in substations and water treatment plants. Special color combinations are available on request.

# Specifications

## A/D CONVERTER

- Bi-polar 18-Bit Delta-Sigma A/D converter
- Accuracy:  $\pm 0.01\%$  of Full Scale
- Linearity:  $\pm 0.01\%$  of Full Scale
- Zero offset: Automatic/Programmable
- SPAN: User Programmable for any reading
- F.S.Input Voltage Range: User selectable with internal jumpers
- Sampling Rate: 16 conversions per second (62.5mS), 100 per second available on request.
- Input Type: DC with internal signal conditioners for RMS, thermocouple, RTD, Strain-Gage or Watts available.
- Input Bias: 50pA
- C.M.V.:  $\pm 2\text{VDC}$  max (when powered by 5VDC)
- CMR:  $>90\text{dB}$
- Averaging (Weighted): None to 40. Adjustable band method for quick response
- Input Impedance:  $>100\text{K}$  for voltage inputs  
 $<1\text{K}$  for current inputs.  
See ordering information for details.

## ANALOG CONTROL OUTPUTS

- 16-BIT Digital to Analog converter, Isolated
- Accuracy & Linearity:  $\pm 0.03\%$
- Outputs: 0-5VDC ( 100K ohm minimum load)  
4-20mADC ( 1K ohm maximum load)  
Sourcing at 24VDC
- Isolation: 500VDC
- Response 70mS standard, 12mS available on request

## ON-OFF CONTROL OUTPUTS RELAYS(4)

- Type: 4 each, S.P.D.T. Form "C"
- Max. Switching Current: 10A Res.
- Max. Switching Voltage: 30VDC/ 240VAC@Rated Current
- Contact Protection: Included
- Life Expectancy: 10,000,000 Cycles
- Activation: 30mS on / 50mS off
- Programmable Hysteresis eliminates chatter

## BiMOS (8) OPEN COLLECTOR

- Type: Sink Driver (Open collector Transistor)
- Isolation to 5V Power and analog inputs: None
- Isolation to 10-32VDC or 90-265VAC Power: 500V min
- Isolation to analog output: 500V minimum.
- Max. Current Sink: 250mA each
- $V_{\text{sat}}$  @250mA: 1.8V
- Standard Collector voltage: 5VDC
- External Collector voltage: Up to 35VDC
- Switching Speed: 100 $\mu\text{S}$

## POWER INPUTS

- 5VDC $\pm 5\%$  Non-Isolated from analog inputs
- 10-32VDC or 9-36VAC Isolated to 500V minimum
- 90-265VAC or 100-300VDC Isolated to 500V minimum
- Power Consumption 8Watts Maximum

## NEMA 4X

- NEMA 4x front panel when mounted in enclosure with the supplied gasket. Care must be taken during the installation process to not damage the gasket and to insure it is positioned properly

## ENVIRONMENTAL

- Operating Temperature..... -10 to 60 Degrees C
- Storage Temperature.....-40 to 70 Degrees C
- Humidity.....5% to 95% non-condensing
- Face Plate.....Lexan with epoxy ink printed on front

## DISPLAY

- High intensity light emitting diode (LED) type
- Viewing angle  $\pm 80$  degrees from center
- Three separate 6 digit numeric displays 0.6" tall

## QUALIFICATIONS

(N, M and S series only. Consult Factory)

- Meets EPRI TR102323 rev B
- Radiated Emissions MIL-STD-461
- Radiated Susceptibility MIL-STD-462
- Conducted Emissions MIL-STD-461
- Conducted Susceptibility MIL-STD-462
- Fast Transient
- Seismic IEEE 323 / 344
- Software V&V per IEEE
- Shock & Vibration MIL-STD-901 & MIL-STD-167
- MTBF calculated at 100,000 hours per MIL-HDBK
- Optional EMI / RFI mesh and conductive gasket available with metal housing only.

**ORDERING INFORMATION 1/2003)**



**DISPLAY TYPE (1)**

- 0 .. Standard red, green, yellow
- 9 ..... Custom (Factory #)

**SERIAL COMMUNICATIONS**

- 0..Non-Isolated RS-232 C Only (2)
- 1 ..... Isolated RS-232C&485
- 2 ..... Isolated RS-232C& 422
- 9 ..... Custom (Factory #)

**POWER INPUTS**

- 0 ..... 5VDC
- 1 ..... 10-32VDC
- 2 ..... 90-265VAC
- 9 ..... Custom (Factory#)

**CONTROL OUTPUTS**

- 0 ..... None
- 1 ..... 4 Relays
- 2 ..... 8 O.C.T.
- 9 ..... Custom (Factory#)

**ANALOG & POWER OUTPUTS**

- 0 ..... None
- 1 ..... 4-20mA, 1 Each
- 2 ..... 0-5VDC, 1 Each
- 6 ..... 4-20mA & 30VDC, 1 Each
- 7 ..... 0-5VDC & 30VDC, 1 Each
- 8 ..... 30VDC/30mA, 1 Each
- 9 ..... Custom (Factory#)

**HOUSING & MOUNTING**

- 0 ..... Plastic & 3.375"
- 1 ..... Plastic & 90mm
- 2 ..... Metal & 3.375"
- 9 ..... Custom (Factory #)

**DIGITAL INPUTS**

- 00.....None
- 01 ..... Multilevel
- 02 ..... TTL High Speed
- 09 ..... Custom (Factory #)

**ANALOG INPUTS (1 Channel)**

- 10 ..... VDC (1MΩ)
- 11 ..... mADC
- 12 4-20mA Current Loop (25Ω)
- 14 ..... VRMS (1MΩ)
- 15 ..... mARMS
- 17 ..... Strain-Gage (>200<400Ω)
- 18 ..... Strain-Gage (>1K<5KΩ)
- 20 ..... Resistance (50KΩ)
- 21 ..... Temperature RTD
- 22 Temperature Thermocouple
- 25 ..... mVDC(1MΩ)
- 29 ..... Custom (Factory #)

**ANALOG INPUTS (2 Channels)**

- 30 ..... VDC (1MΩ)
- 31 ..... mADC
- 32 .. 4-20mA Current Loop (25Ω)
- 33 ..... Watts DC (1M-0.1Ω)
- 34 ..... VRMS (1MΩ)
- 35 ..... mARMS
- 36 ..... Watts RMS (1M-0.1Ω)
- 41 ..... Temperature RTD
- 42 ..... Temperature TC
- 47 ..... mVDC (1MΩ)
- 49 ..... Custom (Factory #)

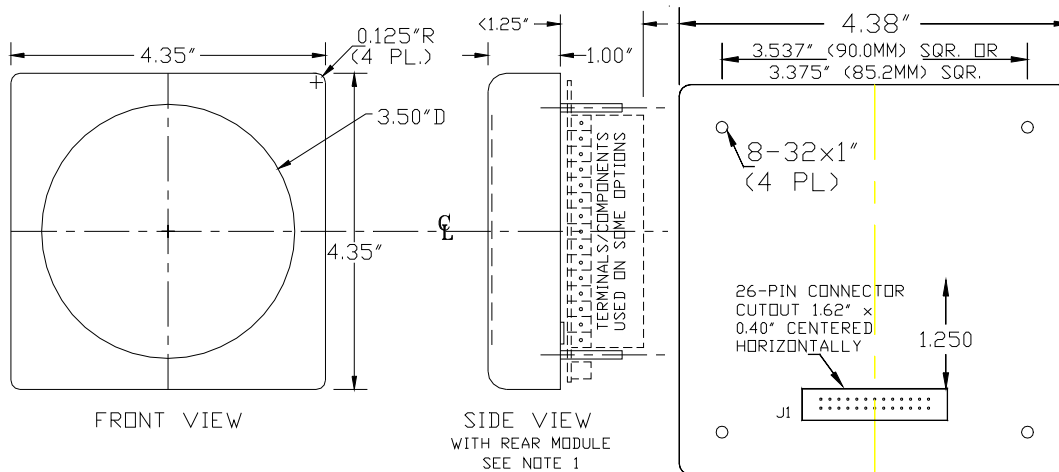
**ANALOG INPUTS (3 Channels)**

- 50 ..... VDC (1MΩ)
- 51 ..... mADC
- 52 .. 4-20mA Current Loop (25Ω)
- 53 ..... VRMS(1MΩ)
- 54 ..... mARMS
- 59 ..... Custom (Factory#)

**Note:**

1. Contact the Factory with your requirement for custom display or scales.
2. RS-232C only (Option 0) is not isolated.
3. Volt & Amps Ranges are Internal Jumper Range Selectable .5, 5, 10 & 50VDC, 1, 5, 20mADC. Shipped with .5V or 1mA Unless Specified.
4. Mixed Inputs (V&A, Temp & 4-20mA, Etc.) Available.
5. Specify Voltage input. Range option 36 is for use with 5A CT and 120VAC.

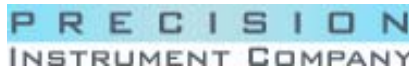
**MECHANICAL FOR ALL "SWITCHBOARD" STYLE METERS**



**Note:**

1. J<sub>1</sub> connector and 3.375" studs spacing meet ANSI 39.1 standard for switch board meters. J1 falls within existing "Barrel" cutout.

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