

# TRICOLOR BARGRAPH METER REPLACES OLDER MOORE PRODUCTS INDICATORS

MODEL  
HI-QTEK

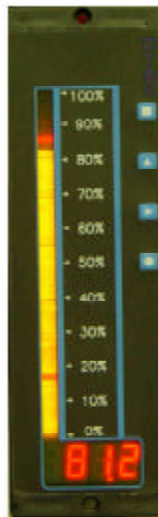


## Green

Bargraph display denotes value is within normal operating parameters. Notice the alarm marks (Yellow & Red). The bargraph can be programmed to change to the color of the alarm marks or only the portion beyond the alarm marks can change. Alternately, the alarm pointers can be disabled and the bargraph will still change to the pre programmed colors. Flashing the bargraph is easily configured and controlled with the alarm settings. Bargraph color and Alarm color is user programmable Red, Yellow or Green.

## FEATURES:

- ✦ 18 bit Delta-Sigma A/D converter
- ✦ 10-32VDC or 90-265VAC Power, 10 Watts maximum
- ✦ Optional Isolated RS-232C/422/485 Serial communications
- ✦ Optional Isolated excitation to power your Sensors/Transducers
- ✦ 1, 2 or 3 analog input channels. Control each bargraph separately or perform complex math functions.
- ✦ Math Functions: +, -, X, ÷, % & More, user definable polynomials and 25 point linearization tables
- ✦ Custom face plate markings available
- ✦ Bargraphs are programmable to change color at the limits or as a continuous color display
- ✦ Four 10 Amp relays (optional)
- ✦ Dual Isolated 16bit Analog output 4-20mA . 0-5VDC (optional)
- ✦ NEMA4x Front Panel with Gasket.
- ✦ All metal housing available

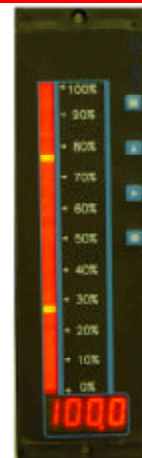


## Yellow

Bargraph display indicates value is just outside the normal operating parameters. Notice that the danger alarms (red) are still visible. These give an indication of how far from the danger zone you actually are. If programmed, the bargraph can flash at this alarm and relays can be triggered to turn equipment on or off.

## RED

Bargraph display shows value is outside the normal operating parameters. Notice that the warning alarms are still visible. These give an indication of how far from the intermediate zone you actually are. If programmed, the bargraph can flash at this alarm and outputs can be triggered to turn equipment on or off. The HI-Q also has a feature known as the "PANIC" setting. When enabled, this will cause the relays to switch to a user programmed state (open or close) and the analog output to jump to the predetermined setting. This is extremely usefull for taking control of a process in the event of a failure.



# 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.:  $\pm 2$ VDC max (when powered by 5VDC)
- CMR:  $>90$ dB
- Averaging (Weighted): None to 40. Adjustable band method for quick response
- Input Impedance:  $>100$ K for voltage inputs  
 $<1$ 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 OUTPUT RELAYS(6)

- 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 OUTPUT (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
- Vsat @250mA: 1.8V
- Standard Collector voltage: 5VDC
- External Collector voltage: Up to 35VDC
- Switching Speed: 100 $\mu$ S

## POWER INPUTS

- 10-32VDC or 9-36VAC Isolated to 500V minimum
- 90-265VAC or 100-300VDC Isolated to 500V minimum
- Power Consumption 10Watts Maximum

## ENVIRONMENTAL

- Operating Temperature..... -10 to 60 Degrees C
- Storage Temperature.....-40 to 70 Degrees C
- Humidity.....5% to 95% non-condensing
- NEMA4x when mounted on panel with supplied gasket.
- Face Plate.....UV Stabalized Polycarbonate

## DISPLAY

- Bargraphs.....51segment tri-color LED  
Single or Dual available.
- Numeric.....4 digit (9999 to -1999) LED, 0.40"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 (01/2003)

HI-QTEK --



#### DISPLAY TYPE

- 0 ..... Dual Tricolor Bar-Digital
- 9 ..... Custom (Factory #)
- A ..... Single Tricolor 51 Seg.

#### SERIAL COMMUNICATIONS (2)

- 0 ..... RS232C Remote Display
- 1 ..... Isol. RS232C & RS485
- 2 ..... Isol. RS232C & RS422
- 9 ..... Custom (Factory#)

#### POWER INPUTS

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

#### CONTROL OUTPUTS

- 0 ..... None
- 1 ..... Relays
- 2 ..... Bi MOS
- 9 ..... Custom (Factory#)

#### ANALOG & POWER OUTPUTS

- 0 ..... None
- 1 ..... 4-20mA, 1 Each
- 2 ..... 0-5VDC, 1 Each
- 3 ..... 4-20mA, 2 Each
- 4 ..... 0-5VDC, 2 Each
- 5 ..... 4-20mA & 0-5V, 1 Each
- 9 ..... Custom (Factory#)

#### SIGNAL & DIGITAL INPUTS (2 Inputs)

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

#### ANALOG INPUTS (1 Channel)(4)

- 10 ..... VDC (IM?)
- 11 ..... mADC
- 12 ..... 4-20mA Current Loop (25?)
- 14 ..... VRMS (1M?)
- 15 ..... mARMS (0.1?)
- 17 ..... Strain-Gage (>200<400?)
- 18 ..... Strain-Gage (>1K<5K?)
- 20 ..... Resistance (50K?)
- 21 ..... Temperature RTD
- 22 ..... Temperature Thermocouple
- 25 ..... mVDC (1M?)
- 29 ..... Custom (Factory#)

#### ANALOG INPUTS (2 Channels)(4)

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

#### HOUSING

- 0 ..... Plastic
- 1 ..... Metal
- 9 ..... Custom (Factory#)

#### TRANSMITTER'S POWER (30V)

- 0 ..... None
- 1 ..... Included
- 9 ..... Custom

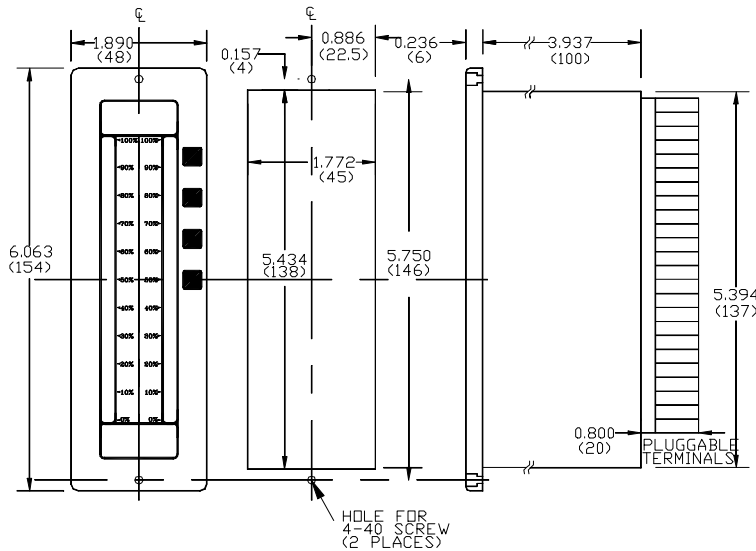
#### ANALOG INPUTS (3 Channels)(4)

- 50 ..... VDC (1M?)
- 51 ..... mADC
- 52 ..... 4-20mA Current Loop (25?)
- 53 ..... VRMS (1M?)
- 54 ..... mARMS
- 55 ..... Temperature RTD
- 69 ..... Custom (Factory #)

#### NOTE:

1. Contact the Factory with your requirement for special scale plates.
2. RS232C (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 & 4-20,A, Etc.) Available.

#### MECHANICAL INFORMATION



FRONT VIEW

PANEL CUTOUT

SIDE VIEW

\* (= MM)

#### CASE

##### (Mechanical Information)

- Case: Aluminum Machined or Plastic ABS 94VO Rated
- ANSI 1.77"x5.43" Panel Cutout
- Overlay: Polycarbonate, Water & Mild Soap Resistant
- Gaskets: NEMA4X (IP65)
- Connectors: Two-Piece Plug-in Screw Terminal, Wire Protection
- Insulation Resistance: >100M?
- Isolation Voltage: 1500VRMS