

**NEW**

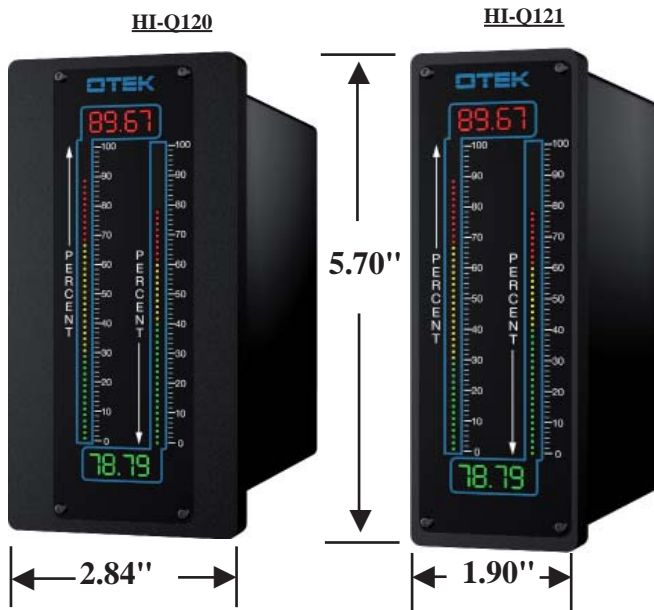
**AUTO-TRICOLOR BAR-DIGITAL CONTROLLER  
FOR NUCLEAR, MIL-SPEC AND INDUSTRIAL**

**MODEL  
HI-Q120  
& HI-Q121**

Replaces Sigma 9270, 9264; VMI: 2000; Dixson: BD, BJ, BS, BL; Weschler: PC, PH; YEW: US1000 or Any 1/2 DIN 72 x 144mm or 48 x 144mm

**FEATURES**

- \*Single or Dual Bar-Digital
- \*Vertical Mount
- \*Class 1E, EPRI & Mil-Spec
- \*Optional Relays
- \*Mathematical Functions
- \*X-Y Tables & Polynomials
- \*AC or DC Power Input
- \*No Rewiring Required
- \*Lifetime Warranted
- \***USB**, RS232, 422 & 485
- \*Field Selectable Ranges
- \*Custom Scales



**SPECIFICATIONS @ 25°C**

**A/D CONVERTER:**

- 16-Bit Plus Sign A/D & DAC
- Display Resolution: 0.01% of F.S.
- Accuracy:  $\pm 0.01\%$  of Full Scale
- Linearity:  $\pm 0.01\%$  of Full Scale
- Drift:  $\pm 50\text{PPM}/^\circ\text{C}$
- Zero: Automatic/Programmable
- SPAN: Programmable
- Sampling Rate: 16/sec.  $\div$  by Channels
- Input Type: Single Ended/Diff.
- Input Bias: 50pA
- C.M.V.:  $\pm 2\text{VDC}$
- CMR:  $>90\text{dB}$
- Averaging (Weighted): None to 255
- Self Diagnostics
- Signal Conditioners For Any Input
- EPRI 102323-R2, TVA 18.14.01 Compliant

**DESCRIPTION:**

**The Mechanical:** Thanks to "**SONGS**," OTEK introduces its Models **HI-Q120** and **HI-Q121** to replace existing Sigma's 9270 indicators. To make the switch over economical and smooth to the latest technology offered by OTEK's **HI-Q** Series, we redesigned the housing of our **HI-Q119** and display board leaving the mother board and option boards "As Is" as well as the **SV&V** approved firmware. This approach saved **SONGS** thousands of \$\$ and time! As a by product of the **HI-Q120** we created the **HI-Q121** whose Bezel is 1.75" wide vs. 2.84" of the **HI-Q120**. By adding "Trim Plates" we can make the **HI-Q121's** bezel replace any 6" bargraph as listed above without additional expenses to you! And if we don't have it, we will make it!

**The Electronics:** Thanks to **PVN**, **TVA (BF)** and **FPL** (St. Lucie) and many other **Nuclear Power Plants**, we perfected the original **HI-Q HW & SW** to bring you the best and latest proven technology and features for either stand alone indicator/controller or as part of your **DCS/Scada** System (See Common Features and Specifications Section).

**Self-Diagnostics:** We check for **CPU**, display coprocessor. & **ADC** and more. When we detect a failure we visually notify you if it is a component failure, we will repair it for free, hence our Life Time Warranty!

**HFE/HSI:** Only **OTEK's HI-Q** Series comply to EPRI's and **NUREG's** Human Factor Engineering, Human-System Interface and MMI (Machine-Machine Interface)

**ON-OFF CONTROL OUTPUTS RELAYS**

- Type: S,P,D.T. (1C) 500VAC Isolation
- Max. Switching Current: 10A Res., Minimum: 1mA
- Max. Switching Voltage: 30VDC/240VAC @ Rated Current
- Contact Protection: Varistors to 250VAC included.

**ALARM SET POINTS**

- Programmable with P.O.D. and Hysteresis, On or Off

**SERIAL COMMUNICATIONS**

- Isolation to 5V or Other Power Inputs: 500VDC
- Baud Rate: to 19.2K Baud
- Protocol: Full ASCII (8N1 Setting)
- Concurrent Use of RS-232C & 422 or RS-232C & RS-485 I/O
- USB front mount behind scale plate

**POWER INPUTS**

- 5VDC $\pm 5\%$  Non-Isolated
- Or 10-32VDC Isolated
- Or 90-265VAC Isolated
- Power Consumption: 10 Watts

**ENVIRONMENTAL (To Specs)**

- Operating Temperature: -10 to 55°C
- Storage Temperature: -20 to 65°C
- Humidity 10-90% RH, N.C.
- MTBF:  $> 100,000$  Hrs. (Calculated)

**OPTIONAL:** Conformal Coating & EMI/RFI (Mil-Std. 461)

**Housing:** All SS316, Bezel Black Powder Coated

**Connectors:** Terminal barrier or plug-in screw type.



**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



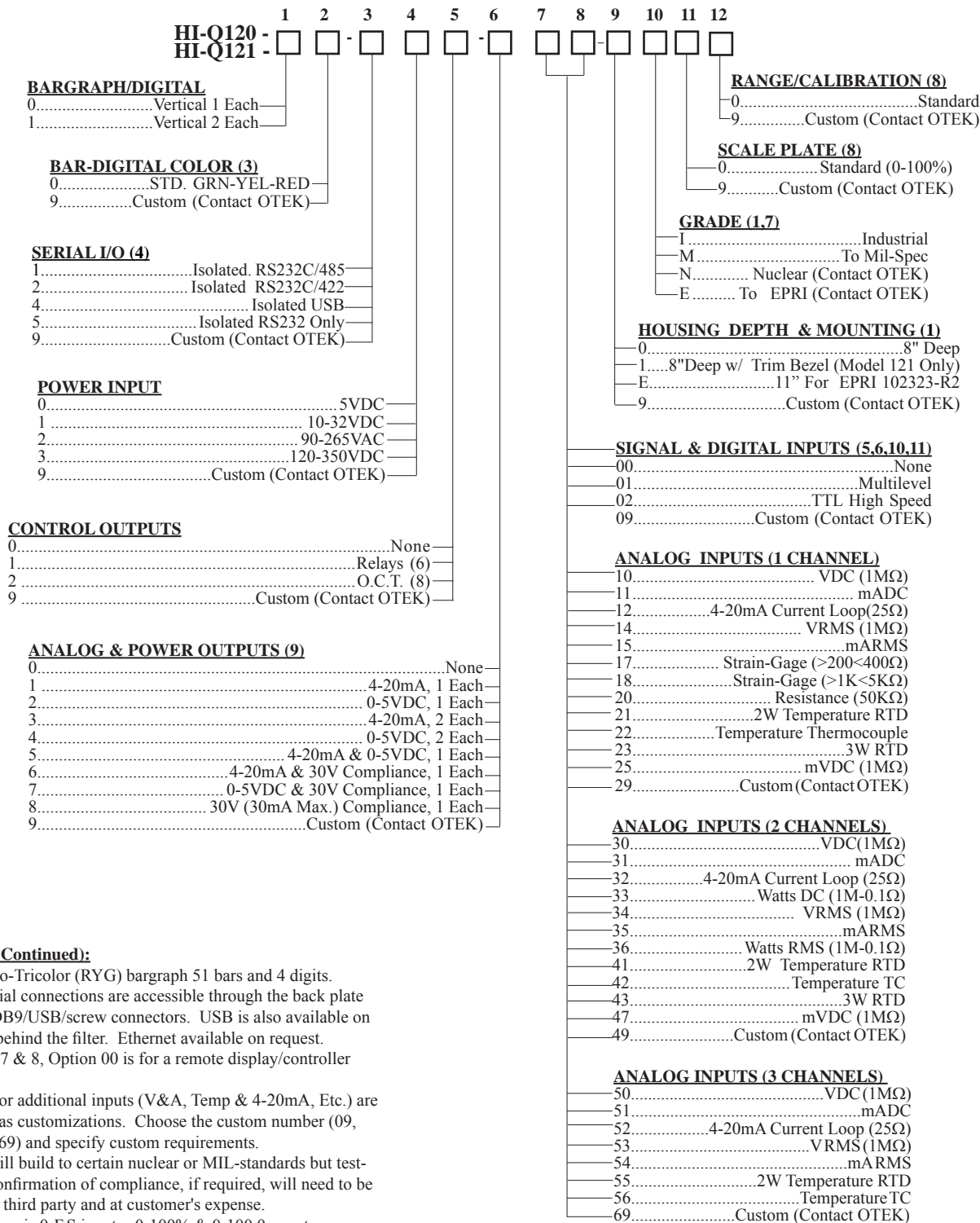
4016 E. TENNESSEE ST.  
TUCSON, AZ. 85714 U.S.A.



# HI-Q120/HI-Q121 ORDERING INFORMATION 4-18-13

**NOTES: Please READ BEFORE building part number:**

1. If digit 10 is option E, digit 9 must be option E.
2. See notes on bottom of page.



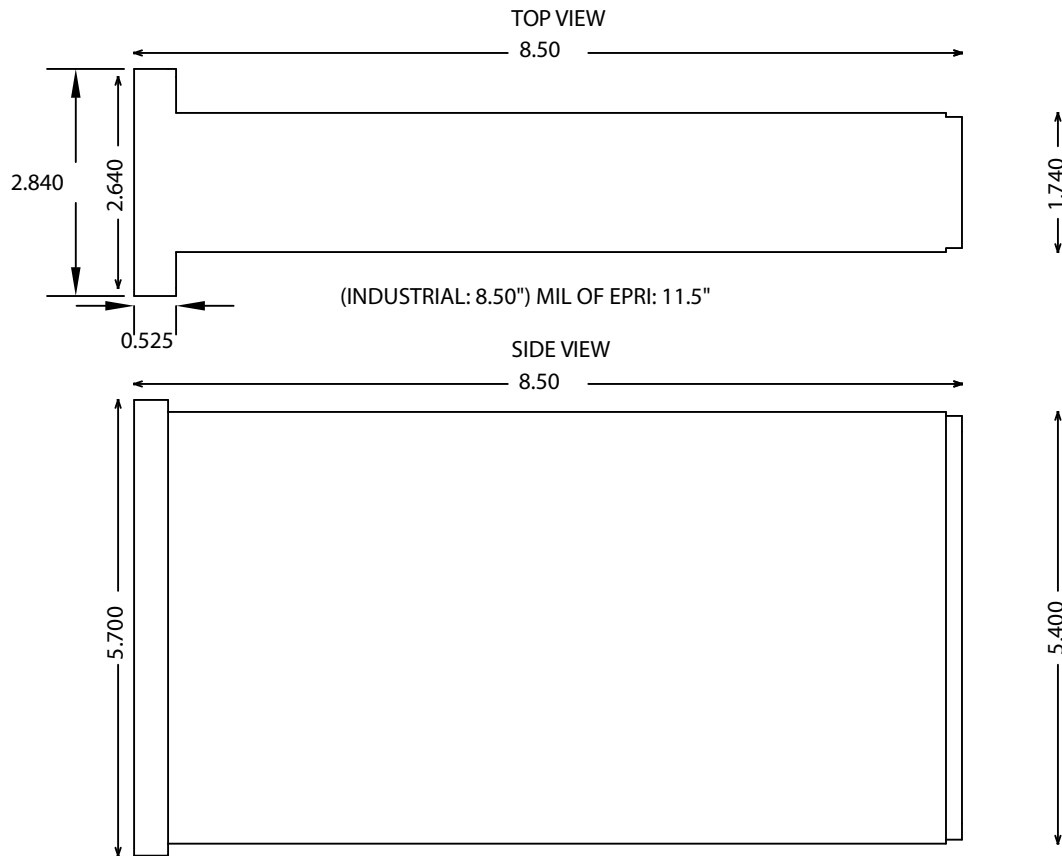
**NOTES (Continued):**

3. All Auto-Tricolor (RYG) bargraph 51 bars and 4 digits.
4. All serial connections are accessible through the back plate through DB9/USB/screw connectors. USB is also available on the front behind the filter. Ethernet available on request.
5. Digits 7 & 8, Option 00 is for a remote display/controller only.
6. Mixed or additional inputs (V&A, Temp & 4-20mA, Etc.) are available as customizations. Choose the custom number (09, 29, 49 or 69) and specify custom requirements.
7. Otek will build to certain nuclear or MIL-standards but testing and confirmation of compliance, if required, will need to be done by a third party and at customer's expense.
8. Std. range is 0-F.S input = 0-100% & 0-100.0 counts.
9. 30V compliance is for external transmitters/transducers.
10. Volt & Amp ranges are internal jumper range selectable .5, 5, 10 & 50VDC; 1, 5 & 20mA. Shipped with .5V or 1mA unless specified.
11. Multi-channel input options are factory assigned to specific displays but are field configurable.

**DOWNLOADS:** For manuals, user-software or drivers:  
[www.otekcorp.com](http://www.otekcorp.com)

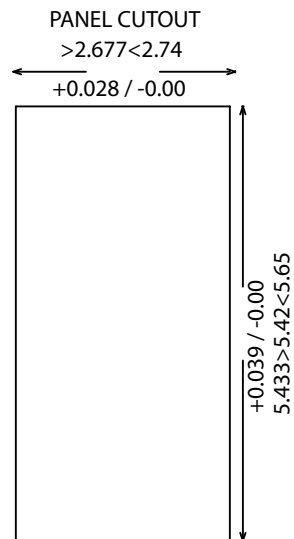
# HI-Q120 MECHANICAL INFORMATION

## HI-Q120 EPRI HOUSING ONLY



NOTE: INDUSTRIAL HAS EURO PLUG CONNECTORS  
(MIL OR EPRI HAS FILTERED TERMINAL CONNECTORS)

## HI-Q120 PANEL CUTOUT (ALL) MODELS



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520-748-7900  
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http://www.otekcorp.com

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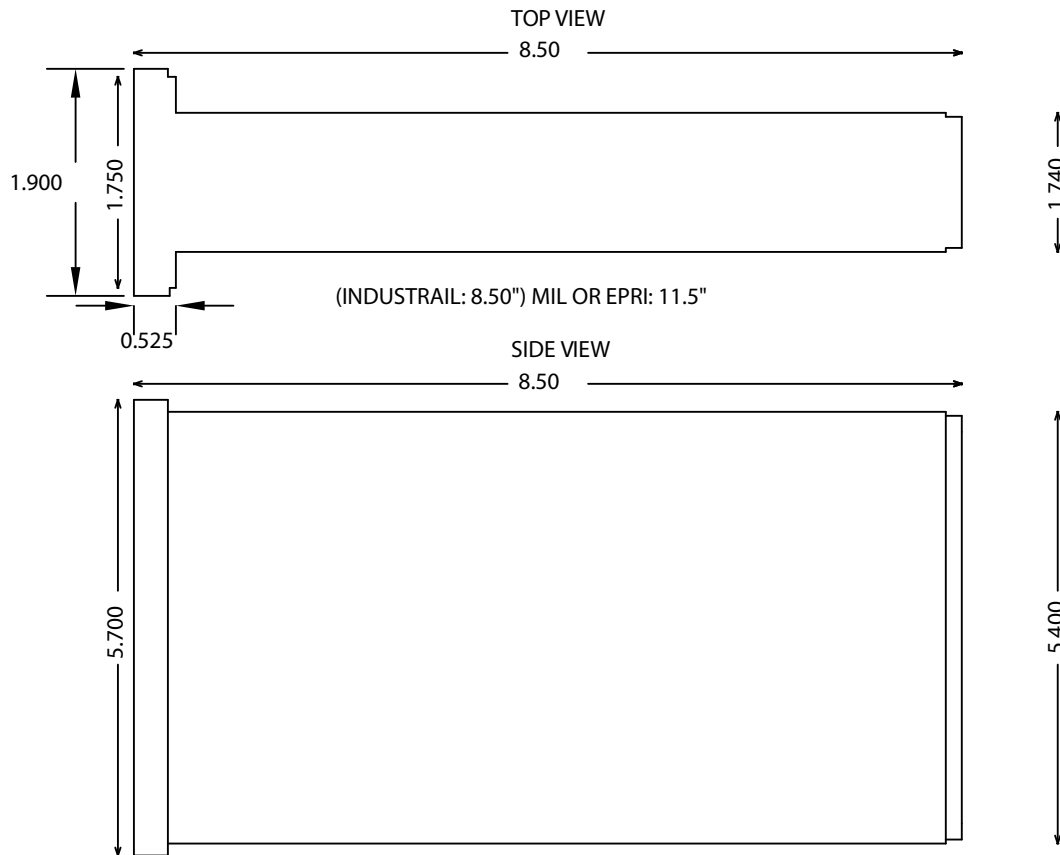
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MADE  
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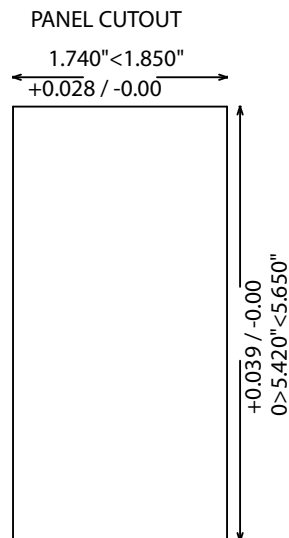
# HI-Q121 MECHANICAL INFORMATION

## HI-Q121 EPRI HOUSING ONLY



NOTE: INDUSTRAIL HAS EURO PLUG CONNECTORS  
(MIL OR EPRI HAS FILTERED TERMINAL CONNECTORS)

## HI-Q121 PANEL CUTOUT (ALL) MODELS



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