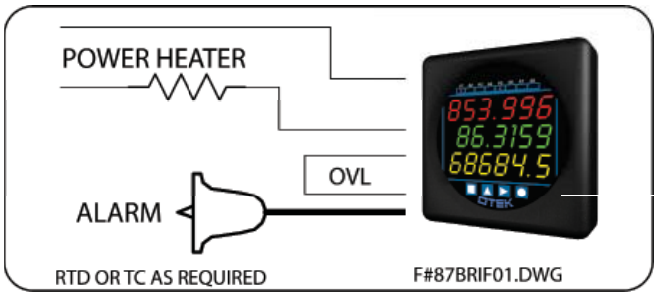
HI-Q SERIES TYPICAL APPLICATIONS

NOTE: This document for ideas and illustration purposes only. Not all HI-Q series might apply to all applications. Contact eng@otekcorp.com (520-748-7900) for assistance.

1. Simple On-Off Temperature Controller (TC or RTD)

Set Hi & Lo limits, connect load to relays, turn power to heater on. You can use the other relays for alarm or over/under temperature shut down. You can make the display flash, and/or send alarms via the serial port.

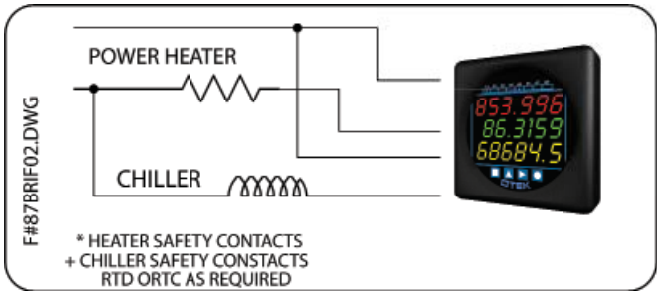


2. Ramp and Soak (Hot or Cold or Hot & Cold)

Set Hi (heat) and/or Lo (cool) limit(s), set "Hold" times for hot and/or cold, set out of range alarms (extra relays or BiMOS), connect loads to relays, BiMOS or analog output and start your process. The HI-Q will bring the temperature to the Hi (or Lo) limit, hold it, then reverse it to the opposite limit, hold it and repeat the cycle for as many times as you have commanded.

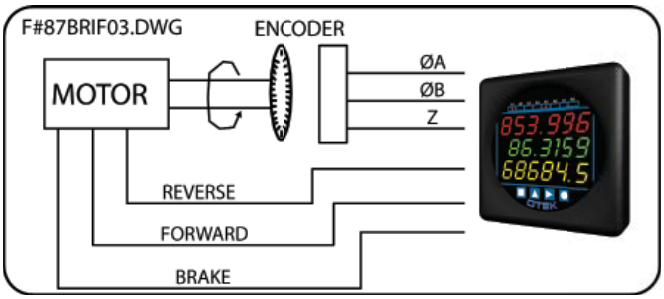
3. Multi-Point Ramp & Soak

With the four relays or the 8 BiMOS, you can set up to 8 different temperatures to ramp (up or down) and soak, i.e.: Temperature to 100°, hold 5 min, temp. to 200°, hold 10 min, temp. to 400°, hold 20 min, temp. to 0°, hold 1 hr, temp. to -20°, hold 10 min, temp to -50°, hold 30 min, temp to 0°, hold 10 min, temp to 20° off.



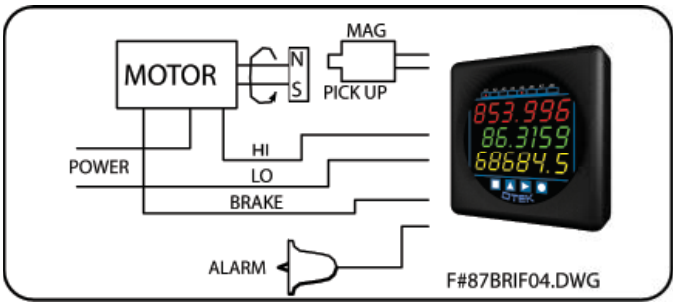
4. Up/Down Counter With Limits

Set you limits, connect your TTL (or multilevel) signals (quadrature or up/down-count) and start your cycle. You can use relays, BiMOS, "RS" or analog outputs to control your process.



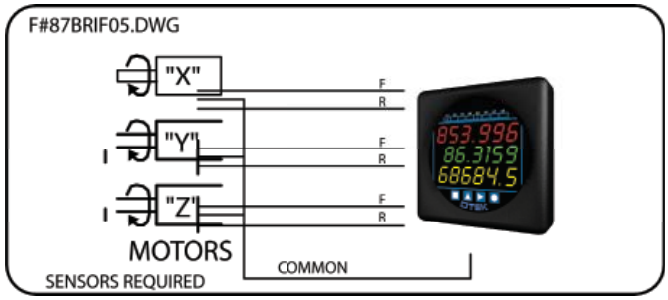
5. Automatic Coil Winder (Slow•Down•Stop)

Set the number of turns (events, strokes, etc.) on hi limit, (preset) set HI-Q for down count, set lo limit to a safe "Slow Down" value, assign K1 for full power and to hi limit, assign K2 to "Slow Down" power and to lo limit, assign K3 to zero (000000) counts, assign K4 to -counts and to alarm (or you can use BiMOS or the analog output). Start the cycle, the HI-Q will apply full power to motor and upon reaching the lo limit will switch to slow down power (usually 10% of F.P.), then will apply the brake upon reaching the "Zero" limit. If there is an overrun, the 4th relay will activate the alarm.



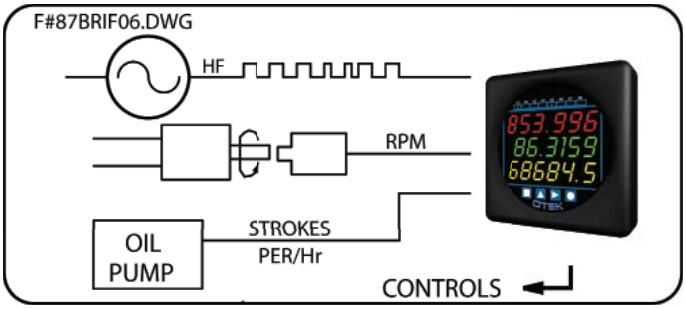
6. Automatic X-Y-Z Positioner

Set your limits on the displays, assign BiMOS or relays to those limits, connect loads to BiMOS, start the cycle (the displays will zero automatically) upon reaching their limits, the BiMOS will turn off. If you are using stepping motors, the BiMOS option will be ideal for them.



7. Frequency, RPM, SPH (or any time dependent process)

Select proper signal conditioner; set your limits, assign alarms to them (use relays BiMOS or analog outputs to control) and start the process.



HI-Q SERIES TYPICAL APPLICATIONS (Continued)

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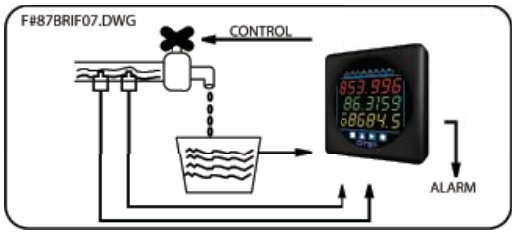
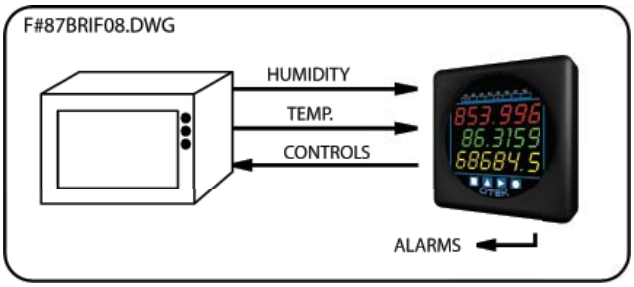
8. Volume Flow, Pressure (or other variable)

Select proper conditioner (if required), assign display #1 to total flow, #2 to instantaneous flow and #3 to pressure (or other PV), set your limits and assign alarms (or controls) to their proper limit, start your process. Note: Above application varies with type of transducer (s) used (analog or digital output), select the proper conditioner and factor for its input).



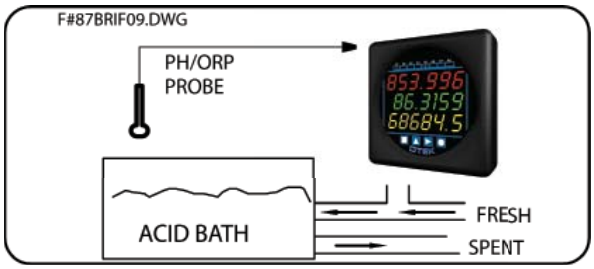
9. Humidity-Temperature-Dew Point (or other variable)

Select option 23 & connect transducer to HI-Q, assign Channel 1 to Display #1 & to humidity, assign Channel 2 to temperature & to Display #3, select "Dew Point" from menu, assign display #1 to dew point (or product) & assign alarms to process variables and start the process. The HI-Q will control temperature & humidity to maintain the dew point (or other balance point) with a preset hysteresis.



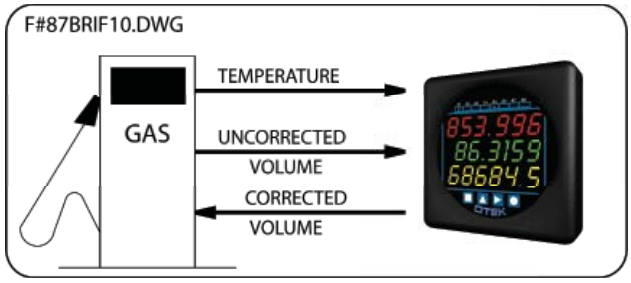
10. pH (Acidity) Control

Order Option 09 and contact OTEK, connect it to Channel 1, assign it to Display #1, set Lo & Hi Limits and assign them relays (Hi; Hi, Hi: Lo and Lo, Lo) as required. The HI-Q will maintain the pH within the Lo and Hi limits and if a "Runaway" condition occurs, the Hi Hi or Lo Lo alarms will set alarms off or shut down the process.



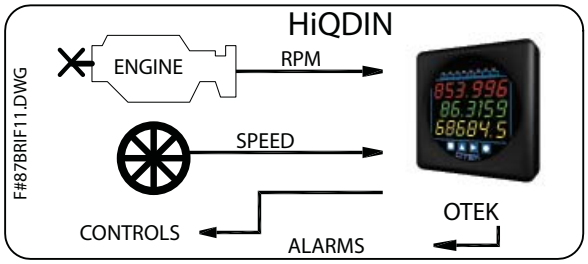
11. Volume vs Temperature (Fuel Correction Dispensing)

Select RTD Option 41 (for highest accuracy) & connect to Channel 1 and assign to Display #3 (fuel temperature). Connect flow transducer to Channel 2 for 4-20mA or pulses or mVDC (depending on your flow XDCR), and assign to display #3 (uncorrected flow), select proper factoring and assign it to Channel 2. The HI-Q will calculate the actual flow corrected by the temperature (channel 1) factor selected (per °C or °F). You can assign any discrete or analog output to control the volume or temperature (if required) or set off alarms and transmit via the RS I/O to ticket printer, and data log it in the P.C. memory cards.



12. Speed-RPM-Distance

Select proper signal conditioner, assign display to channels as required, assign discrete or analog outputs to control the variables, select the proper factor (multiplier or metric/English). The HI-Q will do the rest.



13. Amp-Hour (Used, To Use, Total) -Battery Charge

Note: *Applicable to many other processes, such as fuel, grain, distance, etc. or other sequence.*

A. Digital (Discrete) Signal Method:

Use the HI-Q as an Up/Down Counter, preset total Amp-hour on, battery (or system) and assign to display #1. Assign pulse input to Channels 1 and display #3, assign alarm limit (+ or -) to display #2. As power is drawn from battery, display #1 will decrement & display #3 will increment. As battery is charged, the opposite will occur. The display #2 will flash, indicating low battery charge and an alarm could be sound. A variation of this could indicate fuel used, fuel started with and distance to travel under similar historical conditions. Display #2 (bargraph) can display charge-discharge with center zero.

B. Digital Analog Signal Method:

Same procedure as A, except use analog signal conditioner (if required) or 0.5 Amp internal shunt or external shunt as required. The HI-Q will sense the polarity and magnitude of the signal and calculate the power A/H remaining.

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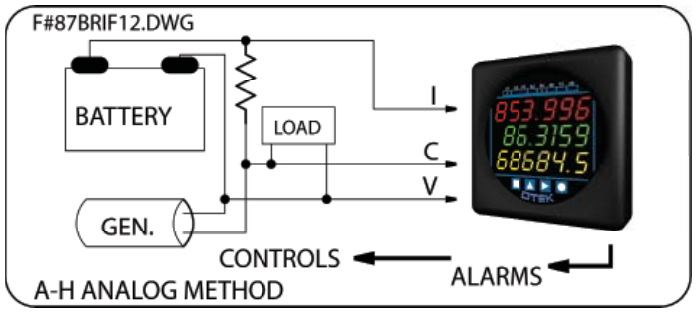
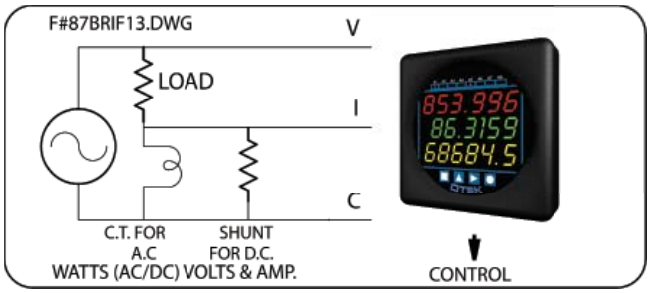


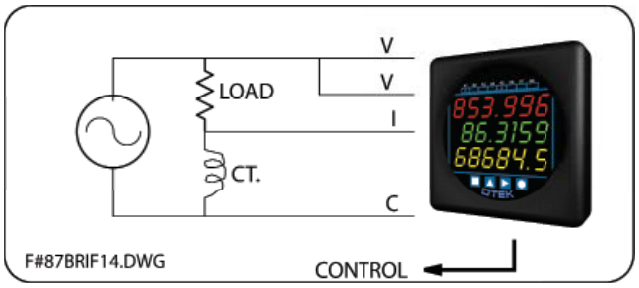
14. Watts-Amps-Volts (AC or DC)

Select signal conditional (Option 36) for AC or Option 33 (for DC signals). Connect per instruction manual, set your alarms and start your process.



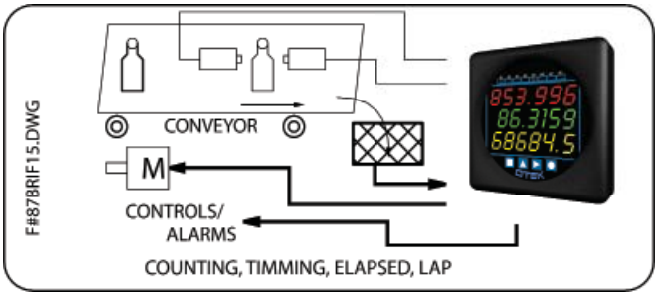
15. Volts-Amps-Frequency

This is a variation of the above and as simple as it. Select Option 52 (for external transducers with 4-20mADC output) or Option 09 and contact OTEK for direct input (see current limit), connect per instruction manual, assign displays to channels, set alarms (if required) and start your generator.



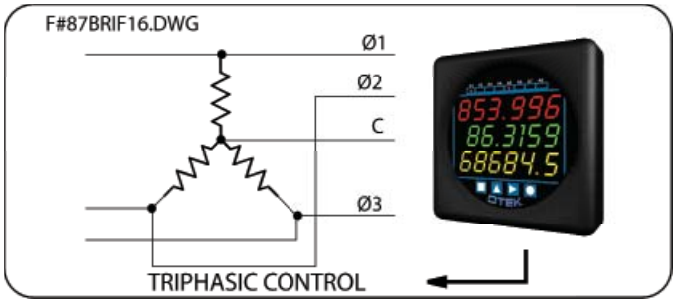
16. Lap-Elapsed-Total (Time, Bins, Bushels, Gallons, etc.)

Connect trigger device to input (or use remote PS Port or local keypad), assign displays as required (#1 to total, #2 for Elapsed,#3 for Lap or Speed, Lap Elapsed), #2 to indicate trend of either variable, set alarms & go.



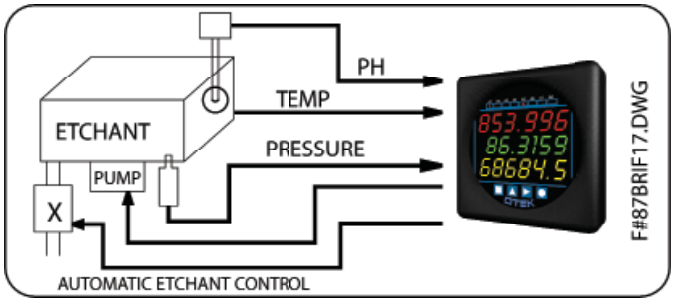
17. Triphasic Measurements/Control

Order option 09 and contact OTEK, use appropriate signal conditioner or transducer (for Amps, Volts, Frequency), assign displays to phases, set your alarms and start your process. Note: Contact OTEK for further functions, such as power factor, VARs, etc.



18. Specific Gravity Control

Use pressure transdducer compatible with solution, set Hi,Hi HI, Lo and Lo Lo limits, assign input signal to display #1 and limits to display #2 and #3. When solution becomes heavier, pressure will increase, triggering Hi limit and the slurry pump. As level drops, new replenishing solution is pumped in to bring S.G. below the lo limit, stopping both pumps. Use Hi Hi and Lo Lo Alarms to prevent a runaway condition.



19. Draw Your Own Application Here

Note: Above typical applications use the HI-Q126 as the controller, but they also apply to most any HI-Q series controllers.