KLASSIC™ 830 In-Line Threaded

Flow, Level, Interface & Temperature Switch & Transmitter

- Threaded Process Connections - 3/4" FNPT
- For use inline sizes of 3/4" or less and/or applications with very low flow.
- Exotic Alloys and Remote Mounted Electronics Available
- Digital Microprocessor Technology - Settings configurable by user for Flow, Level, Interface & Temperature Sensing
- No Jumpers - All Configurable Options are stored in Non-Volatile Memory
- FM Explosion-proof Class I, Div. 1, Groups B, C & D
- CSA/ANSI UL Flameproof Class I, Div. 1, Groups B, C & D

Display Panel & Intelligent User Interface

The KAYDEN KLASSIC 800 Series Electronics Module is designed for quick and easy setup. All CLASSIC 800 models, regardless of the type of sensor, use the same Electronics Module.

Display Panel Indicators:
- Relay 1 & 2 Set Point 1 & 2
- Fault Alarm
- Run Mode
- Start-up Bypass Timer (for pump control)
- LED Bar Graph for Flow Rate, Level or Interface Indication

Configuration Mode Features:
- Adjustable Sensitivity
- Zero & Span Adjustment
- Modbus Addressable

Electronics Modules Feature:
- Easy setup; no jumpers or trim pots
- Continuous Self-test Diagnostics with Fault Indicator
- Temperature Compensation

Applications:
- Universal Power 12-24 VDC & 115-230 VAC standard
- Two SPDT Relays - independently adjustable
- 4-20 mA Analog Output
- “Smart Heater” function for power economy and increased heater life
- Start-up Bypass Timer (for pump control)
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>Sensor Type</td>
</tr>
<tr>
<td>-45°C to +200°C (-50°F to +392°F) Continuous Service</td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td>Sensor Material</td>
</tr>
<tr>
<td>316/316L Stainless Steel c/w Nickel Braze</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Process Connection - FNPT</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td></td>
</tr>
<tr>
<td>0035</td>
<td>Sensor Assembly Body Length</td>
</tr>
<tr>
<td>3.5&quot; (8.8 cm)</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Bleed Port</td>
</tr>
<tr>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>Sensor Mounting Orientation</td>
</tr>
<tr>
<td>Horizontal Pipe</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>Vertical Pipe</td>
</tr>
<tr>
<td>0</td>
<td>Injection Tubes (3/4&quot; MNPT x 1/4&quot; FNPT)</td>
</tr>
<tr>
<td>Not Required</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Type 1; .180&quot; Bore; 316/316L Stainless Steel</td>
</tr>
<tr>
<td>2</td>
<td>Type 2; .086&quot; Bore; 316/316L Stainless Steel</td>
</tr>
<tr>
<td>A</td>
<td>Mounting Bracket Kit</td>
</tr>
<tr>
<td>Not Required</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>90° Angle Bracket with hardware for wall/stand mounting</td>
</tr>
<tr>
<td>C</td>
<td>Power</td>
</tr>
<tr>
<td>12-24 VDC and 115-230 VAC, 50 to 60 Hz</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>Electronics</td>
</tr>
<tr>
<td>Microprocessor Controlled with User Interface. Two SPDT sealed relay contacts. Modbus via RS-485, 4-20 mA current loop.</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Local Enclosure</td>
</tr>
<tr>
<td>Flameproof - Aluminum</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Cover - For Local Enclosure / Sensor Enclosure</td>
</tr>
<tr>
<td>Blind Cover - Flameproof</td>
<td></td>
</tr>
<tr>
<td>Glass Lens Cover - Flameproof</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Remote Electronics&lt;formula&gt;</td>
</tr>
<tr>
<td>0A</td>
<td>Not Required</td>
</tr>
<tr>
<td>1B</td>
<td>Blind Cover - Flameproof</td>
</tr>
<tr>
<td>1G</td>
<td>Glass Lens Cover - Flameproof</td>
</tr>
<tr>
<td>1</td>
<td>Agency Approvals</td>
</tr>
<tr>
<td>UL &amp; CSA</td>
<td></td>
</tr>
<tr>
<td>FM</td>
<td></td>
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<tr>
<td>E</td>
<td>Language</td>
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<tr>
<td>English</td>
<td></td>
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</table>

**Model Number Legend**

- **830**: 830
- **R**: R
- **A3**: A
- **D**: D
- **0035**: 0035
- **A**: A
- **H**: H
- **1**: 1
- **A**: A
- **C**: C
- **1**: 1
- **B**: B
- **OA**: OA
- **1**: 1
- **E**: E

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ML-830-004

This is a Controlled Document and cannot be changed without the Approval of the Quality Control Manager.
Applications:
- Flow, Level, Interface & Temperature

Process Connections:
- 1/2", 3/4", 1", 1-1/4", 1-1/2" & 2" MNPT
- 3/4" FNPT & Flanged InLine
- Flanged & Sanitary 1" to 3.5" Tri-Clamp®
- Threaded (1" MNPT) & Flanged Retractable Packing Glands

Insertion ‘U’ Lengths:
- Imperial:
  - 1.2", 2", 3", 4", 6", 9", 12" & 18" standard
  - Model 828 (Sanitary) - 2", 3", 4" & 6" only
- Metric:
  - 3, 5, 7.5, 10, 15, 23, 30 & 45 cm standard
  - Model 828 (Sanitary) - 5, 7.5, 10 & 15 cm only
- Custom Lengths:
  - Available in 1/2" or 1 cm increments
  - Min. 1.2" - Max. 120" (3.0 - 305 cm) model dependant

Wetted Materials:
- 316/316L Stainless Steel - standard
- Titanium Gr. 2, Hastelloy® C-276
- 316/316L Stainless Steel c/w Nickel Braze (830 & 832 InLine Models)
- Highly Saturated Nitrile (Pressure Seal - 814 & 816 Packing Gland Models)

Enclosure Material:
- Copper-free Aluminum (does not exceed 0.4% copper)
- Powder Coated Polyester TGIC (polyester triglycidyl isocyanurate)
- NEMA 4X / Type 4 / IP55
- 1" FNPT Conduit Connection
- Buna O-ring on Cover

Temperature Range – Continuous Service:
- Sensors:
  - -45°C to +200°C (-50°F to +392°F)
  - (Models 814 & 816: -45°C to +160°C [-50°F to +320°F])

Electronics:
- -55°C to +65°C (-67°F to +149°F)
  
  Note: For temperatures above +65°C (+149°F) electronics must be remotely mounted.

Storage:
- -55°C to +75°C (-67°F to +167°F)

Operating Pressure - Sensor:

Threaded Style:
- Maximum Working Pressure:
  - 24 MPa (3500 psig) dependent on model and material of construction

Flanged Style:
- Maximum Working Pressure:
  - per flange rating

Sanitary Tri-Clamp® Style:
- Maximum Working Pressure:
  - per flange rating

Switch / Transmitter Switch Point Range
(Insertion Style - 1/2" to 2"MNPT, Flanged):
- Water-based Liquids:
  - 0.01 to 3.0 ft./sec. (0.003 to 0.9 meters/sec.)
- Hydrocarbon-based Liquids:
  - 0.01 to 5.0 ft./sec. (0.003 to 1.5 meters/sec.)
- Gases:
  - 0.25 to 254 sfps (0.076 to 77 smps)
  - Standard conditions: 21°C (70°F) at 14.7 psi (1 atm)

Switch / Transmitter Switch Point Range
(InLine Style):
- Water-based Liquids:
  - 0.015 to 50 cc/sec.
- Hydrocarbon-based Liquids:
  - 0.033 to 110 cc/sec.
- Gases:
  - 0.6 to 20,000 cc/sec.
  - Standard conditions: 21°C (70°F) at 14.7 psi (1 atm)

Accuracy:
- Flow Service:
  - ±1% set point velocity over operating range of ±28°C (±50°F)
- Level Service:
  - ±0.25 inches (±0.64 cm)
CLASSIC™ 800 Technical Specifications

Response Time:
- Approximately 0.5 to 30 seconds

Remote Electronics Option:
- Maximum recommended cable length - 200 feet (60 m)
- Cable type - 24 AWG minimum - twisted pairs

Heater Power:
- Field adjustable to optimize performance

Input Power:
- Universal Power standard
  12-24 VDC and 115-230 VAC, 50-60 Hz
- Consumption: Maximum: 6.0 watts (fully configured)

Outputs:
- 4-20 mA current loop
- Two (2) independent SPDT sealed relay contacts rated @ 4 amps resistive 230 VAC or 30 VDC Max.; individually adjustable

Start-Up Bypass Timer:
- Adjustable for 0 to 100 seconds

Communications:
- Modbus via RS-485

RCMS (Remote Control & Monitoring Software) Functions and Features:
- Display Panel Lock-Out
- Set Points configuration
- Relay Actuation Delay Timer
  - Independently configurable for both On and Off, increasing or decreasing
  - Adjustable from 0 - 5,000 seconds
- Start-up Bypass Timer
  - Adjustable from 0 - 100 seconds
- Relay Mode Configuration
  - Energized above or below set point
- Relay Temperature Mode Configuration
- Heater Power setting
- Zero and Span settings
- Analog (4-20 mA) output configuration
- View and Print Graphing (Trend) function
- Configuring settings; write to device, save to file and print
- Fault Event Log
  Note: Also configurable from Display Panel

Diagnostics:
- Primary watchdog circuit monitors microprocessor parameter anomalies
- Secondary watchdog circuit monitors microprocessor health
- Heater monitored for out-of-range conditions
- Fault Mode de-energizes relay(s) and halts power to the heater

Agency Approvals:
- CSA - ANSI/UL
  Class I, Div. 1, Groups B, C and D; Ex d IIB + H2; AEx d IIB+H2
  (Class I, Zone 1, Group IIB + H2,)
  T3; Enclosure Type 4 / IP55
- Single Seal Approval
  Per ANSI/ISA 12.27.01-2003
- CRN
  Canadian Registration Number
  Note: CRN approvals available. Visit telematic.com for CRN information per model and jurisdiction.
- FM Approvals
  Class I, Div. 1, Groups B, C and D;
  Class I, Zone 1, AEx d IIB+H2
  T2D (Ta=75°C); T3 (Ta=65°C);
  Enclosure Type 4 / IP55

Weights and Dimensions:
- 810 Threaded: 2” U length - 7 lbs (3.18 kg)
- Carton Size - 15” x 5” x 6” (38 cm x 13 cm x 15 cm)
- Other models/sizes - consult Telematic

Warranty:
- One (1) Year from shipment date from factory
  (see Terms & Conditions on telematic.com for details)