**Display Panel & Intelligent User Interface**

The **KAYDEN CLASSIC 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
- 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)

**Applications:**

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**CLASSIC™ 810 Threaded**

- Threaded Process Connections - 316/316L Stainless Steel sensor standard
- Exotic Alloys, Custom ‘U’ Lengths 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
- 316/316L SST & Exotic Alloy versions designed to ASME Section VIII Div. 1 Latest Addenda and/or to be inserted in system complying with ASME/ANSI B31.3 Latest Addenda.
  Canadian Registration Number (CRN): 0F09437.2

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**Flow, Level, Interface & Temperature Switch & Transmitter**

Flow, Level, Interface & Temperature Switch & Transmitter

For dimensions on all process connections go to telematic.com/kayden

(Typical)
# Classic 810 Threaded

## Sensor Type
- **R**: -45°C to +200°C (-50°F to +392°F) Continuous Service

## Sensor Material
- **A**: 316/316L Stainless Steel
- **X**: Titanium Gr. 2
- **T**: Hastelloy C-276

## Process Connection - MNPT
- **C**: 1/2"
- **D**: 3/4"
- **E**: 1"
- **F**: 1-1/4"
- **G**: 1-1/2"
- **H**: 2"

## Insertion 'U' Lengths
- **0012**: 1.2" (3.0 cm)
- **0020**: 2" (5.0 cm)
- **0030**: 3" (7.5 cm)
- **0040**: 4" (10.1 cm)
- **0060**: 6" (15.2 cm)
- **0090**: 9" (23 cm)
- **0120**: 12" (30 cm)
- **0180**: 18" (46 cm)

**Custom 'U' Lengths**: Use 4 digits preceded by an 'I' (i.e. 3.5" 'U' = I0035) (Use 'M' for cm)

## Input Power
- **C**: 12-24 VDC and 115-230 VAC, 50 to 60 Hz

**Electronics**
- Microprocessor Controlled with User Interface.
- Two SPDT sealed relay contacts. Modbus via RS-485. 4-20 mA current loop.

## Local Enclosure
- **1**: Flameproof - Aluminum

## Cover - For Local Enclosure
- **B**: Blind Cover - Flameproof
- **G**: Glass Lens Cover - Flameproof

## Remote Electronics Enclosure & Cover
- **0A**: Not Required
- **1B**: Blind Cover - Flameproof
- **1G**: Glass Lens Cover - Flameproof

## Agency Approvals
- **1**: UL & CSA
- **3**: UL, CSA & CRN
- **9**: FM

## Language
- **E**: English

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This is a Controlled Document and cannot be changed without the Approval of the Quality Control Manager.
CLASSIC™ 800 Technical Specifications

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)
**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)