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:

Flanged 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 2007 Latest Addenda and/or to be inserted in system complying with ASME/ANSI B31.3-2006 +2007 Addenda. Canadian Registration Number (CRN): 0F13782.2 & 0F13787.2
**Thermal Dispersion**

### 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 - Flange Type
- A: Raised Face
- B: RTJ - Ring Type Joint

### Flange Material
- A: 316/316L SST
- X: Titanium Gr. 2
- T: Hastelloy C-276

### Insertion 'U' Lengths
- 2.5" - 120" (6.4 cm - 305 cm) in 1/2" (1.0 cm) increments.
- Custom 'U' Lengths: Use 4 digits preceded by an 'I' (i.e. 3.5" "U" = I0035)

### Input Power
- 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
- Flameproof - Aluminum

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

### Remote Electronics Enclosure & Cover
- Not Required
- Blind Cover - Flameproof
- Glass Lens Cover - Flameproof

### Agency Approvals
- UL & CSA
- UL, CRN & CSA
- FM

### Language
- English
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 configuration¹
- Relay Actuation Delay Timer
  - Independently configurable for both On and Off,
    increasing or decreasing
  - Adjustable from 0 - 5,000 seconds
- Start-up Bypass Timer¹
  - Adjustable from 0 - 100 seconds
- Relay Mode Configuration¹
  - Energized above or below set point
- Relay Temperature Mode Configuration
- Heater Power setting¹
- Zero and Span settings¹
- Analog (4-20 mA) output configuration¹
- View and Print Graphing (Trend) function
- Configuring settings; write to device,
  save to file and print
- Fault Event Log
  Note:¹ 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 II B + 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)