

# Technical Specifications Sheet



## CLASSIC<sup>®</sup> Series

Thermal Flow, Level, Interface &  
Temperature Switches & Transmitters



CRN  
Canadian  
Registration  
Number

**KAYDEN<sup>®</sup>**  
Helping the World Switch

**CLASSIC® 800 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
- Threaded (1" MNPT) & Flanged Retractable Packing Glands

**Insertion 'U' Lengths**

- **Imperial**  
1.2", 2", 3", 4", 6", 9", 12" & 18" standard
- **Metric**  
3, 5, 7.5, 10, 15, 23, 30 & 45 cm standard
- **Custom Lengths**  
Available in 1/2" or 1 cm increments  
Min. 2.5" - Max. 120" (6.0 - 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)

**Enclosure Material**

- Copper-free Aluminum (does not exceed 0.4% copper)
- Powder Coated Polyester TGIC (polyester triglycidyl isocyanurate)
- NEMA 4, 4X, 6P; IP65/67
- 1" FNPT Conduit Connection
- Buna O-Ring on Cover

**Temperature Range – Continuous Service**

- **Sensors**  
-55°C to +200°C (-58°F to +392°F)  
(Models 814 & 816: -55°C to +160°C [-58°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. Refer to Electronics Location Considerations Page 10.

- **Storage**  
Product should be stored in a clean and dry environment between -30°C and +60° C (-34.5°F and 140° 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

**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 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)
- **Repeatability**  
±0.5% Thermal Signal
- **Hysteresis (Dead Band)**  
±1% Thermal Signal
- **Temperature**  
±1° C or ±2% of full-scale range, whichever is greater.

**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
- DC input has reverse polarity protection
- AC & DC inputs have TVS diodes to protect against transient voltages (390 VAC, 39 VDC)
- Internal 1A self-resettable non-user-replaceable fuse

**Outputs**

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

**Start-Up Bypass Timer**

- Adjustable: 0 to 100 seconds

**Communications**

- Modbus RTU via RS-485

**Additional Features (Configure Using Kayden RCM Software or Modbus)**

- Display Panel Lock-Out
- Set Points Configuration<sup>1</sup>
- Relay Actuation Delay Timer
  - Independently configurable for both On and Off, increasing or decreasing
  - Adjustable from 0 - 5000 seconds
- Start-up Bypass Timer<sup>1</sup>
  - Adjustable from 0 - 100 seconds
- Relay Mode Configuration<sup>1</sup>
  - Energized above or below set point
- Relay Temperature Switch Configuration
- Heater Power setting<sup>1</sup>

- Lower and Upper Range Values (LRV & URV) settings<sup>1</sup>
- Analog (4-20 mA) output configuration<sup>1</sup>
- View and Print Graphing (Trend) function
- Configuring settings; write to device, save to file and print
- Fault Event Log

**Diagnostics**

- Primary watchdog circuit monitors microprocessor parameter for 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**  
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
  - CLASSIC 810/812: 0F22124.2C



**Note:** Visit [kayden.com](http://kayden.com) for CRN specifics.

**Factory Certifications**

- Factory tested to NEMA 4, 4X, 6P; IP65/67. Contact Technical Support for reports.

**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 Kayden

**Warranty**

- One (1) Year from shipment date from factory (see Terms & Conditions on [kayden.com](http://kayden.com) for details)

**Note:** <sup>1</sup> Also configurable from Display Panel