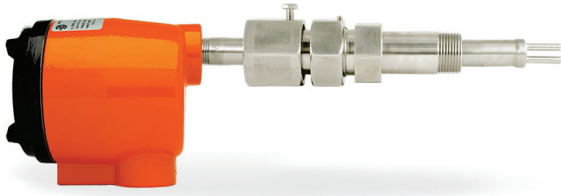


## CLASSIC™ 816 Threaded Retractable Packing Gland



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

- Threaded Connection-retractable assembly - 1" MNPT
- 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 Flameproof Class I, Div. 1, Groups B, C & D

### 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

- 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)

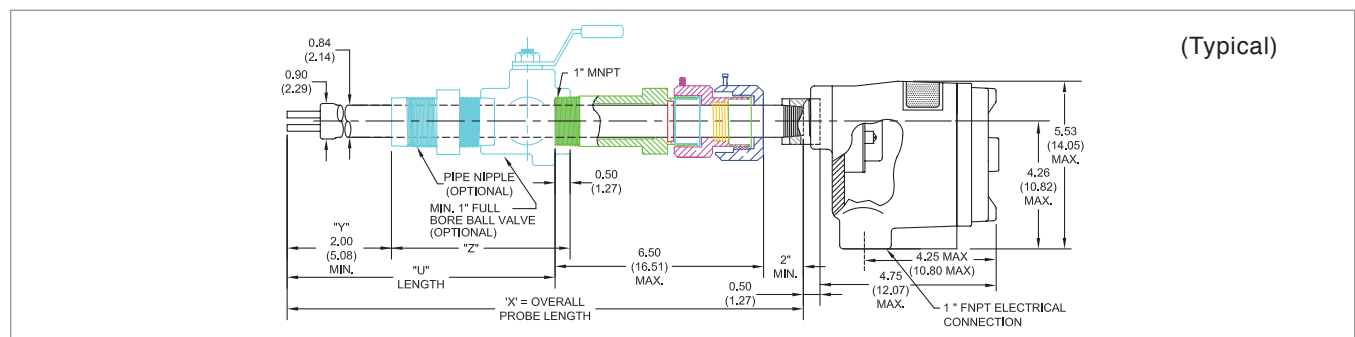
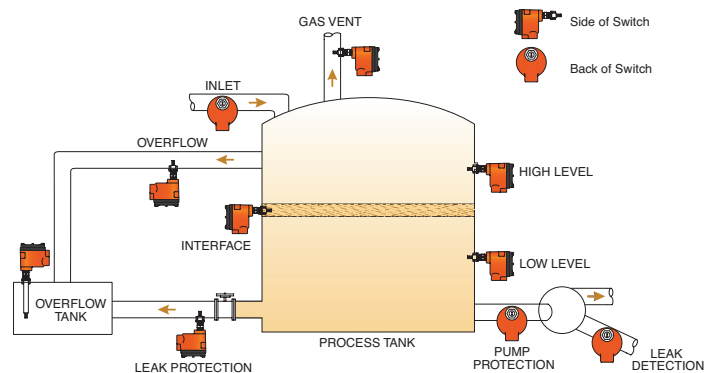
### Configuration Mode Features:

- Adjustable Sensitivity
- Zero & Span Adjustment
- Modbus Addressable

### Electronics Modules Feature:

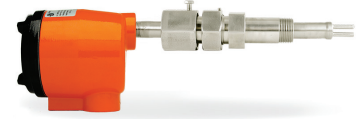
- Easy setup; no jumpers or trim pots
- Continuous Self-test Diagnostics with Fault Indicator
- Temperature Compensation

### Applications:



# KAYDEN | CLASSIC™ 816 Threaded Retractable Packing Gland

<b>816</b>	<b>CODE</b>	<b>Sensor Type</b>											
	<b>R</b>	-45°C to +160°C (-50°F to +320°F) Continuous Service											
	<b>CODE</b>	<b>Sensor Material</b>											
	<b>A</b>	316/316L Stainless Steel											
	<b>X</b>	Titanium Gr. 2											
	<b>T</b>	Hastelloy C-276											
	<b>CODE</b>	<b>Process Connection - MNPT</b>											
	<b>E</b>	1"											
	<b>CODE</b>	<b>Insertion 'U' Lengths</b>											
	<b>T</b>	Low Pressure; 316/316L Stainless Steel (MWP 50 psi)											
	<b>J</b>	Low Pressure c/w Retaining Chain; 316/316L Stainless Steel (MWP 125 psi)											
	<b>X</b>	Medium Pressure; 316/316L Stainless Steel (MWP 500 psi)											
	<b>CODE</b>	<b>Insertion 'U' Lengths</b>											
	<b>0060</b>	6" (15.2 cm)											
	<b>0120</b>	12" (30 cm)											
	<b>0180</b>	18" (46 cm)	Custom 'U' Lengths:										
	<b>0240</b>	24" (60 cm)	2.5" - 120" (6.0 cm - 305 cm)										
	<b>0360</b>	36" (91 cm)	Available in 1/2" (1.0 cm) increments.										
	<b>0480</b>	48" (121 cm)											
	<b>0600</b>	60" (152 cm)											
	<b>IXXXX</b>	Custom 'U' Lengths: Use 4 digits preceded by an 'I' (i.e. 3.5" 'U' = I0035) (Use 'M' for cm)											
	<b>CODE</b>	<b>Input Power</b>											
	<b>C</b>	12-24 VDC and 115-230 VAC, 50 to 60 Hz											
		<b>Electronics</b>											
		Microprocessor Controlled with User Interface.											
		Two SPDT sealed relay contacts. Modbus via RS-485. 4-20 mA current loop.											
	<b>CODE</b>	<b>Local Enclosure</b>											
	<b>1</b>	Flameproof - Aluminum											
	<b>CODE</b>	<b>Cover - For Local Enclosure</b>											
	<b>B</b>	Blind Cover - Flameproof											
	<b>G</b>	Glass Lens Cover - Flameproof											
	<b>CODE</b>	<b>Remote Electronics Enclosure &amp; Cover</b>											
	<b>0A</b>	Not Required											
	<b>1B</b>	Blind Cover - Flameproof											
	<b>1G</b>	Glass Lens Cover - Flameproof											
	<b>CODE</b>	<b>Agency Approvals</b>											
	<b>1</b>	cCSA <sub>us</sub> (UL Standards)											
	<b>9</b>	FM											
	<b>CODE</b>	<b>Language</b>											
	<b>E</b>	English											
<b>816</b>	<b>R</b>	<b>A</b>	<b>E</b>	<b>T</b>	<b>0020</b>	<b>C</b>		<b>1</b>	<b>G</b>	<b>0A</b>	<b>9</b>	<b>E</b>	



Flow, Level, Interface & Temperature Switch & Transmitter

© Kayden Instruments All rights reserved. Contents subject to change without notice.  
Please refer to kayden.com for current specifications and configurations.

Model Number Legend  
DOC#: ML-816-004

ML-816-004-[012]  
This is a Controlled Document and cannot be changed without the Approval of the Quality Control Manager.

\*Sensor only. The Packing Gland Assembly is available as standard in 316/316L Stainless Steel. For exotic alloys contact Kayden.

**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. 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 / IP67
- 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:**

Product should be stored in a clean and dry environment between -30° and +60° C (-34.5° 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 / 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 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<sup>1</sup>
- Relay Actuation Delay Timer
  - Independently configurable for both On and Off, increasing or decreasing
  - Adjustable from 0 - 5,000 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 Mode Configuration
- Heater Power setting<sup>1</sup>
- Zero and Span 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

**Note:**<sup>1</sup> 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**  
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



- **Single Seal Approval**  
Per ANSI/ISA 12.27.01-2003

- **CRN**  
Canadian Registration Number



**Note:** CRN approvals available.  
Visit [kayden.com](http://kayden.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)



**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)