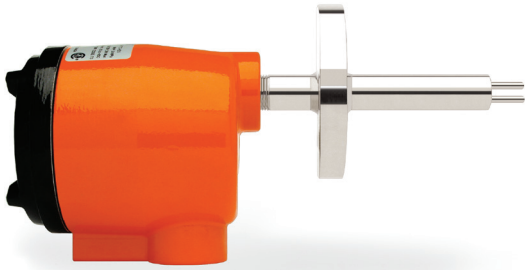


## CLASSIC® 812 Flanged



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

- 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
- CSA 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

### 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:

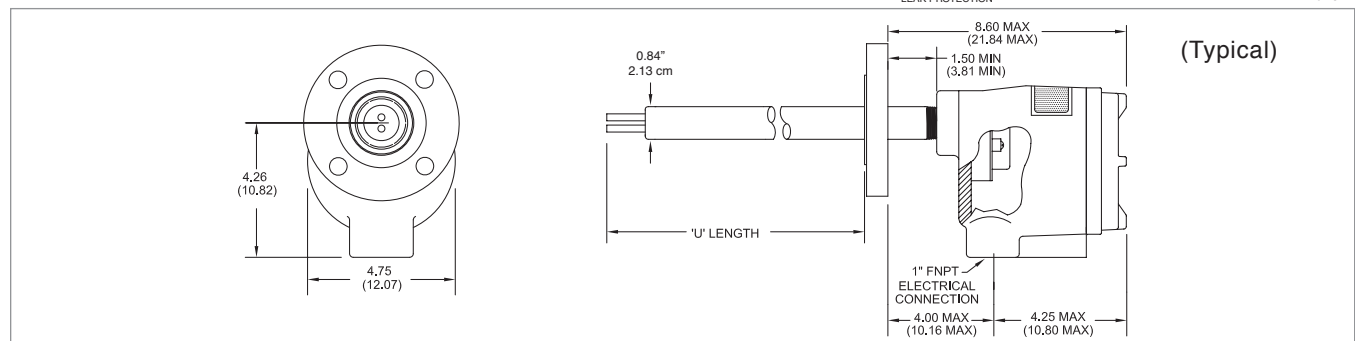
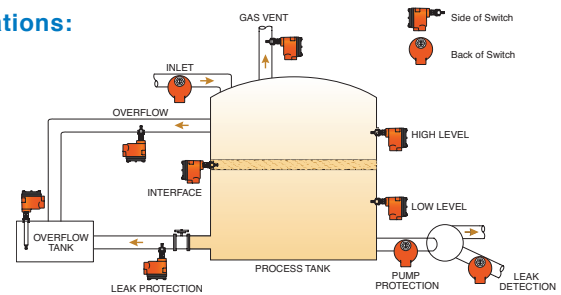
- Adjustable Sensitivity
- Zero & Span Adjustment
- Modbus Addressable

#### Electronics Modules Feature:

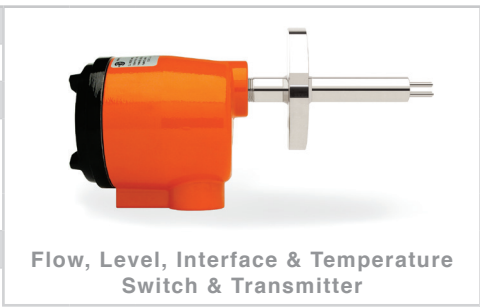
- Easy setup; no jumpers or trim pots
- Continuous Self-test Diagnostics with Fault Indicator

- 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:



<b>812</b>	<b>CODE</b>	<b>Sensor Type</b>																
	<b>R</b>	-55°C to +200°C (-58°F to +392°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 - Flange Type</b>																
	<b>A</b>	Raised Face																
	<b>B</b>	RTJ - Ring Type Joint																
	<b>CODE</b>	<b>ANSI</b>	<b>CODE</b>	<b>ANSI</b>	<b>CODE</b>	<b>ANSI</b>	<b>CODE</b>	<b>ANSI</b>	<b>CODE</b>	<b>ANSI</b>	<b>CODE</b>	<b>ANSI</b>	<b>CODE</b>	<b>ANSI</b>	<b>CODE</b>	<b>ANSI</b>		
		<b>1"</b>	<b>1-1/2"</b>	<b>2"</b>	<b>3"</b>	<b>4"</b>	<b>5"</b>	<b>6"</b>	<b>8"</b>	<b>10"</b>								
	<b>121</b>	150	<b>131</b>	150	<b>141</b>	150	<b>151</b>	150	<b>161</b>	150	<b>171</b>	150	<b>181</b>	150	<b>191</b>	-	<b>201</b>	-
	<b>122</b>	300	<b>132</b>	300	<b>142</b>	300	<b>152</b>	300	<b>162</b>	300	<b>172</b>	300	<b>182</b>	-	<b>192</b>	-	<b>202</b>	-
	<b>123</b>	600	<b>133</b>	600	<b>143</b>	600	<b>153</b>	600	<b>163</b>	600	<b>173</b>	-	<b>183</b>	-	<b>193</b>	-	<b>203</b>	-
	<b>124</b>	900	<b>134</b>	900	<b>144</b>	900	<b>154</b>	900	<b>164</b>	900	<b>174</b>	-	<b>184</b>	-	<b>194</b>	-	<b>204</b>	-
			<b>CODE</b>	<b>Flange 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>Insertion 'U' Lengths 2.5" - 120" 6.4 cm - 305 cm in 1/2" 1.0 cm increments.</b>														
			<b>IXXXX</b>	Custom 'U' Lengths: Use 4 digits preceded by an 'I' (i.e. 3.5" 'U' = I0035) ('M' = 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 fully 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>1G</b>	Glass Lens Cover - Flameproof														
			<b>CODE</b>	<b>Agency Approvals</b>														
			<b>1</b>	cCSA <sub>us</sub> (UL Standards)														
			<b>3</b>	cCSA <sub>us</sub> (UL Standards) & CRN														
			<b>CODE</b>	<b>Language</b>														
			<b>E</b>	English														
<b>812</b>	<b>R</b>	<b>A</b>	<b>A</b>	<b>131</b>	<b>A</b>	<b>I0035</b>	<b>C</b>		<b>1</b>	<b>G</b>	<b>0A</b>	<b>1</b>	<b>E</b>					



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Model Number Legend  
DOC#: ML-812-006

ML-812-006-[004]

**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