• Convenient Micro Connectors (M12) speed installation and maintenance

• Enclosure is fully potted and sealed to eliminate threat of moisture contamination in the wiring and electronics

• High Intensity red and green LED’s indicate electronic switch status
<table>
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<tr>
<th>Function</th>
<th>Enclosure/Approvals</th>
<th>Entry Options</th>
<th>Visual Indicator</th>
<th>Brand</th>
<th>Options</th>
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<td><strong>EG</strong></td>
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<td><strong>Sensor Modules</strong></td>
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<tr>
<td>33 (2) SST N.O. Sensors</td>
<td>C</td>
<td>23 (1) 4-pin M12 Male Connector</td>
<td>R</td>
<td>A</td>
<td>StoneL</td>
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<tr>
<td>34 (2) SST N.C. Sensors</td>
<td>D</td>
<td>24 (1) 4-pin M12 Male Connector</td>
<td>G</td>
<td>M</td>
<td>Metso</td>
</tr>
<tr>
<td>44 (2) NAMUR Sensors (DIN 19234)</td>
<td>P</td>
<td>25 (1) 5-pin M12 Male Connector</td>
<td>F</td>
<td>M</td>
<td>Metso</td>
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<tr>
<td></td>
<td>A</td>
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<td></td>
<td>N</td>
<td>Neles</td>
</tr>
<tr>
<td><strong>Bus Communication Modules</strong></td>
<td></td>
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<td>92 DeviceNet Communication VCT Module</td>
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<td>93 Foundation Fieldbus VCT Module</td>
<td>(Bus Powered Outputs)</td>
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</tr>
<tr>
<td>94 Foundation Fieldbus VCT Module</td>
<td>(24VDC Externally Powered Outputs)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>95 Modbus Communication VCT Module</td>
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<td></td>
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<td>96 AS-i Communication VCT Module</td>
<td>(Standard Addressing Version)</td>
<td></td>
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<td></td>
<td></td>
</tr>
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<td>97 AS-i Communication VCT Module</td>
<td>(Extended Addressing Version)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Special Configuration**

- Red Closed/Green Open
- Green Closed/Red Open
- Flow Line
- T1 Three Way (90° rotation)
- T2 Three Way (90° rotation)
- Red Closed/Green Open
- Green Closed/Red Open
- Flow Line
- T1 Three Way (90° rotation)
- T2 Three Way (90° rotation)
- Special
General Specifications and Ratings

<table>
<thead>
<tr>
<th>Operating Life</th>
<th>Unlimited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature Range</td>
<td>-40° C to 80° C (-40° F to 180° F)</td>
</tr>
<tr>
<td>Enclosure Protection</td>
<td>NEMA 4, 4X &amp; 6; IP67</td>
</tr>
<tr>
<td>Warranty</td>
<td>Five Years</td>
</tr>
<tr>
<td>Indicator &amp; Triggering</td>
<td>Two Years</td>
</tr>
<tr>
<td>Product Patents</td>
<td>5,623,963; 5,647,396</td>
</tr>
</tbody>
</table>

Materials of Construction

(User to check the chemical compatibility of the materials used in their process to ensure chemical compatibility)

- Housing: Lexan® Polycarbonate
- Drum: Lexan® Polycarbonate
- Fasteners: Stainless Steel
- Triggers & Couplings: Stainless Steel

Lexan is a registered trademark of General Electric Corporation.

Dimensions - Inches (mm)

- 2.4” (60)
- 0.67” (17)
- 6.0” (153)
- M12 Micro Connectors
Mounting to ISO-NAMUR Style Actuators

1. **(Namur Size 1 & 2)**
   - Attach Function Module using fasteners provided in the mounting kit and tighten to **25-30 inch pounds. (Do not over tighten)**.

2. **(Namur Size 3 and Non-Namur applications)**
   - Attach spacer or bracket to actuator with fasteners provided in the mounting kit and tighten securely. Attach Function Module to spacer or bracket and tighten to **25-30 inch pounds. (Do not over tighten)**.

2. Place the Drive Block into the slot of the actuator shaft. Next, place the Inner Drum over the Drive Block, ensuring the Drive Block goes into the mating recess of the Inner Drum. Now slide both Trigger Adjustment Rings over the Inner Drum (for the Flow Line option, place the yellow flow line bar on top of the Visual Indicator/Trigger Assembly). Finally, insert the Drum Fastner (provided with the mounting kit) through the entire Visual Indicator/Trigger Assembly and tighten only a couple of turns into the actuator shaft as to allow the Trigger Adjustment Rings to rotate freely to perform the sensor settings. Ensure the assembly is centered.

Sensor Settings

3. Start with the actuator in the closed position. Ensure the Drum Fastner is loose enough to allow the Trigger Adjustment Rings to rotate. Lift and rotate the lower ring until the stainless steel trigger is in front of the lower bulls-eye on the Function Module (lower trigger activates the Red LED). Rotate the actuator to the open position. Lift and rotate the upper ring until the stainless steel trigger is in front of the upper bulls-eye on the Function Module (upper trigger activates Green LED). For the Flow Line option, lift and rotate the yellow flow line bar on top of the Visual Indicator/Trigger Assembly to indicate desired flow. Securely tighten the Drum Fastener. To adjust simply loosen screw and adjust triggers and indicator to suit your application. LEDs will energize and de-energize when powered, indicating sensor status.

Indicator Cover

4. Install the Visual Indicator Cover. The Cover Alignment Ribs on the Visual Indicator Cover are tapered and cannot be inserted vertically into the mating grooves on the Function Module. Place the Visual Indicator Cover over and as close to the Visual Indicator/Trigger Assembly as possible. When the bottom of the Visual Indicator Cover is flush with the base of the Function Module, slide the Visual Indicator horizontally until the Cover Alignment Ribs fit completely into the mating grooves on the Function Module. Tighten the Visual Indicator Cover securely to the actuator with fastners provided in the mounting kit. **(25-30 inch pounds. Do not over tighten)**.

Wiring

5. Control and solenoid wires as connected to the Eclipse Function Module via M12 micro-connectors as per information located on pages 5 thru 8.
2 SST™ Solid-State Sensors
(EG33 & EG34)

Configuration: (2) Solid State Sensors
(Normally Open or Normally Closed)

Indications:
EG33  Target On Sensor = LED On
      Target Off Sensor = LED Off
EG34  Target On Sensor = LED Off
      Target Off Sensor = LED On

Operating Voltage: 8-125 VDC; 24-125 VAC
Maximum Voltage Drop: 6.5 Volts @ 10mA
                     7.0 Volts @ 100mA

Current Ratings:
Max Inrush 2.0 Amps @ 125 VDC/VAC
Max Continuous 0.1Amps @ 125 VDC/VAC
Minimum On Current 2.0mA
Leakage Current <0.15mA with DC Voltage
              <0.25mA with AC Voltage

To Bench Test a Solid State Sensor Unit: Use StoneL Light Read Tester. Or you may use a 24 VDC or 120 VAC power supply with a series load resistor (2K ohm to 6K ohm). Connect to NO and C (EG33) or NC and C (EG34) male pins.

WARNING:
FAILURE TO USE A SERIES LOAD RESISTOR WHEN BENCH TESTING WITH A POWER SUPPLY WILL RESULT IN PERMANENT DAMAGE TO THE UNIT.

---

2 SST™ Namur Sensors
(EG44)

Configuration: (2) Namur Sensors (Normally Closed)

Indications: Target On Sensor = LED Off
             Target Off Sensor = LED On

Operating Voltage: 6-29 VDC
Current Ratings: Target On (LED Off) <1.0mA
                 Target Off (LED On) >3.0mA

Must use intrinsically safe repeater barrier.
Namur Sensors conform to EN 60947-5-6 Standard

See Page 9 or Page 10 for Intrinsic Safety Hazardous Location Installation Diagram

To Bench Test a Namur Sensor Unit: Use StoneL Light Read Tester or a 6-29 VDC power supply across + and - male pins. No series resistor needed.
## DeviceNet EG Module  
**(EG92)**

<table>
<thead>
<tr>
<th>Communication Protocol:</th>
<th>DeviceNet</th>
</tr>
</thead>
<tbody>
<tr>
<td>I/O:</td>
<td></td>
</tr>
<tr>
<td>(2) Discrete Inputs (Sensors)</td>
<td></td>
</tr>
<tr>
<td>(1) Discrete Output (Solenoid)</td>
<td></td>
</tr>
<tr>
<td>Default Address:</td>
<td>63</td>
</tr>
<tr>
<td>Bit Assignment: Inputs:</td>
<td>(3 Bytes)</td>
</tr>
<tr>
<td>Bit 0 = Input 1 (Red LED; Bottom Sensor)</td>
<td></td>
</tr>
<tr>
<td>Bit 1 = Input 2 (Green LED; Top Sensor)</td>
<td></td>
</tr>
<tr>
<td>Bit 4 = Fault Bit (Set when both Input 1 and Input 2 = 1)</td>
<td></td>
</tr>
<tr>
<td>Bits 8-23 = Not Used</td>
<td></td>
</tr>
<tr>
<td>Outputs: (1 Byte)</td>
<td></td>
</tr>
<tr>
<td>Bit 0 = Not Used</td>
<td></td>
</tr>
<tr>
<td>Bit 1 = Output 2 (Solenoid)</td>
<td></td>
</tr>
<tr>
<td>I/O Messaging:</td>
<td>Polling, Cyclic, Change of State</td>
</tr>
<tr>
<td>Operating Voltage:</td>
<td>24 VDC via DeviceNet network</td>
</tr>
<tr>
<td>Baud Rates:</td>
<td>125K, 250K, 500K</td>
</tr>
<tr>
<td>Output Voltage:</td>
<td>24 VDC</td>
</tr>
<tr>
<td>Max. Output Current:</td>
<td>160mA</td>
</tr>
<tr>
<td>Max. Output Power:</td>
<td>4 Watts</td>
</tr>
</tbody>
</table>

**To Bench Test a DeviceNet Unit:** Use 24 VDC power supply across V + (Pin 2) and V - (Pin 3) of male connector. No series resistor needed. To test communication, a functioning DeviceNet network is required.

---

## Foundation Fieldbus EG Module  
**(EG93)**

<table>
<thead>
<tr>
<th>Communication Protocol:</th>
<th>Foundation Fieldbus</th>
</tr>
</thead>
<tbody>
<tr>
<td>I/O:</td>
<td></td>
</tr>
<tr>
<td>(2) Discrete Inputs (Sensors)</td>
<td></td>
</tr>
<tr>
<td>(1) Discrete Output (Piezo Valve)</td>
<td></td>
</tr>
<tr>
<td>Function Blocks:</td>
<td>2 DI, 2 DO</td>
</tr>
<tr>
<td>Channel Reference</td>
<td>Channel 1 = DI1 (Green LED)</td>
</tr>
<tr>
<td></td>
<td>Channel 2 = DI2 (Red LED)</td>
</tr>
<tr>
<td></td>
<td>Channel 3 = DO1 (OUT 1)</td>
</tr>
<tr>
<td>Operating Voltage:</td>
<td>9-32 VDC (Foundation Fieldbus Voltage)</td>
</tr>
<tr>
<td>Max Output Current:</td>
<td>2mA @ 6.5 VDC. Current limited to 2mA (Bus Powered). Suitable for StoneL Piezo Valve</td>
</tr>
<tr>
<td>Indication:</td>
<td>Red LED = Bottom Sensor</td>
</tr>
<tr>
<td></td>
<td>Green LED = Top Sensor</td>
</tr>
</tbody>
</table>

**See Page 11 and Page 12 for Intrinsic Safety (FISCO) Hazardous Location information and Installation Diagram.**

**See Page 13 for Non-Incendive Field Wiring Apparatus Installation Drawing.**

**To Bench Test a Foundation Fieldbus Module:** Use 24 VDC power supply across FB - (Pin 1) and FB + (Pin 2) of male connector. No series resistor needed. To test communication, a functioning Foundation Fieldbus network is required.
## Modbus EG Module

**Communication Protocol:** Modbus  
**I/O:**  
- (2) Discrete Inputs (Sensors)  
- (1) Discrete Output (Solenoid)  
**Default Address:** 03  
**Bit Assignment:**  
- Inputs:  
  - Bit 1 = Not Used  
  - Bit 2 = Not Used  
  - Bit 3 = (Green LED; Top Sensor)  
  - Bit 4 = (Red LED; Bottom Sensor)  
- Outputs:  
  - 00001 = Not Used  
  - 00002 = Output 2 (Solenoid 2)  
**Operating Voltage:** 24VDC (The 24VDC power source should share the same ground reference as the communication line)  
**Baud Rates:** 9.6K, 19.2K, 38.4K  
**Output Voltage:** 24VDC  
**Max. Output Current:** 160mA  
**Max. Output Power:** 4 Watts

### EG9525
- 1: N/C  
- 2: V+  
- 3: V-  
- 4: BUS +  
- 5: BUS -

### EG9526
- 1: N/C  
- 2: V+  
- 3: V-  
- 4: BUS +  
- 5: BUS -

**Solenoid Connection (Female Socket):**  
- 1: N/C  
- 2: N/C  
- 3: Solenoid -  
- 4: Solenoid +

### To Bench Test a Modbus Unit:
- Use 24 VDC power supply across V+ (Pin 2) and V- (Pin 3) of male connector. No series resistor needed. To test communication, a functioning DeviceNet network is required.

## AS-Interface® EG Module

**Communication Protocol:** AS- Interface (AS-i)  
**I/O:**  
- (2) Discrete Inputs (Sensors)  
- (1) Discrete Output (Solenoid)  
**Default Address:** 00  
**AS-Interface ID/IO Codes:** ID = F; IO = 4; ID1 = F; ID2 = E  
**Bit Assignment:**  
- Inputs:  
  - Bit 1 = Not Used  
  - Bit 2 = Not Used  
  - Bit 3 = (Green LED; Top Sensor)  
  - Bit 4 = (Red LED; Bottom Sensor)  
- Outputs:  
  - Bit 1 = Not Used  
  - Bit 2 = Not Used  
  - Bit 3 = Output (Solenoid)  
  - Bit 4 = Not Used  
**Operating Voltage:** 24-30 VDC (AS-i Voltage)  
**Output Voltage:** 24 VDC  
**Max. Output Current:** 160mA  
**Max. Output Power:** 4 Watts

### EG9623
- 1: AS-I +  
- 2: N/C  
- 3: AS-I -  
- 4: N/C

### EG9624
- 1: AS-I +  
- 2: N/C  
- 3: AS-I -  
- 4: N/C

**Solenoid Connection (Female Socket):**  
- 1: N/C  
- 2: N/C  
- 3: Solenoid -  
- 4: Solenoid +

### To Bench Test AS-i Module:
- Use 24 VDC power supply across AS-I + (Pin 1) and AS-I - (Pin 3) of male connector. No series resistor needed. To test communication, a functioning AS-i network is required.

See Page 14 for Non-Incendive Field Wiring Apparatus Installation Drawing
AS-Interface® EG Module  
(EG97)

Communication Protocol: AS-Interface (AS-i)  
Configuration:  
(2) Discrete Inputs (Sensors)  
(1) Discrete Output (Solenoid)  
Default Address: 0A  
AS-Interface ID/IO Codes: ID = A; IO = 4; ID1 = 7; ID2 = E  
Bit Assignment:  
Inputs:  
Bit 1 = Not Used  
Bit 2 = Not Used  
Bit 3 = (Green LED; Top Sensor)  
Bit 4 = (Red LED; Bottom Sensor)  
Outputs:  
Bit 1 = Not Used  
Bit 2 = Not Used  
Bit 3 = Output (Solenoid)  
Bit 4 = Not Used  
Operating Voltage: 24-30 VDC (AS-i Voltage)  
Output Voltage: 24 VDC  
Max. Output Current: 100mA  
Max. Output Power: 2.4 Watts

See Page 14 for Non-Incendive Field Wiring Apparatus  
Installation Drawing

To Bench Test AS-i Module: Use 24 VDC power supply across AS-I + (Pin 1) and AS-I - (Pin 3) of male connector. No series resistor needed. To test communication, a functioning AS-i network is required.
EG44D or A____ models approved for Intrinsically Safe Installations: (Ex ia IIC T5)

*Note: Any Visual Indicator/Trigger Assembly option is approved

HAZARDOUS
(CLASSIFIED)
LOCATION

NON-HAZARDOUS
(SAFE AREA)
LOCATION

INSTALLATION NOTES Intrinsically Safe Installations: (Ex ia IIC T5):

EG44___ Entity Parameters:  \( U_i = 22 \ \text{Vdc} \);  \( I_i = 120 \ \text{mA} \);  \( C_i = 98 \ \text{nF} \);  \( L_i = 1.56 \ \text{mH} \);  \( P_i = 2.0 \ \text{W} \)

1. The Entity Concept allows interconnection of intrinsically safe apparatus with associated apparatus when the following is true:
   \( U_i > U_o \);  \( I_i > I_o \);  \( P_i > P_o \);  \( C_o > C_i + C_{cable} \);  \( L_o > L_i + L_{cable} \).

2. For Installations in Europe, control room equipment connected to intrinsically safe associated apparatus shall not use or generate more than the marked \( U_m \) of the associated apparatus.

3. Installation in Europe shall be in accordance with latest editions of the wiring practices for the country of origin.

4. For Installations in Europe, the Associated Apparatus must be ATEX approved. Associated apparatus manufacturer's installation drawing must be followed when installing this equipment.

5. To maintain intrinsic safety, wiring associated with each sensor or solenoid coil wiring must be run in separate cables or separate shields connected to intrinsically safe (associated apparatus) ground. Each Sensor and Solenoid coil shall be wired as separate intrinsically safe circuits.

6. Conduit Grounding - Upon installation verify electrical continuity between conduit and ground terminal.

7. Resistance between Intrinsic Safe Ground and earth ground must be less than 1.0 ohm.

WARNING:

8. Parts of the enclosure are non-conducting and may generate an ignition-capable level of electrostatic charge under certain extreme conditions. The user should ensure that the equipment is not installed in location where it may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charge on non-conducting surfaces. Additionally, cleaning of the equipment should only be done with a damp cloth.

9. Substitution of components may impair hazardous location safety.

10. No revision to drawing without prior FM Approval.
EG44C or P____ models approved for Intrinsically Safe Installations:
IS Class I,II and III; Division 1, Groups A,B,C,D,E,F,G
EG4423C or P____*
*Note: Any Visual Indicator/Trigger Assembly option is approved

HAZARDOUS (CLASSIFIED) LOCATION

NON-HAZARDOUS (SAFE AREA) LOCATION

 INSTALLATION NOTES:
EG44___ Entity Parameters:  
\[ U_i (V_{max}) = 22 \text{ Vdc;} \quad I_i (I_{max}) = 120 \text{ mA;} \quad C_i = 98 \text{ nF;} \quad L_i = 1.56 \text{ mH;} \quad P_i = 2.0 \text{ W} \]

1. \( U_o < U_i (V_{max}); \quad I_o < I_i (I_{max}); \quad C_a > C_i + C_{cable}, \quad L_a > L_i + L_{cable} \).
2. Control equipment connected to barrier must not use or generate more than 250 Vrms or Vdc.
3. Installation should be in accordance with ANSI/ISA RPA12.6.01 "Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations" and the National Electrical Code (ANSI/NFPA 70) or in accordance with the Canadian Electric Code.
4. Associated apparatus manufacturer's installation drawing must be followed when installing this equipment.
5. To maintain intrinsic safety, wiring associated with each sensor or solenoid coil wiring must be run in separate cables or separate shields connected to intrinsically safe (associated apparatus) ground. Each Sensor and Solenoid coil shall be wired as separate intrinsically safe circuits.
6. Shield Grounding - Upon installation verify electrical continuity between shield and ground terminal.
7. Resistance between Intrinsic Safe Ground and earth ground must be less than one ohm.

WARNING:
8. Parts of the enclosure are non-conducting and may generate an ignition-capable level of electrostatic charge under certain extreme conditions. The user should ensure that the equipment is not installed in location where it may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charge on non-conducting surfaces. Additionally, cleaning of the equipment should only be done with a damp cloth.
9. Substitution of components may impair hazardous location safety.
FISCO Concept

The FISCO Concept allows the interconnection of intrinsically safe apparatus to associated apparatus not specifically examined in such combination. The criterion for such interconnection is that voltage ($V_{max}$), the current ($I_{max}$), and the power ($P_i$), which intrinsically safe apparatus can receive and remain intrinsically safe, considering faults, must be equal to or greater than the voltage ($U_o$, $V_{oc}$, $V_i$), the current ($I_o$, $I_{sc}$, $I_t$), and the power ($P_o$) which can be provided by the associated apparatus (supply unit). In addition, the maximum unprotected residual capacitance ($C_i$) and inductance ($L_i$) of each apparatus (other than the terminators) connected to the Fieldbus must be less than or equal to 5nF and 10µH respectively.

In each I.S. Fieldbus segment only one active source, normally the associated apparatus, is allowed to provide the necessary power for the Fieldbus system. The allowed voltage ($U_o$, $V_{oc}$, $V_i$) of the associated apparatus used to supply the bus must be limited to the range of 14V d.c. to 24V d.c. All other equipment connected to the bus cable has to be passive, meaning that the apparatus is not allowed to provide energy to the system, except to a leakage current of 50µA for each connected device. Separately powered equipment needs a galvanic isolation to insure that the intrinsically safe Fieldbus circuit remains passive.

The cable used to interconnect the devices must comply with the following parameters:

- Loop resistance $R'$: 15 - 150 ohm/KM
- Inductance per unit length $L'$: 0.4 - 1mH/KM
- Capacitance per unit length $C'$: 80 - 200nF/KM
  
  $C' = C'_{line to line} + \frac{1}{2} C'_{line to shield}$, if both lines are floating with respect to shield  
  or  
  $C' = C'_{line to line} + C'_{line to shield}$, if one line is connected to shield  

- Trunk Length: $\leq$ 1000 meters  
- Spur Length: $\leq$ 30 meters  
- Splice Length: $\leq$ 1 meters

FM Approved line terminators must be used on each end of the trunk cable that have the following parameters:

- $R = 90 - 100$ ohms  
- $C = 0.0 - 2.2$µF

(See Page 12 for Installation Diagram and Notes)
**INSTALLATION NOTES:**

**EG93___ Entity Parameters (FISCO):**

$U_i (V_{max}) = 30 \text{ Vdc}$; $I_i (I_{max}) = 380 \text{ mA}$; $C_i = 0.0 \text{ nF}$; $L_i = 0.0 \text{ mH}$; $P_i = 5.32 \text{ W}$

1. Installation shall be in accordance with ANSI/ISA RPA12.6.01, ANSI/NFPA 70, and the National Electrical Code or in accordance with the Canadian Electric Code.

2. Control equipment must be FM or CSA Approved Associated Apparatus suitable for FISCO.

3. Control equipment connected to FISCO barrier must not use or generate more than 250Vrms or Vdc.

4. Resistance between FISCO Intrinsically Safe Ground and earth ground must be less than 1.0 Ohm.

**WARNING:**

5. Parts of the enclosure are non-conducting and may generate an ignition-capable level of electrostatic charge under certain extreme conditions. The user should ensure that the equipment is not installed in location where it may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charge on non-conducting surfaces. Additionally, cleaning of the equipment should only be done with a damp cloth.

6. Substitution of components may impair hazardous location safety.

7. Approval Agency controlled Installation Diagram. No revision to diagram allowed without prior Factory Mutual or Approval Agency authority.

---

**HAZARDOUS (CLASSIFIED) LOCATION**

- IS (FISCO) Cl I,II,III Div 1, Groups A,B,C,D,E,F,G

**NON-HAZARDOUS (SAFE AREA) LOCATION**

- FM/CSA Approved Control Equipment

- FM/CSA Approved Termination

- FM/CSA Approved Fieldbus Device "n" suitable for FISCO

- FM/CSA Approved Fieldbus Device 2 suitable for FISCO

---

**Intrinsic Safety (FISCO) Hazardous Location Installation Diagram**

**EG93C or P____* models approved for Intrinsically Safe (FISCO) Installations:**

**IS Class I,II and III; Division 1, Groups A,B,C,D,E,F,G**

*Note: All Entry options and Visual Indicator/Trigger Assembly options are approved*
EG93C or P____* models approved for Non-Incendive Field Wiring Apparatus: 
NI Class I,II and III; Division 2, Groups A,B,C,D,F,G

*Note: All Entry options and Visual Indicator/Trigger Assembly options are approved

**HAZARDOUS**

(Classified) LOCATION

- Non-Indendive Field Wiring Apparatus
  - NI; Cl I,II,III Div 2
  - Groups A,B,C,D,F,G

**NON-HAZARDOUS**

(Safe Area) LOCATION

- Control Equipment

---

**INSTALLATION NOTES:**

Entity Parameters:  **EG93_____**:  
Ui = 30 Vdc;  Ii = 380 mA ;  Ci = 0.0 nF;  Li = 0.0 mH;  Pi = 5.32 W

1. Installation shall be in accordance with ANSI/ISA RPA12.6.01, ANSI/NFPA 70, and the National Electrical Code.

2. Control equipment must be FM approved to supply power in Class I, Division 2 Areas.

3. Power Limiting Associated Apparatus must satisfy the conditions:  
   - Voc or Vt < Ui
   - Isc or It < Ii
   - Ca > Ci + Ccable,
   - La > Li + Lcable of the EG93_______ Entity Parameters

4. Manufacturer’s associated non-incendive field wiring apparatus installation drawing must be followed when installing this equipment.

5. Parts of the enclosure are non-conducting and may generate an ignition-capable level of electrostatic charge under certain extreme conditions. The user should ensure that the equipment is not installed in locations where it may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charge on non-conducting surfaces. Additionally, cleaning of the equipment should only be done with a damp cloth.

6. Substitution of components may impair hazardous location safety.
14 INSTALLATION NOTES:
Entity Parameters:  EG96 or EG97____:  Ui = 37 Vdc;  Ii = 150 mA ;  Ci = 0.0 nF;  Li  = 0.0 mH;  Pi  = 3.0 W

1.  Installation shall be in accordance with ANSI/ISA RPA12.6.01, ANSI/NFPA 70, and the National Electrical Code.
2.  Control equipment must be FM approved to supply power in Class I, Division 2 Areas.
3.  Power Limiting Associated Apparatus must satisfy the conditions: Voc or Vt < Ui, Isc or It < Ii, Ca  > Ci + Ccable, La > Li + Lcable of the EG96 or EG97_______ Entity Parameters
4.  Manufacturer’s associated non-incendive field wiring apparatus installation drawing must be followed when installing this equipment.
5.  Parts of the enclosure are non-conducting and may generate an ignition-capable level of electrostatic charge under certain extreme conditions. The user should ensure that the equipment is not installed in location where it may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charge on non-conducting surfaces. Additionally, cleaning of the equipment should only be done with a damp cloth.
6.  Substitution of components may impair hazardous location safety.
INSTALLATION ADDENDUM – EN and EG series

SPECIFIC CONDITIONS OF USE / MARKING

**For EN and EG Series - FM08ATEX0015X**

<table>
<thead>
<tr>
<th>Specific Conditions of Use - Notes</th>
<th>Marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Parts of the enclosure are non-conducting and may generate an ignition-capable level of electrostatic charge under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions which might cause a build up of electrostatic charge on non-conducting surfaces. Additionally, cleaning of the equipment should be done only with a damp cloth.</td>
<td>ATEX II 1 G Ex ia IIC T5 Ga Ta = -40°C to +80°C</td>
</tr>
</tbody>
</table>

**For EN and EG Series - FM17US0239X**

<table>
<thead>
<tr>
<th>Specific Conditions of Use - Notes</th>
<th>Marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Part of the enclosure is constructed from plastic. To prevent the risk of electrostatic sparking the plastic surface should only be cleaned with a damp cloth.</td>
<td>*NI / I /2 / ABCD - 105149  *S / II /2 / FG  *IS / I, II, III / 1 / ADBCDEFG - 105149  *See Approval Certificates for applicable models / type codes.</td>
</tr>
</tbody>
</table>

Materials
- Enclosure: Polycarbonate
- Seal: Buna-N or RTV5240

Attention: Replace only with identical factory parts/components. Deviation from the installation conditions in the Installation Manual and this addendum may invalidate this product's conformity with the Explosive Atmospheres, Pressure Equipment, and EMC Directives. Conformity of this product with any other "CE Mark“ Directive(s) shall not be assumed. Contact StoneL for help with replacements or emergency maintenance. For installation manuals in a community language other than English, please contact StoneL.

DECLARATION OF CONFORMITY

Manufacturer:
StoneL
26271 US Highway 59
Fergus Falls, Minnesota 56537 USA

Products:
Eclipse EN Series - Valve Position Monitors and Valve Communication Terminals
Eclipse EG Series - Valve Position Monitors and Valve Communication Terminals

<table>
<thead>
<tr>
<th>Model - Type</th>
<th>Certificates / Directives / Standards</th>
<th>Marking</th>
</tr>
</thead>
</table>

ATEX Notified Bodies for EU Type Examination Certificates:
FM Approvals Ltd. Windsor, Berkshire, UK (Notified Body Number 1725)

Quality Assurance Certificates:
ISO 9001:2008 ..................... TUV SUD America Inc.
QAN FM06ATEX0013 ................ FM Approvals (Notified Body Number 1725)
QAR GB/FME/QAR11.003 ........ FM Approvals (Notified Body Number 1725)

We declare under our sole responsibility that the products, as described, are in conformity with the listed standards and directives.

Fergus Falls, 4th August 2017

Bryan Beckman, Quality Manager
Authorized Person of the Manufacturer