

# Rosemount™ 3490 Series 4–20 mA + HART® Compatible Controller

## Product Certifications



**⚠ WARNING****Failure to follow safe installation guidelines could result in death or serious injury**

- The Rosemount 3490 Series Control Unit ("control unit") must not be installed in a hazardous area. The control unit can be connected to transmitters that are installed in a hazardous area.
- Use the control unit only as specified in this guide and the product reference manual. Refer to the Rosemount 3490 Series [Reference Manual](#) for more instructions.
- The control unit must be installed, connected, commissioned, operated, and maintained by suitably qualified personnel only, observing national and local requirements that may apply.

**Electrical shock could cause death or serious injury**

- Make sure that the control unit is not powered when removing the terminal cover and making terminal connections.
- If the control unit is installed in a high voltage environment and a fault condition or installation error occurs, high voltage may be present on leads and terminals.

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# Product Certifications

## 1.0 European directive information

The EC Declaration of Conformity for all applicable European directives for this product can be found on [page 7](#) and at [EmersonProcess.com/Rosemount](http://EmersonProcess.com/Rosemount).

## 2.0 Hazardous locations certifications

### 2.1 North American and Canadian approvals

#### **Canadian Standards Association (CSA)**

##### **intrinsically safe approvals – certified to US standard**

##### **I5** Project ID: 1830310

Intrinsically safe for Class I, Division 1, Groups A, B, C, and D

Intrinsically safe for Class 1, Zone 0, Group IIC [Ex ia]

Ambient temperature: -40 °C to +55 °C

Control Drawing: 71097/1201

Uo = +27.3 V, Io = 96.9 mA, Po = 0.66 W, La = 2.26 mH, Ca = 70 nF

##### **Canadian Standards Association (CSA) intrinsically safe approvals**

##### **I6** Project ID: 1830310

Intrinsically safe for Class I, Division 1, Groups A, B, C, and D

Intrinsically safe for Class 1, Zone 0, Group IIC [Ex ia]

Ambient temperature: -40 °C to +55 °C

Control Drawing: 71097/1201

Uo = +27.3 V, Io = 96.9 mA, Po = 0.66 W, La = 2.26 mH, Ca = 70 nF

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#### **Note**

Control drawing 71097/1201 is in the Rosemount 3490 Series [Reference Manual](#).

Manuals are available electronically on the web site [EmersonProcess.com/Rosemount](http://EmersonProcess.com/Rosemount).

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## 2.2 European approvals

### **ATEX intrinsically safe approval**

#### **I1** Certificate numbers:

SIRA 06ATEX7128 (Wall Mount), SIRA 06ATEX7129X (Panel Mount)

Intrinsically safe for II(1) G D, [Ex ia] IIC, [Ex ia Da] IIIC

Ambient temperature: -40 °C to +55 °C

$U_o = +27.3$  V,  $I_o = 96.9$  mA,  $P_o = 0.66$  W,  $L_i = 0.22$  mH,  $C_i = 0.6$  nF

(See also “ATEX and IECEx conditions for safe use (I1 and I7)” on page 5)

#### **Special conditions for safe use**

1. Terminal 30 must be connected to a high integrity earth/ground point in a non-hazardous area.

## 2.3 International approvals

### **International Electrotechnical Commission (IEC)**

#### **intrinsically safe approval**

#### **I7** Certificate number: IECEx SIR 06.0104X

Intrinsically safe for [Ex ia] IIC, [Ex ia Da] IIIC

Ambient temperature: -40 °C to +55 °C

$U_o = +27.3$  V,  $I_o = 96.9$  mA,  $P_o = 0.66$  W,  $L_i = 0.22$  mH,  $C_i = 0.6$  nF

(See also “ATEX and IECEx conditions for safe use (I1 and I7)” on page 5)

#### **Special conditions for safe use**

1. Terminal 30 of the panel mount control unit (349\*\*\*P7\*\*\*) shall be earthed/grounded in the safe area using a high integrity earth/ground.

### **Technical Regulation Customs Union (EAC)**

#### **intrinsically safe approval**

#### **IM** Certificate number: TC RU C-GB.AA87.B.00117

Intrinsically safe for [Ex ia] IIC

Ambient temperature: -40 °C to +55 °C

$U_o = +27.3$  V,  $I_o = 96.9$  mA,  $P_o = 0.66$  W,  $L_i = 0.22$  mH,  $C_i = 0.6$  nF

## 3.0 ATEX and IECEx conditions for safe use (I1 and I7)

Model numbers covered: 349\*\*\*\*\*I1\*\*\* and 349\*\*\*\*\*I7\*\*\*  
 (“\*” indicates options in construction, function and materials).

The following instructions apply to equipment covered by certificates numbered **Sira 06ATEX7128**, **Sira 06ATEX7129X**, and **IECEx SIR 06.0104X**:

1. The Rosemount 3490 Series Control Unit (“control unit”) may be connected to a transmitter located in a hazardous area. The control unit **must not** itself be located in a hazardous area.
2. General
  - a. Do not mount the control unit on a structure that is subject to vibration, or in a position where damage may be caused by impact, thermal stress or liquid ingress.
  - b. The fuse must only be replaced with the type specified.
  - c. It is the responsibility of the user to ensure the voltage and current limits for this equipment are not exceeded.
  - d. If the equipment is likely to come into contact with **aggressive substances**, it is the responsibility of the user to take **suitable precautions** that prevent it from being adversely affected, thus ensuring that the type of protection is not compromised.
    - **Aggressive Substances**  
e.g. acidic liquids or gases that may attack metals or solvents that may affect polymeric materials.
    - **Suitable Precautions**  
e.g. regular checks as part of routine inspections or establishing from the material's data sheet that it is resistant to specific chemicals.
  - e. The user should not repair this equipment.
3. Wiring instructions
  - a. Terminal 30 of the control unit must be connected to an intrinsically safe earth/ground point.
  - b. The control unit must not be connected to a supply exceeding 250 V r.m.s. or dc, or to apparatus containing a source of voltage exceeding 250 V r.m.s. or dc.
  - c. The Intrinsically Safe outputs of the control unit may be connected to certified equipment used in a hazardous area requiring Equipment Protection Level Ga or Da (category 1) equipment, with flammable gas and vapor groups IIC, IIB and IIA, and flammable dust groups IIIC, IIIB, and IIIA. No additional I.S. barrier is required.
  - d. If the circuit connected to terminals 1 and 2 does not satisfy IEC60079-11 (EN60079-11) clause 6.3.13 (Isolation of circuits from earth or frame), then equipotential earthing/grounding to the control unit intrinsically safe earth/ground shall be provided.
    - An example of equipotential earthing/grounding is a cable with a cross-sectional area greater than 4 mm<sup>2</sup> and a resistance of less than 1 Ohm.

## 4. Technical data

## a. Coding:

## ■ ATEX:

II (1) GD

[Ex ia] IIC ( $-40\text{ °C} \leq T_a \leq 55\text{ °C}$ )[Ex ia Da] IIIC ( $-40\text{ °C} \leq T_a \leq 55\text{ °C}$ )

## ■ IECEx:

[Ex ia] IIC ( $-40\text{ °C} \leq T_a \leq 55\text{ °C}$ )[Ex ia Da] IIIC ( $-40\text{ °C} \leq T_a \leq 55\text{ °C}$ )

## b. Safety parameters:

Terminals T1 (24 V) with respect to T2 ( $I_{in}$ ) and T1 (24 V) with respect to T3 (Earth)	Terminals T2 ( $I_{in}$ ) with respect to T3 (Earth) <sup>(1)</sup>
$U_i = 0, U_o = 27.3\text{ V}, I_o = 96.9\text{ mA}, P_o = 0.66\text{ W}, L_i = 0.22\text{ mH}, C_i = 0.6\text{ nF}$	$U_i = 30\text{ V}, I_i = 120\text{ mA}, L_i = 0.1\text{ mH}, C_i = 0.6\text{ nF}, U_o = 6.51\text{ V}$ (capacitive charging only), $I_o = 0, P_o = 0$

1. Terminal T2 ( $I_{in}$ ) with respect to terminal T3 (Earth) must be treated as a 6.51 V source. The 6.51V is considered as being theoretical maximum to which a capacitive load across these terminals could become charged through leakage via internal series blocking diodes. This voltage does not contribute to the short circuit sparking risk of any external source connected to these terminals.

c. The **capacitance** and **inductance** of the load connected must not exceed the following values:

Group	Capacitance	Inductance (mH) or L/R Ratio ( $\mu\text{H}/\text{Ohm}$ )	
IIC	$0.082\ \mu\text{F}$ <sup>(1)</sup>	1.2 mH	42 $\mu\text{H}/\text{Ohm}$
IIB	$0.65\ \mu\text{F}$	10.9 mH	172 $\mu\text{H}/\text{Ohm}$
IIA	$2.15\ \mu\text{F}$	21.9 mH	346 $\mu\text{H}/\text{Ohm}$

1.  $0.082\ \mu\text{F}$  of which total  $C_i$  of the hazardous area apparatus connected must not exceed  $0.020\ \mu\text{F}$ .

## d. Fuse: 200mA (T) 5 x 20mm 250V

## e. Materials of construction:

349\*\*\*P6\*

Polycarbonate enclosure and cover

304SS cover fixing screws

UV resistant polycarbonate membrane keypad

Nylon cable glands and blanking plugs

349\*\*\*P4\*

Polycarbonate enclosure and cover

Polyester and alloy 400 fastening

UV resistant polycarbonate membrane keypad

349\*\*\*P7\*

Polyphenylene (PPO) enclosure and cover

Carbon steel / zinc-plated fascia fixing screws

UV resistant Polycarbonate membrane keypad

Nylon and PBT terminal blocks with plated fittings

## f. Year of manufacture: printed on product label.

# 4.0 EC Declaration of Conformity

Figure 1. Rosemount 3490 Series Declaration of Conformity (Page 1)



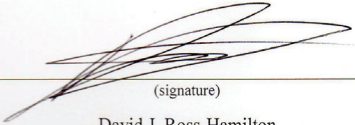
	<h2>EU Declaration of Conformity</h2> <p>No: RMD 1063 Rev. E</p>	
<p>We,</p>		
<p><b>Rosemount Measurement Ltd.</b>  <b>158 Edinburgh Avenue,</b>  <b>Slough, SL1 4UE</b>  <b>United Kingdom</b></p>		
<p>declare under our sole responsibility that the product,</p>		
<p><b>Rosemount 3490 Universal Control Unit</b></p>		
<p>manufactured by,</p>		
<p><b>Rosemount Measurement Ltd.</b>  <b>158 Edinburgh Avenue,</b>  <b>Slough, SL1 4UE</b>  <b>United Kingdom</b></p>		
<p>to which this declaration relates, is in conformity with the provisions of the European Community Directives, including the latest amendments, as shown in the attached schedule.</p>		
<p>Assumption of conformity is based on the application of the harmonized standards and, when applicable or required, a European Community notified body certification, as shown in the attached schedule.</p>		
	<p>Global Approvals Manager (function)</p>	
<p>David J. Ross-Hamilton (name)</p>	<p>4/20/2016 (date of issue)</p>	
<p><b>ROSEMOUNT</b></p>		
<p>Page 1 of 3</p>		

Figure 2. Rosemount 3490 Series Declaration of Conformity (Page 2)





	<h1>EU Declaration of Conformity</h1>	
<p>No: RMD 1063 Rev. E</p>		
<p><b>EMC Directive (2014/30/EU)</b></p>		
<p><b>Model 3491L*****, 3492L*****, 3493L*****</b>                  Harmonized Standards: EN 61326-1:2013                  Class A ( Industrial Radiated Emission limits)</p>		
<p><b>LV Directive (2014/35/EU)</b></p>		
<p><b>Model 3491L1*****, 3492L1*****, 3493L1*****</b>                  Harmonized Standards: EN 61010-1:2010</p>		
<p><b>ATEX Directive (2014/34/EU)</b></p>		
<p><b>Model 349*L*P4I1**, 349*L*P6I1**</b></p>		
<p><b>Sira 06ATEX7128 – (Intrinsically Safe &amp; Dust)</b>                  Equipment Group II, Category (1) GD ([Ex ia] IIC, [Ex ia Da] IIC)                  Harmonized Standards: EN60079-0:2012, EN 60079-11:2012,                  EN60079-26:2007</p>		
<p><b>Model 349*L*P7I1**</b></p>		
<p><b>Sira 06ATEX7129X – (Intrinsically Safe &amp; Dust)</b>                  Equipment Group II, Category (1) GD ([Ex ia] IIC, [Ex ia Da] IIC)                  Harmonized Standards: EN60079-0:2012, EN 60079-11:2012,                  EN60079-26:2007</p>		
<p>(Minor variations in design to suit the application and/or mounting requirements are identified by alpha/numeric characters where indicated * above)</p>		
<p><b>ROSEMOUNT™</b></p>	<p>Page 2 of 3</p>	

Figure 3. Rosemount 3490 Series Declaration of Conformity (Page 3)



# EU Declaration of Conformity

No: RMD 1063 Rev. E

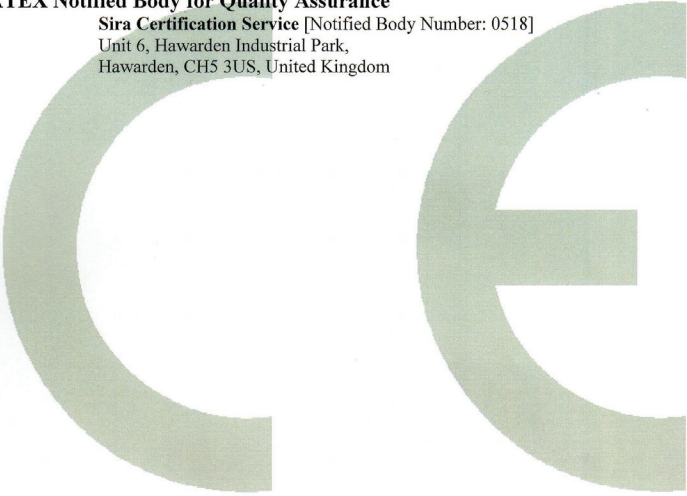
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**ATEX Notified Body**

Sira Certification Service [Notified Body Number: 0518]  
Unit 6, Hawarden Industrial Park,  
Hawarden, CH5 3US, United Kingdom

**ATEX Notified Body for Quality Assurance**

Sira Certification Service [Notified Body Number: 0518]  
Unit 6, Hawarden Industrial Park,  
Hawarden, CH5 3US, United Kingdom



**ROSEMOUNT**

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含有China RoHS 管控物质超过最大浓度限值的部件型号列表 Rosemount 3490  
List of Rosemount 3490 Parts with China RoHS Concentration above MCVs

部件名称 Part Name	有害物质 / Hazardous Substances					
	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr +6)	多溴联苯 Polybrominated biphenyls (PBB)	多溴联苯醚 Polybrominated diphenyl ethers (PBDE)
电子组件 Electronics Assembly	X	O	O	O	O	O
壳体组件 Housing Assembly	O	O	O	O	O	O
传感器组件 Sensor Assembly	O	O	O	O	O	O

本表格系依据SJ/T11364的规定而制作。

This table is proposed in accordance with the provision of SJ/T11364.

O: 意为该部件的所有均质材料中该有害物质的含量均低于GB/T 26572所规定的限量要求。

O: Indicate that said hazardous substance in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572.

X: 意为在该部件使用的所有均质材料里，至少有一类均质材料中该有害物质的含量高于GB/T 26572所规定的限量要求。

X: Indicate that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572.





**Global Headquarters**

**Emerson Process Management**

6021 Innovation Blvd.  
Shakopee, MN 55379, USA  
+1 800 999 9307 or +1 952 906 8888  
+1 952 949 7001  
RFQ.RMD-RCC@EmersonProcess.com

**North America Regional Office**

**Emerson Process Management**

8200 Market Blvd.  
Chanhassen, MN 55317, USA  
+1 800 999 9307 or +1 952 906 8888  
+1 952 949 7001  
RMT-NA.RCCRFQ@Emerson.com

**Latin America Regional Office**

**Emerson Process Management**

1300 Concord Terrace, Suite 400  
Sunrise, FL 33323, USA  
+1 954 846 5030  
+1 954 846 5121  
RFQ.RMD-RCC@EmersonProcess.com

**Europe Regional Office**

**Emerson Process Management Europe GmbH**

Neuhofstrasse 19a P.O. Box 1046  
CH 6340 Baar  
Switzerland  
+41 (0) 41 768 6111  
+41 (0) 41 768 6300  
RFQ.RMD-RCC@EmersonProcess.com

**Asia Pacific Regional Office**

**Emerson Process Management Asia Pacific Pte Ltd**

1 Pandan Crescent  
Singapore 128461  
+65 6777 8211  
+65 6777 0947  
Enquiries@AP.EmersonProcess.com

**Middle East and Africa Regional Office**

**Emerson Process Management**

Emerson FZE P.O. Box 17033,  
Jebel Ali Free Zone - South 2  
Dubai, United Arab Emirates  
+971 4 8118100  
+971 4 8865465  
RFQ.RMTMEA@Emerson.com



Linkedin.com/company/Emerson-Process-Management



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