

# Rosemount™ BP20E Power Module for Wireless Corrosion Transmitter



## NOTICE

This guide provides basic guidelines for the installation of the Rosemount Power Module for the Rosemount Wireless Permasense Corrosion Transmitter. It does not provide instructions for configuration, diagnostics, maintenance, service, troubleshooting or Intrinsically Safe (I.S.) installations. Refer to the Rosemount Wireless Permasense Corrosion Transmitter Reference Manual for more instruction. The manual and this guide are also available electronically on [Emerson.com\Permasense](http://Emerson.com/Permasense).

## ⚠ WARNING

### Explosion hazard

Explosions could result in death or serious injury.

Installation of this power module in an explosive environment must be in accordance with the appropriate local, national, and international standards, codes, and practices. Review the Product Certifications section for any restrictions associated with a safe installation.

### Electrostatic hazard

The power module may be replaced in a hazardous area. However, its enclosure has surface resistivity greater than one gigohm. Care must be taken during transportation to and from the point of installation to prevent electrostatic charge build-up.

### Physical access

Unauthorized personnel may potentially cause significant damage to and/or misconfiguration of end users' equipment. This could be intentional or unintentional and needs to be protected against.

Physical security is an important part of any security program and fundamental to protecting your system. Restrict physical access by unauthorized personnel to protect end users' assets. This is true for all systems used within the facility.

## ⚠ CAUTION

### Shipping consideration

Each BP20E power module contains two "D" size primary lithium batteries. Primary lithium batteries are regulated in transportation by the U.S. Department of Transportation, and are also covered by IATA (International Air Transport Association), ICAO (International Civil Aviation Organization), and ARD (European Ground Transportation of Dangerous Goods). It is the responsibility of the shipper to ensure compliance with these and any other local requirements. Before shipping, please consult current regulations and requirements.

The power module must be installed correctly to avoid risk of becoming detached and falling.

Do not short-circuit, recharge, puncture, incinerate, crush, force discharge, expose contents to water, or expose to temperatures above 212 °F (100 °C). Risk of fire or explosion.

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# 1 Overview

## 1.1 Warning on product labels

The Rosemount BP20E Power Module for Wireless Corrosion Transmitters each have a warning printed on them. In each case, the warning text is the same. Below is a figure that shows the label. The text of the warning is: "Use only with approved sensor – see instructions. Potential static hazard."

	BP20E Permasense Power Module	<div>⚠ Use only with approved sensor - see instructions. Potential static hazard.</div> <div><math>T_{amb} = -50^{\circ}C \text{ to } +75^{\circ}C</math></div> <div>Ex II 1G, Ex ia IIC T4 Ga</div> <div>IECEx BAS 18.0088X</div> <div>Baseefa18ATEX0144X</div> <div>INTRINSICALLY SAFE</div> <div></div> <div>  </div> <div>PERMASENSE LTD, RH10 9TT, UK BP20E-6000-1562/AA IP67</div>
	MADE IN UK      DATE:	

## 2 Physical installation

### 2.1 Compatibility

Permasense WT100 Corrosion Transmitter

Rosemount Wireless Permasense WT210 Corrosion Transmitter

Rosemount Wireless Permasense ET210 Corrosion Transmitter

Rosemount Wireless Permasense ET310 Corrosion Transmitter

Rosemount Wireless Permasense ET410 Corrosion Transmitter

Rosemount Wireless Permasense ET310C Corrosion Transmitter

### 2.2 Required tooling

Tooling is supplied in the Permasense IK220 Installation Kit:

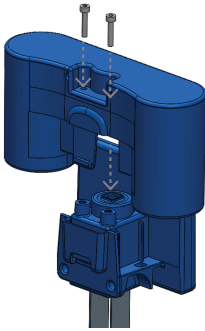
- Hex key, 2.5 mm, for power module retaining bolts

### 2.3 Power module installation

To install the power module:

1. Check power module and sensor terminals are clean and corrosion free.
2. Ensure the ring seal around the connector on the power module is present.
3. Clip on the power module as shown in [Figure 2-1](#).
4. Fit the two M3 retaining bolts using a 2.5 mm AF hex key.
5. The sensor will resume normal operation. No configuration is required.

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**Figure 2-1: Rosemount BP20E Installation**

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## 2.4 Power module removal

To remove the power module:

1. Remove the two M3 retaining bolts using a 2.5 mm AF hex key.
2. Depress the clip on the front of the power module (on the opposite side of the sensor label).
3. Pull off the power module.

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### Note

There is a secondary clip mechanism in the electrical connector. Some force may be required to remove the power module, especially in cold weather.

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4. Dispose of old power module according to local regulations. Refer to the relevant power module datasheet.

## 3 Verify operation

### 3.1 Sensor operation

Correct sensor operation can be verified by:

- Checking the join status in Gateway Manager software,  
OR
- Checking in Data Manager that data has been received once the sensor has joined the gateway.



## 4 Disposal/recycling

### 4.1 Disposing of depleted power modules

1. Dispose in accordance with applicable laws and regulations in your country and state.
2. Disposal should only be performed by authorized professionals in accordance with applicable requirements for hazardous waste transportation and disposal.
3. Incineration should only be performed by trained professionals in authorized facilities.

### 4.2 Shipping regulations

Primary lithium batteries are regulated in transportation by the U.S. Department of Transportation, and are also covered by IATA (International Air Transport Association), ICAO (International Civil Aviation Organization), and ARD (European Ground Transportation of Dangerous Goods). It is the responsibility of the shipper to ensure compliance with these or any other local requirements. Please consult current regulations and requirements before shipping.

### 4.3 Handling considerations

Each power module contains two “D” size primary lithium batteries. Under normal conditions, the battery materials are self-contained and are not reactive as long as the batteries and the battery pack integrity are maintained. Care should be taken to prevent thermal, electrical, or mechanical damage. Contacts should be protected to prevent premature discharge.

Use caution when handling the power module. It may be damaged if dropped onto a hard surface. Battery hazards remain when cells are discharged.

### 4.4 Environmental considerations

As with any battery, local environmental rules and regulations should be consulted for proper management of spent batteries. If no specific requirements exist, recycling through a qualified recycler is encouraged. Consult the materials safety data sheet for battery specific information.

## 5 Product certifications

Rev 0.1

### 5.1 Directive information

A copy of the Declaration of Conformity can be found at the end of the Quick Start Guide. The most recent revision of the Declaration of Conformity can be found at [Emerson.com/Rosemount](https://emerson.com/Rosemount).

### 5.2 Ordinary location certification

As standard, the power module has been examined and tested to determine that the design meets the basic electrical, mechanical, and fire protection requirements by a Nationally Recognized Test Laboratory (NRTL), as accredited by the Federal Occupational Safety and Health Administration (OSHA).

### 5.3 North America

The US National Electrical Code® (NEC) and the Canadian Electrical Code (CEC) permit the use of Division marked equipment in Zones and Zone marked equipment in Divisions. The markings must be suitable for the area classification, gas, and temperature class. This information is clearly defined in the respective codes.

#### 5.4 USA

**Certificate:** SGSNA/19/BAS/0003

**Standards:** UL 913 - 8th Edition, Revision Dec 6 2013

**Markings:** CLASS I, DIV 1, GP ABCD, T4,  $T_{amb} = -50\text{ }^{\circ}\text{C}$  to  $+75\text{ }^{\circ}\text{C}$ , IP67

#### 5.5 Canada

**Certificate:** SGSNA/19/BAS/0003

**Standards:** CAN/CSA C22.2 No. 157-92 (R2012) +Upd1 +Upd2

**Markings:** CLASS I, DIV 1, GP ABCD, T4,  $T_{amb} = -50\text{ }^{\circ}\text{C}$  to  $+75\text{ }^{\circ}\text{C}$ , IP67

#### 5.6 Europe

**Certificate:** Baseefa18ATEX0144X

**Standards:** EN IEC 60079-0:2018

EN 60079-11: 2012

**Markings:**  II 1 G, Ex ia IIC T4 Ga,  $T_{amb} = -50\text{ °C to }+75\text{ °C}$ , IP67

#### Specific Condition for Safe Use (X):

The polymer enclosure may present a potential electrostatic ignition hazard and must not be rubbed or cleaned with a dry cloth.

## 5.7 International

**Certificate:** IECEX BAS 18.0088X

**Standards:** IEC 60079-0:2017 Edition 7.0, IEC 60079-11: 2011 Edition 6.0

**Markings:** Ex ia IIC T4 Ga,  $T_{amb} = -50\text{ °C to }+75\text{ °C}$ , IP67

#### Specific Condition For Safe Use (X):

The polymer enclosure may present a potential electrostatic ignition hazard and must not be rubbed or cleaned with a dry cloth.

## 5.8 Brazil

### Safety - UL

**Certificate:** UL 19.1144X Issue 1

**Standards:** ABNT NBR IEC 60079-0:2013, ABNT NBR IEC 60079-11:2013

**Markings:** Ex ia IIC T4 Ga ( $-50\text{ °C} \leq T_{amb} \leq +75\text{ °C}$ )

#### Specific Condition for Safe Use (X):

See certificate.

## 5.9 China

### China (NEPSI)

**Certificate:** GYJ20.1347X

**Standards:** GB3836.1-2010, GB3836.4-2010, GB3836.20-2010

**Markings:** Ex ia IIC T4 Ga

#### Specific Condition For Safe Use (X):

See certificate for specific conditions of safe use.

## China (CCC)

<b>Certificate:</b>	2020322303000948
<b>Standards:</b>	GB3836.1-2010, GB3836.4-2010
<b>Markings:</b>	Ex ia IIC T4 Ga

## 5.10 EAC - Kazakhstan

### IM (EAC) Intrinsic Safety

<b>Included on sensor certificates:</b>	RU C-GB.AЖ58.B.01828/21
<b>Standards:</b>	TP TC 012/2011

#### Specific condition for safe use (X):

See certificate for specific conditions of safe use.

## 5.11 Korea

### IP Korea (KCs) Intrinsic Safety

<b>Certificate:</b>	20-KA4BO-0501X
<b>Markings:</b>	Ex ia IIC T4

#### Specific Condition For Safe Use (X):

See certificate for specific conditions of safe use.

## 5.12 India

### Safety - PESO

<b>Equipment reference number:</b>	P539646/1
<b>Applicable standards:</b>	IEC 60079-0:2017, IEC 60079-11:2011
<b>Markings:</b>	Ex ia IIC T4 Ga

#### Specific condition for safe use (X):

See certificate.

## 5.13 Japan

### I4 CML Intrinsically Safe (IS)

<b>Included on sensor certificates:</b>	CML 17JPN2097X, CML 19JPN2339X, CML 17JPN2140X, CML 22JPN2619X
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**Markings:** Ex ia IIC T4 Ga (-50 °C ≤ T<sub>amb</sub> ≤ +75 °C)

**Specific condition for safe use (X):**

See certificate for specific conditions of safe use.

## 5.14 Declaration of Conformity

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### Figure 5-1: Declaration of Conformity

#### EU Declaration of Conformity

We,

Permasense Ltd  
Alexandra House  
Newton Road  
Manor Royal  
Crawley  
RH10 9TT, UK

declare under our sole responsibility that the product,

BP20E power module

is in conformity with the relevant Union harmonisation legislation:

Equipment for explosive atmospheres directive (ATEX) 2014/34/EU

The following harmonised standards and reference standards have been applied:

ATEX: EN IEC 60079-0: 2018  
EN 60079-11: 2012

ATEX notified body:

SGS Fimko Oy (Notified Body number 0598) performed an EU-type examination  
and issued certificate number Baseefa18ATEX0144X  
with coding ® II I G, Ex ia IIC T4 Ga

ATEX notified body for quality assurance:

SGS Fimko Oy (Notified Body number 0598)

Signed for and on behalf of Permasense Ltd.



Dr Jonathan Allin – Chief Technical Officer  
Crawley, UK – 11 November 2020

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## 5.15 China RoHS

中国 RoHS 2 - 中国《电器电子产品有害物质限制使用管理办法》，2016年第32号令

China RoHS 2 - Chinese order No. 32, 2016; administrative measures for the restriction of hazardous substances in electrical and electronic equipment

作为总部位于美国密苏里州圣路易斯市艾默生电气公司的一个战略性业务单位及艾默生过程管理的一部分（以下简称“艾默生”），永威™意识到于2016年7月1日生效的中国第32号令，即《电器电子产品有害物质限制使用管理办法》（“中国RoHS 2”），并已设立符合规体系以履行艾默生在第32号令项下的相关义务。

Permasense, a strategic business unit of Emerson Electric Co, St. Louis, Missouri and part of Emerson Process Management (“Emerson”), is aware of and has a program to meet its relevant obligations of the Chinese Order No. 32, 2016; Administrative Measures for the Restriction of Hazardous Substances in Electrical and Electronic Equipment (China RoHS 2), which entered into force on 1 July 2016.

艾默生理解中国RoHS 2实施的第一阶段须遵守的与产品标识和信息披露等相关的各项要求。作为一个电器电子设备供应商，艾默生确定供应给贵公司的前述型号产品属于中国RoHS 2的管理范围。

Emerson understands there are numerous requirements with the regulation regarding, among others, marking of product and communications for purpose of the Phase I implementation of China RoHS 2. As a supplier of electrical and electronic equipment, Emerson has determined that the captioned product supplied to your company is within scope of China RoHS 2.

迄今为止，基于供应商所提供的信息，就艾默生所知，前述产品中不存在超过最大浓度限值的中国RoHS管控物质，且该产品上已做相应标识。

To date, based on information provided by suppliers and to Emerson's best knowledge, no China RoHS substances are present at a concentration above the Maximum Concentration Values and the product is marked to reflect this.





**Quick Start Guide**  
**00825-0100-4212, Rev. BB**  
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For more information: [Emerson.com](https://www.emerson.com)

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