# Instruction Manual

## 1. Marking

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| Switch Amplifier<br>HiC2821, HiC2822 |
| ATEX certificate: BASEEFA 06 ATEX 0093 X<br>ATEX marking:<br>Ⓔx II (1)G [Ex ia Ga] IIC<br>Ⓔx II (1)D [Ex ia Da] IIIC<br>Ⓔx I (M1) [Ex ia Ma] I<br>ATEX certificate: PF 08 CERT 1047 X<br>ATEX marking: Ⓔx II 3G Ex nA nC IIC T4 Gc |
| IECEx certificate: IECEx BAS 06.0026X<br>IECEx marking: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I |
| North America Certifcates: E106378 (UL)<br>Class I, Division 2, Groups A-D, T4<br>Associated apparatus with intrinsically safe circuits for:<br>Class I, II, III, Division 1, Groups A-G<br>Class 1, Zone 0 [AEx ia] IIC (US), [Ex ia] IIC (Canada) |
| CCC certificate: 2025322316006983<br>CCC marking: [Ex ia Ga] IIC, [Ex ia Da] IIIC |


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## 2. Target Group, Personnel

Responsibility for planning, assembly, commissioning, operation, maintenance, and dismounting lies with the plant operator.

The personnel must be appropriately trained and qualified in order to carry out mounting, installation, commissioning, operation, maintenance, and dismounting of the device. The trained and qualified personnel must have read and understood the instruction manual.

Prior to using the product make yourself familiar with it. Read the instruction manual carefully.

## 3. Reference to Further Documentation

Observe directives, standards, and national laws applicable to the intended use and the operating location.

The corresponding datasheets, manuals, declarations of conformity, EU-type examination certificates, certificates, and control drawings if applicable supplement this document. You can find this information under www.pepperl-fuchs.com.

For specific device information such as the year of construction, scan the QR code on the device. As an alternative, enter the serial number in the serial number search at www.pepperl-fuchs.com/device-information.

If you use the device in safety-related applications, observe the requirements for functional safety. You can find these requirements in the functional safety documentation under www.pepperl-fuchs.com.

Observe the instruction manuals for the associated termination boards.

## 4. Intended Use

The device is only approved for appropriate and intended use. Ignoring these instructions will void any warranty and absolve the manufacturer from any liability.

The device is used in control and instrumentation technology (C&I technology). The device is used for the galvanic isolation of intrinsically safe circuits and non-intrinsically safe circuits. The device is used as interface between modules, field circuits and control circuits.

Only use the module with the designated termination boards.

Use the device only within the specified ambient and operating conditions.

Only use the device stationary.

The device is an associated apparatus according to IEC/EN 60079-11.

The device is an electrical apparatus for hazardous areas of Zone 2.

If you use the device in safety-related applications, observe the information for safety function and safe state.

Only use the module in the hazardous area if the termination boards are also approved for the hazardous area.

## 5. Improper Use

Protection of personnel and the plant is not ensured if the device is not used according to its intended use.

The device is not suitable for isolating signals in power installations unless this is noted separately in the corresponding datasheet.

## 6. Mounting and Installation

Do not mount a damaged or polluted device.

Mount the device in a way that the device is protected against mechanical hazard. Mount the device in a surrounding enclosure for example.

Do not mount the device in the dust hazardous area.

Mount the device with at least a degree of protection of IP20 according to IEC/EN 60529.

The device must be installed and operated only in a controlled environment that ensures a pollution degree 2 (or better) according to IEC/EN 60664-1.

If used in areas with higher pollution degree, the device needs to be protected accordingly.

The device must be installed and operated only in an environment of overvoltage category II (or better) according to IEC/EN 60664-1.

Observe the installation instructions according to IEC/EN 60079-14.

If you install the device in safety-related applications, observe the requirements for functional safety.

**Requirements for Usage as Associated Apparatus**

If circuits with type of protection Ex i are operated with non-intrinsically safe circuits, they must no longer be used as circuits with type of protection Ex i.

Intrinsically safe circuits of associated apparatus can be led into hazardous areas. Observe the compliance of the separation distances to all non-intrinsically safe circuits according to IEC/EN 60079-14.

Observe the compliance of the separation distances between two adjacent intrinsically safe circuits according to IEC/EN 60079-14.

Observe the maximum values of the device, when connecting the device to intrinsically safe apparatus.

When connecting intrinsically safe devices with intrinsically safe circuits of associated apparatus, observe the maximum peak values with regard to explosion protection (verification of intrinsic safety). Observe the standards IEC/EN 60079-14 or IEC/EN 60079-25.

If no $L_o$ and $C_o$ values are specified for the simultaneous appearance of lumped inductances and capacitances, the following rule applies.

- The specified value for $L_o$ and $C_o$ is used if one of the following conditions applies:
  - The circuit has distributed inductances and capacitances only, e. g., in cables and connection lines.
  - The total value of $L_i$ (excluding cable) of the circuit is < 1 % of the specified $L_o$ value.
  - The total value of $C_i$ (excluding cable) of the circuit is < 1 % of the specified $C_o$ value.
- A maximum of 50 % of the specified value for $L_o$ and $C_o$ is used if the following condition applies:

  The total value of $L_i$ (excluding cable) of the circuit is ≥ 1 % of the specified $L_o$ value.

  The total value of $C_i$ (excluding cable) of the circuit is ≥ 1 % of the specified $C_o$ value.
- The reduced capacitance for gas groups I, IIA, and IIB must not exceed the value of 1 µF (including cable). The reduced capacitance for gas group IIC must not exceed the value of 600 nF (including cable).

If more channels of one device are connected in parallel, ensure the parallel connection is made directly at the terminals of the device. When verifying the intrinsic safety, observe the maximum values for the parallel connection.

**Requirements for Equipment Protection Level Gc**

Only use the module in the hazardous area if the termination boards are also approved for the hazardous area.

The device must be installed and operated only in surrounding enclosures that

- comply with the requirements for surrounding enclosures according to IEC/EN 60079-0,
- are rated with the degree of protection IP54 according to IEC/EN 60529.

Connection or disconnection of energized non-intrinsically safe circuits is only permitted in the absence of a potentially explosive atmosphere.

Only plug and pull the energized module in the absence of a potentially explosive atmosphere.

Provide a transient protection. Ensure that the peak value of the transient protection does not exceed 140 % of the rated voltage.

## 7. Operation, Maintenance, Repair

If you operate the device in safety-related applications, observe the requirements for functional safety. In case of operating in low demand mode, plan appropriate intervals for the proof test.

The device must not be repaired, changed, or manipulated. In case of failure, always replace the device with an original device.

**Requirements for Equipment Protection Level Gc**

Connection or disconnection of energized non-intrinsically safe circuits is only permitted in the absence of a potentially explosive atmosphere.

Only plug and pull the energized module in the absence of a potentially explosive atmosphere.

Only use operating elements in the absence of a potentially explosive atmosphere.

Only use the programming socket in the absence of a potentially explosive atmosphere.

## 8. Delivery, Transport, Disposal

Check the packaging and contents for damage.

Check if you have received every item and if the items received are the ones you ordered.

Always store and transport the device in the original packaging.

Store the device in a clean and dry environment. The permitted ambient conditions must be considered, see datasheet.

The device, built-in components, packaging, and any batteries contained within must be disposed in compliance with the applicable laws and guidelines of the respective country.