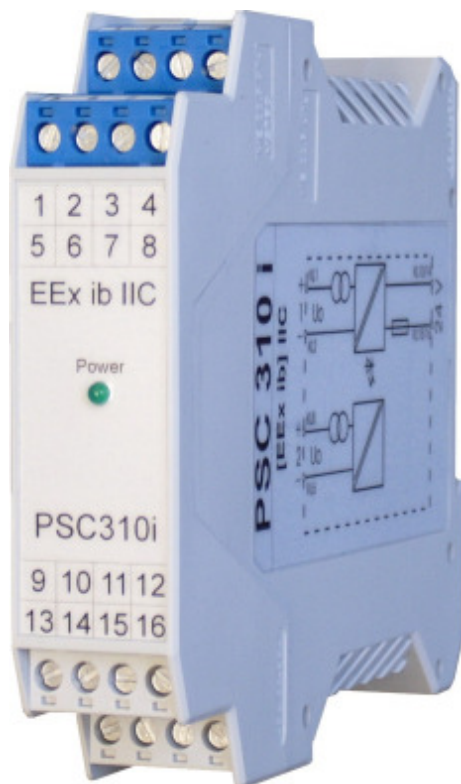


Supply module
PSC 310 i



DMT 03 ATEX E 027

Revision 5.1

Year of manufacture: see type plate

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Attention!

Assembly, disassembly, installation, operation and maintenance must only be performed by personnel qualified according to the automation industry requirements and acting in compliance with applicable regulations and the operating manual for the PSC 310i.

Technical data and connected load values must on all accounts be observed during installation. The housing must not be opened, otherwise adherence to electrical specifications will not be ensured and the guarantee will be annulled.

Validity of the assembly and operating manual

- This assembly and operating manual applies to all PSC 310i interface and supply modules.
- Information on the current version and extensions can be obtained from your IBS sales centre.
- The manufacturer cannot be held liable for damage resulting from improper or unauthorized handling. The device must not be converted or modified, otherwise the certification for use and the guarantee will be annulled.

Operational safety

- The devices are manufactured at our plant certified in accordance with ISO 9001 / ATEX and therefore fulfil the associated requirements.
- The PSC 310i supply module fulfils the requirements of the IP20 protective system.
- The device might pose hazards if handled in an improper or unauthorized manner. Observe all instructions rigorously.

Technical advancement

- The manufacturer reserves the right to adapt technical data to the prevailing state-of-the-art without special announcement.

Repairs

Devices must only be repaired by **IBS BatchControl GmbH**, otherwise their intrinsic safety is endangered.

Any device sent to **IBS BatchControl GmbH** for the purpose of repair must be accompanied by a note describing the fault.

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1. System description

The PSC 310i is an two channel supply module developed for the CTRi, BGI and Batching Master. However, it can also be used to supply other intrinsically safe devices such as valves. Observe the safety data of the connected assemblies.

The input and the outputs are galvanically isolated from each other.

1.1. Identification in accordance with guideline 94/9/EG

CE 0158  II (2) G

Device group _____

Related equipment with external circuits for connection to devices of category 2 _____

For explosive mixtures of air and flammable gases, vapours or mist _____

Identification of the ignition protection system: **[EEx ib] IIC**

Related equipment in compliance with _____
European standard

Ignition protection system _____

1.2. Safety instructions

If the device no longer appears to operate reliably or safely, it must be deactivated and safeguarded against inadvertent activation. Reasons for this type of situation include:

- Visible damage to the device
- Electrical malfunction
- Extended storage at temperatures over 85 °C
- High stress during transport

Before the device is put into operation again, it is absolutely necessary to carry out a proper unit test in accordance with DIN EN 61010, Part 1. To ensure safety and adherence to guarantee terms, this test must be performed by the manufacturer.

1.3. Intended use

The PSC 310i module is intended to supply intrinsically safe equipment.

The circuits (terminals 1 + 2 and terminals 6 + 8) comply with the ignition protection system designated "Intrinsic safety" of category "ib".

The maximum permissible ambient temperature range of -20°C to $+70^{\circ}\text{C}$ must not be transgressed.

Only the supply circuit and intrinsically safe interface circuit may be routed into explosive areas. These two circuits must only be connected to certified, intrinsically safe circuits.

Before start-up, it is necessary to verify the intrinsic safety of connections - including lines - between the circuits and equipment.

The EC prototype test certificate and regulations of EN60079-14: 1996 contd. are to be observed.

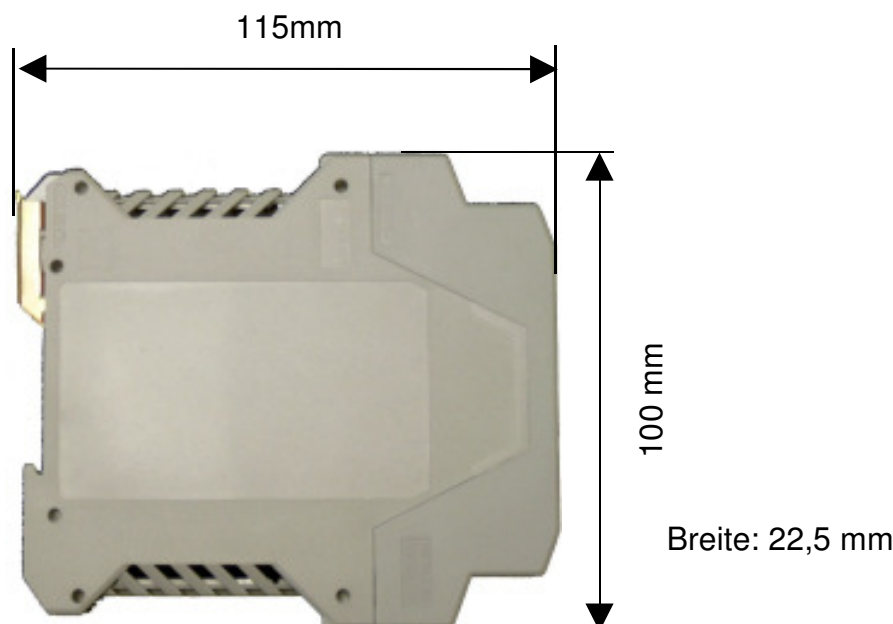
2. Installation and start-up

2.1. Assembly of the PSC 310i

The PSC 310i module comprises related equipment intended for use outside explosive areas.

2.2. IP20 protective system

The compact DIN rail housing provides the IP20 protective system required in accordance with IEC publication 144.



2.3. Arrangement

Connecting elements for the external, intrinsically safe circuits are to be arranged in compliance with para 6.3.1 of EN 50020 so that bare components are at least 50 mm away from the connecting elements and bare conductors of circuits not intrinsically safe, or isolated from these items by a partitioning wall.

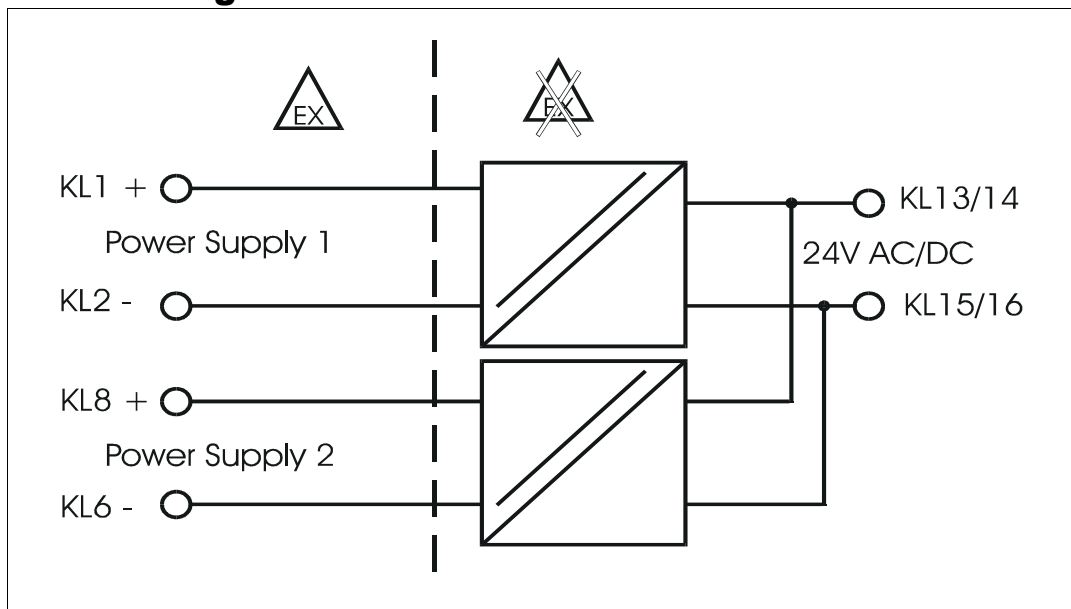
2.4. Terminals

Blue terminals are provided for connecting intrinsically safe circuits. These terminals are clearly identified with [EEx ib] IIC on the front plate.

The terminal assignment for the auxiliary power is also clearly identified on the front plate.

The screwable terminals provide wiring space for wire cross-sections of up to 2.5 mm².

2.5. Block diagram



2.5.1. Voltage supply

The voltage supply feeds the entire electronic system.

| | |
|----------------|--|
| Terminal 13/14 | |
| Terminal 15/16 | |

The following maximum supply voltages may be applied:

Rated voltage: $U = 20 - 32 \text{ V DC}$
 $18 - 28 \text{ V AC}$

Maximum voltage for safety reasons: $U_m = 250 \text{ V AC}$

Maximum power consumption: $P_{\max} = 3,4 \text{ W}$

2.5.2. Supply circuit 1

Supply circuit 1 is galvanically isolated.

| | | |
|------------|-----|------------------|
| Terminal 1 | + | Supply circuit 1 |
| Terminal 2 | GND | Supply circuit 1 |

| | |
|------------------------------------|--------|
| Ignition protection system | |
| EEx ib IIC intrinsic safety: | |
| trapeziform output characteristics | |
| U_0 | 19 V |
| I_0 | 50 mA |
| P_0 | 1 W |
| C_0 | 258 nF |
| L_0 | 9 mH |
| Effective internal inductance: | |
| Negligible | |
| Effective internal capacitance: | |
| Negligible | |

2.5.3. Supply circuit 2

Supply circuit 2 is galvanically isolated.

| | | |
|------------|-----|------------------|
| Terminal 8 | + | Supply circuit 2 |
| Terminal 6 | GND | Supply circuit 2 |



| | |
|------------------------------------|--------|
| Ignition protection system | |
| EEx ib IIC intrinsic safety: | |
| trapeziform output characteristics | |
| U_0 | 19 V |
| I_0 | 31 mA |
| P_0 | 574 mW |
| C_0 | 258 nF |
| L_0 | 25 mH |
| Effective internal inductance: | |
| Negligible | |
| Effective internal capacitance: | |
| Negligible | |

2.5.4. Potential equalisation

Connect PE to terminal 12.

Connect the standard DIN EN 50022 rail snapped on the housing to the potential equalisation terminal, as well.

3. Declaration of Conformity

| | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| <h2>Konformitätserklärung Declaration of Conformity</h2> | | |
| IBS BatchControl GmbH Marie-Curie-Str. 8 50170 Kerpen | |  |
| erklärt in alleiniger Verantwortung, dass das Produkt <i>assumes sole responsibility in stating that the product</i> | | |
| PSC 300i / PSC 310i | | |
| EG-Baumusterprüfbescheinigung Nummer: | | DMT 03 ATEX E 027 |
| EC-Type Examination Certificate Number: | | |
| mit den Vorschriften folgender europäischer Richtlinien übereinstimmt: <i>conform with the prescription of following european directives:</i> | | |
| EMV-Richtlinie / <i>EMC-Directive</i> 2004/108/EG Ex-Richtlinie / <i>Ex-Directive</i> 94/9/EG | | |
| Die Übereinstimmung wird nachgewiesen durch die Einhaltung folgender Normen oder normativer Dokumente: <i>The conformity are verified under observance of following standards or standard documents:</i> | | |
| EN 50014 : 2000 EN 50020 : 2003 EN 61000-6-2:1999 EN 61000-4-2:2001 EN 61000-4-3:2001 EN 61000-4-4:2001 EN 61000-4-5:2001 EN 61000-4-6:2001 EN 55011:1998 + A1:1999 + A2:2002 | | |
| Die Geräte entsprechen auch den neuen Normen DIN EN 60079-0 und DIN EN 60079-11 mit Ausnahme der Kennzeichnung, die weiterhin nach der DIN EN 50014 ausgeführt ist. <i>The devices also meet the new standards DIN EN 60079-0 and DIN EN 60079-11, with the exception of identification which is still performed according to DIN EN 50014.</i> | | |
| | Benannte Stelle <i>Notified body</i> | Kenn-Nummer: <i>Identification Number:</i> |
| 94/9/EG | EXAM | 0158 |
| ISO 9001:2008 | DEKRA | |
| Kerpen, 02.11.2010 |  Entwicklung / Development i. V. Karl Fasen | |