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General notes

The devices may only be mounted, started up and operated by experienced personnel familiar with this product.

According to these mounting and operating instructions, trained personnel is referred to as individuals who are able to judge the work they are assigned to and recognize possible dangers due to their specialized training, their knowledge and experience as well as their knowledge of the applicable standards. Explosion-protected versions of this device are to be operated only by personnel who has undergone special training or instructions or who is authorized to work on explosion-protected devices in hazardous areas.

Any hazards that could be caused in the valve by the process medium, the signal pressure or by moving parts are to be prevented by means of the appropriate measures.

If inadmissible motions or forces are produced in the pneumatic actuator as a result of the supply pressure level, it must be restricted using a suitable supply pressure reducing station.

Proper shipping and appropriate storage of the device are assumed.

For technical data, ordering data, accessories and spare parts see Data Sheet T 3967 EN.

Model number and device index

The model number and the device index are shown on the nameplate:

```
3967-XXXXXXXXX XXX
```

Model number

Device index

Attachment

Before mounting, all relevant parts of the plant must be depressurized. Due to the high surface resistance, the device must be mounted and serviced in hazardous areas in such a way that no electrostatic charging is to be expected.

The devices can be mounted in any desired position.

The cable gland must be installed vertically downwards or, if this is not possible, horizontally (see “Connection cable”, page 11).

On mounting, make sure that a minimum clearance of 200 mm above the enclosure cover is kept.

When the devices are to be used in hazardous areas of zone 21 according to EN 50281-1-1: 1998, the equipment must be mounted in an additional enclosure made of steel, stainless steel or plastic. The enclosure including its connection parts and bushings must be proven to comply with degree of protection IP 54 according to IEC 60529:1989.

In locations where there is a risk of mechanical damage to the enclosure, the enclosure must be fitted with additional protection to fulfill the requirements in paragraph 6 of EN 61241-0: 2006 Electrical apparatus for use in the presence of combustible dust.
Rail mounting

Devices with adapter plate can be attached with two mounting bases to rails with G-profile G 32 or top hat rails TH 35 according to EN 60715 (see Fig. 2).

Panel and wall mounting

Devices with adapter plate can be attached on panels. For wall mounting an additional mounting plate is required (see Fig. 3).

Mounting base according to EN 60715 | Order no.
| ① for rail with G-profile G 32 | 1400-5930
| ② for top hat rail TH 35 | 1400-5931

1× Slotted cheese head screw
ISO 1207 – M 3 × 8

Mounting plate for wall mounting | Order no.
| ① Mounting plate for wall mounting | 1400-6726
| ② 2× Hexagon socket head screw | ISO 4762 – M 3 × 8
Attachment to connection block with positioner for SAMSON Type 3277 Linear Actuators

Devices with NAMUR interface can be attached to a connection block with SAMSON Type 3730-X, 3731-X, 3766, 3767 or 378X Positioners for SAMSON Type 3277 Linear Actuators (see Fig. 4).
Before attaching, make sure that the molded gasket is positioned correctly at the NAMUR interface.
The devices are attached to the connection block using two hexagon socket head screws ISO 4762 – M 5 × 35 and two split washers DIN 127 – B 5 underneath.

Attachment to linear actuators with NAMUR rib according to IEC 60534-6-1

Devices with adapter plate can be attached to linear actuators with NAMUR rib (see Fig. 5). The adapter plate is attached to the linear actuator using a hexagon socket head screw ISO 4762 – M 8 × 35 and a split washer DIN 127 – B 8 underneath.

Adapter plate for NAMUR rib according to IEC 60531-6-1, panel, wall or rail mounting

<table>
<thead>
<tr>
<th>Connection</th>
<th>Material</th>
<th>Order no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>G 1/4</td>
<td>AlMgSiPb, powder-coated</td>
<td>1400-9598</td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>AlMgSiPb, powder-coated</td>
<td>1400-9599</td>
</tr>
<tr>
<td>G 1/4</td>
<td>Stainless steel 1.4404</td>
<td>1400-9600</td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>Stainless steel 1.4404</td>
<td>1400-9601</td>
</tr>
<tr>
<td>1 × Hexagon socket head screw</td>
<td>ISO 4762 – M 8 × 35</td>
<td></td>
</tr>
<tr>
<td>1 × Split washer DIN 127 – B 8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fig. 4

Fig. 5
Attachment to rotary actuators with NAMUR interface according to VDI/VDE 3845

Devices with NAMUR interface can be attached to rotary actuators (see Fig. 6). The operation direction is determined by a threaded coding pin ISO 4029 – M 5 × 10 on the mounting flange of the rotary actuator. Before attaching, make sure that the molded gasket is positioned correctly at the NAMUR interface. The devices are attached to the rotary actuator using two captive hexagon socket head screws ISO 4762 – M 5 × 35 and two split washers DIN 127 – B 5 underneath.

Attachment to rotary actuators with NAMUR interface according to VDI/VDE 3845

NAMUR interface according to VDI/VDE 3845

Fig. 6
Air connection

The air supply pipes and screw joints must only be laid and mounted by experienced personnel. They must be regularly checked for leaks and damage, and if necessary, repaired. Before starting any repair work, all supply pipes which are to be opened must be depressurized.

The air connections are tapped holes or the air is connected over the NAMUR interface according to VDI/VDE 3845.

### Air supply pipes

<table>
<thead>
<tr>
<th>Connection</th>
<th>Air supply 9</th>
<th>Operating medium 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output 2</td>
<td>G (NPT) 1/4</td>
<td>G (NPT) 1/4</td>
</tr>
<tr>
<td>Thread</td>
<td>G (NPT) 1/4</td>
<td>G (NPT) 1/4</td>
</tr>
<tr>
<td>Pipe</td>
<td>$\geq 6 \times 1\text{ mm} \geq 12 \times 1\text{ mm}$</td>
<td></td>
</tr>
<tr>
<td>Hose</td>
<td>$\geq 4 \times 1\text{ mm} \geq 9 \times 3\text{ mm}$</td>
<td></td>
</tr>
</tbody>
</table>

### Quality of compressed air according to ISO 8573-1

<table>
<thead>
<tr>
<th>Particle size and density</th>
<th>Oil contents</th>
<th>Pressure dew point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 4</td>
<td>Class 3</td>
<td>$-20^\circ\text{C or at least 10 K below the lowest ambient temperature to be expected}$</td>
</tr>
<tr>
<td>$\leq 5 \mu\text{m}$ and $1000/m^3$</td>
<td>$\leq 1 \text{ mg/m}^3$</td>
<td></td>
</tr>
</tbody>
</table>

### Air supply and Operating medium

**Air supply**

<table>
<thead>
<tr>
<th>Medium</th>
<th>Connection</th>
<th>Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrument air, free of corrosive particles, or nitrogen</td>
<td>9 external air supply</td>
<td>$1.4 \ldots 6.0 \text{ bar}$ or $1.9 \ldots 10.0 \text{ bar}$</td>
</tr>
<tr>
<td>Instrument air, free of corrosive particles, or nitrogen</td>
<td>1 internal air supply (connection 9 is closed)</td>
<td>$1.4 \ldots 10.0 \text{ bar}$</td>
</tr>
</tbody>
</table>

**Operating medium**

<table>
<thead>
<tr>
<th>Medium</th>
<th>Connection</th>
<th>Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrument air, free of corrosive particles, oil containing air or noncorrosive gases</td>
<td>1</td>
<td>$0 \ldots 6.0 \text{ bar}$ or $0 \ldots 10.0 \text{ bar}$</td>
</tr>
<tr>
<td>Instrument air, free of corrosive particles, or nitrogen</td>
<td>1</td>
<td>$1.4 \ldots 10.0 \text{ bar}$</td>
</tr>
</tbody>
</table>

When nitrogen is used as the medium, the devices must only be mounted in ventilated rooms or outdoors.

Air supply and operating medium must not exceed the maximum permissible pressure (see table below).
Connections for air supply, operating medium and exhaust air

The connections are protected against dirt particles with sieves, mesh size 100 µm. The sieves must be cleaned or replaced when contaminated as follows (see Fig. 8):

1. Screw sieve 1 out of the connection using a screwdriver (screwdriver blade 7 to 9 mm).
2. Clean or replace sieve 1 and screw it completely into connection.

Venting

The device is protected against water and dirt entering with a venting plug at the enclosure cover. In case of leakage, the diaphragm in the venting plug must be replaced as follows (see Fig. 9):

1. Unscrew four screws and remove enclosure cover from the enclosure.
2. Unscrew cross head screw 1 and remove venting plug 4 from the enclosure cover.
3. Replace diaphragm 3.
   Note: The seating surface of the diaphragm must be lightly lubricated with silicone oil (Baysilone M 60000).
4. Attach venting plug 4 to the enclosure cover using cross head screw 1.
5. Attach the enclosure cover to the enclosure using four screws.
   Before attaching, make sure that the gasket 2 is positioned correctly at the enclosure.

Spare parts

<table>
<thead>
<tr>
<th>Spare part</th>
<th>Order no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Sieve 1/₄&quot;</td>
<td>0550-0213</td>
</tr>
<tr>
<td>2 Gasket</td>
<td>0430-1941</td>
</tr>
<tr>
<td>3 Diaphragm</td>
<td>0520-1370</td>
</tr>
<tr>
<td>4 Venting plug</td>
<td>0070-0808</td>
</tr>
<tr>
<td>8336-0769</td>
<td></td>
</tr>
<tr>
<td>ISO 3506 – 3 x 10</td>
<td></td>
</tr>
<tr>
<td>0430-1941</td>
<td></td>
</tr>
<tr>
<td>0520-1370</td>
<td></td>
</tr>
<tr>
<td>0070-0808</td>
<td></td>
</tr>
</tbody>
</table>

Fig. 8

Fig. 9
Connection of air supply

The air supply can be connected externally over connection 9 or internally over connection 1 (see Fig. 10).

External connection of air supply
(for attachment to actuators for modulating service or connection block with positioner)

1. Unscrew blanking plug ② and O-ring ③ underneath from connection 9 at the connection plate or adapter plate.
2. Unscrew three screws ① and remove adapter plate from the enclosure.
   Note: For this purpose, a screwdriver type T 25 (manufacturer Torx) is required.
3. Take reversible gasket ④ out of the groove and turn it so that the tab points to the right (connection 9).
4. Place the reversible gasket ④ into the groove.
5. Refasten adapter plate to the enclosure using three screws ①.

Internal connection of air supply
(for attachment to on-off actuators)

1. Seal connection 9 at the connection plate or adapter plate with a blanking plug ② and an O-ring ③ underneath.
2. Unscrew three screws ① and remove the adapter plate from the enclosure.
3. Take reversible gasket ④ out of the groove and turn it so that the tab points to the left (connection 1).
4. Place the reversible gasket ④ into the groove.
5. Refasten adapter plate to the enclosure using three screws ①.

---

**Spare parts**

<table>
<thead>
<tr>
<th>Part</th>
<th>Order no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>① Screw DIN 7964 – 5 x 20</td>
<td>8336-1108</td>
</tr>
<tr>
<td>② Blanking plug G 1/4</td>
<td>0070-0799</td>
</tr>
<tr>
<td>③ O-ring 14 × 1.5</td>
<td>8421-0070</td>
</tr>
<tr>
<td>④ Reversible gasket</td>
<td>0430-1884</td>
</tr>
</tbody>
</table>

Fig. 10
Restrictor plate for supply air or exhaust air

The devices can be provided with a restrictor plate for supply air or exhaust air (see Fig. 11 and 12).
The flow rate can be adjusted by turning the restrictor screw clockwise or counterclockwise, using a screwdriver (screwdriver blade 5 to 7 mm).
The restrictor plate can be attached with two threaded bolts M 5 to the rotary actuator or to the adapter plate. Then make sure that the O-rings are positioned correctly at the NAMUR interface.
The device can be attached with two hexagon socket head screws to the restrictor plate. Before attaching, make sure that the molded gasket is positioned correctly at the NAMUR interface.

Symbols

Fig. 11

Restrictor plate for supply air or exhaust air

NAMUR interface according to VDI/VDE 3845

<table>
<thead>
<tr>
<th>Restrictor plate</th>
<th>$K_{VS}$ value</th>
<th>Order no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>with exhaust air restrictor</td>
<td>0.01 ... 0.24</td>
<td>1400-9603</td>
</tr>
<tr>
<td>with supply air restrictor</td>
<td>0.01 ... 0.24</td>
<td>1400-9602</td>
</tr>
<tr>
<td>2×Threaded bolt M 5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fig. 12
Electrical connection

For electrical installation, observe the relevant regulations and the accident prevention regulations that apply in the country of use. In Germany, these are the VDE regulations and the accident prevention regulations of the employers` liability insurance.


For intrinsically safe electrical equipment approved in accordance with Directive 94/9/EC, the data specified in the EC type examination certificate and the statement of conformity apply to the connection of intrinsically safe circuits (see “Certifications”, pages 14 to 22).

Do not loosen enameled screws in or on the enclosure.

Connecting cable

The power supply is connected through a cable gland ① to screw terminals ④ underneath the enclosure cover (see Fig. 13 and 14).

When connected to DC voltage signals, correct polarity must be ensured.

The cable gland ① with an O-ring ③ underneath can be installed according to the mounting position hanging vertically downwards or horizontally. The unused cable entry must be sealed by a plug ② and an O-ring ③ underneath.

Devices which are used for ambient temperatures to −45 °C must be provided with a metal cable gland.

It is recommended to use connecting cables with a conductor cross-section of 0.5 to 2.5 mm² and an external diameter of 5 to 8 mm. The diameter of an individual wire in a fine-stranded conductor must not be smaller than 0.1 mm.

Protect the conductor ends against splicing, e.g. by using wire-end ferrules.

Fig. 13

Electrical connection

① Cable gland M 16 × 1.5
② Plug M 16 × 1.5
③ O-ring 14 × 1.5
④ Screw terminals

(not for cable gland manufactured by CEAG)

Fig. 14
Degree of protection

The devices are protected against water and dust by a venting plug at the enclosure cover (see “Venting”, page 8).

The required degree of protection IP 65 according to IEC 60529:1989 can be only guaranteed with installed enclosure cover, integrated venting plug, closed cable entries and proper installation of the connections.

Manual override

The devices are optionally provided with a manual override (see Fig. 15). When an electric nominal signal is not available, the device can be operated manually.

For safety circuits, only devices without manual override must be used.

Manual override

underneath the enclosure cover

1. Pushbutton – Press pushbutton

Manual override

at the enclosure cover

1. Pushbutton – Press pushbutton with a pin
2. Pushbutton switch – Press pushbutton switch using a screwdriver (screwdriver blade 4.5 mm) and turn 90° clockwise. To unlock, turn in opposite direction.
Servicing explosion-protected devices

If a part of the device on which the explosion protection is based needs to be serviced, the device must not be put back into operation until a qualified inspector has assessed it according to explosion requirements, has issued an inspection certificate or given the device a mark of conformity.

Inspection by a qualified inspector is not required if the manufacturer performs a routine test on the device prior to putting it back into operation. The passing of the routine test must be documented by attaching a mark of conformity to the device.

Replace explosion-protected components only by original, routine tested components from the manufacturer.

Devices that have already been used outside hazardous areas and are intended for future use inside hazardous areas must comply with the safety requirements placed on serviced devices.

The devices must be inspected before being put back into operation as specified in paragraph (6) in Article 14 of the German Ordinance concerning the protection of safety and health at work (BetrSichV).
CERTIFICATIONS

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

TRANSLATION

EC TYPE EXAMINATION CERTIFICATE


2. EC Type Examination Certificate Number

PTB 06 ATEX 2027

3. Equipment: Model 3967-1 Solenoid Valve

4. Manufacturer: SAMSON AG, Mess- und Regeltechnik

5. Address: Weismüllerstrasse 3, 60314 Frankfurt am Main, Germany

6. The design of this equipment and the various approved versions thereof are specified in the schedule to this type examination certificate and the documents referred to therein.

7. The Physikalisch-Technische Bundesanstalt, notified body number 0102 according to Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the essential health and safety requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres as specified in Annex II to the Directive.

The examination and test results are recorded in the confidential report PTB Ex 06-26108.

8. The essential health and safety requirements are satisfied by compliance with

EN 50014:1997 + A1+A2
EN 50020:2002
EN 50281-1-1:1998

9. If the sign “X” is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use as specified in the schedule to this certificate.

The results laid down in this test report refer exclusively to the test object and the technical documentation submitted. Test reports without signature and seal are invalid. This test report may be reproduced unaltered only. Extracts or amendments shall require the prior approval of the Physikalisch-Technische Bundesanstalt.

Physikalisch-Technische Bundesanstalt – Bundesallee 100 - D 38116 Braunschweig

PTB52.3967.doc

EB 3967 EN – 14 –
Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

(11) This EC Type Examination Certificate relates only to the design and examination of the specified equipment in compliance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment. These requirements are not covered by this Certificate.

(12) The marking of the equipment shall include the following:

\[ \text{Ex II 2 G EEx ia II T6 and II 2 D IP 65 T 80 °C} \]

Zertifizierungsstelle Explosionsschutz
Braunschweig, 23 October 2006

By order
(Signature)
(Seal)

Dr. Ing. U. Gerlach
Oberregierungsrat

The results laid down in this test report refer exclusively to the test object and the technical documentation submitted. Test reports without signature and seal are invalid. This test report may be reproduced unaltered only. Extracts or amendments shall require the prior approval of the Physikalisch-Technische Bundesanstalt.
Schedule

EC Type Examination Certificate Number PTB 06 ATEX 2027

15. Description of Equipment

The Model 3967-1 ... Solenoid Valve converts electrical binary signals into pneumatic output signals and serves for controlling pneumatic actuators.

The solenoid valve is actuated electrically by the Model 1079-40 .. c/p Binary Converter Coil, a modified version of the Model 1079-27 .. c/p Binary Converter Coil certified under PTB 00 ATEX 2157 U. This is a passive two-pole network that is permitted to be connected to certified intrinsically safe circuits unless the admissible maximum values of U, I and P are exceeded.

The equipment is intended for use in hazardous areas.

The Model 3967-1 ... also complies with the requirements of electrical equipment protected by the enclosure according to EN 50281-1-1:1998.

Electrical data:

By connection of a suitable series resistor the Model 1079-40 .. c/p Binary Converter Coil can be connected to nominal voltages of 6 V, 12 V and 24 V.

The correlation between version, temperature classification, permissible ambient temperature ranges and maximum power dissipation is shown in the table below.

<table>
<thead>
<tr>
<th>Version</th>
<th>Un</th>
<th>6 V DC</th>
<th>12 V DC</th>
<th>24 V DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature class</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T6</td>
<td></td>
<td>-45 °C</td>
<td>60 °C</td>
<td></td>
</tr>
<tr>
<td>T5</td>
<td></td>
<td></td>
<td></td>
<td>70 °C</td>
</tr>
<tr>
<td>T4</td>
<td></td>
<td></td>
<td></td>
<td>80 °C</td>
</tr>
<tr>
<td>Characteristic rectangular</td>
<td></td>
<td>250 mW</td>
<td>(#)</td>
<td>(#)</td>
</tr>
<tr>
<td>Characteristic linear</td>
<td>P1</td>
<td>(#)</td>
<td>(#)</td>
<td>(#)</td>
</tr>
</tbody>
</table>

(#) No limitations

The results laid down in this test report refer exclusively to the test object and the technical documentation submitted. Test reports without signature and seal are invalid. This test report may be reproduced unaltered only. Extracts or amendments shall require the prior approval of the Physikalisch-Technische Bundesanstalt.
Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

Schedule to the EC Type Examination Certificate PTB 06 ATEX 2027

The maximum values for connection to a certified intrinsically safe circuit are shown in the table below:

<table>
<thead>
<tr>
<th>Uᵲ</th>
<th>25V</th>
<th>27 V</th>
<th>28 V</th>
<th>30 V</th>
<th>32 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iᵲ</td>
<td>150 mA</td>
<td>125 mA</td>
<td>115 mA</td>
<td>100 mA</td>
<td>85 mA</td>
</tr>
<tr>
<td>Pᵳ</td>
<td>No limitation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cᵰ negligible
Lᵰ negligible

(16) **Test report**  PTB Ex 06-26108

(17) **Special conditions for safe use**

None

(18) **Essential safety and health requirements**

Satisfied by compliance with the standards specified above.

Zertifizierungsstelle Explosionsschutz Braunschweig, 23 October 2006

By order

(Signature)

(Seal)

Dr. Ing. U. Gerlach
Oberregierungsrat

The results laid down in this test report refer exclusively to the test object and the technical documentation submitted. Test reports without signature and seal are invalid. This test report may be reproduced unaltered only. Excerpts or amendments shall require the prior approval of the Physikalisch-Technische Bundesanstalt.

Physikalisch-Technische Bundesanstalt – Bundesallee 100 - D 38116 Braunschweig

Ptb52-0697.doc
TRANSLATION

ADDENDUM No. 1
in compliance with Directive 94/9/EC Annex III Clause 6
to the EC Type Examination Certificate PTB 06 ATEX 2027

Equipment: Model 3967-1… Solenoid Valve

Marking: Ex II 2 G Ex ia IIC T 6 and Ex II 2 D IP 65 T 80 °C

Manufacturer: SAMSON AG Mess- und Regeltechnik

Address: Weismüllerstrasse 3
50314 Frankfurt am Main, Germany

Description of the additions and modifications:
The Model 3967-1… Solenoid Valve converts electrical binary signals into pneumatic output signals and
serves for closed-loop and open-loop control of pneumatic actuators.

The modifications relate, amongst others, to modifications of the printed circuit board and of the marking.

In future the will be:

Ex II 2 G Ex ia IIC T 6
Ex II 2 D Ex ID A21 IP 65 T 80 °C

The electrical data and all other specifications apply also to this Addendum No. 1.

Standards applied

Test report: PTB Ex 07-27332
Zertifizierungsstelle Explosionsschutz

By order (Seal)  
Braunschweig, 16 November 2007

(Signature)
Dr.-Ing. U. Johannsmeyer
Director and Professor

Page 1 of 1
TRANSLATION

Statement of Conformity


(3) EC Type Examination Certificate Number

PTB 06 ATEX 2028 X

(4) Equipment: Model 3967-8 Solenoid Valve

(5) Manufacturer: SAMSON AG Mess- und Regeltechnik

(6) Address: Weismüllerstr. 3, 60314 Frankfurt am Main, Germany

(7) The design of this equipment and the various approved versions thereof are specified in the schedule to this type examination certificate and the documents referred to therein.

(8) The Physikalisch-technische Bundesanstalt certifies that according to the Council Directive 94/9/EC of 23 March 1994 this equipment has been found to comply with the essential health and safety requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres as specified in Annex II to the Directive.

The examination and test results are recorded in confidential report PTB Ex 06-26109

(9) The essential health and safety requirements are satisfied by compliance with


(10) If the sign “X” is placed after the certificate number, it indicates that the equipment it subject to special conditions for safe use as specified in the schedule to this certificate.

(11) This Statement of Conformity relates only to the design and construction of the subject equipment according to Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment and its placing it on the market.

Statements of conformity without signature and seal are invalid.

Physikalisch-technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig
(12) The marking of the equipment shall include the following:

\[\text{Ex} \quad \text{II 3 G EEEx nA II T 6, or II 3 G EEEx nL II C T 6, or}
\]
\[\text{II 3 D IP 54 T 80 °C, or II 3 D IP 65 T 80 °C}
\]

Zertifizierungsstelle Explosionsschutz

Braunschweig, 23 October 2006

By order
(Signature)

(Seal)

Dr. Ing. U. Gerlach
Oberregierungsrat

Statements of conformity without signature and seal are invalid.
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Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig
Schedule

Statement of Conformity PTB 06 ATEX 2028 X

Description of Equipment

The Model 3967-8.. Solenoid Valve converts electrical binary signals into pneumatic output signals and serves for controlling pneumatic actuators.

The solenoid valve is actuated electrically by the Model 1079-40 .. e/p Binary Converter Coil, a modified version of the Model 1079-27 .. e/p Binary Converter Coil certified under PTB 00 ATEX 2157 U. This is a passive two-pole network that is permitted to be connected to certified intrinsically safe circuits unless the admissible maximum valves of \( U_i \), \( I_i \) and \( P_i \) are exceeded.

The equipment is intended for use in hazardous areas.

The Model 3967-8 ... also complies with the requirements of electrical equipment protected by the enclosure according to EN 50281-1-1:1998.

Electrical data:

By connection of suitable series resistors the Model 1079-40 .. e/p Binary Converter Coil can be connected to nominal voltages of 6 V, 12 V and 24 V.

The correlation between version, temperature classification, permissible ambient temperature ranges and maximum power dissipation is shown in the table below.

<table>
<thead>
<tr>
<th>Version</th>
<th>Un</th>
<th>6 V DC</th>
<th>12 V DC</th>
<th>24 V DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature class</td>
<td>T6</td>
<td>-45 °C</td>
<td>....</td>
<td>60 °C</td>
</tr>
<tr>
<td></td>
<td>T5</td>
<td>45 °C</td>
<td>....</td>
<td>70 °C</td>
</tr>
<tr>
<td></td>
<td>T4</td>
<td>60 °C</td>
<td></td>
<td>80 °C</td>
</tr>
<tr>
<td>Characteristic rectangular</td>
<td>P1</td>
<td>250 mW</td>
<td>(#)</td>
<td></td>
</tr>
<tr>
<td>Characteristic linear</td>
<td>P1</td>
<td>(#)</td>
<td>(#)</td>
<td></td>
</tr>
</tbody>
</table>

(# No limitations

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Ptb52Ex x.doc
Schedule

Statement of Conformity PTB 06 ATEX 2028X

Electrical data

Input circuit ………

Type of protection EEx nA II
or EEx nL IIIC

Maximum values:

Ui = 32 V
Ii = 132 mA

Gi negligible
Li negligible

(16) Test report PTB Ex 06-26109

(17) Special conditions for safe use

According to the requirements of type of protection EEx nA II the input circuits are permitted to be connected, disconnected or operated while live only during installation, maintenance and repair work.

According to the requirements of type of protection EEx nL IIIC the input circuits are permitted to be connected while in operation.

If the Model 3967-8 … Solenoid Valve is intended to be used in hazardous areas containing conductive dusts according to EN 50281-1-1:1998 it shall be installed in an enclosure providing at least degree of protection IP 54 in compliance with the IEC publication 60529:1989. The cabling shall be connected in such a manner that the connecting wiring is free from tensile and torsional stress.

(18) Essential health and safety requirements

Satisfied by compliance with the standards specified above.

Zertifizierungsstelle Explosionsschutz Braunschweig, 23 October 2006

By order
(Signature)

(Seal)

Dr. Ing. U. Gerlach
Oberregierungsrat

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