Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

(1) # EC-TYPE-EXAMINATION CERTIFICATE

(Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

PTB 08 ATEX 1024

(4) Equipment: Solenoid valve, type 3966

(5) Manufacturer: SAMSON AG Mess- und Regeltechnik

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

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with 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, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report PTB Ex 08-16347.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2006 **EN 60079-1:2004**

EN 61241-0:2006 **EN 61241-1:2004**

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

(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

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

II 2 G Ex d IIC T6

II 2 D Ex tD A21 IP 66 T80 °C

Zertifizierungsstelle Explosionsschutz
By order:
(*signature*)
Dr.-Ing. M. Thedens
Oberregierungsrat

Braunschweig, May 6, 2008

(13) # SCHEDULE

(14) ## EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 1024

(15) Description of equipment

The type 3966 solenoid valve with flameproof enclosure is designed to convert binary electric input signals into pneumatic output signals; it is used to control pneumatic actuators. The solenoid valve is composed of a pilot valve and a subsequent booster valve. The pilot valve is an e/p binary converter consisting of a coil and a flapper/nozzle system. The booster valve is a purely pneumatic unit to increase the air capacity of the solenoid valve.

Technical data

Design	Operating values; max. dissipation
Type 3966-2101	U_N = 6 V DC; P_{max} = 4 W
Type 3966-2102	U_N = 12 V DC; P_{max} = 4 W
Type 3966-2103	U_N = 24 V DC; P_{max} = 4 W

Degree of protection according to EN 60529: IP 66

(16) Test Report PTB Ex 08-16347

(17) Special conditions for safe use

No conditions

Additional notes for safe operation:

Connection conditions

1. The type 3966 solenoid valve is to be connected with suitable cable glands or conduit systems that meet the requirements stipulated in EN 60079-1, sections 13.1 and 13.2, and for which a separate test certificate has been issued.
2. Cable glands (Pg type glands) and blanking plugs of a simple design must not be used.
3. Any openings of the type 3966 solenoid valve that are not used must be sealed as specified in EN 50018, section 11.9.
4. The connecting cable of the type 3966 solenoid valve must be fixed and routed so that it will be adequately protected against damage.
5. If the temperature at the input parts exceeds 70 °C, temperature-resistant connecting cables have to be used.

6. The type 3966 solenoid valves has to be included in the local equipotential bonding system.

7. If connection is made in the potentially explosive area, the connecting cable (unconnected cable end) of the solenoid valve has to be connected in an enclosure that meets the requirements of an approved type of protection in accordance with EN 60079-0, section 1.

These notes and instructions have to accompany each device in an adequate form.

Components attached or installed (terminal compartments, bushings, Ex-type cable glands, connectors) must be of a technical standard that complies as a minimum with the specifications on the cover sheet, and they must have a separate examination certificate. The operating conditions specified in the component certificates must be complied with!

Ambient temperature

The type 3966 solenoid valve can be operated within the following range:

in temperature class T6 at ambient temperatures between -55 °C and +60 °C,
in temperature class T5 at ambient temperatures between -55 °C and +70 °C, and
in temperature class T4 at ambient temperatures between -55 °C and +80 °C.

Operating medium in the pneumatic section

1. The maximum ingoing-air pressure is 6 bar.
2. The equipment operator must ensure that the operating medium does not form an explosive atmosphere, i.e. the gases used must not contain any substances whose presence in the medium may cause an explosive atmosphere (no flammable gases, no oxygen or oxygen-enriched gas).

(18) Essential health and safety requirements

Met by compliance with the afore-mentioned Standards.

Zertifizierungsstelle Explosionsschutz
By order:

(*signature*)

Dr.-Ing. M. Thedens
Oberregierungsrat

Braunschweig, 6 May 2008

3 pages, correct and complete as regards content.
By order:

Dipl.-Phys. U. Völkel

Braunschweig, May 11, 2010