

# **Operating instructions** and safety information for

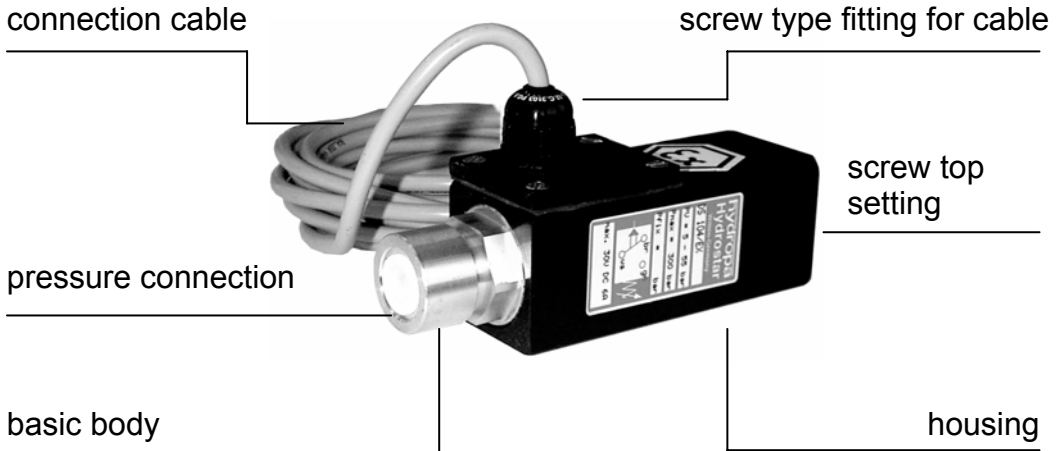
pressure switches

## **DS 104**

**edition: 2010**

# Brief outline of pressure switch

(picture may deviate from supplied execution)



## marking:

**Ex** II 2G T6  $-20^{\circ}\text{C} \leq T_a \leq 70^{\circ}\text{C}$   
includes

**Ex** II 2G EEx d IICT

**PTB 01 ATEX 1005X**  
production-no.: XXXXXXX/XX



## Safety information



- Only qualified and skilled personnel may establish the electric and hydraulic connections.
- It is mandatory to comply with all legal regulations, standards and provisions.
- Use this switch only in accordance with its intended purpose.
- Observe the admissible ranges of application.
- Prior to installation units must be voltage-free and without pressure.
- All connections and cables must be fixed.
- The electric connection must be located in an explosion-proof connection box.
- Employ this switch solely for control engineering purposes.
- The pressure switch is no safety component and may not be used as such.
- Exceeding the  $p_{\text{max.}}$ -value can result in damages to the switch.

- **Do not continue using leaky switches. These have to be replaced.**
- **Always use appropriate tools.**
- **Observe the safety specification sheets of the pressure fluid you employ.**
- **For instance it is possible that the pressure switch is heated up by the pressure fluid. Stay within the admissible temperature range.**
- **Dispose of the switch in an environmentally-friendly way.**

# Admissible ranges of application

The data on the type plate are binding.

In application of Directive 97/23/EC dated

May 29, 1997 the following ranges of application are valid:

<b>Admissible ranges of application</b>	
<b>hazardous fluids*</b>	$p_{\max.} \leq 500 \text{ bar}$
<b>non-hazardous fluids*</b>	$p_{\max.} \leq 1000 \text{ bar}$
<b>*according to the Regulation On Hazardous Substances</b> as defined by article 9, section 2 of the Council Directive 97/23/EC	
<b>range of ambient temperature Ta</b>	
$-20^{\circ}\text{C} \leq Ta \leq +70^{\circ}\text{C}$	
For electric data please refer to type plate resp. model examination certificate PTB 01 ATEX 1005 X of the Bartec company. We regularly use limit switches type 07-2501-6 with a 0,75 mm <sup>2</sup> conductor cross section.	

**It is necessary to check with us in case of any further ranges of application.**



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## Declaration of Conformity in accordance with Council Directive 94/9/EC


We herewith declare in our sole responsibility that the product                      pressure switch

type: **DS104/\*\***


alternatively equipped with a limit switch by Bartec

type **07-1501-6** or type **07-1501-7**

marked

 II 2G EEx d IICT6  
PTB 01 ATEX 1005X

and a screw-type cable fitting marked:

 II 2G EEx e II  
PTB 00 ATEX 3136X

fulfills the fundamental requirements of Directives

- 94/9/EC (ATEX)

- 97/23/EC (pressure components)

and complies with the following harmonised standards or standard-setting documents

EN 13463-1:2001

### Marking

The pressure switch is composed of a non-electric and an electric part

complete marking



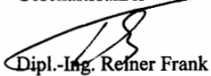
(electric part by Bartec)

/\*\* various types of mechanical execution (see data sheet)

### Hydrostar Messtechnik GmbH

Schwerte, 08.10.2003

Geschäftsführer



Dipl.-Ing. Reiner Frank

Qualitätsmanagement



i.A. Dipl.-Ing. Ralf Stuhmann

Geschäftsführer: Dipl.-Ing. Reiner Frank, Gevelsberg, Carl-Aug. Thomashoff, Herdecke - Registergericht: Schwerte HRB 1466  
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The entire switch consists of a non-electric and an electric part. The documentation is deposited, as required in Directive **94/9/EC (ATEX)**, in an official place under number BVS 03 ATEX H/B 122.

### **Maintenance / supplementary information**

The pressure switch is subject to natural electrical and mechanical wear. Consequently all seals should be leak-tested depending on the switching frequency.

In order to retain service-life over a long period vibrations, oscillations and high switching currents resp. inductive loads should - as far as possible - be avoided.

## FAQ

- Screw top for setting is blocked:  
Loosen clamping screw resp. clamping top.  
Readjust switching pressure and tighten screw.
- Fluid leaks from cable fitting:  
Immediately switch off current and pressure.  
Replace switch (observe safety information).
- Pressure switch does not switch back when free from pressure:  
Check whether setting top is not sufficiently screwed in.  
If necessary, readjust switching point.  
Should the error subsist, replace switch.
- The switch works normally but does not switch back when pressureless:  
Switch is probably defective and should be replaced.



## 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 01 ATEX 1005 X**

- (4) Equipment: Limit switch, type Typ 07-2501-.../....
- (5) Manufacturer: BARTEC Componenten und Systeme GmbH
- (6) Address: D-97980 Bad Mergentheim
- (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 01-10024.

- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
**EN 50014:1997 + A1 + A2** **EN 50018:1994**
- (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 and construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.
- (12) The marking of the equipment shall include the following:

**II 2 G EEx d IIC T6**

Zertifizierungsstelle Explosionsschutz

Braunschweig, May 16, 2001

By order

Dr.-Ing. U. Klausmeyer  
Regierungsdirektor



sheet 1/3

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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## SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 1005 X**

(15) Description of equipment

The limit switch of type 07-2501-.../... is used as a switch for appliances or as a control switch for signal and control circuits. Installation shall be of the protected type; connection will be by means of the encapsulated connecting cable (open ended line).

Technical data

Rated voltage .....	up to	250 V
Limit switch, type 07.2501-5.../...		
Rated current .....	max.	1 A
Limit switch, type 07.2501-6.../... and type 07.2501-7.../...		
Rated current .....	max.	5 A
cos ρ .....		≥ 0.9
Thermal rated current		
with cross-sectional area of 0.5 mm <sup>2</sup>		3 A
with cross-sectional area of 0.75 mm <sup>2</sup>		6 A
Limit switch, type 07.2501-7... (gold contacts)		
Rated voltage .....	up to	30 V
Rated current .....	max.	0.4 A
Make-break capacity .....	max.	0.12 VA

*Provided the making and breaking capacities are met, rated values other than those specified above are acceptable and will be defined by the manufacturer on the basis of the operating mode, utilisation category, etc.*

Contacts: break contact, make contact, or change-over contact of the same potential

Connection rating ..... 2 or 3 x 0.75 or 0.5 mm<sup>2</sup>

Ambient temperature for temperature class T6

when using PVC sheathed cables H03 VV-F .... max. 60 °C  
 when using PVC sheathed cables LiYY ..... max. 70 °C

The limit switch is designed for a temperature resistance of -40 °C to 80 °C.

sheet 2/3

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(16) Test report PTB Ex 01-10024

(17) Special conditions for safe use

The limit switch shall be installed so as to provide for mechanical protection against impact energy in accordance with EN 50014 section 23.4.3.1.

The quality of the connecting cable shall satisfy the thermal and mechanical requirements within the functional range.

This EC type-examination certificate as well as any future supplements thereto shall at the same time be regarded as supplements to Certificate of Conformity No. Ex-93.C.1019 X.

(18) Essential health and safety requirements

The tests and the favourable results these have produced reveal that the limit switch meets the requirements of directive 94/9/EC as well as those of the standards quoted on the cover sheet.

Zertifizierungsstelle Explosionsschutz

Braunschweig, May 16, 2001

By order:

  
Dr.-Ing. U. Klausmeyer  
Regierungsdirektor



sheet 3/3

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