

**GOST R CERTIFICATION SYSTEM
GOSSTANDRAT OF RUSSIA**

CERTIFICATE OF CONFORMITY

No. POCC NL.MJI14.B00132

Period of validity from 03.03.2009 until 03.03.2012

7850397

CERTIFICATION BODY POCC RU.0001.11MJI14
BODY FOR CERTIFICATION "TEhSI
Russia, 125635, Moscow, ul. Angarskaya, 10
tel./fax: (495) 534-45-11

PRODUCTS Temperature and pressure switches series C and W
serial production
as per Ex-annex

OK 005 (OKII) code:
42 1200

CONFORMITY WITH NORMATIVE DOCUMENTS REQUIREMENTS

GOST R 51330.0-99, GOST R 51330.1-99, GOST R 51330.10-99

Customs code:
9032 20 900 0

MANUFACTURER

BETA B.V. (The Netherlands)
Verrijn Stuartlaan 22, 2288 EL Rijswijk, The Netherlands
tel.: +31 70 3199700; fax: +31 703199790

CERTIFICATE IS ISSUED TO

BETA B.V. (The Netherlands)
Verrijn Stuartlaan 22, 2288 EL Rijswijk, The Netherlands
tel.: +31 70 3199700; fax: +31 703199790

ON THE BASIS OF


1. Test report No. 16-101/Ex dated 01.12.2008
IL ZAO "TIBR" (No. ROSS RU.0001.21MJI44)
2. The act about the analysis results for state of production dated 18.12.2008

ADDITIONAL INFORMATION

Head of certification body _____ L.V. Chepeleva

Expert _____ Yu. N. Teryaev

Certificate is legally valid for the whole territory of Russian Federation

Certification body "TEhSI" Accreditation License OS No. POCC RU.0001.11MJI14 dated 30.08.07 Russia, 125635, Moscow, ul. Angarskaya, 10. tel./fax (499) 905-67-87		
	Total – 4 pages	Page 1 of 4

EX – ANNEX

to Certificate of Conformity **No. POCC NL.MJI14.B00132**
 Period of Validity **from 03.03.2009 until 03.03.2012**

1 **Temperature and pressure switches series C and W**

Russian Customs code 9032 20 900 0
 OK 005 (OKP) code 42 1200

2 **Manufacturer**

BETA B.V. (The Netherlands)
 Verrijn Stuartlaan 22, 2288 EL Rijswijk, The Netherlands

3 **Explosion proof mark**

see in Table 1 of Section 5

4 **Conditions of use**

- 4.1 Temperature and pressure switches series C and W are to be used in accordance with explosion proof mark, requirements of GOST R 51330.13, current "Electrical plant arrangement rules" (PUE, art. 7.3), "Technical maintenance rules for electrical plants" (PTEEP, art. 3.4), other normative documents regulating application of electrical equipment in explosive areas, and manufacturer's instruction manual.
- 4.2 Applicable explosive areas and condition of use of cable entries, adapters and plugs categories and groups of explosive air mixtures with gases and vapors are in accordance with GOST R 51330.9, GOST R 51330.11 and requirements of "Electrical plants arrangement rules" (PUE, art.7.3).
- 4.3 Temperature and pressure switches series of Exd-design are to be used together with certified cable glands and plugs, which provide necessary type and level of the explosion proof and enclosure ingress protection.
- 4.4 The instruments connected to output Exia/ib-circuits of the temperature and pressure switches are to have intrinsically electrical circuits as per GOST R 51330.10, and their intrinsically safety characteristics (level of the intrinsically safe electrical circuit and sub-group of electrical equipment) are to comply with conditions of use of temperature and pressure switches in explosive areas.
- 4.5 Temperature and pressure switches series C and W are certified for use in areas that hazardous on flammable dust with maximum parameters stated in manufacturer's technical documentation.
- 4.6 The design modification of the explosion proof cable entries, adapters and plugs related to explosion proof method is to be coordinated with licensed test laboratory.

5 Structure, design and specification of the products

The certificate covers the temperature and pressure switches series C and W.

The explosion proof mark depending on the series is stated in table 1.

Table 1

Series	Explosion proof mark
C	ExiaIICT4/T5/T6 или ExibIICT4/T5/T6
W	ExdIICT5/T6

6 Destination and field of application

Temperature and pressure switches series C and W are destined for emergency signaling when preliminary pressure or temperature limits are reached on the pipelines, tanks, and reservoirs.

Temperature and pressure switches series C and W belong to explosion proof electrical equipment of group II as per GOST R 51330.0, and according to assigned explosion proof mark are destined for use in explosive indoor and outdoor areas.

7 Major technical data

- 7.1. Explosive mixtures as per GOST R 51330.11 IIA, IIB, IIC
Groups T1 ... T6
- 7.2. Explosion proof type intrinsically safe electric circuit of level ia/ib
explosion proof "d" enclosure
- 7.3. Explosion proof mark according to table 1
- 7.4. Ingress protection as per GOST 14254 IP66
- 7.5. Parameters of electrical power supply of Exd – design switch
- DC voltage, V (max.) 125
 - Current, A 5
 - AC voltage, V (max.) 480
 - Current, A 10
- 7.6. parameters of intrinsically safe electric circuit of Exia – design switch:
- maximum input voltage U_i, V 90
 - maximum input current I_i, mA no more 24
 - maximum input current I_i, A 3,3
 - maximum input voltage U_i, V no more 12,1
 - maximum internal capacity C_i negligibly small
 - maximum internal inductivity L_i negligibly small
- 7.7. Allowed values of the ambient temperature in switch locations for proper temperature classes stated in table 2.

Table 2

ExiaIICT4/T5/T6 or ExibIICT4/T5/T6	T4	c/w film resistor	$-40\text{ }^{\circ}\text{C} \leq t_{\text{amb}} \leq 80\text{ }^{\circ}\text{C}$
	T5		$-40\text{ }^{\circ}\text{C} \leq t_{\text{amb}} \leq 70\text{ }^{\circ}\text{C}$
	T6		$-40\text{ }^{\circ}\text{C} \leq t_{\text{amb}} \leq 55\text{ }^{\circ}\text{C}$
ExdIICT5/T6	T6	With out film resistor	$-40\text{ }^{\circ}\text{C} \leq t_{\text{amb}} \leq 80\text{ }^{\circ}\text{C}$
	T5		$-40\text{ }^{\circ}\text{C} \leq t_{\text{amb}} \leq 80\text{ }^{\circ}\text{C}$
	T6		$-40\text{ }^{\circ}\text{C} \leq t_{\text{amb}} \leq 70\text{ }^{\circ}\text{C}$

- 7.8. Conditions of use:
- ambient temperature, $^{\circ}\text{C}$ -40 ... +80
- 7.9 Dimensions, weight as per technical documentation of manufacturer

8 Description of design and explosion proof methods

8.1. Pressure and temperature switches series C are made in square casing made of aluminium alloy, covered with the closure with four fixing screws. There is a cable gland and earthing clip. Pressure and temperature switches series W are made in cylinder casing made of aluminium alloy or stainless steel, covered with the threaded closure with locking screw. There are two threaded holes for the cable glands and earthing clip.

8.2 Explosion proof “intrinsically safe electric circuit” of the temperature and pressure switches is provided with the following means:

8.2.1. In the electrical circuits, any sparks does not make any ignition; and any heating influence does ignite the explosive mixture.

8.2.2 Electric demand of active and passive elements of intrinsically circuits and intrinsically safe elements does not exceed two thirds of nominal values.

8.2.3 Leakage paths, electrical gaps and electrical strength of the insulation, electrical parameters of printed cards and terminal connections comply with requirements of GOST R 51330.10.

8.2.4. Electrical parameters of intrinsically safe circuits confirm to requirements for electrical equipment of subgroup IIC of level ia/ib as per GOST R 51330.10.

8.3 Explosion proof of type «explosion proof enclosure» is provided with the following means:

8.3.1 Electrical parts are placed in explosion proof enclosure which can bear blast pressure and excludes its passing into environment.

8.3.2. Cable glands design, enclosure strength, explosion proof connection parameters as well as temperature characteristics of the materials applied comply with requirements of GOST R 51330.0, GOST R 51330.1.

8.3.3 Explosion impenetrability of the enclosure is provided with flat and threaded explosion proof connections as per GOST R 51330.1.

8.3.4. Parameters of explosion proof flat (length and width of the hole) and treaded connections (axial thread length and number of full continuous threads) comply with requirements of GOST R 51330.1.

8.3.3. Connections of the parts are made using sealing gaskets.

8.4. The enclosure complies to high level of mechanical strength for equipment of group II as per GOST R 51330.0.

8.5. Body parts are made of materials which comply with requirements of friction intrinsically safety as per GOST R 51330.0.

8.6. Sealing and connections of design elements provide ingress protection level IP66 as per GOST 14254.

9 Data of tests

Explosion strength and impenetrability of the enclosure comply with requirements of for electrical equipment of subgroup IIC as per GOST R 51330.1.

Intrinsically safe electric circuits of pressure and temperature switches series C comply with requirements of GOST R 51330.10 for electrical equipment of subgroup IIC of level ia/ib.

Maximum temperature of switch surface heating in operating conditions does not exceed allowable values for related temperature classes as per GOST R 51330.0.

Results of design investigation, pressure and temperature switches testing to conformity of the explosion proof parameters to requirements of GOST R 51330.0, GOST R 51330.1, GOST R 51330.10 are stated in test reports of IL ZAO «TUBR» No. 16-101/Ex dated 01.12.2008.

The operation documentation for pressure and temperature switches contains necessary indications related to installation conditions and safe operation.

10 Explosion proof mark

As per design check results, explosion proof tests and according to requirements of GOST R 51330.0, GOST R 51330.1, and GOST R 51330.10, the explosion proof pressure and temperature switches series C and W are given the explosion proof mark stated in table 1.

11 List of documents containing explosion proof details

EC-Type examination certificate

Drawing set	30.09.78; 32.09.17; 30.09.79; 30.41.27; 30.09.40; 30.09.12; 30.40.01; 30.41.27;
Operation manual	SP 001 Rev. K, August 2008
Test report of IL ZAO «TIBR»	No. 16-101/Ex

Head of Certification Body

signature

L.V. Chepeleva

stamp

Expert, license No. POCC RU.0001.31010988

signature

Yu. N. Teryaev