(1) # UK - Type Examination Certificate

(2) Equipment and protective systems intended for use in potentially explosive atmospheres – **UKSI 2016:1107 (as amended)**

(3) UK - Type Examination Certificate Number

EPS 22 UKEX 2 106 X **Revision 0**

(4) Equipment: Float level switches and float level transmitter JUMO NESOS 4083XX

(5) Manufacturer: JUMO GmbH & Co. KG

(6) Address: Moritz-Juchheim-Straße 1
36039 Fulda
Germany

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

(8) Bureau Veritas Consumer Products Services United Kingdom Limited, approved body No. 8507 in accordance with UKSI 2016:1107 (as amended) Part 4, 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 Schedule 1 of UKSI 2016:1107 (as amended). The examination and test results are recorded in the confidential documentation under the reference number 22TH0291.

(9) Compliance with the essential health and safety requirements has been assured by compliance with:

EN IEC 60079-0:2018 **EN 60079-11:2012** **EN 60079-26:2015**

EN ISO 80079-36:2016 **EN ISO 80079-37:2016**

(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 annex to this certificate.

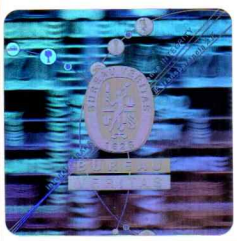
(11) This UK - Type Examination Certificate relates only to the design and construction of the specified equipment in accordance with UKSI 2016:1107 (as amended). Further requirements apply to the manufacture of this equipment and its placing on the market. Those requirements are not covered by this certificate.

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

II 1/2G Ex h ia IIA/IIB/IIC T3 ... T6 Ga/Gb
II 2D Ex h ia IIIC T80°C ... T200°C Db

Deviations of the gas group for different configurations:

II 1/2G Ex h ia IIB T6 ... T3 Ga/Gb or
II 1/2G Ex h ia IIA T6 ... T3 Ga/Gb



Certification department of explosion protection

N. Wilkinson

Natalie Wilkinson

Warrington, 14-12-2022

Bureau Veritas Consumer Products Services United Kingdom Limited
https://www.bureauveritas.co.uk/consumer-products-testing
+44 (0) 1925 854 360

Registered Office: 31 Kingsland Grange,
Woolston, Warrington, Cheshire, WA1 4RW

Registered in England & Wales
Company Number: 00852439

(13) # Annex

(14) **UK - Type Examination Certificate EPS 22 UKEX 2 106 X** **Revision 0**

(15) Description of equipment:

The limit and level measurement takes place according to the Archimedean principle for liquids. The float moves along the guide tube as the level rises or falls.

The magnet in the float actuates the reed contact(s) installed in the guide tube with its magnetic field.

The switching status of the reed contact can be evaluated and processed through downstream electronics.

The electrical connection, process connection, guide tube length, float, as well as the number, position, and function of the contacts may vary depending on the ordered variant.

The float switch is used to switch small loads such as lamps, horns, PLC inputs, motor controls, pumps or valves.

With the level transmitter, the levels of tanks and containers are transferred with a standard signal.

When connecting to intrinsically safe electrical circuits, the intrinsically safe version of the product (Ex i) fulfils the requirements for explosion group II of categories 1/2 G and 1/2 D, as well as 2 G und 2 D.

It is therefore suitable for use in the potentially explosive area of zone 0, 1 and 2 for gas (G) and zone 21 and 22 for dust (D). A certified, intrinsically safe isolation amplifier or supply isolator in Ex ia must be used.

Details of Rating:

Measurement and supply circuit of Ex i float level switches	In type of protection intrinsically safe: Ex ia IIC, Ex ia IIIC only to connect to a certified intrinsically safe circuit: Maximum ratings: $U_i \leq 30$ V $I_i \leq 100$ mA $P_i \leq 750$ mW $C_i = 0$ $L_i = 0$
or	
Measurement and supply circuit of Ex i float level switches as option NAMUR	In type of protection intrinsically safe: Ex ia IIC, Ex ia IIIC only to connect to a certified intrinsically safe circuit: Maximum ratings: $U_i \leq 15$ V $I_i \leq 60$ mA $P_i \leq 225$ mW $C_i = 0$ $L_i = 0$
or	
Measurement and supply circuit of Ex i float level transmitters with JUMO dTRANS T01 temperature transmitter type 707015/...:	In type of protection intrinsically safe: Ex ia IIC, Ex ia IIIC only to connect to a certified intrinsically safe circuit: Maximum ratings: $U_i \leq 30$ V $I_i \leq 100$ mA $P_i \leq 750$ mW $C_i = 0$ $L_i = 0$
or	
Measurement and supply circuit of Ex i float level transmitters with 2-wire level transmitter type 5333D and 5343B:	In type of protection intrinsically safe: Ex ia IIC, Ex ia IIIC only to connect to a certified intrinsically safe circuit: Maximum ratings: $U_i \leq 30$ V $I_i \leq 120$ mA $P_i \leq 840$ mW $C_i = 1$ nF $L_i = 10$ µH

or	
Optional temperature switch:	In type of protection intrinsically safe: Ex ia IIC, Ex ia IIIC only to connect to a certified intrinsically safe circuit: Maximum ratings: $U_i \leq 30$ V $I_i \leq 100$ mA $P_i \leq 750$ mW $C_i = 0$ $L_i = 0$
or	
Optional temperature sensor:	In type of protection intrinsically safe: Ex ia IIC, Ex ia IIIC only to connect to a certified intrinsically safe circuit: Maximum ratings: $U_i \leq 30$ V $I_i \leq 55$ mA $P_i \leq 413$ mW $C_i = 0$ $L_i = 0$
or	
Measurement and supply circuit of Ex i float level transmitters with display CL1:	In type of protection intrinsically safe: Ex ia IIC only to connect to a certified intrinsically safe circuit: Maximum ratings: $U_i \leq 30$ V $I_i \leq 100$ mA $P_i \leq 750$ mW $C_i = 0$ $L_i = 0$

The maximum values of the allowable external capacitance (C_a or C_o) and inductance (L_a or L_o) can be found on the nameplate or the certificate of the supply unit.

Measurement and supply circuit of Ex i float level transmitters with 2-wire HART temperature transmitter type 5437D:	Supply / output circuit for type 5437D (terminals 1 and 2, inclusive the 'Test' connection) in type of protection intrinsic safety Ex ia IIC and Ex ia IIIC, only for connection to a certified intrinsically safe circuit, with the following maximum values: $U_i = 30$ V $I_i = 120$ mA $C_i = 1.0$ nF $L_i = 0$ µH. Sensor circuit type 5437D (terminals 3..9) in type of protection intrinsic safety Ex ia IIC and Ex ia IIIC, with the following maximum values: $U_o = 7.2$ V $I_o = 12.9$ mA $P_o = 23.3$ mW $C_o = 13.5$ µF $L_o = 200$ mH. Sensor circuit (CH1 terminals 3 to 4,5,6 or CH2 terminals 3 to 7,8,9) for 5437D in type of protection intrinsic safety Ex ia IIC and Ex ia IIIC, with the following maximum values: $U_o = 7.2$ V $I_o = 7.3$ mA $P_o = 13.2$ mW $C_o = 13.5$ µF $L_o = 667$ mH. The sensor circuit is infallibly isolated from the supply / output circuit.

The relation between Pi, temperature class, model type and maximum ambient temperature is as follows:

Pi per channel	Temperature class	Maximum ambient temperature	
		Single and dual input	Two channel
900 mW	T6	+50 °C	+45 °C
	T5	+65 °C	+60 °C
	T4	+85 °C	+85 °C
750 mW	T6	+55 °C	+50 °C
	T5	+70 °C	+65 °C
	T4	+85 °C	+85 °C
610 mW	T6	+60 °C	+55 °C
	T5	+75 °C	+70 °C
	T4	+85 °C	+85 °C

Classification of installation: stationary

Protection: Depends on the device configuration and is defined in the type drawings or datasheet, minimum IP 54

(Ex Ga) respective IP 65 (Ex Da)

Rated ambient temperature: Depends on the device configuration and is defined in the type drawings or datasheet.

(16) Reference number: 22TH0291

(17) Special conditions for safe use:

- In case the flange, stopper and floats are made from titanium alloy ignition sparks needs to be prevented by the end user.
- An equipotential bonding of the metal parts of the enclosure must be ensured over the entire circuit.

(18) Essential health and safety requirements:

Met by compliance with standards.

Certification department of explosion protection

Warrington, 14-12-2022

N. Wilkinson

Natalie Wilkinson