Translation

(1) EU-Type Examination Certificate

(2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 2014/34/EU**

(3) **Certificate Number** **TÜV 15 ATEX 163874 X** **issue:** 00

(4) for the product: JUMO exTHERM-DR

(5) of the manufacturer: **JUMO GmbH & Co. KG**

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

Order number: 8003017130
Date of issue: 2020-07-01

(7) The design of this product and any acceptable variation thereto are specified in the schedule to this EU-Type Examination Certificate and the documents therein referred to.

(8) The TÜV NORD CERT GmbH, Notified Body No. 0044, in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential ATEX Assessment Report No. 20 203 266472.

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

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

except in respect of those requirements listed at item 18 of the schedule.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions for Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design, and construction of the specified product. 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 product shall include the following:

II (1) G [Ex ia Ga] IIC or
II (1) D [Ex ia Da] IIIC

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, notified by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The head of the notified body

Roder

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Excerpts or changes shall be allowed by the TÜV NORD CERT GmbH**

(13) **S C H E D U L E**

(14) **EU-Type Examination Certificate No. TÜV 15 ATEX 163874 X issue 00**

(15) **Description of product:**
The JUMO exTHERM-DR type 701055 / * - * is a microprocessor-based designed as a two point controller, in the following called controller. The controller has the task to regulate a channel.

The device has to be mounted on a mounting rail outside the hazardous area. It has a universal input. The inputs can measure the resistance thermometer PT100/PT1000, temperature element and a 4...20 mA standard signal.

The device has two relay outputs, one binary input and one analog output with (0) 4...20mA or (0) 2...10 V. The used universal input will be read out by the diagnostic-/display unit.
For the visualization of the measured values, for configuration and for display of error reports a graphic display and LED are available. The device can be configured with a PC- program about a USB interface.

The connection of the sensors, of the relays, of the binary inputs, of the analog output and of the power supply is via printed circuit terminal for a cross section up to 2.5 mm².

Type code:

701055 **Basic type**
ExTHERM-DR
Version
8 Factory settings
9 According to customer specifications
Power supply
23 AC 110...240 V + 10 % / -15 %; 48...63 Hz
25 AC /DC 20...30 V 48...63 Hz

701055 / *- *

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Electrical data:

For type 701055 / 8 – 23:

Supply circuit (Terminals N and L1)	only for the connection to a non-intrinsically safe circuit with a safety-related maximum voltage of: U_N = 110 up to 240 V a.c +10% / -15%, 48 up to 63 Hz U_m = 264 V

For type 701055 / 8 – 25:

Supply circuit (Terminals L- and L+)	only for the connection to a non-intrinsically safe circuit with a safety-related maximum voltage of: U_N = 20 up to 30 V d.c or a.c, 48 up to 63 Hz U_m = 250 V

For all types:

Binary connection (Terminals 4 and 5)	only for the connection to a non-intrinsically safe circuit with a safety-related maximum voltage of: U_m = 250 V
Analogue connection (Terminals 9 and 10)	only for the connection to a non-intrinsically safe circuit with a safety-related maximum voltage of: U_m = 250 V
Relay connection (Terminals 11, 12, 13)	only for the connection to a non-intrinsically safe circuit with a safety-related maximum voltage and current of: U_m = 250 V I_{max} = 3 A
Relay connection (Terminals 14, 15, 16)	only for the connection to a non-intrinsically safe circuit with a safety-related maximum voltage and current of: U_m = 250 V I_{max} = 3 A
USB connection (USB-socket)	only for the connection to a non-intrinsically safe circuit with a safety-related maximum voltage and current of: U_m = 250 V
Universal input (Terminals 1, 2, 3 and 5, 6, 7)	in type of protection intrinsic safety Ex ia IIC resp. Ex ia IIIC with the following maximum values per circuit: U_o = 6 V I_o = 41.2 mA P_o = 61.8 mW Characteristic line: linear The effective internal capacitance C_i is 3.7 µF. The effective internal inductance L_i is negligibly small.

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The maximum permissible values for the external inductance L_o and the external capacitance C_o have to be taken from the following table:

Ex ia IIC	L_o [mH]	0.2	0.1	0.05	0.02	0.01	0.001
	C_o [µF]	0.2	1	2.1	4.3	7.3	36.3
Ex ia IIIC	L_o [mH]	100	50	20	10	0.2	0.001
	C_o [µF]	3.6	5.4	7.3	8.3	27.3	996.3

The values of the table below are only applicable, if the internal inductance L_i (without the cable) or the internal capacitance C_i (without the cable) of the connected equipment is ≤ 1 % of the below specified values.
If L_i (without the cable) and C_i (without the cable) of the connected equipment are > 1 % of the specified values, the specified values of L_o shall be reduced to 50 %.
The reduced capacitance of the external circuit (including cable) shall not exceed 1 µF for group IIIC and 600 nF for group IIC.

Ex ia	IIC	IIIC
Maximum permissible external inductance	20 mH	83 mH
Maximum permissible external capacitance	36.3 µF	996.3 µF

For the temperature probes listed below, which have to be considered as simple apparatus and which to be operated with the device, the limit value for the maximum permissible upper limit of the ambient temperature according to the temperature class resp. the maximum surface temperature has to be taken from the following table:

Temperature class resp. maximum surface temperature	Upper limit of the medium and ambient temperature for applications requiring devices of equipment protection level Gb resp. Db		Upper limit of the medium and ambient temperature for applications requiring devices of equipment protection level Ga resp. Da	
	Temperature probes with PT100	Temperature probes with thermocouple	Temperature probes with PT100	Temperature probes with thermocouple
T1 / 445 °C	432.5 °C	439.1 °C	342.5 °C	349.1 °C
T2 / 295 °C	282.5 °C	289.1 °C	222.5 °C	229.1 °C
T3 / 195 °C	187.5 °C	194.1 °C	147.5 °C	154.1 °C
T4 / 130°C	122.5 °C	129.1 °C	95.5 °C	102.1 °C
T5 / 95 °C	87.5 °C	94.1 °C	67.5 °C	74.1 °C
T6 / 80 °C	72.5 °C	79.1 °C	55.5 °C	62.1 °C

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The following temperature probes of the manufacturer with PT100 resistor-type thermometer are intended to be operated with the device:

Type designation of the manufacturer	Replacement character xxx
902006/65-228-1003-1-15-xxx-668/922 902006/55-228-1003-1-15-xxx-254/922 902006/65-228-2003-1-15-xxx-668/922 902006/55-228-2003-1-15-xxx-254/922	500, 710 and 1000
902006/10-402-1003-1-9-xxx-104/922 902006/10-402-2003-1-9-xxx-104/922	100, 150 and 200
902006/10-226-1003-1-9-xxx-104/922 902006/10-226-2003-1-9-xxx-104/922	250
902006/54-227-1003-1-15-xxx-254/922 902006/54-227-2003-1-15-xxx-254/922	710
902006/53-505-2003-1-12-xxx-815/922 902006/53-505-1003-1-12-xxx-815/922	190
902006/53-507-2003-1-12-xxx-815/922	100, 160, 190 and 220
902006/53-507-1003-1-12-xxx-815/922 902006/53-505-3003-1-12-xxx-815/922 902006/40-226-1003-1-12-xxx-815/922	100, 160 and 220
902006/10-390-1003-1-8-xxx-104/922	250

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The following temperature probes of the manufacturer with thermocouple are intended to be operated with the device:

Type designation of the manufacturer	Replacement character xxx
901006/65-547-2043-15-xxx-668/922 901006/65-546-2042-15-xxx-668/922	500, 710 and 1000
90.1006/66-550-2043-6-xxx-668/922 90.1006/66-880-1044-6-xxx-668/922 90.1006/66-880-2044-6-xxx-668/922 90.1006/66-953-1046-6-xxx-668/922 90.1006/66-953-2046-6-xxx-668/922	250, 355 and 500
901006/54-544-2043-15-xxx-254/922 901006/54-544-1043-15-xxx-254/922 901006/54-544-2042-15-xxx-254/922 901006/54-544-1042-15-xxx-254/922	710
901006/53-543-1042-12-xxx-815/922 901006/53-543-2042-12-xxx-815/922	220
901006/45-551-2043-2-EL-11-AL/922	50<EL<2000; 1000<AL<20000

Thermal data:
Permissible ambient temperature range during operation $0\ °C \leq T_a \leq +55\ °C$

(16) Drawings and documents are listed in the ATEX Assessment Report No. 20 203 266472

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(17) Specific Conditions for Use

1. The switching on the intrinsically safe circuits may be performed only if the J JUMO exTHERM-DR type 701055 / * - * including all supply lines is de-energized.

2. To energize the JUMO exTHERM-DR type 701055 / * - * including all supply lines, the protective cap of the intrinsically safe circuits shall be correctly mounted.

3. The sensors listed under the specifications of JUMO GmbH & Co KG based on the JUMO-datasheet 901006 and 902006 have no safe isolation to the armature. The sensor connections are therefore to be considered as grounded for the safety assessment. This means that the user must ensure in case of connection of the intrinsically safe circuit to the local potential (eg PA resp. FB) that the intrinsic safety of the JUMO exTHERM-DR type 701055 / * - * is not repealed.

4. The sensor connection heads do not meet the requirements of the material composition of EN IEC 60079-0:2018 for applications that require devices of category 1. The device has to be installed in such a way that any ignition hazards caused by impact or friction can be excluded".

(18) Essential Health and Safety Requirements
No additional ones

- End of Certificate -