Ex Devices

Reliable products for potentially explosive areas
according to EU Directive 2014/34/EU

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Dear Reader,

The expression ATEX is an acronym from ATmosphères EXplosibles, which is French for potentially explosive atmospheres. The abbreviation serves as a short designation for 2 European directives which refer to sections of the European Treaty:

EU directive 2014/34/EU refers to devices and protective systems intended for operation in potentially explosive atmospheres. It applies to both electrical and mechanical devices. Primarily, this directive is aimed at the manufacturers of devices and plants. It has replaced the previous EU directive 94/9/EC (ATEX).

EU directive 1999/92/EC (ATEX 137) deals with the safety of plants as well as protecting the health and safety of employees who could be endangered by potentially explosive atmospheres. This directive defines the minimum requirements for plant operators who ultimately bear full responsibility. Plant operators are also required to draw up explosion protection documents.

IECEx Certificates of Conformity (IECEx CoC)
As part of the internationalization process, JUMO has begun the process of having the product range certified for the explosion-protected area according to IECEx.

TR TC Ex certification for the Eurasian Economic Union
Within the Eurasian Economic Union (Russia, Kazakhstan, and Belarus) products with the label "Ex" must have proof of conformity with the valid explosion protection directives. This proof is the TR Ex certificate in accordance with the technical regulations TR CU 012/2011 "On safety of equipment intended for use in explosive atmospheres". Upon request, several JUMO products can be delivered with this certificate.

Project planning and application
Neatly declared components such as those offered by JUMO are highly beneficial in designing measuring circuits for use in potentially explosive areas and creating explosion protection documents. These components give the operator the legal certainty that is essential. They also facilitate cost-optimal, efficient project planning with no ifs, ands, or buts.
Zones with potentially explosive dust atmospheres (dust Ex) require special consideration. Here, too, we can offer suitable products.

This brochure will give you an overview of our ATEX products. Of course, we are also happy to work with you to create customized solutions for your individual requirements.

In addition, we offer a specialist book and seminar entitled "Explosion Protection in Europe" on the subject of ATEX. For further information please visit www.jumo.net.

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ATEX and IECEx identification marking

Potentially explosive areas and zone classification according to EU directive 2014/34/EU

II (1G) [Ex ia]

II (1D) [Ex ia]

Device category

I Mining
II Area susceptible to gas explosion
III Area susceptible to dust explosion

1	Very high level of safety 2 independent errors 2 redundant protection measures	
1G	Gases, mist, vapors	Zone 0
1D	Dust	Zone 20
2	High level of safety	
2G	Gases, mist, vapors	Zone 1
2D	Dust	Zone 21
3	Normal level of safety	
3G	Gases, mist, vapors	Zone 2
3D	Dust	Zone 22

Zone classification

Gases, mist, vapors	Dust	Potentially explosive atmosphere exists	Equipment Protection Level (EPL) Gases	Dust
Zone 0	Zone 20	Continuously, long-term, or frequently > 1000 hr/yr	Ga	Da
Zone 1	Zone 21	Occasionally > 10 hr/yr ⩽ 1000 hr/yr	Gb + Ga	Da + Db
Zone 2	Zone 22	Rarely and briefly > 0 hr/yr ⩽ 10 hr/yr	Ga, Gb + Gc	Da, Db + Dc

Ignition protection types with the corresponding standards

EN 60079-0 General requirements

Gas

EN 60079-1 d Flameproof enclosure
EN 60079-2 p Pressurized enclosure
EN 60079-5 q Powder filling
EN 60079-6 o Oil immersion
EN 60079-7 e Increased safety
EN 60079-11 ia, ib, ic Intrinsic safety
EN 60079-15 n Non-sparking
EN 60079-18 ma, mb, mc Die-cast enclosure
EN 60079-25 i-Intrinsically safe system
Electr. systems

Dust

EN 60079-18 maD, mbD Die-cast enclosure
EN 60079-31 ta, tb, tc Protection by enclosure
EN 61241-4 pD Pressurized enclosure
EN 60079-11 ia, ib, ic Intrinsic safety

Protection level

a 2 countable errors simultaneously
b 1 countable error
c Operation without faults (no errors)

Related electrical equipment

[... is outside the potentially explosive area.
The signal lines lead into the Ex area (e.g. supply isolators for transmitters)]

IIC T6 Ga

IIIC T_{150} Da

Explosion groups

I Electrical equipment for mines susceptible to firedamp (e.g. mining with coal dust, methane gas)

II Electrical equipment for all areas susceptible to gas explosions except for mines susceptible to firedamp (e.g. chemical industry with dyes, acetylene)

III Subdivision into IIA, IIB, IIC depending on ignitability.

Electrical equipment for all areas susceptible to dust explosions

- IIIA = Combustible lint
- IIIB = Non-conductive dust
- IIIC = Conductive dust

Temperature classes

Tempera-ture class	Max. surface temperature of the equipment	Ignition temperature for combustible substances
T1	450 °C	> 450 °C
T2	300 °C	> 300 < 450 °C
T3	200 °C	> 200 < 300 °C
T4	135 °C	> 135 < 200 °C
T5	100 °C	> 100 < 135 °C
T6	85 °C	> 85 < 100 °C

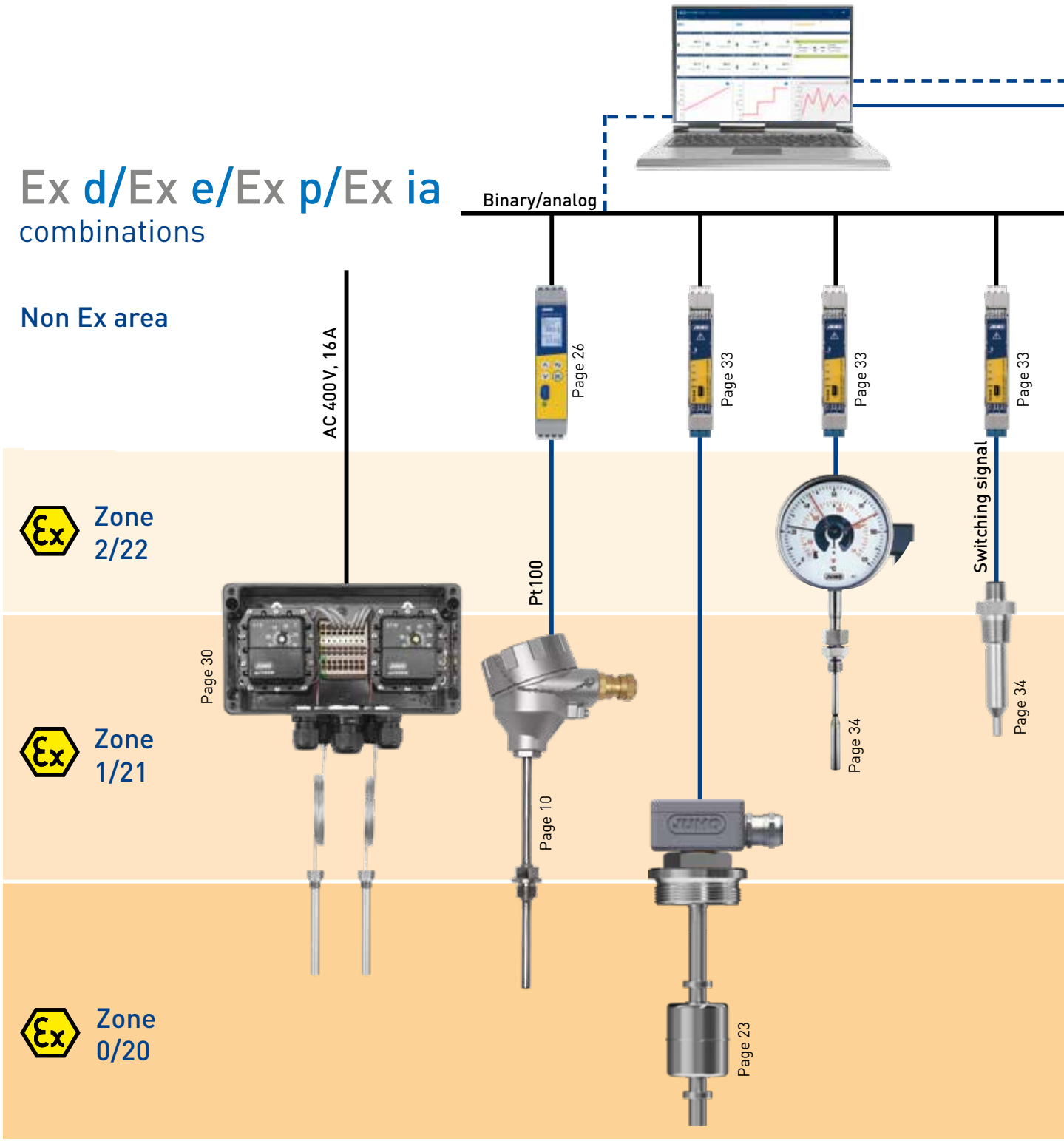
Temperature classes and explosion protection groups

(excerpt)

	T1	T2	T3	T4	T5	T6
I	Methane	–	–	–	–	–
IIA	Acetone Ethane Acetic acid Ammonia Phenol Propane*	Ethyl alcohol n-Butane n-Butyl alcohol	Benzine Heating oil Diesel fuel	Acetal dehyde	–	–
IIB	City gas	Ethyl alcohol Ethylene*	Hydrogen sulfide	Ethyl ether	–	–
IIC	Hydrogen*	Acetylene				Carbon disulfide

*Typical ignitable gas

Ex d/Ex e/Ex p/Ex ia
combinations



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ATEX Sensors Automation JUMO Safety Performance JUMO Engineering

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HART® modem


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4 to 20 mA/HART®

4 to 20 mA

4 to 20 mA

Pt100

Pt100


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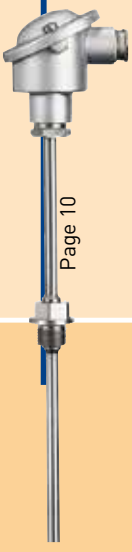
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Sensors

Temperature measuring devices

RTD temperature probes are used as intrinsically safe equipment or equipment with flameproof enclosure for temperature measurements in liquid and gaseous media as well as in dusty conditions. Depending on the needs of the application and the measurement task, the RTD temperature probes are available with different terminal heads, various process connections, matching thermowells, LED display modules, with or without zone separation, with or without exchangeable measuring inserts, or with the connection line mounted.

RTD temperature probes with ignition protection type [Ex i] are certified for connection to intrinsically safe electrical circuits of category ia/ib (for applications in zones 1 and 2, with separation element in zone 0) and of category ia (for use of the probe tube in zones 0, 1, and 2).

RTD temperature probes in a flameproof enclosure are also fitted with measuring inserts in an intrinsically safe version for connection to intrinsically safe electrical circuits.

Humidity measuring devices

Measuring probes of this intrinsically-safe design series were especially developed for potentially explosive areas and can be installed directly in the Ex area as a whole unit. In addition, various probe modules provide versatile possibilities for nearly all applications. The intelligent probe module can also be easily removed for calibration purposes or replaced if necessary. Saving all of the calibration coefficients directly in the probe module saves the otherwise time-consuming manual entry. The measuring probe can also remain installed on-site. The calculations of dew point temperature, absolute humidity, mixing ratio, and wet-bulb temperature are possible as options. Last but not least, an LCD display with user keyboard can be integrated. This outstanding feature makes configuration on the measuring probe even easier.

We bring knowledge and experience – you get reliability.

Pressure and level measuring devices

Measuring pressure and level are among the most important tasks in almost all industrial sectors.
High-quality measuring devices ensure reliable and safe measuring results regardless of whether you are dealing with high-precision solutions for the process industry, hygienic solutions for the food and pharmaceutical sectors, or universal solutions for mechanical and plant engineering.

Maximum precision and reliability

This is the result of the many years of experience that our qualified employees have in development and production. We are familiar with complex interrelationships and therefore see quality as a process to be continuously examined and improved. Starting with new product development based on internally manufactured sensors, we uphold our manufacturing process with the very latest production lines and finally subject each device to a full final inspection.

Flexibility

JUMO develops, tests, and manufactures new products or customer-specific versions internally. Our great manufacturing depth safeguards the quality process and gives us more flexibility, allowing us to pay special attention to customer needs and specific application-oriented features.

Thermocouples and RTD temperature probes

Product name	Thermocouple with ceramic protection tube	RTD temperature probe with continuous protection tube, with reduced protection tube (not shown)	RTD temperature probe with continuous protection tube (not shown); with reduced protection tube	RTD temperature probe with thermowell DIN 43767
Type	901820	902820		
ATEX/IECEx identification marking	Ⓔx II 2 G Ex ia IIC T1 ... T6 Ga/Gb Ⓔx II 2 D Ex ia IIIC T60 °C ... T400 °C Da/Db	Ⓔx II 1/2 G Ex ia IIC T1 ... T6 Ga/Gb Ⓔx II 1/2 D Ex ia IIIC T60 °C ... T400 °C Da/Db Version for each terminal head Ex d; Ex ia/d, Ex tb		
Further approvals	SIL/PL qualified*			
Temperature range	-100 to +1200 °C	(-200) -50 to +600 °C -100 to +600 °C		
Measuring insert	Type "J", "K", "N", "B", "S"	With or without replaceable measuring insert, as single or double Pt100, Pt500, Pt1000 with and without programmable [Ex i] head transmitter		
Tolerance class	Class 1/2 according to DIN 43710/60584	B, A, AA (according to DIN EN 60751)		
Connection	–	In two-wire, three-wire, or four-wire circuit		
Terminal heads	Form B (BUZ, BUZH) made of aluminum die-cast, protection type IP54 (IP65)			
	–	Form BBKS made of plastic, protection type IP54, with flameproof enclosure [Ex d], terminal heads with LED display (optional), others upon request		
Protection tube/ thermowell	Steel, ceramic C799, KER 610	Protection tube made of stainless steel 1.4571, titanium, Inconel®, HASTELLOY®; with PTFE or Halar® coating	Protection tube made of stainless steel 1.4571, titanium, tantalum, Inconel®, HASTELLOY®; with PTFE or Halar® coating	Thermowell D1/D2, D4/ D5 made of stainless steel 1.4571, steel 1.7335, titanium, tantalum, Inconel®, HASTELLOY®; with PTFE or Halar® coating
Process connection	Flange/screw connection/ thread	Screw connection/thread G1/2, G1, NPT, others upon request	Flange, C DN 25, C DN 40 others upon request	Thermowell
Special features	Inspection certificate 3.1 available upon request for material, pressure test, leak test, insulation resistance, electrical tolerance/calibration			

*Depending on the version

Product name	Compact RTD temperature probe	Screw-in thermometer	Push-in thermometer, push-in mineral-insulated thermometer	Push-in mineral-insulated thermocouple
Type	902815	902821		
ATEX/IECEx identification marking	Ⓔx II1/2 G Ex ia IIC T6 Ga/Gb Ⓔx II1/2 D Ex ia IIIC T80 °C Da/Db	Ⓔx II 1/2 G Ex ia IIC T6 Ga/Gb Ⓔx II 1/2 D Ex ia IIIC T80 °C IP65 Da/Db Ⓔx II 2 G Ex e IIC T1 ... T6 Gb Ⓔx II 2 D Ex tb IIIC T60 °C ... T80 °C IP65 Db		
Further approvals	SIL/PL qualified			
Temperature range	-70 to +260 °C	-100 to +260 °C, –100 to +600 °C (mineral-insulated thermometer)		-200 to +1200 °C
Measuring insert	Pt100, Pt1000	Pt100, Pt500, Pt 1000, Pt2000, NTC		Type: “J”, “K”, “L”, “S”, “B”
Tolerance class	1/3 DIN class B	B, A, AA (according to DIN EN 60751)		Class 1/2 according to DIN 43710/60584
Connection	Four-wire circuit	Two-wire circuit, three-wire circuit, four-wire circuit		–
Terminal head	M12 connector	Silicone, PTFE, PVC, FEP, RADOX®, BETAflam®, FPM, PEEK, or PUR connection line (also available with shielding or armoring)		
Protection tube	–	Stainless steel 1.4571, 1.4435, or others upon request		Stainless steel 1.4541
Process connection	Screw connection or thread G1/2, G1, clamp DN 25/DN 32/DN 40, or others upon request	Various threads	–	
Special features	Without transmitter	For universal application		For universal application, flexible protection tube

Thermocouples and RTD temperature probes

Product name	Thermocouple I.T.C., I.T.C 420	RTD temperature probe I.I.R and I.I.R.420	Thermocouple C97 EEX	RTD temperature probe C97 EEX
Type	903510/40	903520/40	903510/50	903520/50
ATEX/IECEx identification marking*	Ⓔx II 1/1G 1/1D for I.T.C. and I.I.R Ⓔx II 1/1 G 1/2D for I.T.C.420 and I.I.R420 Ex ia IIC T1 to T6 or xxx °C/T6 Ga/Ga Ex ia/tb III CT xxx °C/T85 °C Da/Db		Ⓔx II 2/2 G 1/2 D* Ex e II T1 to T6 or xxx °C/T6 Gb/Gb Ex ta/tb IIIC T xxx °C/T85 °C Da/Db	
Temperature range	-200 to +1300 °C	-200 to +800 °C	-200 to +1300 °C	-200 to +800 °C
Measuring insert	Type "T", "J", "L", "K", "N", thermowell or process connection, sheath cable version	Pt100, Pt1000, NTC, PTC	Type "T", "J", "L", "K", "N", thermowell or process connection, sheath cable version	Pt100, Pt1000, NTC, PTC
Terminal head	Form BUZ 72 Form BUZ 85 Form BUSH Form CNI-3		Form DN AG Form BUZ 85 Form BUSH Form XD-AD	
Protection tube	Solid material or welded version made of steel, stainless steel, nickel alloy, titanium.			
Process connection	Thread, flange, clamp			
Ambient temperature	-40 to +80 °C			
Special features	Approval only in conjunction with an ATEX or IECEx approved transmitter for I.T.C420 and I.I.R420			

* IECEx version optional

Product name	Thermocouple TB.97-XDT/CT	RTD temperature probe TB.97-XDR/CR	Thermocouple TXI.03	RTD temperature probe TXI.03
Type	903510/30	903520/30	903515/40	903525/40
ATEX/IECEx identification marking*	Ⓔx II 2/2 G Ex d IIC T1 to T6 or xxx°C/T6 Gb/Gb		Ⓔx II 1 G 1 D Ex ia IIC T1 ... T6 Ga Ex ia IIIC T xxx °C Da	
Temperature measuring range	-200 to +1300 °C	-200 to +800 °C	Depending on connection line	
Measuring insert	Type "T", "J", "L", "K", "N", thermowell or process connection, sheath cable version	Pt100, Pt1000, NTC	Type "T", "J", "L", "K", "N", thermowell or process connection, sheath cable version	Pt100, Pt1000, NTC, PTC
Terminal head/ connection line	Form XD-AD Form CNI-3 ADF		PVC -5 to +80 °C PUR -5 to +105 °C Silicone -50 to +180 °C PTFE -50 to +260 °C Extra code: additional protection with metal protection tube	
Transmitter	–		Intrinsic safety according to EN 60079-11	
Protection tube	Solid material or welded version made of steel, stainless steel, nickel alloy, titanium			
Process connection	Thread, flange, clamp		–	
Ambient temperature	-40 to +60 °C max. +80 °C		–	

* IECEx version optional

Special solutions

Product name	Thermocouple C.D.E	RTD temperature probe C.D.E	Thermocouple Ch.P	RTD temperature probe Ch.P
Type	903515/60	903525/60	903515/50	903525/50
ATEX/IECEx identification marking*	Ⓔx II 2/2 G – II 1/1 D Ex e II T1 to T6 to xxx °C/T6 Gb/Gb Ex ta IIIC Txxx °C/T85 °C Da/Da		Ⓔx II 2/2 G – II 1/1 D Ex e IIC T1 to T6 or xxx °C/T6 Gb/Gb Ex ta IIIC Txxx °C/T85 °C Da/Da Class I, zone 1, AEx e IIC Gb T6 Class I, div 2, groups A, B, C, D	
Further approvals	–		CSA/UL	
Cable entry	Certificate II 2GD – Ex e II according to EN 60079-7		Certificate II 2GD – Ex e II according to EN 60079-7	
Temperature measuring range	-200 to +1300 °C	-200 to +800 °C	-200 to +1300 °C	-200 to +800 °C
Measuring insert	Type "T", "J", "L", "K", "N", thermowell or process connection, sheath cable version	Pt100, Pt1000, NTC, PTC	Type "T", "J", "L", "K", "N", thermowell or process connection, sheath cable version	Pt100, Pt1000, NTC, PTC
Connection line	PVC -5 to +80 °C PUR -5 to +105 °C Silicone -50 to +180 °C PTFE -50 to +260 °C Extra code: additional protection with metal protection tube			
Protection tube	Solid material or welded version made of steel, stainless steel, nickel alloy, titanium.			
Process connection	Thread, flange, clamp		–	
Ambient temperature	-20 to +60 °C			
Special features	–		Certificate II 2GD – Ex e II according to EN 60079-7 and EN 60079-31	

* IECEx version optional

Product name	Multipoint RTD temperature probe (silo monitoring)	Hot-point RTD temperature probe
Type	903530	903540
ATEX identification marking	Ⓔx II 1 D - Ex ta IIIC T85 °C Da	Ⓔx II 2/2 D - Ex tb IIIC T... °C/T85 °C Db/Db
Position	Different versions for fastening on a concrete slab or internal and external metallic construction	–
Temperature measuring range	5 to 80 °C	-20 to +440 °C
Measuring insert	Pt100, Pt1000, NTC, measuring insert replaceable	
Connection line	PVC -5 to +80 °C Extra code: additional protection with metal protection tube	M12 connector
Protection tube	Polypropylene: - Diameter Ø = 17 mm - Protection tube, 24 wires made from galvanized steel - Inner protection tube: polyamide Stainless steel 1.4301: - Diameter Ø = 15 mm - Protection tube, 75 wires made from stainless steel - Inner protection tube: PVDF	Solid material or welded version made of steel, stainless steel, nickel alloy, titanium
Special features	For specific version Certificate II 2 D – Ex t II according to EN 60079-31	–

RTD temperature probes for wireless data transmission

Product name	JUMO Wtrans – transmitter T03
Type	902930/15/17/55
ATEX identification marking without zone separation	Ⓔx II 1 G Ex ia IIB T4 Ga Ⓔx II 1 D Ex ia IIIB T130 °C Da
ATEX identification marking with zone separation	Ⓔx II 1/2 G Ex ia IIB T4 Ga/Gb Ⓔx II 1/2 D Ex ia IIIB T130 °C Da/Db
Further approvals	cULus, IC, FCC
Transmission frequency	868.4 MHz (Europe); 915 MHz (USA, Australia, Canada, New Zealand, and other countries); 10 frequencies can be configured in the 915 MHz frequency band
Transmission interval	Adjustable from 1 to 3600 s Default setting for basic type 902930/15, 902930/17, and 902930/55 = 20 s adjustable via DIP switch to 5 s, 10 s, 20 s, or 45 s
Open air range	Up to 300 m when using the antenna wall mounting holder for the receiver and 3 m antenna cable
Transmitter detection (transmitter ID)	Five-digit ID, set per default Customer-specific configuration also possible
Measurement input	Pt1000 according to DIN EN 60751, in three-wire circuit
Protection type	IP67 according to DIN EN 60529 (for basic type 902930/55 *)
Lithium battery	Voltage: 3.6 V; rated capacity: 2.2 Ah/1.7 Ah
Special features	- For mobile or stationary temperature measurement, wiring expenses are eliminated with modern wireless technology, fail-safe transmission with telegram coding

Product name	JUMO Wtrans receiver
Type	902931
Special feature	Receiver must be placed in non Ex area
Approval	cULus, IC, FCC
Input	Wireless signal from transmitters
Accuracy	0.1 %
Output	(0)4 to 20 mA 0 to 10 V relay
Frequency	868.4 (Europe)/ 915 MHz (USA/ Canada)
Range	Up to 300 m when using the antenna wall mounting holder for the receiver and 3 m antenna cable
Voltage supply	AC 110 to 240 V AC/DC 20 to 30 V

* Only with screwed-on machine connector M12 × 1

Industrial measuring probes for humidity and temperature

Product name	Intrinsically safe industrial measuring probe for humidity, temperature, and derived variables
Type	907025
ATEX identification marking	Ⓔx II 1 G EEx ia IIC T4 Ga Ⓔx II 1 D IP65 T=70 °C Da (with protective cover)
Measuring ranges	Humidity: 0 to 100 % RH Temperature: -40 to +180 °C (depending on the probe selected)
Output variables	RH + T, optionally rF + T + Td + a + Tw + x
Measuring output	4 to 20 mA, (optionally 2 channels)
Voltage supply	DC 15 to 28 V (via Zener barrier or [Ex i] supply isolator)
Design type/protection type	For wall mounting (907025/61), with small sensor head on 2 m sensor line (907025/63), with stainless steel sensor head on 2 m sensor line (907025/65), with pressure resistant stainless steel sensor head on 2 m sensor line for process pressures from 0 to 10 MPa (100 bar) (907025/64), with pressure resistant stainless steel sensor head on 2 m sensor line, for process pressures from 0 to 4 MPa (40 bar), sensor head with movable threaded fitting (907025/68)
Enclosure/protection type	G-AlSi10Mg/IP66 (NEMA 4X)
Humidity measurement method	Capacitive
Probes	Universally replaceable (without recalibration) All calibration coefficients are saved in the probe itself
Operating temperature (probe)	-40 to +60 °C (907025/61), -40 to +120 °C (907025/63) -40 to +180 °C (907025/65), -40 to +180 °C (907025/64) -40 to +180 °C (907025/68)
Application	Pharmaceuticals, petrochemicals, food
Special features	Second analog output 4 to 20 mA; housing with display/operator panel; extension: derived variables; probes with line length 2, 5, or 10 m; various protective filters and accessories

Process pressure transmitters

Product name	JUMO dTRANS p02 DELTA	JUMO dTRANS p02	JUMO dTRANS p20 DELTA
Type	404382	404385	403022
ATEX identification marking	Ex II 1/2G Ex ia IIC T6 Ga/Gb		Ex II 1G Ex ia IIC T4 Ga Ex II 1D Ex ia IIIC T105 °C Da
Further approvals	–		SIL 2
Measuring range (measuring span) min./max.	Differential pressure 60 mbar/25 bar	Relative, absolute 100 mbar/600 bar	Differential pressure 10 mbar/600 bar
Accuracy	0.1 %		0.07 %
Measuring output	4 to 20 mA (two-wire), additionally HART®		4 to 20 mA (two-wire), additionally HART®
Voltage supply	DC 11.5 to 36 V		DC 11.5 to 36 V
Ambient temperature	–50 to +85 °C		–50 to +85 °C
Design type/protection type	IP65 field housing according to EN 60529, aluminum		IP67 field housing according to EN 60529, stainless steel
Process connection	2 × ¼-18NPT internal thread or with pressure separator	Various threads or front-flush connections	2 × ¼-18NPT internal thread or with pressure separator
Electrical connection	Cable fitting		Cable fitting or round plug M12 × 1
Medium temperatures	Max. 100 °C	Max. 120 °C Optional max. 200 °C	Max. 110 °C
Application	Level, flow, process pressure	Level, process pressure	Level, flow, process pressure
Special features	Various accessories, complete selection of diaphragm seals, programming via keypad/LCD display or PC setup program	Pressure connection also front flush, various accessories, complete selection of diaphragm seals, programming via keypad/LCD display or PC setup program	Various accessories, complete selection of pressure separators, programming via rotary knob/ LCD display or PC setup program



Product name	JUMO dTRANS p20 DELTA Ex d	JUMO dTRANS p20	JUMO dTRANS p20 Ex d
Type	403023	403025	403026
ATEX identification marking	Ex II 1/2G Ex d IIC T6 ... T4 Ga/Gb Ex II 2D Ex t IIIC T105 °C Db	Ex II 1/2G Ex ia IIC T6 ... T3 Ga/Gb II 1/2D Ex ia IIIC T105 °C Da/Db	Ex II 1/2G Ex d IIC T6 ... T4 Ga/Gb Ex II 1/2D Ex t IIIC T105 °C Da/Db
Further approvals	SIL 2	NEPSI, DNV GL, SIL 2	SIL 2
Measuring range (measuring span) min./max.	Differential pressure 10 mbar/100 bar	Relative/absolute 600 mbar/600 bar	
Accuracy	0.07 %	0.05 %	
Measuring output	4 to 20 mA (two-wire), additionally HART®		
Voltage supply	DC 11.5 to 36 V		
Ambient temperature	–50 to +85 °C		
Design type/ protection type	IP67 field housing according to EN 60529, stainless steel		
Process connection	2 × ¼-18NPT internal thread or with pressure separator	Various threads or front-flush connections	
Electrical connection	Cable fitting	Cable fitting or round plug M12 × 1	Cable fitting
Medium temperatures	Max. 110 °C	Max. 120 °C Optionally max. 200 °C	Max. 115 °C
Application	Level, flow, process pressure	Level, process pressure	
Special features	Various accessories, complete selection of pressure separators, programming via rotary knob/ LCD display or PC setup program	Pressure connection also front flush, various accessories, complete selection of pressure separators, programming via rotary knob/LCD display or PC setup program	

Pressure transmitters

Product name	JUMO MIDAS S21 Ex Pressure transmitter	JUMO dTRANS p33 Pressure transmitter
Type	404710	404753
ATEX identification marking	Ⓔx II 2G Ex ib IIC T6 ... T4 Gb	
	Ⓔx II 2D Ex ib IIIC T70 °C ... T100 °C Db	Ⓔx II 1/2 D Ex ia IIIC T60 °C ... T100°C
Further approvals	–	Met. certificate
Measuring range (measuring span) min./max.	Relative, absolute 0.25 to 100 bar	Relative, absolute 0.25/600 bar
Accuracy	0.3 %	0.5 %
Measuring output	4 to 20 mA (two-wire)	
Voltage supply	DC 16 to 28 V	DC 11 to 28 V
Ambient temperature	-40 to +85 °C	
Design type/ protection type	Stainless steel case IP65 according to EN 60529	
Process connection	Various threads or front-flush connections	
Electrical connection	Attached cable, M12	Cable socket, attached cable, M12, terminal head
Medium temperatures	-40 to +85 °C	-40 to +85 °C Optionally -40 to +200 °C
Application	Process pressure, level	
Application	Oil, fuel, natural gas, painting plants/robots, process engineering, chemistry	Hygienic applications in the food and pharmaceutical industry

Level probes

Product name	JUMO dTRANS p33 Level probe	MAERA S29 SW Level probe
Type	404753	404393
ATEX identification marking	Ⓔx II 2G Ex ia IIC T6 ... T4 Gb Ⓔx II 1G Ex ia IIB T6 ... T4 Da	II 2G Ex ib IIC T6 ... T4 Gb II 2D Ex ib IIIC T70 °C ... T100 °C Db
Further approvals	Met. certificate	DNV GL
Measuring range (measuring span) min./max.	Relative 0.25/10 bar	Relative, absolute 0.1/10 bar
Accuracy	0.5 %	0.3 %
Measuring output	4 to 20 mA (two-wire)	
Voltage supply	DC 11 to 28 V	DC 16 to 28 V or DC 21 to 24 V
Ambient temperature	0 to 50 °C	
Design type/ protection type	Stainless steel case IP68 according to EN 60529	Titanium case IP68
Process connection	Threads, open or closed system	G1/2" front-flush with protective cap
Electrical connection	Attached cable made from PE; cutting ring fitting for protection tube	Attached cable made from FEP
Medium temperatures	0 to 50 °C	
Application	Level	
Special features	Connection to protection tube for zone 0	–
Applications	All level applications in the Ex area	Ballast tanks in the shipbuilding industry, wastewater in splash water containers, swimming pool technology in mediums containing chloride

Float switches and level transmitters

Product name	JUMO NESOS R01 LS und JUMO NESOS R02 LS Float switch in miniature and standard version	JUMO NESOS R20 LT Level transmitter using a float
Type	408301/02	408320
Identification marking according to ATEX/IECEx	ATEX, IECEx	
Further approvals	EAC, DNV GL	EAC, DNV GL
Temperature sensor (optional)	●	● (also available as temperature transmitter)
Temperature switch (optional)	● (Not 408301)	●
Guide tube length (max.)	30 to 500 mm 100 to 4000 mm	100 to 4200 mm
Guide tube diameter	408301: 8 mm 408302: 14 mm or 16 mm	12 mm or 14 mm
Medium temperature	-52 to +240 °C	-52 to +180 °C
Sensor	Reed contact	Reed chain
Accuracy	± 2 mm (switching point)	Up to 5.5 mm (resolution)
Output signals	Up to 5 switching contacts	4 to 20 mA Resistance value, potentiometric
Switching function	SPST-NO, N/O contact; SPST-NC, N/C contact; SPDT-CO, changeover contact; SPST-NO, N/O contact bistable	–
Parts in contact with medium	Stainless steel AISI 316; optionally titanium, HASTELLOY®-C	Stainless steel AISI 316; optionally titanium, HASTELLOY®-C
Process connection	Thread, flange	Thread, flange
Electrical connection	Cable, cable with connector, line socket, round plug M12 × 1, connection housing	Cable, connection housing

Product name	JUMO NESOS R04 Float switch in curved version	JUMO NESOS R40 Horizontal float switch
Type	408304	408340
ATEX/IECEx identification marking	ATEX, IECEx	
Further approvals	DNV GL, EAC	EAC
Temperature sensor (optional)	●	●
Temperature switch (optional)	●	●
Guide tube length (max.)	Horizontal 40 to 200 mm, vertical 50 to 2000 mm	1 m
Guide tube diameter	8 mm or 12 mm	
Medium temperature	-52 to +240 °C	
Sensor	Reed contact	
Accuracy	± 2 mm (switching point)	–
Output signals	Up to 4 switching contacts	2 switching contacts
Switching function	SPST-NO, N/O contact; SPST-NC, N/C contact; SPDT-CO, changeover contact; SPST-NO, N/O contact bistable	SPST-NO, N/O contact; SPDT-CO, single pole changeover contact;
Parts in contact with medium	Stainless steel AISI 316; optionally titanium, HASTELLOY®-C	Stainless steel AISI 316
Process connection	Thread, flange	
Electrical connection	Cable, cable with connector, line socket, round plug M12 × 1, connection housing	

Automation

Automation and monitoring

Life in our modern industrial society is shaped by the rapid progress of technology. Each step of progress requires an increase in safety at the same time. Explosion hazards exist in many industries, not just in the petrochemicals sector. These industries in particular must make selective use of explosion-protected products and perform associated measures because of the seriousness of possible accidents. Here, JUMO offers innovative products which reliably monitor machines and plants.

To be able to reach the full potential of your core expertise in mechanical and plant engineering efficiently, you need an expert partner to cover the safety-relevant aspects of measurement and control technology – including explosion protection. Always in touch with the latest trends, we develop and produce a range of products to cover all requirements placed on modern explosion-protected measurement and control technology. Our expertise lies in controlling and regulating electrical energy in potentially explosive environments. JUMO products reflect the latest state of the art. They stand for safety, reliability, and innovation in a challenging market that is constantly changing with new requirements. Extensive quality control measures also ensure the high standard of our products. This process demonstrates time and again: our products always measure and control thermal processes reliably, even under extreme environmental conditions.
Continuous contact with customers who use our products

Maximum plant availability and optimum process reliability

allows us to respond to new demands with pinpoint accuracy in a challenging business segment. This way we can supplement our products with custom-fit new developments.

Temperature transmitters

Product name	JUMO dTRANS T06 Ex	JUMO dTRANS T01 Ex	JUMO dTRANS T01 HART®/Ex
Type	707075	707015	707016
Identification marking according to ATEX	Ⓔx II (1) G [Ex ia Ga] IIC Ⓔx II (1) D [Ex ia Da] IIIC	Ⓔx II 1G Ex ia IIC T6	Ⓔx II 1G Ex ia IIC T6/T5/T4 Ⓔx II 2G Ex ia IIC T6/T5/T4
IEC Ex identification marking	[Ex ia Ga] IIC [Ex ia Da] IIIC	Ex ia IIC T6...T4 Ga	–
Further approvals	Met. certificate, SIL 2 and PL c	–	–
Inputs	RTD temperature probe in two-wire, three-wire, and four-wire circuit; thermocouple, double thermocouple; resistance transmitter; resistance/ potentiometer in two-wire, three-wire, and four-wire circuit; voltage 0 to 1(10) V; current 0(4) to 20 mA	Thermocouple: type "L", "J", "U", "T", "K", "E", "N", "S", "R", "B", "D", "C", Pt100, Pt500, Pt1000, Ni100, Ni500, Ni1000, in two-wire, three-wire, or four-wire circuit	
Outputs	Voltage DC 0(2) to 10 V, current DC 0(4) to 20 mA, RS485 interface	4 to 20 mA	
Voltage supply	DC 24 V +10/-15 %	DC 8 to 30 V	DC 11.5 to 30 V
Operating temperature	-10 to +70 °C	-40 to +85 °C	
Storage temperature	-20 to +80 °C	-40 to +100 °C	
Housing width	22.5 mm	∅ 44 mm	
Protection type	IP20 according to EN 60529	IP54 in the terminal head, open mounting IP00 according to EN 60529	
Mounting site	Outside the Ex area	In the Ex area	
Transmission behavior	Temperature-linear, customer-specific linearization		
Operation	Intuitive operation and configuration on the device or through USB interface via setup program	Completely configurable via setup program	Completely configurable via setup program with HART® modem
Special features	Use of the sensor up to Ex zone 0, SIL 2 (hardware) and SIL 3 (software), min./max. drag indicator, operating hours counter, output simulation	Flexible application possibilities with free configuration and galvanic isolation, output simulation	Communication in Ex area via HART® communicator

Two-channel temperature transmitters

Product name	JUMO dTRANS T07 B Ex JUMO dTRANS T07 B Ex SIL	JUMO dTRANS T07 T Ex JUMO dTRANS T07 T Ex SIL
Type	707085, 707086	707087, 707088
Identification marking according to ATEX	Ⓔx II1G Ex ia IIC T6...T4 Ga Ⓔx II2G Ex ia IIC T6...T4 Gb	Ⓔx II2(1)G Ex ib [ia Ga] IIC T6...T4 Gb
Identification marking according to IECEx	Ⓔx ia IIC T6...T4 Ga Ⓔx ia IIC T6...T4 Gb	Ⓔx ib [ia Ga] IIC T6...T4 Gb
Further approvals	cULus, SIL 2/SIL 3 (hardware/software) according to IEC 61508	
Inputs	2 sensor inputs for RTD temperature probes Pt50, Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Cu50, Cu100 in two-wire, three-wire, and four-wire circuit or thermocouples A, B, C, D, E, J, K, L, N, R, S, T, U	
Outputs	4 to 20 mA	
Voltage supply	DC 12 to 32 V	
Operating temperature	Max. -40 to +85 °C (depending on the version and Ex zone)	-40 to +46 °C (zone 1; T6) -40 to +61 °C (zone 1; T5) -40 to +85 °C (zone 1; T4)
Storage temperature	-50 to +100 °C	-40 to +100 °C
Housing width	Ø 44 mm	17.5 mm
Protection type	IP66/67 (in the field housing)	IP20
Mounting site	In terminal head, form B	On mounting rail/DIN rail 35 × 7.5 mm
Transmission behavior	Temperature-linear, resistance-linear, voltage-linear	
Operation	Via HART® modem with JUMO DTM or HART® communicator with JUMO DD	
Display	Optional attachable display for measured value indication	–
Special features	2 universal measurement inputs (RTD, TC, Ω, mV), high degree of accuracy (0.1 K with Pt100 sensor), output 4 to 20 mA (one-channel loop powered), HART® 7 protocol, HART® communication sockets on the front, SIL 2/SIL 3 (hardware/software) according to IEC 61508, reliable measuring mode due to sensor monitoring and device hardware error detection	

Temperature transmitters




Product name			JUMO dTRANS T08 01 Eco thermocouple transmitter (J, K)	JUMO dTRANS T08 02 Eco transmitter (Pt100)	JUMO dTRANS T08 11 Thermocouple transmitter (J, K)	JUMO dTRANS T Transmitter (Pt1
Type			707101	707102	707111	707112
ATEX/IECEx identification marking			Ⓔx II 3 G Ex nA IIC T4 Gc			
Input	Thermo-couple	J and K	●		●	
		Int. CJC	●		●	
		Ext. CJC			●	
	Pt100	Two/three/ four wire		●		●
Output (current or voltage)	Current	Active	0(4) to 20 mA			
		Passive	–	–	–	–
	Voltage		0(1) to 5 V; 0(2) to 10 V	0(1) to 5 V; 0(2) to 10 V	0(1) to 5 V; 0(2) to 10 V	0(1) to 5 V; 0(2) to 10 V
Front LED			●	●	●	●
Power supply			24 V DC, ±30 %		V DC, ±30 %; also via bus bar	
Isolation			–	–	2500 V	
Accuracy			<0.1 % in all available areas under <1 °C	<0.1 % in all available areas or <0.2 °C	<0.05 % in all available areas or <0.5 °C	<0.05 % in all av areas or <0.1 °C

* You can find further information in the respective data sheets

**Only configurable with control panel BD 08 14 and docking station DS 08 14; input also configurable for 0 to 10 V, 0 to 20 mA, potentiometer 10 Ω to 100 kΩ

T08 12 00)	JUMO dTRANS T08 13 HART® transmitter (Pt100, J, K)	JUMO dTRANS T08 14** Universal transmitter	JUMO dTRANS T08 31 Two-wire transmitter (Pt100, J, K)	JUMO dTRANS T08 33 Two-wire transmitter (Pt100)	JUMO dTRANS T08 37 Two-wire HART® transmitter (Pt100, J, K)
	707113	707114	707131	707133	707137
	●	J and K; additionally B, E, J, K, L, N, R, S, T, U, W3, W5, LR	●		●
	●	●	●		●
	●	●	●		●
	●	Such as Pt100, Pt500, Pt1000	●	●	●
	4 to 20 mA; 20 to 4 mA (HART® 7)	0 to 20 mA; 4 to 20 mA; 20 to 0 mA; 20 to 4 mA			
	–	–	4 to 20 mA; 20 to 4 mA		4 to 20 mA; 20 to 4 mA (HART® 7)
	–	0(0.2) to 1 V; 0(1) to 5 V; 0(2) to 10 V; 1 to (0.2)0 V; 5 to (1)0 V; 10 to (2)0 V	–	–	–
	●	●	–	–	–
			Loop power supply (5.5 to 35 V DC)	Loop power supply (3.3 to 35 V DC)	Loop power supply (6.2 to 35 V DC)
				–	2500 V
vailable C	<0.05 % in all available areas or <0.1 °C	<0.1 % in all available areas	<0.05 % in all available areas or <0.1 °C	<0.1 % in all available areas or <0.2 °C	<0.05 % in all available areas or <0.1 °C

Signal and isolating converters




Product name			JUMO dTRANS S08 03 Signal isolator (mA)	JUMO dTRANS S08 04 Signal converter (V, mA)/supply isolator	JUMO dTRANS S08 05 Eco signal converter (V, mA)	JUMO dTRANS Signal isolator/ (mA)
Type			707203	707204	707205	707208
ATEX/IECEx identification marking			Ⓔx II 3 G Ex nA IIC T4 Gc			
Input	Current	Active	0 to 23 mA	0 to 20 mA; 4 to 20 mA		0 to 23 mA
		Passive	–	4 to 20 mA (supply isolator)	–	–
	Voltage		–	0(1) to 5 V; 0(2) to 10 V		–
	Bipolar		–	–	–	–
Output	Current	Active	0 to 23 mA	0(4) to 20 mA		0 to 23 mA
		Passive	–	–	–	–
	Voltage		–	0(1) to 5 V; 0(2) to 10 V		
	Splitter 1 input – 2 outputs					●
Front LED			●	●	●	●
Power supply			V DC, ±30 %; also via bus bar			
Isolation			2500 V			

* You can find further information in the respective data sheets

** Also available in two-channel version (S08 85A2)

*** Also available in two-channel version (S08 86A2 and S08 86B2)

S08 08 splitter	JUMO dTRANS S08 09 Signal converter (V, mA)/ supply isolator/splitter	JUMO dTRANS S08 17 Bipolar signal converter/isolator	JUMO dTRANS S08 18 Bipolar signal converter/splitter	JUMO dTRANS S08 85 Loop powered signal isolator	JUMO dTRANS S08 86 Two-wire transmitter signal amplifier or isolation amplifier
	707209	707217	707218	707285 **	707286 ***
	0 to 20 mA; 4 to 20 mA	±10 mA; ±20 mA		0 to 23 mA	3.5 to 23 mA (type S08 86B1 and S08 86B2)
	4 to 20 mA (supply isolator)	–	–	–	3.5 to 23 mA (type S08 86A1 and S08 86A2)
	0(1) to 5 V; 0(2) to 10 V	±5 V ±10 V		–	–
	–	●	●	–	–
	0(4) to 20 mA		0(4) to 20 mA; bipolar wiring: ±10 mA, ±20 mA	0 to 23 mA	–
	–	–	–	–	3.5 to 23 mA
	0(1) to 5 V; 0(2) to 10 V			–	–
	●		●		
	●	●	●		
				Loop powered input	Loop powered output (6.0 to 35 V DC)

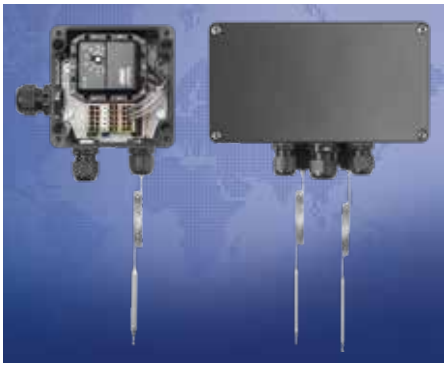
Safety temperature limiters/monitors and two-state controllers

Product name	JUMO safetyM STB/STW Ex	JUMO exTHERM-DR
Type	701155	701055
ATEX/IECEx identification marking	One sensor variant Ⓔx II (1) (2) (3) G (b1) [Ex ia Ga] [e pz] IIC Ⓔx II (1) (2) (3) D (b1) [Ex ia Da] [p Dc] IIIC Two sensor variant Ⓔx II (1) (1) (2) G (b2) [Ex ia Ga] [e py] IIC Ⓔx II (1) (1) (2) D (b2) [Ex ia Da] [p Db] IIIC Ⓔx II (2) G [Ex eb Gb] IIC resp. Ex II (2) G [Ex db Gb] IIC Ⓔx II (2) D [Ex tb Ob] IIIC	Ⓔx II (1) G [Ex ia Ga] IIC Ⓔx II (1) D [Ex ia Da] IIIC Ⓔx Ex II (2) G [Ex eb Gb] IIC Ⓔx Ex II (2) D [Ex tb Db] IIIC
Further approvals	DNV GL, DIN, DGRL, SIL 3, PL e, IPL 2	–
Analog inputs	Thermocouple: type “L”, “J”, “U”, “T”, “K”, “N”, “S”, “R”, “B”, “D”, RTD temperature probe: Pt100, Pt1000, current (4 to 20 mA) freely configurable	
Analog outputs	0 to 20 mA, 4 to 20 mA, 2 to 4 V, 0 to 10 V can be used as actual value output for main measured value, measured value 1, 2, differential	0 to 20 mA, 4 to 20 mA, 2 to 10 V, 0 to 10 V; analog output can be configured as process value, setpoint, or logic output 0/10 V
Digital input	One floating contact for unlocking, keyboard lock, level inhibit	
Relay outputs	KV – can be used as pre-alarm Alarm – limit alarm evaluated for temperature limiter	2 limit value alarms, 1 as control output
Voltage supply	AC/DC 20 to 30 V, 48 to 63 Hz, AC 110 V 240 V +10 %/-15 %, 48 to 63 Hz	
Protection type	IP20 according to EN 60529	
Mounting site	Outside the Ex area	
Operation	LCD display for plain text display	

[Ex i] supply isolating amplifier and [Ex i] isolating switch amplifier

Product name	JUMO Ex-i repeater power supply/ input isolating amplifier	JUMO Ex-i isolating switch amplifier
Type	707530	707540
ATEX identification marking	⟨Ex⟩ II (1) G [Ex ia Ga] IIC/IIB ⟨Ex⟩ II (1) D [Ex ia Da] IIIC ⟨Ex⟩ II 3 (1) G Ex nA [ia Ga] IIC/IIB T4 Gc	Ex II (1) G [Ex ia Ga] IIC Ex II (1) D [Ex ia Da] IIIC Ex II 3 (1) G Ex ec nC [ia Ga] IIC T4 Gc Ex I (M1) [Ex ia Ma] I
Further approvals	SIL, UL, ATEX	SIL, UL, ATEX, IECEx, DNV GL,
Input	0 to 20 mA or 4 to 20 mA	2 channel version, intrinsically safe, designed for ignition protection type Ex i [Ex ia]; NAMUR proximity sensors according to EN 60947-5-6; unconnected switching contacts (not for safety-related applications, SIL 2); switching contacts wired for resistance
Output	0 to 5 V, 1 to 5 V, 0 to 20 mA, 4 to 20 mA (active/passive)	2 relay outputs, 1 changeover contact per channel
Voltage supply	AC/DC 24 to 230 V	
Operating temperature	-20 to +60 °C	-40 to +60 °C
Storage temperature	-40 to +80 °C	
Housing width	17.5 mm	
Protection type	IP20 according to EN 60529	
Mounting site	Outside the Ex area	Installation in zone 2 possible
Transmission behavior	Linear	Switching frequency, maximum 20 Hz (load-dependent)
Configuration	Via DIP switch on the device	
Special features	HART® capable, wide range power supply, galvanic three-way isolation	Use of the sensor up to Ex zone 0, galvanic three-way isolation, 2 channels, wide range power supply, line fault detection (line break, short circuit), phase reversal option (switching output)

Electromechanical thermostats, contact dial thermometers, and bimetal switches



Product name	JUMO exTHERM-AT Explosion-protected surface-mounted thermostat
Type	605055
ATEX/IECEx identification marking	Ⓔx II 2G Ex d e IIC T4/T5/T6 Gb Ⓔx II 2D Ex tb IIIC T85 °C/T100 °C/T130 °C Db
Further approvals	SIL 2
Control ranges	Available from -50 to +500 °C
Operating temperature	-55 to +70 °C
Switching capacity on the N/C contact	AC 230 V, 16(2.5) A, cos φ = 1(0.6) optionally AC 400 V, 16 A optionally AC 230 V, 25(4) A, cos φ = 1(0.6)
Switching function	Temperature monitor, safety temperature monitor, safety temperature limiter
Probe diameter	4 to 6 mm
Capillary length	Up to 5000 mm possible
Protection type	IP65 according to EN 60529
Housing material	Polyester (reinforced) stainless steel (optional)
Special feature	Thermowells for zone isolation type 605057

Product name	Bimetal temperature switch	Contact dial thermometer
Type	608301	608520
ATEX identification marking	For use only in combination with an [Ex i] switching amplifier in zone 2/22	
Further approvals	–	Met. certificate
Control ranges	70 to 140 °C	
Operating temperature	120 °C	
Switching capacity on the N/C contact	Switching capacity depends on the [Ex i] switching amplifier type	
Probe diameter	11.5 mm (standard)	
Protection type	IP67 (standard)	

Accessories: thermowells

Product name	Thermowell
Type	605057
ATEX identification marking	Ⓔx II 1/2 G Ex Ga Ⓔx II 1/2 D Ex Da
Material	CrNi 1.4571
Version	Screw-in Weld-in
Pipe diameter	10 × 1.5 mm
Insertion lengths	100 to 500 mm

JUMO Safety Performance – the compact solution for functional safety

JUMO Safety Performance is a new brand from JUMO. Products marked with this brand are suitable for safety-related plants. Included here are devices that are SIL and PL certified, but also passive elements that are suitable for use in SIL and PL measuring chains. These are labeled with "SIL qualified" and "PL qualified".

The configuration of the components that has been especially adjusted to the process is important for a process-reliable application at the customer's site. The JUMO Safety Performance team of experts was created to assist users with all questions about SIL and PL.

SIL classifications of the compact solution

Based on decades of experience in temperature measurement technology and safety controllers, JUMO has already developed a safety-related compact solution for the temperature measurand which does not require further verifications or calculations. Here, the JUMO safetyM STB/STW is combined with JUMO RTD temperature probes or thermocouples. The manufacturer's declaration issued by JUMO establishes a certified SIL 3 or PL e compact solution. Compact solutions for the measurands pressure and level can be designed up to SIL 2 or PL d depending on the choice of sensor technology and actuators.

Advantages of the new JSP (JUMO Safety Performance) brand

- Certified measuring chain protection up to SIL 3 or PL e possible
- Highest degree of flexibility for the configuration of the SIL components through comprehensive delivery program
- Safe monitoring and shutoff of systems
- Suitable for different measurands such as temperature, pressure, and level
- SIL calculation is no longer necessary by the user when the JUMO safetyM is used in combination with JUMO temperature probes
- Also available as explosion-protected compact solution according to ATEX directive in the different ignition protection types such as [Ex ia] and [Ex e]

JUMO SAFETY PERFORMANCE SIL PL

Functional Safety – Hassle-Free!

Safety-related switch-off up to SIL 3 in ATEX version (ignition protection type [Ex ia] and [Ex e])

Certified compact system for temperature

JUMO thermocouples/
RTD temperature probes

JUMO safetyM STB/STW Ex, [Ex ia]
Type 701155

Manufacturer's declaration

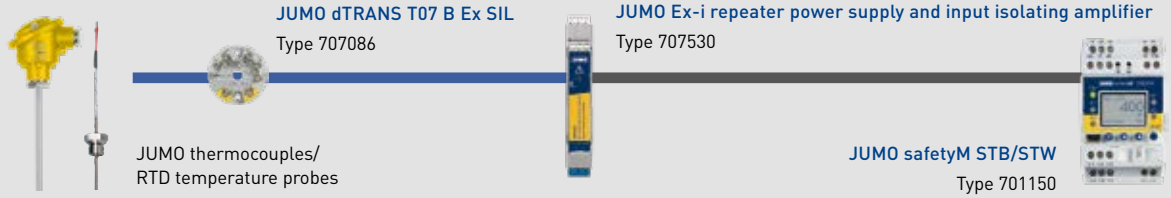
Certified compact system for temperature

JUMO thermocouples/
RTD temperature probes

JUMO safetyM STB/STW Ex, [Ex e]
Type 701155

Manufacturer's declaration

Compact system for temperature



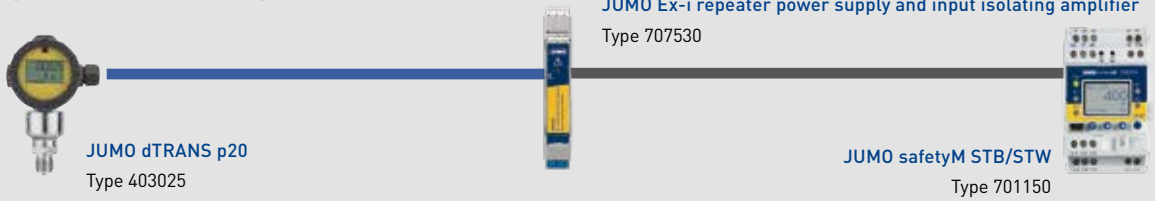
JUMO dTRANS T07 B Ex SIL
Type 707086

JUMO thermocouples/
RTD temperature probes

JUMO Ex-i repeater power supply and input isolating amplifier
Type 707530

JUMO safetyM STB/STW
Type 701150

Compact system for pressure



JUMO dTRANS p20
Type 403025

JUMO Ex-i repeater power supply and input isolating amplifier
Type 707530

JUMO safetyM STB/STW
Type 701150

General comment:

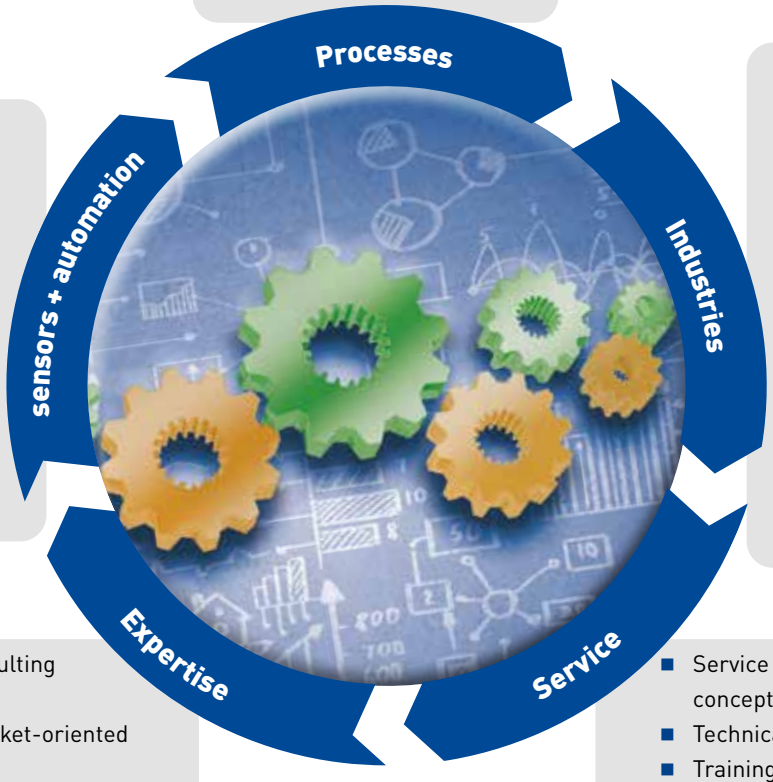
- The JUMO safetyM STB/STW has an output signal to control the downstreamed safety actuator systems.
- Additional output signal suitable for downstreamed visualization, controlling, and documentation.

* Auxiliary energy for power supply is required separately.

JUMO Engineering – system solution

JUMO Engineering, the service area from JUMO GmbH & Co. KG, combines expertise and industry-specific experience in one team. Our engineers and technicians develop customized solutions that are strictly based on your specific requirements. The JUMO Engineering team strongly believes in personalized support and consulting for its customers – from initial contact and the development of a customized solution to its series production. When carrying out the many different industry applications we always strive for optimum results with maximum customer benefits. Our innovative engineering services allow us to achieve this goal.

- Project management
- Feasibility analysis
- Product requirements specifications
- Project planning
- Startup
- Training



- Control
- Recording
- Monitoring
- Automation
- Pressure
- Humidity
- Flow
- Level
- Analytical measurement technology
- Temperature

- Renewable energy
- Mechanical engineering
- Pharmaceutical engineering
- Chemical industry
- Water and wastewater engineering
- Industrial furnace construction
- Food technology
- Railway technology
- Shipbuilding
- Heating and air-conditioning industry

- Personalized consulting and support
- Individual and market-oriented solutions
- Wide range of technologies
- Decades of experience

- Service and maintenance concepts
- Technical support
- Training courses and workshops
- Implementation concepts
- On-the-job training

Innovative system solutions which specific expertise

We always draw on the feedback from our customers around the world to improve our products. This strategy is reflected in our new developments. We view complex tasks as challenges that allow us to develop tailored solutions for you and at the same time improve our product portfolio. JUMO Engineering with its range of services completes this comprehensive approach.

Our services

- Feasibility analysis
- Creating a technical concept including product requirements specification and specification sheet
- Complete project planning and documentation
- Project planning including PLC programming, visualization, network technology, etc.
- Continuous project management
- On-site startup
- Training and support

Your advantages

- As a central contact partner JUMO develops technical system solutions
- Extensive expertise with all measurement and automation devices
- Global support through experienced specialists
- A flexible, tailored solution to suit your individual needs and application

In a nutshell

- Precise and prompt communication channels:
  This saves you time and prevents mistakes!
- Highly developed expertise for maximum flexibility:
  For fully reliable and secure project planning!
- Technology that has proven itself over decades reduces downtimes:
  For excellent plant availability and process reliability!

www.jumo.net

PR 00030 EN/00342341/V4