



More than **sensors + automation**



Pressure

Innovative solutions for the highest requirements



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Dear Reader,

Sensor technology is one of our core areas of expertise. This is particularly so for pressure-sensor technology. After all, we produce both the pressure sensors and the pressure electronics ourselves. The high quality of our products is the result of more than 30 years of knowledge and experience – and the motivation to continually improve ourselves.

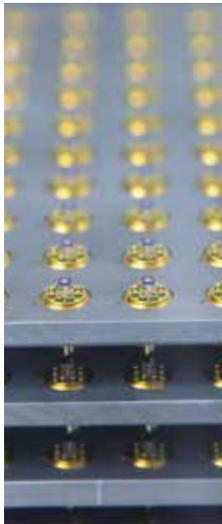
We attach just as much importance to new developments as we do to the continuous improvement of existing products. At the same time, we continuously streamline our production methods to ensure that we can stay competitive and flexible. As a universal supplier for all industrial sectors, JUMO develops standard devices and customized versions both in small and large quantities with the same diligence and commitment.

Why is this diversity so important to us? Because we do not only want to be among the best in Germany but also in all other markets throughout the world. As a result, we make sure that all our products meet the current standards, directives, and laws.

This brochure provides an overview of JUMO's extensive range of products for pressure measurement technology. In addition, we would be happy to work with you to attain solutions that are tailored to your specific requirements. We look forward to hearing from you.

Further information about our products can be found at www.jumo.net using the specified type designation or data sheet number.

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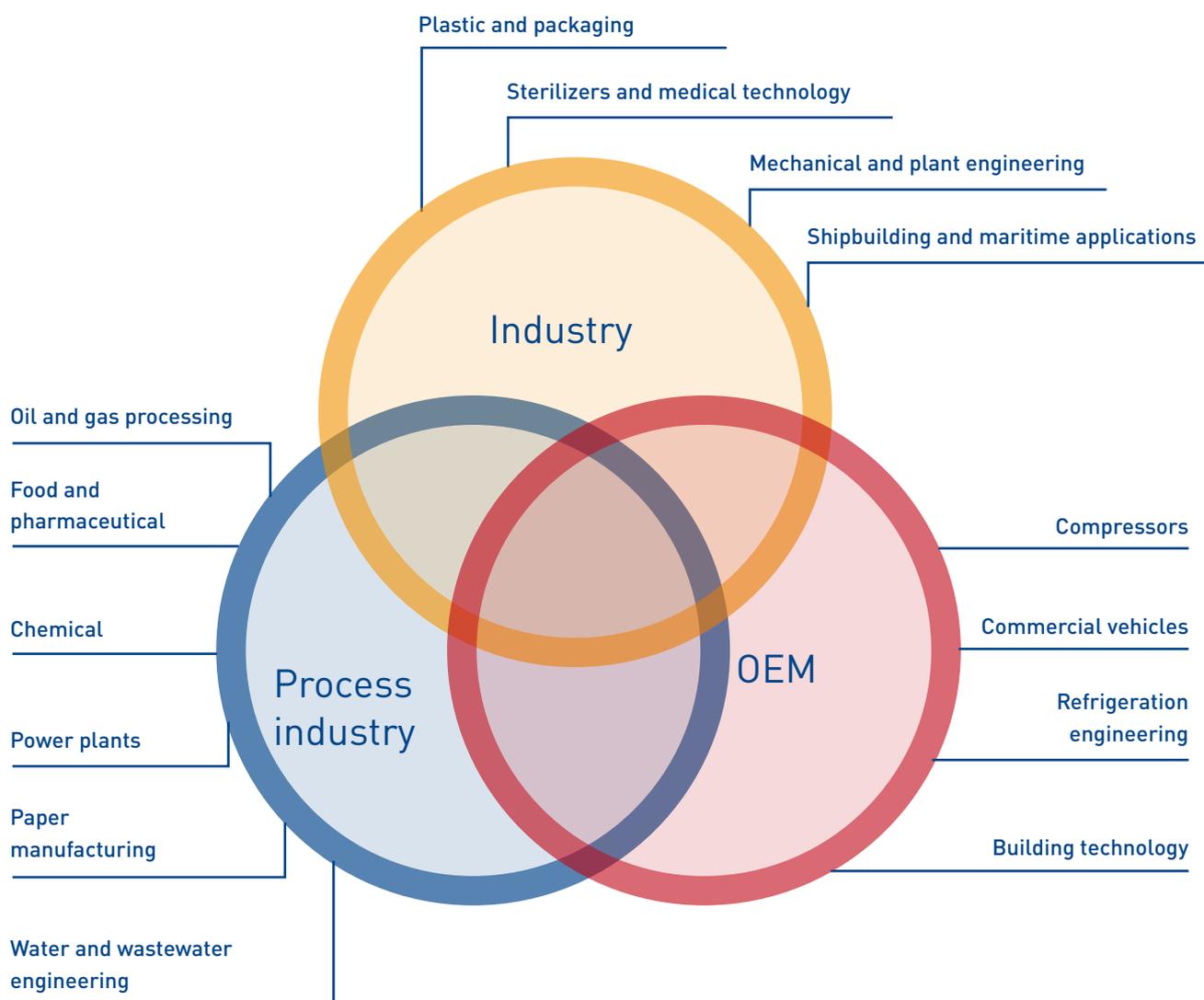


Pressure measurement

Pressure measurement is one of the most important tasks in almost all industrial sectors. High-quality pressure measuring devices ensure reliable and safe measuring results. JUMO supplies precision solutions for the process industries, hygienic solutions for the food and pharmaceutical industry, universal solutions for mechanical and plant engineering, large quantities for the OEM market, and even modules for its competitors. JUMO can also provide the right solution for your specific application.

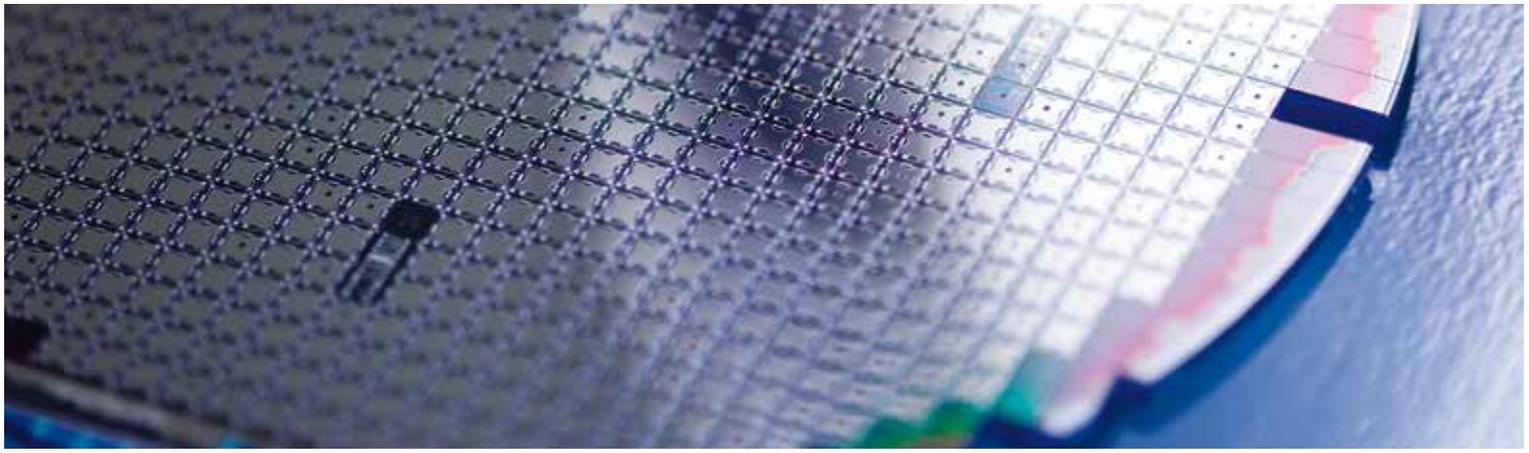


The industries



The right solution for every task: the wide range of our portfolio allows us to offer the perfect sensors for mechanical and plant engineering, the process industry, and the OEM sector.

In addition to the standard devices, JUMO offers individual customer-specific versions for special applications.



JUM0 sensor and measuring system production

Due to our modern production lines, many years of experience, and a huge variety of manufacturable sensor technologies we can offer maximum quality and flexibility with pressure sensors and measuring systems designed and patented by us.



JUMO sensor and measuring system production



Working in a clean room
for pressure sensors



Production:
Silicon pressure sensors



Production:
Ceramic pressure sensors

Quality through attention to detail

Our products set the benchmark for precision. This quality results from the extensive experience of our highly qualified staff as well as close cooperation with our customers 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 safeguard our manufacturing process with the very latest production lines and finally subject each device to a 100 % final inspection.

Flexibility

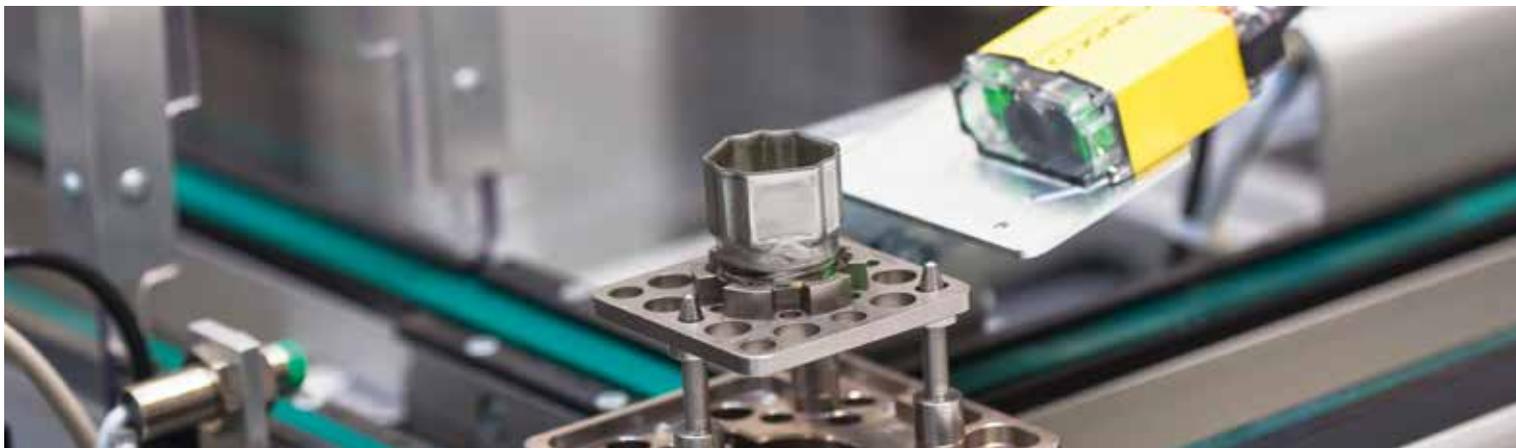
JUMO develops, tests, and manufactures new products or customer-specific versions internally. Our high degree

of vertical integration enables the protection of the quality process and leads to increased flexibility, enabling us to give special consideration to customer requirements and application-orientated conditions.

Diversity and expertise

Even the sensor itself – the basis of any pressure measuring device – can be individually adapted to your applications and requirements. You can choose between different measuring systems such as silicon piezoresistive, metal thin film, ceramic thick film, or ceramic capacitive as well as additional selection criteria such as size and materials.

Our sensors are available in various configuration levels as modules or in complete devices.



JUMO MIDAS series

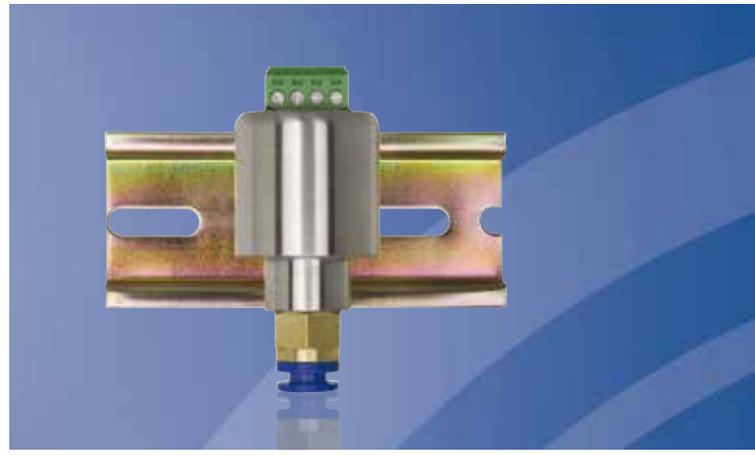
Pressure transmitters of the MIDAS series are the ideal solution if you are looking for a reliable, compact measuring system that offers long-term stability and excellent value for the money. Fully automatic production lines and a final 100 % inspection ensure the high quality of this series. The extensive spectrum of measuring ranges, process connections, and electrical connections allows optimum adaptation to every measuring task.



OEM pressure transmitter series JUMO MIDAS



OEM pressure transmitter	Basic	Universal	Low pressure	Standard	
Type/data sheet designation	401002 JUMO MIDAS C08	401010 JUMO MIDAS S05	401011 JUMO MIDAS S06	401006 JUMO MIDAS SI	
Application	Facility management	•			
	Industry	•	•	•	
	Air conditioning technology and refrigeration engineering		•	•	
	Compressors	•		•	
	Co-generation (combined heat and power)	•	•	•	
	Medical technology		•	•	
	Pneumatics	•			•
	Packaging and filling	•	•	•	•
	Wind power		•		
Technical data	Input	0 to 60 bar relative	0 to 100 bar relative 0 to 40 bar absolute	0.1 to 0.6 bar relative	0.25 to 1.6 bar relative 0.01 to 0.6 bar relative 0 to 25 bar absolute
	Measuring system	Thick film on ceramic bodies (piezoresistive)	Silicon sensor with stainless steel separating membrane		
	Medium temperature	-20 to +125 °C	-40 to +125 °C	-20 to +100 °C	-30 to +125 °C
	Accuracy (linearity)	0.25 %	0.2 to 0.3 %	0.2 to 0.3 %	0.3 %
	Output	4 to 20 mA two-wire, DC 0.5 to 4.5 V three-wire, DC 0 to 10 V three-wire, DC 1 to (5)6 V three-wire			4 to 20 mA two-wire, DC 0.5 to 4.5 V three-wire, DC 0 to 10 V three-wire, DC 1 to (5)6 V three-wire, DC 0 to 10 V three-wire
Process connection	All screw connections that are standard in the industry				



OEM pressure transmitter series JUMO MIDAS



	OEM pressure transmitter	Ship approval	Railway	High pressure	ATEX
	Type/data sheet designation	401021 JUMO MIDAS S07 MA	401008 JUMO MIDAS S19 R	401020 JUMO MIDAS H20 HP	404710 JUMO MIDAS S21 Ex
Application	Shipbuilding	•			
	Railway		•		
	Hydraulics			•	
	Industry			•	
	Compressors			•	
	ECE type approval			•	
	Wind power			•	
	ATEX, explosion protection				•
Technical data	Input	1 to 100 bar relative 1 to 25 bar absolute	2.5 to 60 bar relative 2.5 to 40 bar absolute	100 to 1000 bar relative	0.25 to 100 bar relative 0.6 to 25 bar absolute
	Measuring system	Silicon sensor with stainless steel separating membrane		Thin film sensor	Silicon sensor with stainless steel separating membrane
	Medium temperature	-40 to +125 °C	-40 to +125 °C	-40 to +125 °C	-40 to +85 °C
	Accuracy (linearity)	0.25 to 0.3 %	0.25 to 0.3 %	0.5 to 1 %	0.3 %
	Output	4 to 20 mA two-wire DC 0 to 10 V three-wire DC 1 to 5(6) V three-wire	4 to 20 mA two-wire	4 to 20 mA two-wire DC 0.5 to 4.5 V three-wire DC 0 to 10 V three-wire DC 1 to 5(6) V three-wire	4 to 20 mA two-wire
	Process connection	All screw connections that are standard in the industry			



	OEM pressure transmitter	Cabinet	Differential pressure	Seawater
Type/data sheet designation	401009 JUMO MIDAS DR		401050 JUMO MIDAS DP10	401012 JUMO MIDAS C18 SW
Application	Facility management		•	
	Industry	•	•	
	Air conditioning technology and refrigeration engineering		•	
	Compressors	•	•	
	Co-generation (combined heat and power)		•	
	ATEX, explosion protection			
	Medical technology			•
	Pneumatics	•		
	Packaging and filling			•
Water treatment				•
Technical data	Input	1.6 to 16 bar relative	0.4 to 16 bar DP	1.6 to 100 bar relative
	Measuring system	Thick film on ceramic bodies (piezoresistive)	Piezoresistive silicon sensor	Thick film on ceramic bodies (piezoresistive)
	Medium temperature	-15 to +60 °C	-15 to +100 °C	-20 to +125 °C
	Accuracy (linearity)	0.5 %		0.25 to 0.3 %
	Output	4 to 20 mA two-wire, DC 0 to 10 V three-wire, DC 0.5 to 4.5 V three-wire, DC 1 to 5(6) V three-wire		4 to 20 mA two-wire, DC 0 to 10 V three-wire
	Process connection	Push-in fittings for tube/hose	Rp 1/8 internal thread, push-in fitting for tube/hose	All screw connections that are standard in the industry



JUMO dTRANS p30 series

Our JUMO dTRANS p30 series impresses with its flexibility. Its universal use is reflected in the large selection of measuring ranges, process connections, and electrical connections. The front-flush, sealless measuring system and the high temperature variant for use in media with temperatures of up to 200 °C allow this series to meet the requirements of hygienic applications. This flexible series also has a variation with explosion protection so that virtually all application areas are covered.



Process pressure transmitter series JUMO dTRANS p30



	Pressure transmitter	Standard	High temperature	Gases	EX version	Small ranges
	Type/data sheet designation	404366 JUMO dTRANS p30	402050 JUMO dTRANS p31	402051 JUMO dTRANS p32	404753 JUMO dTRANS p33	404327 JUMO dTRANS ceramic
Application	Biogas plants	•				•
	Chemical industry	•	•			•
	Compressed air control	•		•		
	Food and pharma industry	•	•		•	•
	HVAC technology	•		•		
	Industry, universal	•			•	
	Laboratory technology	•		•		
	Medical technology	•	•			•
	Clean room technology			•		
	Sterilization/ autoclaving		•			
Technical data	Input	250 mbar to 600 bar relative, absolute	1 to 60 bar relative, absolute	40 to 600 mbar relative	250 mbar to 600 bar relative, absolute	50 mbar to 1 bar relative
	Medium temperature	-30 to +120 °C	-30 to +200 °C	-30 to +120 °C	-40 to +200 °C	-20 to +80 °C
	Accuracy (linearity)	0.2 to 0.5 %		0.5 %		0.2 %
	Output	4 to 20 mA two-wire, 0(4) to 20 mA three-wire, DC 0.5 to 4.5 V three-wire, DC 0 to 10 V three-wire, DC 1 to 5(6) V three-wire			4 to 20 mA two-wire	4 to 20 mA two-wire, DC 0.5 to 4.5 V three-wire
	Process connection	Thread, hygienic connections, JUMO PEKA, pressure separator		Thread, hose connection	Thread	Thread, hygienic connections



JUMO Wtrans series

JUMO Wtrans series is a system for the wireless data capture of pressure or temperature measurements using the latest wireless technology. Universally applicable sensors for measured value acquisition on moving and fixed locations open up entirely new possibilities for measured value recording. The measured value is first transmitted wirelessly to the receiver of the Wtrans system from where it is forwarded to measurement and control technology equipment such as controllers, automation systems, displays, or recording devices.

In Europe, the system uses radio frequency 868.4 MHz. In the USA, Canada, Australia, New Zealand, and elsewhere radio frequency 915 MHz is used. These frequencies are generally impervious to external interference influences and are also best suited to use in harsh industrial environments.

The devices work particularly well in mobile, rotating, or even stationary applications – wherever it is too difficult to lay cables and interference-free transmission is required.

Up to 16 transmitters can be connected to each receiver in any combination.

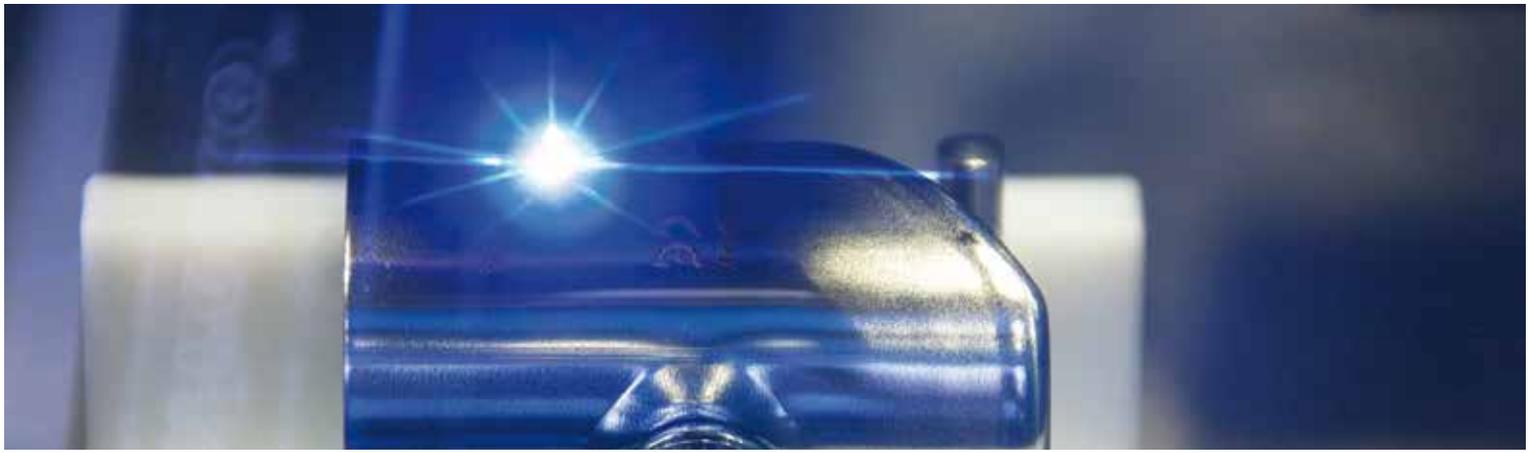


Wireless measured value transmission JUMO Wtrans series



	Type/data sheet designation	902931 JUMO Wtrans receiver	902930 JUMO Wtrans T	707060 JUMO Wtrans B*	402060 JUMO Wtrans p
Application	Mechanical and plant engineering	•	•	•	•
	Food and pharma industry	•	•	•	•
	Chemical	•	•	•	•
	Plastic	•	•	•	•
	Building technology	•	•	•	•
Technical data	Input	Radio signal from transmitters	-200 to +600 °C	Temperature, resistance, voltage	0.25 to 600 bar relative, absolute
	Medium temperature	–	-200 to +600 °C	–	-30 to +85 °C
	Accuracy	0.1 %	Class A	0.1 K / 0.1 %	0.2 %
	Output	{0}4 to 20 mA 0 to 10 V relay	Radio signal to receiver		
	Process connection	–	Screw connection, compression fitting, sheet metal plate JUMO PEKA	–	Thread, NPT, UNF, JUMO PEKA
	Frequency	868.4 / 915 MHz		868.4 MHz	
	Transmission interval	–	1 to 3600 s		0.5 to 3600 s
	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	Lithium battery 3.6 V			

* Programmable head transmitter to which different sensors can be attached



JUMO DELOS series

Reduced costs due to measuring range scaling: the DELOS series allows various measuring tasks to be performed with one device. Configuration is performed directly at the device or by using a convenient setup program. A large, illuminated LCD display shows the setting parameters during configuration as well as the current measured value and switching contact status during operation. For enhanced legibility the device can be turned $\pm 160^\circ$ and the display can be rotated 180° when installed overhead. Its easy-to-clean design and front-flush sealless measuring system make the DELOS series suitable for hygienic applications as well.



TYPE EL

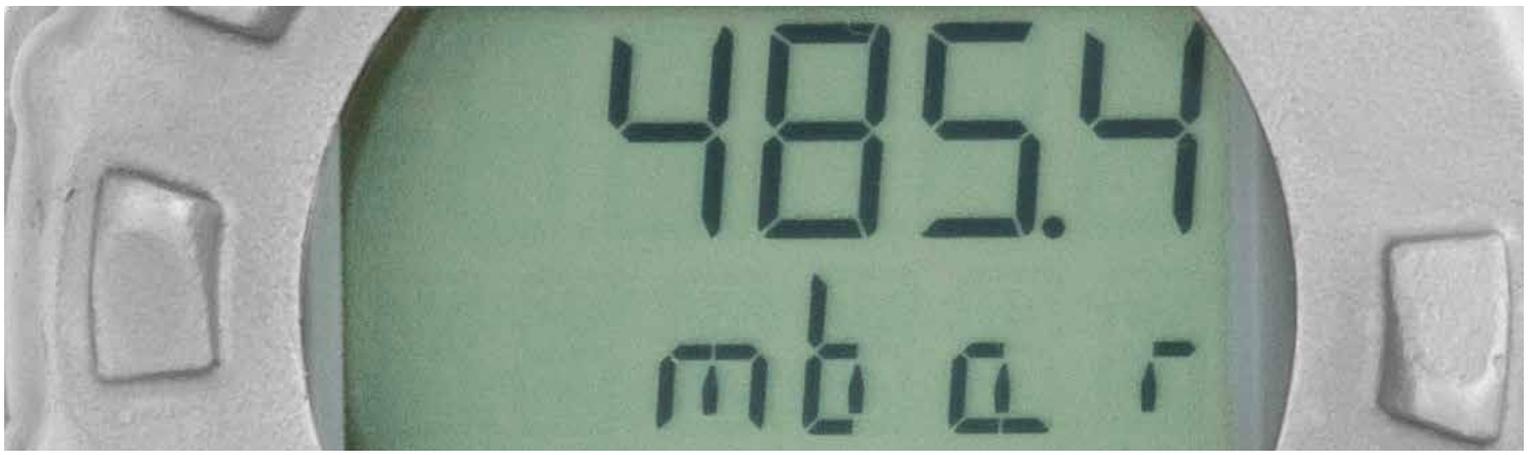
March 2008

TYPE ET

Precision transmitter for pressure or temperature



	Precision transmitter	Pressure, level	High pressure	Temperature
	Type/data sheet designation	405052 JUMO DELOS SI	405054 JUMO DELOS HP	902940 JUMO DELOS T
Application	Food and pharma industry	•		•
	CIP/SIP systems	•		•
	Mechanical and plant engineering	•	•	•
	Refrigeration and air conditioning system construction	•		•
	Hydraulic units		•	
	Special features	Programmable, switching output, measuring range scaling 1:4, selectable measuring unit, housing and process connection made of stainless steel (316 L)	Programmable, switching output, measuring range scaling 1:4, selectable measuring unit, housing and process connection made of stainless steel	Programmable, switching output, selectable measuring unit, case, and protection fitting made of stainless steel (316 L)
Technical data	Input	400 mbar to 60 bar relative, absolute	160 to 600 bar relative	-50 to +150 °C -50 to +260 °C with extension tube -50 to +500 °C with stepped RTD temperature probe
	Medium temperature	-25 to +200 °C	-25 to +100 °C	Depends on input
	Ambient temperature	-25 to +75 °C		
	Accuracy (linearity)	0.1 to 0.15 %	0.1 %	Tolerance class: class A (optional class AA)
	Output	1x PNP switching output, 2x PNP switching output, 1x PNP switching output, and 1x analog output) (either: 0(4) to 20 mA, 0 to 10 V)		
	Process connection	Thread, hygienic connections, pressure separators, JUMO PEKA	Thread	Thread, hygienic connections, screw connections, JUMO PEKA



JUMO dTRANS p02/p20 series

The highest precision with simple operation – that is what the programmable pressure transmitter from JUMO offers you.

You will find the optimum solution to all your tasks whether it involves pressure, differential pressure, level, or flow. We provide an extensive selection of process connections and special approvals.

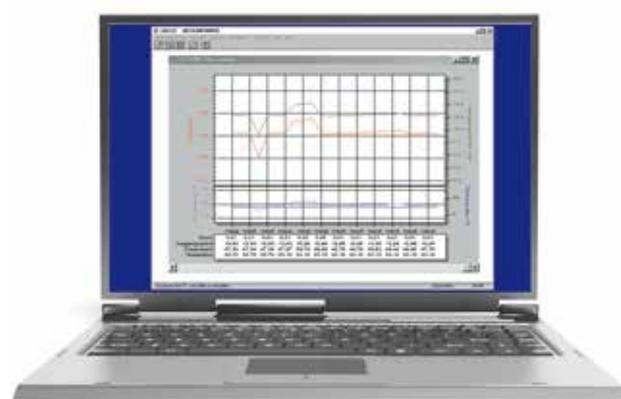


Convenient operation with minimal effort

JUMO setup program for the HART® interface



Parameterizing a device with the setup program



Recording measured values

JUMO dTRANS p02

Process pressure transmitter
Type 404385



JUMO dTRANS p20

Process pressure transmitter
Type 403025



Startup in just a few easy steps

You can perform startup quickly and easily with the rotary knob or the membrane keys.

The devices are also easy to operate at any time in an Ex-area. And you do not even have to open the housing to do it.

A few essential device features:

- Clear LCD display as a standard feature
- High accuracy and stability
- Low temperature drift
- Reduced stockkeeping due to variable setting on the device
- High temperature range
- Sturdy aluminum or stainless steel case

Our setup programs offer numerous functions for operation via interface:

- Convenient parameterization for all device parameters
- Saving or printing parameters for project documentation
- Actual values and device status are displayed clearly online
- Monitoring and documentation of measured pressure values and sensor temperature for a prolonged period
- All status messages are displayed in plain text



Process pressure transmitter series JUMO dTRANS p02



Type/data sheet designation	404385 dTRANS p02	404382 dTRANS p02 DELTA	404387 dTRANS p02 Keramik
Application			
Ex d			
Ex ia	•	•	
Process pressure	•		•
Differential pressure		•	
Flow		•	
Level	•	•	•
Special features	Maximum precision, programmable, stainless steel sensor, aluminum case		Maximum precision, programmable, ceramic sensor, aluminum case
Technical data			
Input	20 mbar to 600 bar relative, absolute	12 mbar to 25 bar DP	
Medium temperature	-40 to +200 °C	-40 to +120 °C	-40 to +100 °C
Accuracy (linearity)	0.1 %		
Output	4 to 20 mA two-wire, HART®		
Process connection	Thread, hygienic connections, JUMO PEKA, pressure separator	2x 1/4-18 NPT, pressure separators	Thread, clamp, taper socket



Process pressure transmitter series JUMO dTRANS p20



	Type/data sheet designation	403025/26 dTRANS p20 dTRANS p20 Ex d	403022/23 dTRANS p20 DELTA dTRANS p20 DELTA Ex d
Application	Ex d	•	•
	Ex ia	•	•
	Process pressure	•	
	Differential pressure		•
	Flow		•
	Level		•
	Special features	Maximum precision, programmable, stainless steel sensor, stainless steel case	
Technical data	Input	60 mbar to 600 bar relative, absolute	1 mbar to 100 bar DP
	Medium temperature	-40 to +200 °C	-40 to +110 °C
	Accuracy (linearity)	0.05 %	0.07 %
	Output	4 to 20 mA two-wire, HART®	
	Process connection	Thread, hygienic connections, JUMO PEKA, pressure separator	2 x 1/4-18 NPT, pressure separator



JUM0 differential pressure transmitter

Our differential pressure transmitters are the ideal solution for measuring absolute pressure, differential pressure, flow, and level. Their versatility and simple operation makes them suitable for less critical applications as well as for use in Ex-areas.



JUMO differential pressure transmitter



	Type/data sheet designation	402005 Multi-range pressure and differential pressure transmitter	404304 Pressure and differential pressure transmitter	401050 JUMO MIDAS DP 10	404382 JUMO dTRANS p02 DELTA	403022/403023 JUMO dTRANS p20 DELTA
Application	Ex d					•
	Ex ia				•	•
	Gas	•	•	•	•	•
	Liquid			•	•	•
	Heating, air conditioning technology	•	•	•	•	•
	Filter monitoring	•	•	•	•	•
	Pump control			•		
	Differential pressure	•	•	•	•	•
	Flow		•		•	•
	Level				•	•
	Special features	Measuring range adjustable, with LCD display as an option	With switching contacts, very small measuring ranges, adjustable, with LCD display as an option	For liquid and gaseous media	Maximum precision, programmable, aluminum case	Maximum precision, programmable, stainless steel case
Technical data	Input (min./max.)	2.5 to 100 mbar DP, relative	0.50 to 1200 mbar DP, relative	0.4 to 16 bar DP, relative	12 mbar to 25 bar DP, relative	1 mbar to 100 bar DP, relative
	Medium temperature	-10 to +50 °C	-10 to +50 °C	-15 to +100 °C	-40 to +120 °C	-40 to +110 °C
	Accuracy (linearity)	2 %	1 %	0.5 %	0.1 %	0.07 %
	Output	{0}4 to 20 mA three-wire, DC 0 to 10 V three-wire	4 to 20 mA two-wire, 0 to 20 mA three-wire, DC 0 to 10 V three-wire	4 to 20 mA two-wire, DC 0 to 10 V three-wire, DC 0.5 to 4.5 V three-wire	4 to 20 mA two-wire, HART®	
	Process connection	Hose connection	Thread, hose connection	G 1/8" internal thread, stainless steel socket, compression fitting	2x1/4-18 NPT, pressure separator	



JUMO CANtrans series

Our CANtrans series transmitters are the first choice for applications with CANopen networking.

The compact and robust sensors with IP67 protection type and high vibration resistance guarantee maximum process reliability. Integrated sensor monitoring in combination with the safety mechanisms of the CAN protocol ensure very reliable detection of measured values. The standardized interface also allows simple integration of the sensors in all CANopen plants.



JUMO CANtrans series for CANopen systems

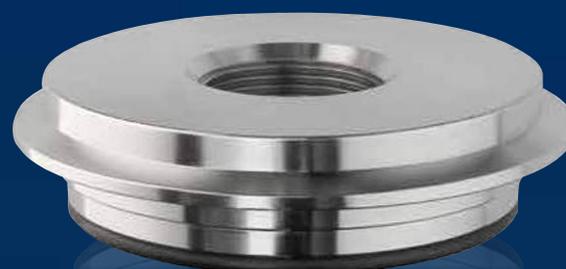


	Type/data sheet designation	402055 JUMO CANtrans p Keramik	402056 JUMO CANtrans p	902910 JUMO CANtrans T
Application	Pressure	•	•	
	Temperature			•
	Special features	Programmable, ceramic sensor, device profile DS 404	Programmable, stainless steel sensor, device profile DS 404	Programmable, sensor Pt1000, device profile DS 404, optional: double temperature probe
Technical data	Input Pressure	1.6 to 100 bar relative	0,25 to 600 bar relative, absolute	
	Temperature			-50 to +450 °C relative, absolute
	Medium temperature	-20 to +85 °C	-40 to +200 °C	-50 to +450 °C
	Accuracy (linearity)	0.5 %		Class B DIN EN 60751
	Output	CANopen		
Process connection	Thread	Thread, hygienic connections, JUMO PEKA	Thread	



JUMO PEKA and pressure separators

To protect the pressure sensor and therefore safeguard the process, pressure separators – either with or without capillary lines – can be used as a connection between the measuring device and the medium. Among other applications they are used to protect against aggressive media (for material durability) or for medium temperatures over 200 °C. For hygienic applications, not only pressure separators (which can achieve the lowest roughness depths) are available but also the JUMO PEKA system. It has been designed and certified in accordance with EHEDG guidelines.



JUMO PEKA and pressure separators



JUMO Dtrans T100
Screw-in RTD temperature probe without/with transmitter
Type 902815



JUMO DELOS SI
Precision pressure transmitter with switching contact and display
Type 405052



JUMO tecLine Lf-4P
Conductive four-electrode conductivity measuring cell
Type 202930



JUMO dTRANS p02
Process pressure transmitter
Type 404382



JUMO PEKA
Process connection adapter system
Type 409711



Pressure separator with flange connection according to ANSI B 16.5
With form RF sealing strip
Type 409786

JUMO PEKA

The process connection JUMO PEKA allows the measuring device (for different physical measuring values or electrolytic conductivity) to be connected to an application-specific process connection adapter (clamp, VARIVENT®, aseptic, or orbital welding socket). Based on an easy-to-clean design without cavities, the modular adapter system is specifically tailored to the requirements of hygienic processes. The rigid adaptor with rotatable adapter allows alignment of the measuring device and protects the flush-mounted O-ring from damage during installation. The thread allows the measuring device to be installed and removed unlimited times which simplifies mounting, cleaning, and repair work.

Pressure separator

Pressure separators, as extended process connections, protect the measuring device and its sensor from difficult ambient conditions such as media that is contaminated, highly viscous, thickening (curdling), highly corrosive, toxic, and hot. Pressure separators can also be used for installation points that are difficult to access. In such cases, the pressure is transmitted to the sensor via a capillary line (capillary) filled with filling oil.

JUMO offers two basic designs: membrane and inline pressure separators. The numerous combination possibilities with regard to membrane material (stainless steel, titanium, PTFE, etc.) and filling oil (silicone oil, high-temperature oil, vegetable oil, etc.) also make them suitable for hygienic applications.



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