

JUMO GmbH & Co. KG

Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
Email: mail@jumo.net
Internet: www.jumo.net

JUMO UK LTD

JUMO House
Temple Bank, Riverway
Harlow, Essex, CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 62 50 29
Email: info.uk@jumo.net
Internet: www.jumo.co.uk

JUMO Process Control, Inc.

6724 Joy Road
East Syracuse, NY 13057, USA
Phone: +1 315 437 5866
Fax: +1 315 437 5860
Email: info.us@jumo.net
Internet: www.jumousa.com



JUMO TAROS H48 Ex

High pressure sensor for use in Ex areas

Description

The pressure transmitter measures the relative pressure of liquid, steam, and gaseous media. The device is suitable for installation in pipes and containers. It can also be used in applications which require explosion protection or in shipbuilding. It is mounted using individual process connections.

The device meets the requirements of explosion group II for the categories 2 G and 2 D if it is connected to intrinsically safe electrical circuits. For this, a certified, intrinsically safe [Ex i] transmitter supply unit must be used. The device is suitable for use in potentially explosive areas:

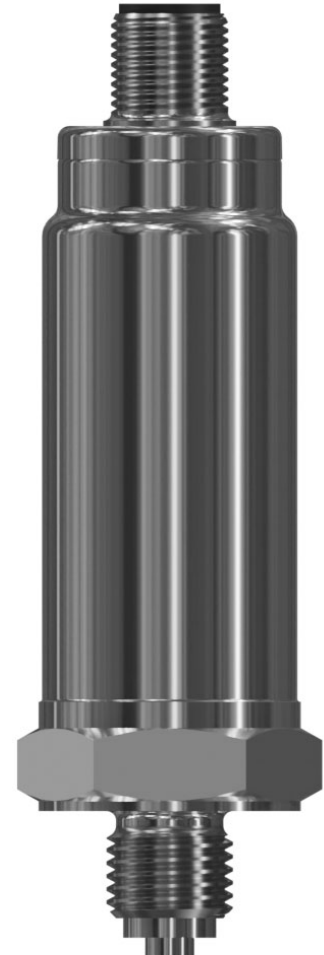
- Zone 1 and 2 for gas (G)
- Zone 21 and 22 for dust (D)

Areas of application

- Renewable energy
- Shipbuilding
- Mechanical engineering
- Plant engineering
- Hydraulic systems
- Test bench construction

Special features

- International use with industry-specific approvals and tests
- Optional extra for mobile hydrogen applications up to a test pressure of 1050 bar
- High accuracy across the entire operating temperature range
- Reliable measured values thanks to zero point correction
- Optional extra restrictor in the pressure channel for applications with pressure peaks
- Planning reliability thanks to long-term delivery capacity



Type 404740

JUMO GmbH & Co. KG

Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
Email: mail@jumo.net
Internet: www.jumo.net

JUMO UK LTD

JUMO House
Temple Bank, Riverway
Harlow, Essex, CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 62 50 29
Email: info.uk@jumo.net
Internet: www.jumo.co.uk

JUMO Process Control, Inc.

6724 Joy Road
East Syracuse, NY 13057, USA
Phone: +1 315 437 5866
Fax: +1 315 437 5860
Email: info.us@jumo.net
Internet: www.jumousa.com



Trademark information

All trademarks and trade and company names used are the property of their rightful owners or authors.

Approval marks and certificates



Observe "Special conditions for safe use" in hazardous areas.

Certificates for approved device versions are available for download on the manufacturer's website.

JUMO GmbH & Co. KG
 Delivery address: Mackenrodtstraße 14
 36039 Fulda, Germany
 Postal address: 36035 Fulda, Germany
 Phone: +49 661 6003-0
 Fax: +49 661 6003-607
 Email: mail@jumo.net
 Internet: www.jumo.net

JUMO UK LTD
 JUMO House
 Temple Bank, Riverway
 Harlow, Essex, CM20 2DY, UK
 Phone: +44 1279 63 55 33
 Fax: +44 1279 62 50 29
 Email: info.uk@jumo.net
 Internet: www.jumo.co.uk

JUMO Process Control, Inc.
 6724 Joy Road
 East Syracuse, NY 13057, USA
 Phone: +1 315 437 5866
 Fax: +1 315 437 5860
 Email: info.us@jumo.net
 Internet: www.jumousa.com



Technical data

Ex identification markings

ATEX, intrinsically safe, Ex i	II 2G Ex ib IIC T6 to T4 Gb II 2D Ex ib IIIC T85 °C to T135 °C Db
IECEx, intrinsically safe, Ex i	Ex ib IIC T6 to T4 Gb Ex ib IIIC T85 °C to T135 °C Db

Electrical safety

Requirements	DIN EN 61010-1 The device must be equipped with an electrical circuit that meets the requirements for "Limited-energy circuits".
--------------	---

Electrical data

Voltage supply	DC 10 to 28 V SELV
Nominal voltage	DC 24 V
Voltage supply influence	≤ 0.02 %/V
Protection	Reverse-polarity protection
Insulation resistance	> 100 MΩ at DC 500 V
Insulation voltage	AC 500 V
Overvoltage category	II
Pollution degree	2
Electrical connection	
Connection elements	Round plug M12 × 1 (IEC 61076-2-101, 4-pole) or line socket ^a

^a Cables used must have a conductor cross section of a maximum of AWG 16 and a diameter of 6 to 8 mm.

Intrinsic safety parameters

Permissible input voltage U_i	≤ 28 V
Permissible input current I_i	≤ 115 mA
Permissible input power P_i	≤ 750 mW
Internal capacitance C_i	≤ 40 nF
Internal inductance L_i	≤ 1,5 µH

Inputs

Sensor system

Measuring principle	Thin-film technology
Admissible load changes	>10 million

JUMO GmbH & Co. KG
 Delivery address: Mackenrodtstraße 14
 36039 Fulda, Germany
 Postal address: 36035 Fulda, Germany
 Phone: +49 661 6003-0
 Fax: +49 661 6003-607
 Email: mail@jumo.net
 Internet: www.jumo.net

JUMO UK LTD
 JUMO House
 Temple Bank, Riverway
 Harlow, Essex, CM20 2DY, UK
 Phone: +44 1279 63 55 33
 Fax: +44 1279 62 50 29
 Email: info.uk@jumo.net
 Internet: www.jumo.co.uk

JUMO Process Control, Inc.
 6724 Joy Road
 East Syracuse, NY 13057, USA
 Phone: +1 315 437 5866
 Fax: +1 315 437 5860
 Email: info.us@jumo.net
 Internet: www.jumousa.com



Measuring range and accuracy

Reference conditions

Basic principles	DIN EN 60770, DIN EN 61298
Ambient temperature	25 °C ±5 °C (77 °F ±9 °F)
Humidity	45 to 75 % RH
Ambient pressure	Constant, 860 to 1060 mbar (12.47 to 15.37 psi)
Installation position	Any
Voltage supply	DC 24 V ±3 V

Relative pressure

Measuring range	Linearity ^a	Accuracy at		Long-term stability ^b	Overload capability ^c	Burst pressure
bar	% MSP ^f	20 °C ^d % MSP	-20 to +75 °C ^e % MSP	% MSP per year	bar	bar
0 to 100	0.15	0.4	0.7	≤ 0.2	200	500
0 to 160	0.15	0.3	0.6	≤ 0.2	320	800
0 to 200	0.25	0.3	1.0	≤ 0.2	500	1250
0 to 250	0.1	0.3	0.45	≤ 0.2	500	1250
0 to 350	0.1	0.3	0.7	≤ 0.2	800	2000
0 to 400	0.1	0.3	0.55	≤ 0.2	800	2000
0 to 600	0.15	0.3	0.6	≤ 0.2	1200	3000
0 to 800	0.25	0.3	0.55	≤ 0.2	2000	3000
0 to 1000	0.25	0.4	0.7	≤ 0.2	2000	3000

^a According to limit point setting.

^b Reference conditions according to EN 61298-1.

^c The pressure transmitters for all measuring ranges are vacuum proof.

^d Includes: linearity, hysteresis, repeatability, deviation of measuring range start value (offset), and measuring range end value.

^e Includes: linearity, hysteresis, repeatability, deviation of measuring range start value (offset), measuring range end value, thermal effect on measuring range start (offset), and measuring span.

^f MSP = measuring span.

Measuring range	Linearity ^a	Accuracy at		Long-term stability ^b	Overload capability ^c	Burst pressure
psi	% MSP ^f	68 °F ^d % MSP	-4 to 167 °F ^e % MSP	% MSP per year	psi	psi
0 to 2000	0.15	0.4	0.7	≤ 0.2	4600	11600
0 to 3000	0.25	0.3	1.0	≤ 0.2	7200	18100
0 to 5000	0.1	0.3	0.7	≤ 0.2	11600	29000
0 to 8000	0.15	0.3	0.6	≤ 0.2	17400	43500
0 to 10000	0.25	0.3	0.55	≤ 0.2	17400	43500
0 to 15000	0.25	0.4	0.7	≤ 0.2	29000	43500

^a According to limit point setting.

^b Reference conditions according to EN 61298-1.

^c The pressure transmitters for all measuring ranges are vacuum proof.

^d Includes: linearity, hysteresis, repeatability, deviation of measuring range start value (offset), and measuring range end value.

^e Includes: linearity, hysteresis, repeatability, deviation of measuring range start value (offset), measuring range end value, thermal effect on measuring range start (offset), and measuring span.

^f MSP = measuring span.

JUMO GmbH & Co. KG
 Delivery address: Mackenrodtstraße 14
 36039 Fulda, Germany
 Postal address: 36035 Fulda, Germany
 Phone: +49 661 6003-0
 Fax: +49 661 6003-607
 Email: mail@jumo.net
 Internet: www.jumo.net

JUMO UK LTD
 JUMO House
 Temple Bank, Riverway
 Harlow, Essex, CM20 2DY, UK
 Phone: +44 1279 63 55 33
 Fax: +44 1279 62 50 29
 Email: info.uk@jumo.net
 Internet: www.jumo.co.uk

JUMO Process Control, Inc.
 6724 Joy Road
 East Syracuse, NY 13057, USA
 Phone: +1 315 437 5866
 Fax: +1 315 437 5860
 Email: info.us@jumo.net
 Internet: www.jumousa.com



Outputs

Analog output

Type	Current output
Function	Output of the process value, output of a signal for error messaging
Signal range	4 to 20 mA
Error signal in the case of	$\leq 3.6 \text{ mA}$ and $\geq 21.5 \text{ mA}$
Linear exceedance according to NAMUR NE 43	3.8 to 20.5 mA
Burden	$R_L \leq (U_B - 10 \text{ V}) \div 0.022 \text{ A } (\Omega)$
Burden influence	0.02 % per 100 Ω
Accuracy	$\pm 0.1 \text{ %}$ referring to 16 mA
Temperature influence	75 ppm/K
Step response time 90 %	< 5 ms
Warm-up time	< 0.2 s

Environmental influences

Admissible ambient temperature	
Equipment protection level Gb	
T4	-40 to +85 °C (-40 to +185 °F)
T5	-40 to +70 °C (-40 to +158 °F)
T6	-40 to +55 °C (-40 to +131 °F)
Equipment protection level Db	
T135 °C	-40 to +85 °C (-40 to +185 °F)
T100 °C	-40 to +70 °C (-40 to +158 °F)
T85 °C	-40 to +55 °C (-40 to +131 °F)
Admissible process temperature	
T4	-40 to +85 °C (-40 to +185 °F)
T5	-40 to +70 °C (-40 to +158 °F)
T6	-40 to +55 °C (-40 to +131 °F)
Admissible storage temperature	-40 to +100 °C (-40 to +212 °F)
Protection type	DIN EN 60529
Device with round plug	IP66/IP67
Device with line socket	IP65
Electromagnetic compatibility (EMC)	DIN EN 61326-2-3:2022
Interference emission	Class B ^a
Interference immunity	Industrial requirement
Mechanical load	DIN EN 60068-2-6, DIN EN 60068-2-27
Vibration resistance	20 g at 15 to 2000 Hz
Shock resistance	100 g for 1 ms
Climatic conditions	
Relative humidity	
Without condensation	$\leq 90 \text{ %}$
Including condensation	$\leq 100 \text{ %}$
Site altitude	$\leq 2000 \text{ m}$ above sea level
Operating location according to UL approval	Indoors

^a The product is suitable for industrial use as well as for households and small businesses.

JUMO GmbH & Co. KG

Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
Email: mail@jumo.net
Internet: www.jumo.net

JUMO UK LTD

JUMO House
Temple Bank, Riverway
Harlow, Essex, CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 62 50 29
Email: info.uk@jumo.net
Internet: www.jumo.co.uk

JUMO Process Control, Inc.

6724 Joy Road
East Syracuse, NY 13057, USA
Phone: +1 315 437 5866
Fax: +1 315 437 5860
Email: info.us@jumo.net
Internet: www.jumousa.com

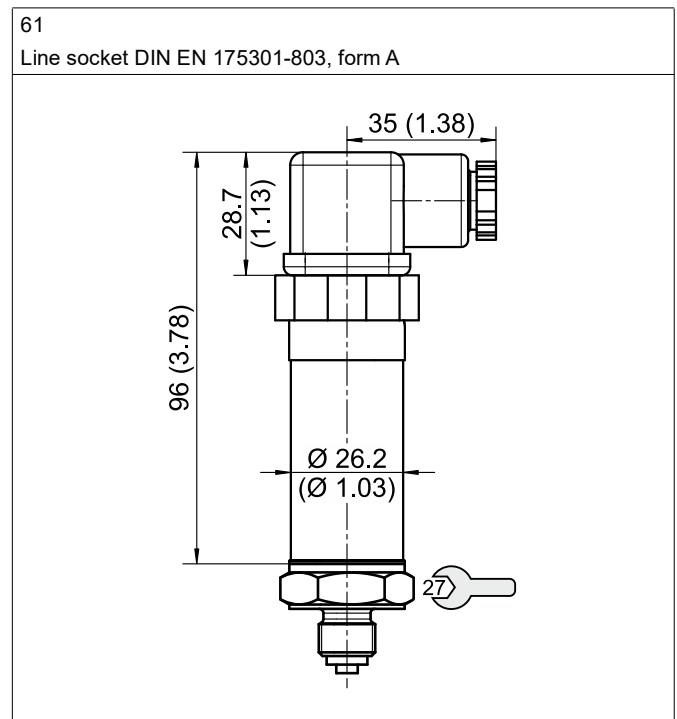
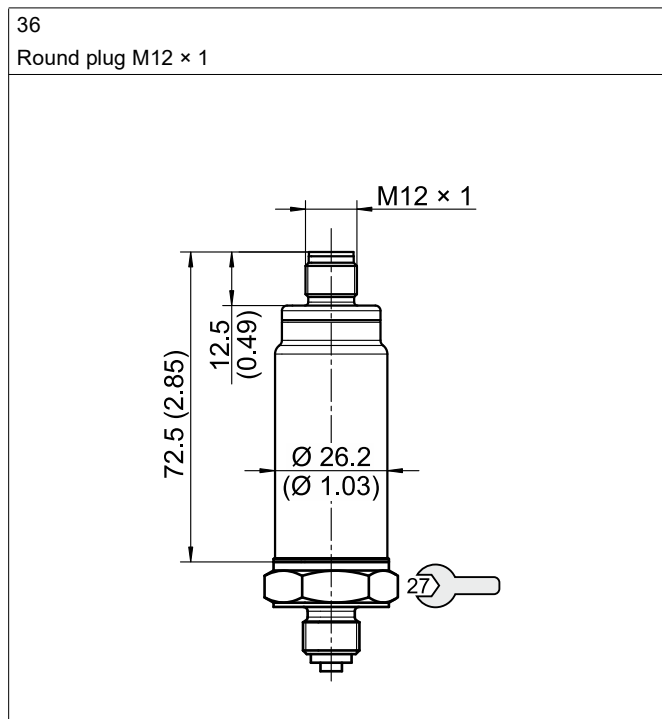
**Mechanical features**

Materials	
Parts in contact with the medium	
Process connection	Stainless steel 316Ti
Membrane	Stainless steel 630
Parts not in contact with the medium	
Housing	Stainless steel 304
Electrical connection	
Round plug M12 × 1	Stainless steel 304
Line socket	PA
Installation position	Any
Weight	Approx. 100 g (0.22 lb) ^a

^a For version with process connection G 1/4 and electrical connection M12.

Dimensions**Device**

Measurements in mm (inches)



JUMO GmbH & Co. KG

Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
Email: mail@jumo.net
Internet: www.jumo.net

JUMO UK LTD

JUMO House
Temple Bank, Riverway
Harlow, Essex, CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 62 50 29
Email: info.uk@jumo.net
Internet: www.jumo.co.uk

JUMO Process Control, Inc.

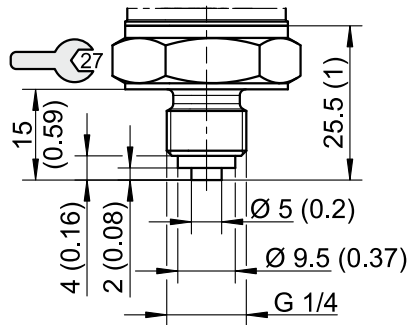
6724 Joy Road
East Syracuse, NY 13057, USA
Phone: +1 315 437 5866
Fax: +1 315 437 5860
Email: info.us@jumo.net
Internet: www.jumousa.com

**Process connections**

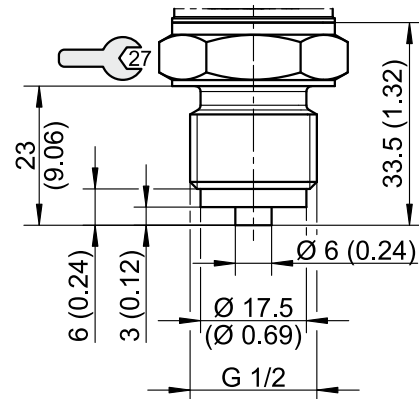
Measurements in mm (inches)

502

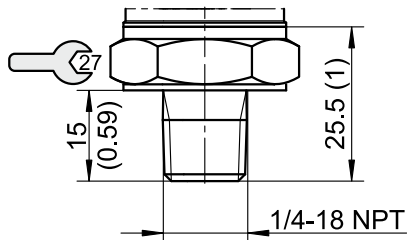
G 1/4 DIN EN 837

**504**

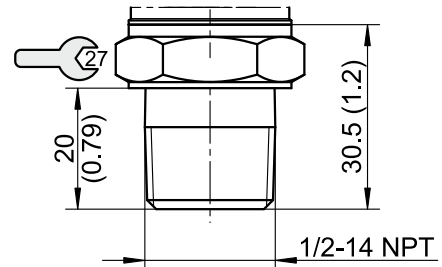
G 1/2 DIN EN 837

**511**

1/4-18 NPT DIN EN 837

**512**

1/2-14 NPT DIN EN 837



JUMO GmbH & Co. KG
 Delivery address: Mackenrodtstraße 14
 36039 Fulda, Germany
 Postal address: 36035 Fulda, Germany
 Phone: +49 661 6003-0
 Fax: +49 661 6003-607
 Email: mail@jumo.net
 Internet: www.jumo.net

JUMO UK LTD
 JUMO House
 Temple Bank, Riverway
 Harlow, Essex, CM20 2DY, UK
 Phone: +44 1279 63 55 33
 Fax: +44 1279 62 50 29
 Email: info.uk@jumo.net
 Internet: www.jumo.co.uk

JUMO Process Control, Inc.
 6724 Joy Road
 East Syracuse, NY 13057, USA
 Phone: +1 315 437 5866
 Fax: +1 315 437 5860
 Email: info.us@jumo.net
 Internet: www.jumousa.com



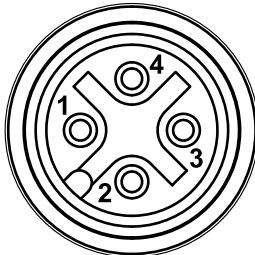
Connection elements

The connection elements in the data sheet provide information on product selection.

For the electrical connection, only use the installation instructions or the operating manual.

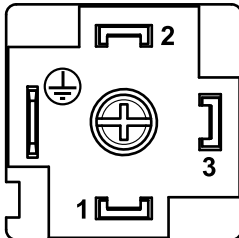
Terminal assignment

M12 plug connector

Function	Pin	View on the device
+24 V (S+)	1	
Not used	2	
GND (S-)	3	
Functional bonding conductor (FB) ^a	4	

^a As a basic principle, the device is grounded via the process connection. Alternatively, the device can also be grounded via the electrical connection. However, grounding via both the process connection **and** the electrical connection is not admissible.

Line socket

Function	Pin	View on the device
+24 V (S+)	1	
GND (S-)	2	
Not used	3	
Functional bonding conductor (FB) ^a		

^a As a basic principle, the device is grounded via the process connection. Alternatively, the device can also be grounded via the electrical connection. However, grounding via both the process connection **and** the electrical connection is not admissible.

JUMO GmbH & Co. KG

Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
Email: mail@jumo.net
Internet: www.jumo.net

JUMO UK LTD

JUMO House
Temple Bank, Riverway
Harlow, Essex, CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 62 50 29
Email: info.uk@jumo.net
Internet: www.jumo.co.uk

JUMO Process Control, Inc.

6724 Joy Road
East Syracuse, NY 13057, USA
Phone: +1 315 437 5866
Fax: +1 315 437 5860
Email: info.us@jumo.net
Internet: www.jumousa.com



Order details

	(1) Basic type
404740	JUMO TAROS H48 Ex – High pressure sensor for use in Ex areas
	(2) Version
0	Standard
	(3) Input – nominal measuring range
464	0 bar to 100 bar relative pressure ^a
465	0 bar to 160 bar relative pressure
466	0 bar to 250 bar relative pressure
467	0 bar to 400 bar relative pressure
468	0 to 600 bar relative pressure
469	0 to 1000 bar relative pressure
511	0 to 200 bar relative pressure
512	0 to 800 bar relative pressure
517	0 to 350 bar relative pressure
785	0 to 2000 psi relative pressure
786	0 to 3000 psi relative pressure
787	0 to 5000 psi relative pressure
788	0 to 8000 psi relative pressure
789	0 to 10 000 psi relative pressure
790	0 to 15 000 psi relative pressure
999	Special measuring range for relative pressure
	(4) Output
405	4 to 20 mA, 2-wire
	(5) Process connection
502	G 1/4 DIN EN 837
504	G 1/2 DIN EN 837
511	1/4" – 18 NPT DIN EN 837
512	1/2" – 14 NPT DIN EN 837
	(6) Process connection material
20	CrNi (stainless steel)
	(7) Electrical connection
36	M12 plug connector
61	Line socket DIN EN 175301-803, form A
	(8) Extra codes
000	Without approval
061	With UL approval
062	With DNV approval
462	Inverted output signal
591	Choke in the pressure channel
624	Oil and grease free
634	With TAG number
769	Calibration certificate
871	Inspection certificate 3.1 accuracy EN 10204
1160	H2 ready – mobile hydrogen applications

^a Not suitable for hydrogen applications

JUMO GmbH & Co. KG

Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
Email: mail@jumo.net
Internet: www.jumo.net

JUMO UK LTD

JUMO House
Temple Bank, Riverway
Harlow, Essex, CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 62 50 29
Email: info.uk@jumo.net
Internet: www.jumo.co.uk

JUMO Process Control, Inc.

6724 Joy Road
East Syracuse, NY 13057, USA
Phone: +1 315 437 5866
Fax: +1 315 437 5860
Email: info.us@jumo.net
Internet: www.jumousa.com



Accessories

With UL approval

Designation	Part no.
Cable PUR, 4 × 0.34, black, length 2 m	00776248
Cable PUR, 4 × 0.34, black, length 5 m	00776250
Cable PUR, 4 × 0.34, black, length 10 m	00776252

Without UL approval

Designation	Part no.
Magnetic pen for teach function	00736330
Ex-i repeater power supply and input isolating amplifier (product group 707530)	00577948
Line socket, 4-pole, M12 × 1, angled, length 2 m	00409334
Line socket, 4-pole, M12 × 1, straight, length 2 m	00404585
Calibration of the mechanical measurement value pressure on site (also DAkkS)	00758363
Service deployment	00427970