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
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

JUMO CTI-750

Inductive Conductivity/Concentration and Temperature Transmitter with switch contacts

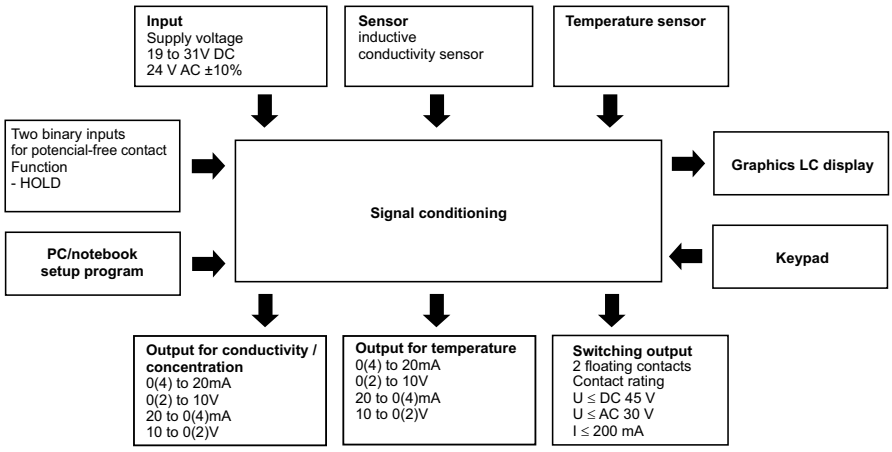
Brief description

The device is used for the measurement/control of conductivity or concentration in liquid media. It is particularly recommended for use in media where severe deposits of dirt, oil, grease or gypsum/lime precipitates are to be expected. The integrated temperature measurement enables fast and accurate temperature compensation, which is of particular importance when measuring conductivity. Additional functions, such as the combined changeover of measurement range and temperature coefficient, and a particularly robust conductivity probe, enable optimum application in CIP processes.
Two built-in switching outputs can be freely programmed to monitor limits for conductivity/ concentration and/or temperature. It is also possible to assign alarm and control functions (dilution).
The device is operated either from the membrane keypad and plain-text graphics display or through the user-friendly PC setup program. The display can be read in a vertical or horizontal mounting position. The device can also be supplied without a keyboard/display. In this case, the setup program is required for programming.
Plastic or stainless steel can be chosen as the housing material, depending on the requirement. The separate sensor design is particularly suitable for systems with powerful vibrations and/or powerful heat emissions at the measuring location.

Typical areas of application: Food/beverage and pharmaceutical industries, product separation in the beverage industry, breweries and dairies, bottle cleaning plant, concentration control in electroplating and chemical processing plant, CIP systems, water and wastewater engineering, dosing of chemicals, leakage indication, in heating and cooling plant, and so on.



Block structure



Key features

- Hygienic sensor
- Activation of up to four measuring ranges and temperature coefficients
- Concentration measurement of
  - caustic soda NaOH
  - nitric acid HNO_3
  - a freely definable curve
- Fast-response temperature sensor
- Temperature compensation
  - linear, natural water or specific characteristic (learning function)
- Operation via keypad and LC display or through setup program
- Operator languages: English, French, German, Italian, Dutch, Polish, Portuguese, Russian, Spanish, Schwedish
- By using the setup program:
  - user-friendly programming
  - plant documentation

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
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Functional description

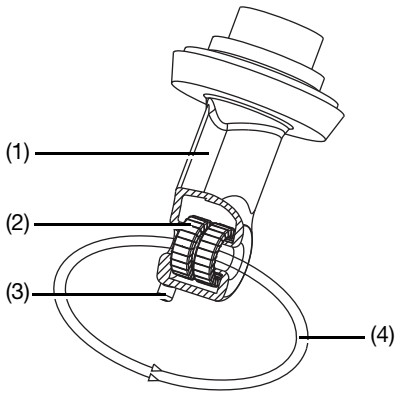
The inductive measurement method permits largely maintenance-free acquisition of the specific conductivity, even in the toughest media conditions. As opposed to the conductive measurement method, problems such as electrode decomposition and polarization do not occur.

Conductivity is measured by using an inductive probe. A sinusoidal a.c. voltage feeds the transmitting coil. Depending on the conductivity of the liquid to be measured, a current is induced in the receiver coil. This current is proportional to the conductivity of the medium.

Device description

Sensor

The sensor consists of a hermetically sealed body inside which the two measurement coils are arranged. A bore in the sensor enables the medium to flow through. The measurement principle entails an inevitable electrical isolation between the sample medium and the signal output.
The sensor is largely unaffected by temperature and pressure variations.



(1) Sensor body (PEEK)
(2) Measuring coils
(3) Temperature sensor
(4) Liquid loop

Exposed temperature sensor

The exposed sensor reacts very quickly to changes in temperature. This is particularly important in CIP processes (phase separation).

Parts in contact with the medium

Depending on the sensor version, the following materials come into contact with the sample medium: PEEK, PVDF, EPDM, stainless steels 1.4301 (AISI 304), 1.4305 (AISI 303) and 1.4404 (AISI 316L); see Dimensions.

Temperature compensation

Since conductivity depends to a large extent on the temperature of the medium, it is usually necessary to compensate for the temperature effect.
The device allows both linear and non-linear temperature compensation.
If required, temperature compensation can be switched off, for example, when the temperature conditions on the measurement site are stable or when temperature compensation is carried out in the software, in external evaluation devices (PLC or similar).

Process connections

To cover a wide variety of applications, the device can be supplied with different process connections, see dimensions.

Installation at the measurement point

The operating position is generally unrestricted. However, it is essential to ensure that there is a continuous exchange of the sample medium in the flow channel and that both air bubbles and dry-running are avoided.

Transmitter

The type 202756 transmitter has been designed for use on site. A rugged housing protects the electronics and the electrical connections from corrosive environmental conditions (IP67). A vent screw with a PTFE membrane prevents condensation.

Operation

The type 202756 can be operated either from the device keys and the graphics LC display and/or through the setup program from a PC or laptop.

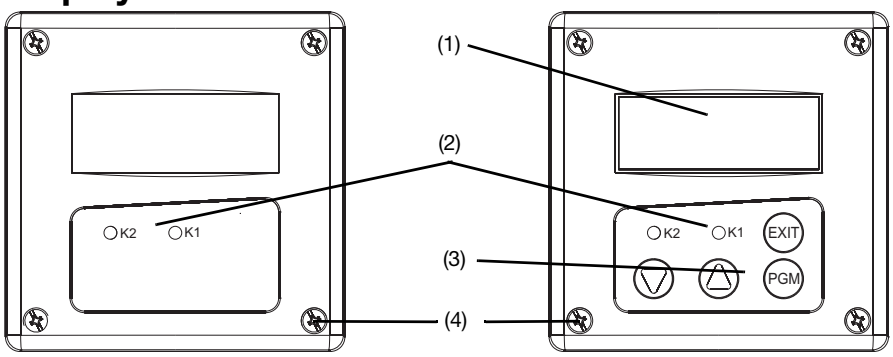
The device can be secured against unauthorized alteration by a password.

Functions of the outputs

Analog outputs

- One analog signal output for conductivity/ concentration and temperature respectively.
- The analog output signals are freely scalable (range start and end values).
- The response of the analog outputs to over/underrange or alarm can be programmed.
- Simulation of the signal output:
  The analog signal outputs can be freely set in the manual (“Hand”) mode.
  Application: “Dry-run” start-up of the plant, trouble-shooting, servicing.

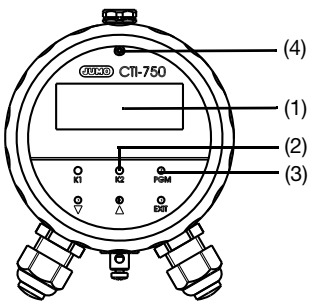
Displays and controls



Version without a display
Operation/configuration through the setup program only

Version with a display
Operation/configuration from the keys or through the setup program

Version in stainless steel housing



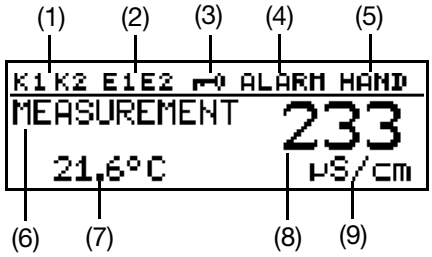
(1) Graphics LC display
(2) LEDs for the switching status indication of the outputs K1 and K2
(3) Keys
(4) Captive screw

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
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Graphics display



(1) Switching output 1 or 2 is active
(2) Binary input 1 or 2 is operated
(3) Keypad is inhibited
(4) Alarm has been activated
(5) Device is in manual mode
(6) Device status
(7) Temperature of medium
(8) Conductivity measurement
(9) Unit of conductivity measurement

Switching outputs

The device features two floating switching outputs (solid-state relays) as standard.

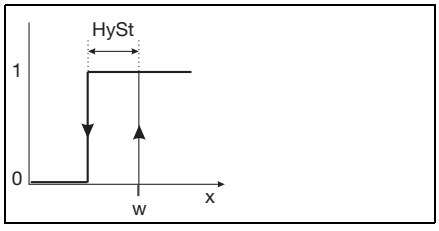
These can be used freely for monitoring the conductivity/concentration or the temperature.

The following functions can be assigned:

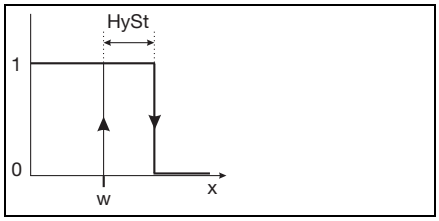
- Limit monitoring (MAX. or MIN. limit comparator) with programmable hysteresis
- Pulse function (the output switches briefly on reaching the switching point, then opens again).
- Pull-in and drop-out delay
- Inverted switching outputs
- Response to overrange/underrange or with activated measuring circuit monitoring (pull-in/drop-out)
- “Calibration timer run down" signal.

Contact functions

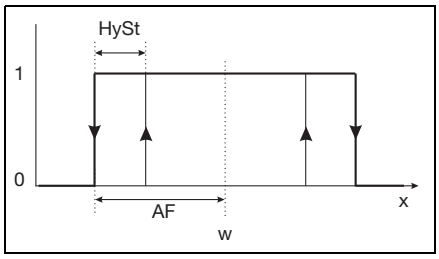
Limit function AF7



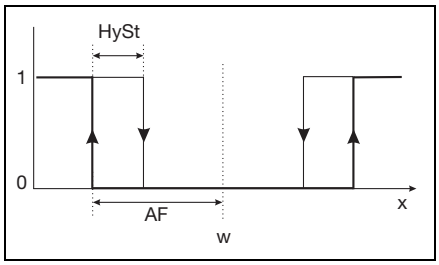
Limit function AF8



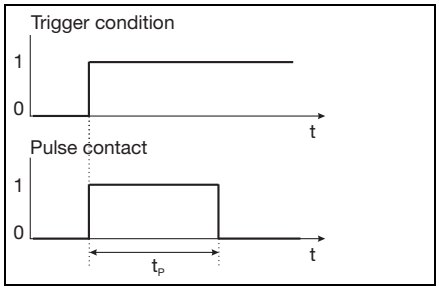
Alarm window AF1



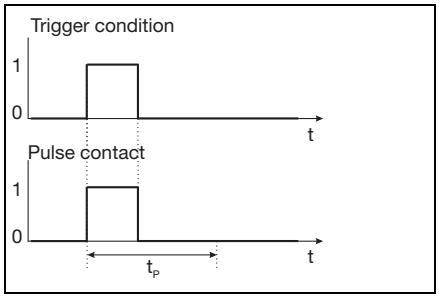
Alarm window AF2



Pulse contact
Trigger conditions longer than pulse duration



Pulse contact
Trigger conditions shorter than pulse duration



Binary inputs

The two binary inputs serve to implement the following functions:

- Key inhibit
- HOLD mode
- 4-fold range changeover
- 4-fold temperature coefficient changeover
- Initiation of dilution function and biocide dosing

Special functions

- The **learning function** for the temperature coefficient enables exact measurement of media with a non-linear characteristic. During a temperature change, the device “learns” the temperature coefficient of the present medium and stores the profile. The stored values then enable the correct indication of the temperature-compensated conductivity.
- **Individual characteristic** for concentration indication. An individual characteristic with 20 interpolation points can be entered through the setup program. This function can be used to generate special characteristics for specific media (e.g. special detergents). This results in correct measurements that contribute to assuring the quality and saving costs.
- **Dilution control**
  Various processes that find their application in wet cooling towers are stored as sequence control (biocide dosing and subsequent inhibiting of dilution). Detailed information can be found in the operating manual.
- The **calibration timer** draws your attention to a calibration schedule. This function is activated by entering a number of days, after which recalibration has to be carried out (plant or operator requirement).

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
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Function of the binary inputs

Setting parameters		Binary input 1	Binary input 2
Range/temperature coefficient changeover	Range1/TC1	open	open
	Range2/TC2	closed	open
	Range3/TC3	open	closed
	Range4/TC4	closed	closed
Key inhibit		closed	X
Hold function		X	closed
Start dilution function		close (0 to 1 edge)	open
Stop dilution function		open	close (0 to 1 edge)

Technical data

Conductivity transmitter

A/D converter	
Resolution	15 bits
Sampling time	500 ms = 2 measurements/s
Power supply	For SELV and PELV circuit operation only.
Standard	19 to 31 V DC (24 V DC nominal)
Residual ripple	<5 %
Reverse polarity protection	yes
Extra code 844	AC 24 V ±10 %, 50 bis 60 Hz
Power draw	
with display	≤ 3 W
without display	≤ 2,6 W
Contact rating of the PhotoMOS® relay	
Voltage	≤ DC 45 V ≤ AC 30 V
Current	≤ 200 mA
Electrical connection	
82	Cable glands/pluggable screw terminals, 2,5 mm^2
83	M12 plug/socket (instead of cable glands)
84	Two M16 cable glands and a pluggable screw terminal blanking plug, 2,5 mm^2
Display	
Basic type 202756/10	without dsplay
Basic type 202756/15	Backlit graphic LCD; adjustable contrast; dimensions: 62 mm × 23 mm
Basic type 202756/16	Backlit graphic LCD; adjustable contrast; dimensions: 62 mm × 23 mm
Permissible ambient temperature	5 to +50 °C; max. rel. humidity. 93 %, no condensation
Permissible storage temperature	-20 to +75 °C; max. rel. humidity. 93 %, no condensation
Protection rating[a]	IP67
Electromagnetic compatibility[b]	
Interference emission	Class B
Interference immunity	to industrial requirements
Housing	
Basic type extensions /10, /15, /20, /25, /60, /65	PA
Basic type extensions /16, /26, /66	Stainless steel 1.4305 (AISI 303)
Weight[c]	approx. 0,3 to 2,4 kg

[a] DIN EN 60529
[b] DIN EN 61326
[c] Dependent on version and process connection

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
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Measuring ranges

There is a choice of four different measuring ranges. Any one of these ranges can be activated by an external switch or by a PLC.
Note: The overall accuracy is composed of transmitter accuracy + sensor accuracy.

Transmitter measuring ranges[a]	**Accuracy** (as % of measuring range span)
0 to 500 µS/cm	≤ 0,5 %
0 to 1000 µS/cm	
0 to 2000 µS/cm	
0 to 5000 µS/cm	
0 to 10 mS/cm	
0 to 20 mS/cm	
0 to 50 mS/cm	
0 to 100 mS/cm	
0 to 200 mS/cm	
0 to 500 mS/cm	
0 to 1000 mS/cm	
0 to 2000 mS/cm[b]	
Concentration measurement	implemented in the device software
NaOH (caustic soda)	0 to 15 % by weight or 25 to 50 % by weight (0 to 90 °C)
HNO_3 (nitric acid)	0 to 25 % by weight or 36 to 82 % by weight (0 to 80 °C)
Customer-specific concentration curve	freely programmable via the setup program (see "Special functions")
Calibration timer	0 to 999 days (0 = OFF)
Output signal conductivity and concentration[c]	0 to 10 V or 10 to 0 V 2 to 10 V or 10 to 2 V 0 to 20 mA or 20 to 0 mA 4 to 20 mA or 20 to 4 mA
Burden	
at current output	≤ 500 Ω
at voltage output	≥ 2k Ω
Ambient temperature effect	≤ 0,1 %/K
Analog output at "Alarm"	
Low	0 mA/0 V/3.4 mA/1.4 V or a fixed value
High	22.0 mA/0.7 V or a fixed value

[a] Usual application range from approx. 100 µS/cm.
[b] Not temperature compensated.
[c] The output signal is freely scalable.

Temperature transmitters

Temperature acquisition[a]	Manually, -20.0 to 25.0 to 150 °C or °F, or automatically
Measuring range	-20 - 150 °C or °F
Characteristic	linear
Accuracy	≤ 0.5 % of the measuring range
Ambient temperature effect	≤ 0.1 %/K
Output signal	0 - 10 V or 10 - 0 V 2 - 10 V or 10 - 2 V 0 - 20 mA or 20 - 0 mA 4 - 20 mA or 20 - 4 mA The output signal is freely scalable in the -20 to +200°C range.
Burden	
at current output	≤ 500 Ω
at voltage output	≥ 2k Ω
Analog output at "Alarm"	
Low	0 mA/0 V/3.4 mA/1.4 V or a fixed value
High	22.0 mA/10.7 V or a fixed value

[a] Take the permissible sample medium temperature into consideration!

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
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Temperature compensation

Reference temperature	15 to 30 °C, adjustable
Temperature coefficient	5.5 %/°C, adjustable
Compensation range	-20 to 150 °C
Function	linear or natural water (EN 27888) or non-linear (learning function, see Special functions

Inductive conductivity sensor

Measuring range[a]	**Accuracy** (as % of measuring range span)
0 - 500 µS/cm	≤ 1 %
0 - 1000 µS/cm	≤ 1 %
0 - 2000 µS/cm	≤ 0,5 %
0 - 5000 µS/cm	≤ 0,5 %
0 - 10 mS/cm	≤ 0,5 %
0 - 20 mS/cm	≤ 0,5 %
0 - 50 mS/cm	≤ 0,5 %
0 - 100 mS/cm	≤ 0,5 %
0 - 200 mS/cm	≤ 0,5 %
0 - 500 mS/cm	≤ 0,5 %
0 - 1000 mS/cm	≤ 1 %
0 - 2000 mS/cm[b]	≤ 1 %
Material	
for extra code 767	PEEK
for extra code 768	PVDF
Permissible sample medium temperatures[c]	-10 - +120 °C, briefly +140 °C (sterilization)
Pressure	max. 10 bar

[a] Usual application range from approx. 100 µS/cm.
[b] Not temperature compensated
[c] **Note:** The temperature, pressure and sample medium affect the service life of the sensor!

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
E-mail: mail@jumo.net
Internet: www.jumo.net

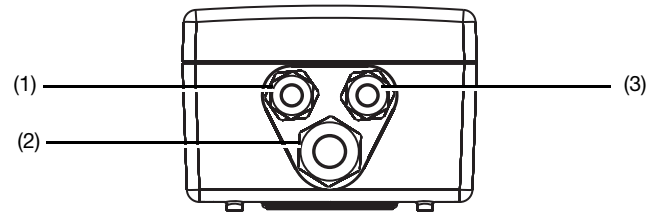
JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Electrical connection

Transmitter with electrical connection 82 (cable glands)

Head transmitter

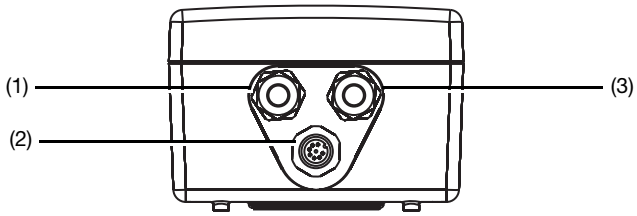


(1) Power supply and actual value output (conductivity/concentration and temperature) M12 cable gland (PA)

(2) Switching outputs M16 cable gland (PA)

(3) Binary input M12 cable gland (PA)

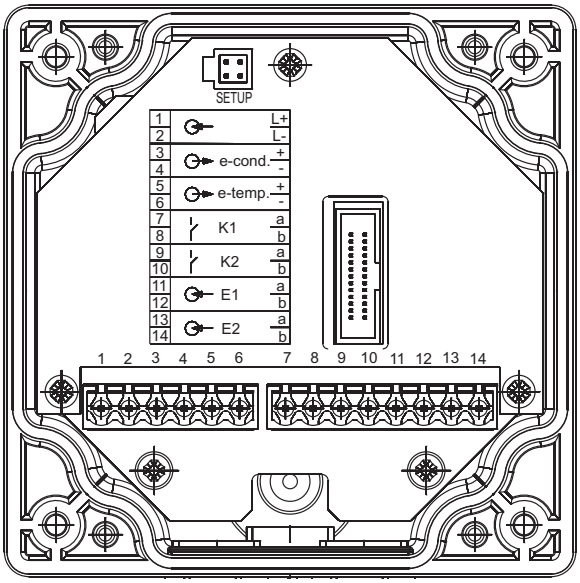
Transmitter with separate sensor

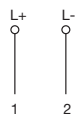


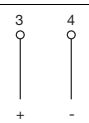
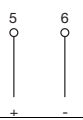
(1) Power supply and actual value output (conductivity/concentration and temperature) M12 cable gland (PA)

(2) Separate sensor M12 flush-type connector

(3) Binary input and switching outputs M12 cable gland (PA)



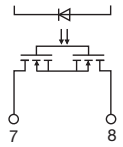
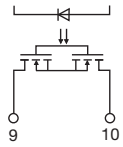
	Terminal assignment		Symbol
Supply			
Supply (with reverse-polarity protection)	1 2	L + L-	

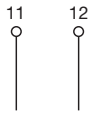
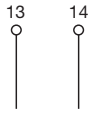
Outputs			
Analog signal output: conductivity/concentration (electrically isolated)	3 4	+ -	
Analog signal output: temperature (electrically isolated)	5 6	+ -	

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
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

	Terminal assignment		**Symbol**
PhotoMOS®-Relay K1 (floating, no)	7 8		
PhotoMOS®-Relay K2 (floating, no)	9 10		

Binary inputs	**Terminal assignment**		
Binary input E1	11 12		
Binary input E2	13 14		

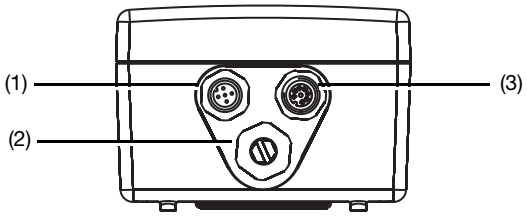
JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14, 36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Transmitter with electrical connection 83 (M12 connectors)

Head transmitter

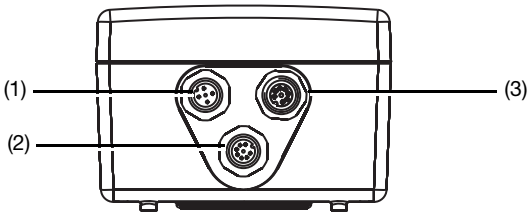


(1) **Connector I**
Power supply and
actual value output for conductivity/concentration
M12 flush-type connector, 5-pin

(2) Blanking plug

(3) **Connector II**
Actual value output for temperature, and binary input and switching outputs
M12 flush-type connector, 8-pin

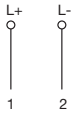
Transmitter with separate sensor

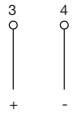
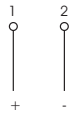
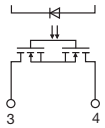
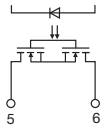


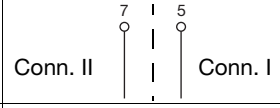
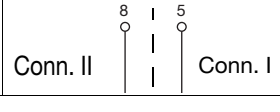
(1) **Connector I**
Power supply and
actual value output for conductivity/concentration
M12 flush-type connector, 5-pin

(2) **Connector III**
Inductive conductivity sensor
M12 flush-type connector, 8-pin

(3) **Connector II**
Actual value output for temperature, and binary input and switching outputs
M12 flush-type connector, 8-pin

Supply	**Connector**	**Assignment**	**Symbol**
Supply (with reverse-polarity protection)	I	L + L-	

Outputs			
Analog signal output: conductivity/concentration (electrically isolated)	I		
Analog signal output: temperature (electrically isolated)	II		
PhotoMOS®-Relay K1 (floating, no)	II		
PhotoMOS®-Relay K2 (floating, no)	II		

Binary inputs			
Binary input E1	I II		
Binary input E2	I II		

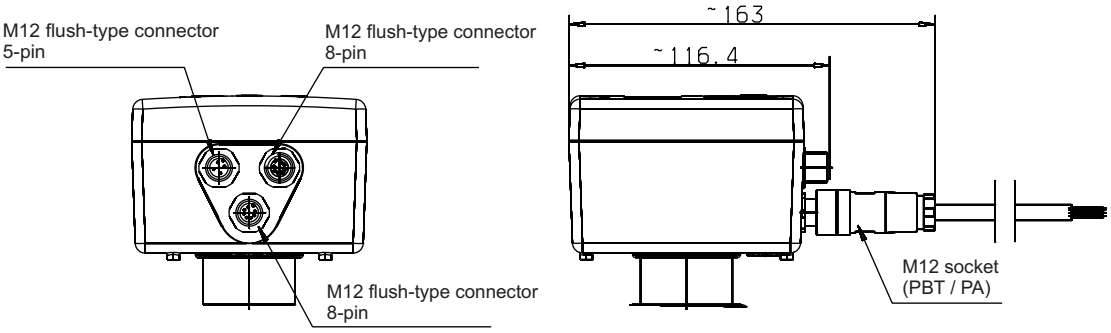
JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14,
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

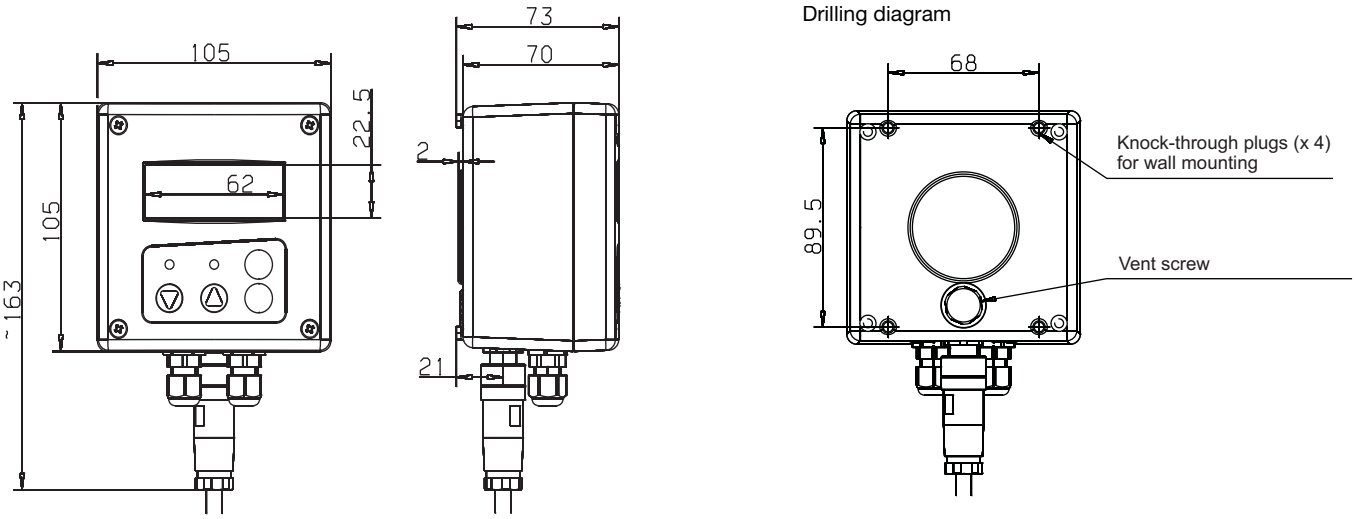
JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Dimensions

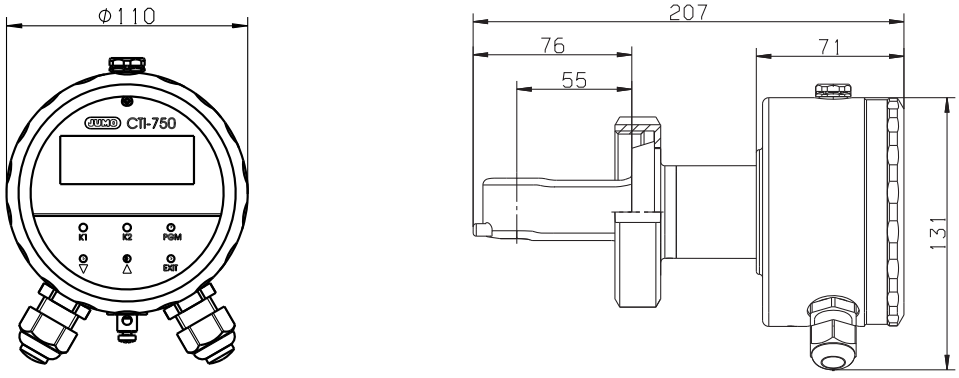
Operating unit of transmitter (head transmitter in plastic housing) with basic type extension 10 or 15 and electrical connection 83



Operating unit of transmitter (transmitter with separate sensor, in plastic housing) with basic type extension 20 or 25 and electrical connection 82



Operating unit of transmitter (head transmitter in stainless steel housing) with basic type extension 16 and electrical connection 84

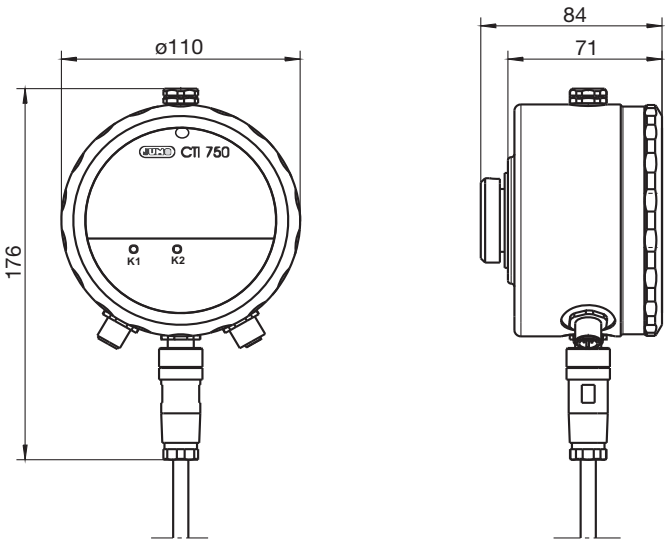


JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14,
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
E-mail: mail@jumo.net
Internet: www.jumo.net

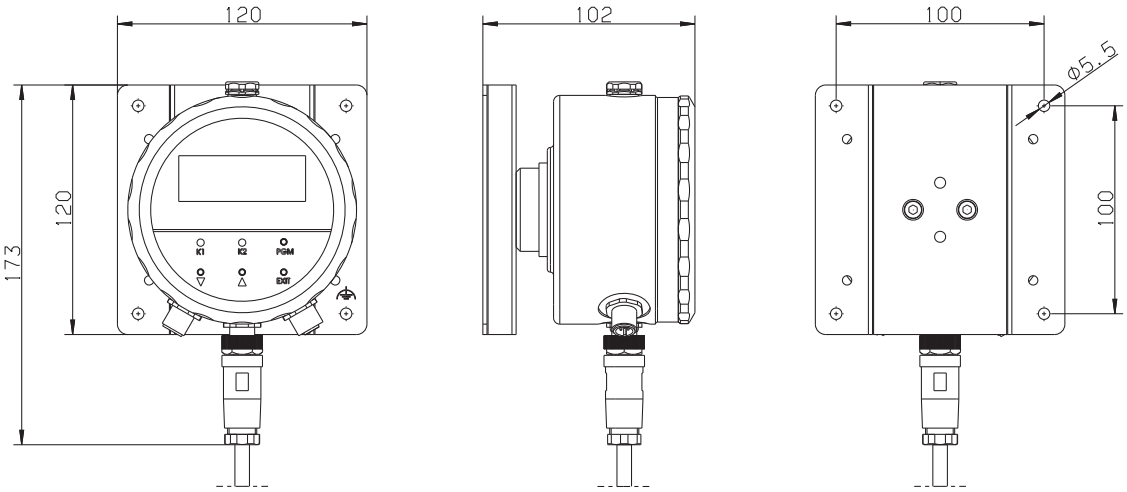
JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Operating unit of transmitter (transmitter with separate sensor, in stainless steel housing) with basic type extension 26 or 66 and electrical connection 83



Wall mounting



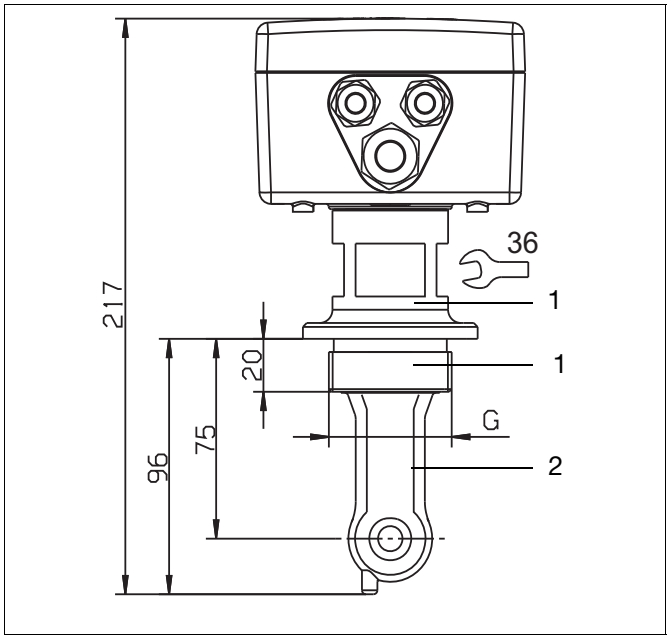
JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14,
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

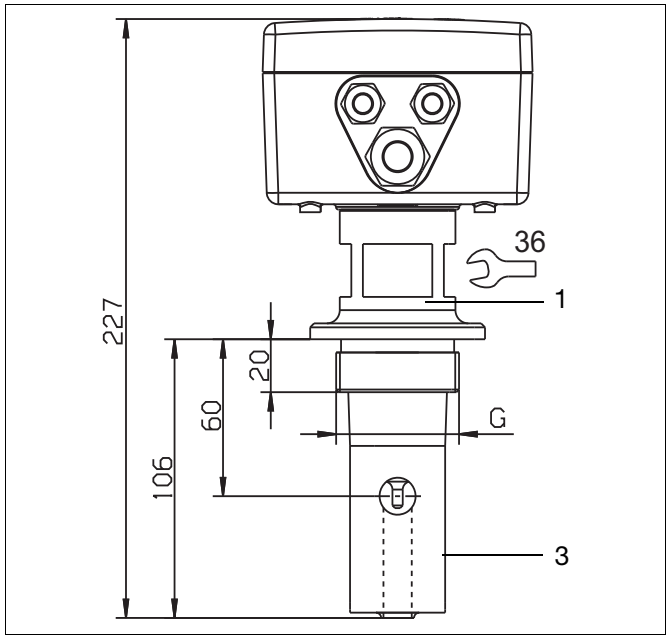
JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Dimensions/Process connections

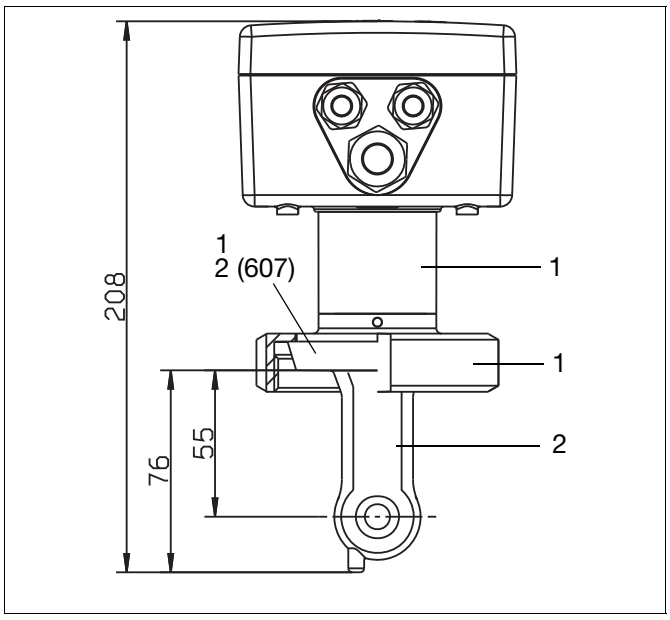
Head transmitter



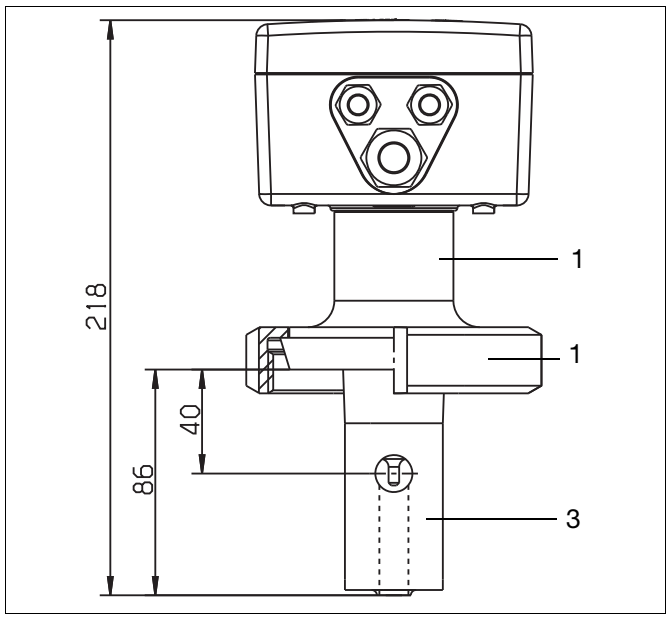
Version with process connection
108 = screw-in thread G 1 1/2 A
110 = screw-in thread G 2 A
and extra code 767



Version with process connection
107 = screw-in thread G 1 1/4 A
108 = screw-in thread G 1 1/2 A
110 = screw-in thread G 2 A
and extra code 768



Version with process connection
607 = MK DN 50
608 = MK DN 65
609 = MK DN 80
and extra code 767



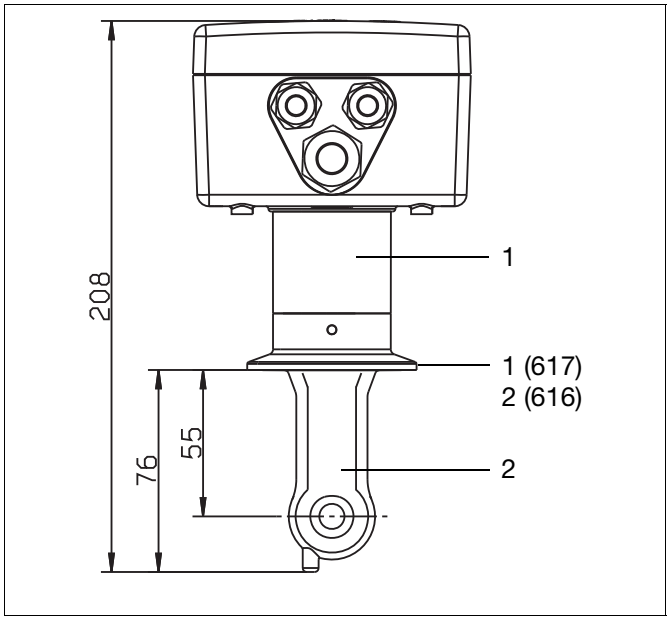
Version with process connection
606 = MK DN 40
607 = MK DN 50
608 = MK DN 65
609 = MK DN 80
and extra code 768

1 = 1.4301 2 = PEEK 3 = PVDF

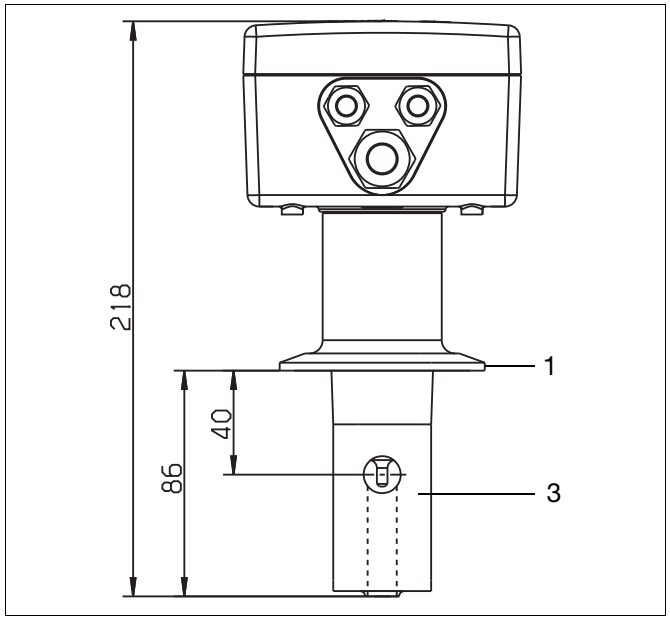
JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14,
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

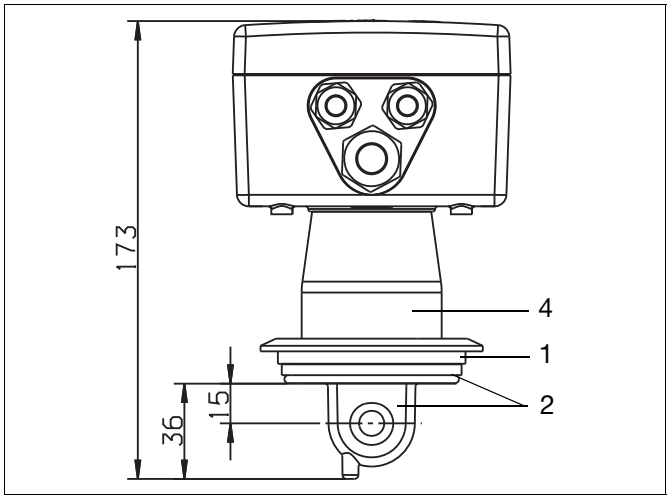
JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us



Version with process connection
616 = Clamp 2"
617 = Clamp 2 1/2"
and extra code 767 and 941
(retaining clip not included in delivery)



Version with process connection
617 = Clamp 2 1/2"
and extra code 768
(retaining clip not included in delivery)



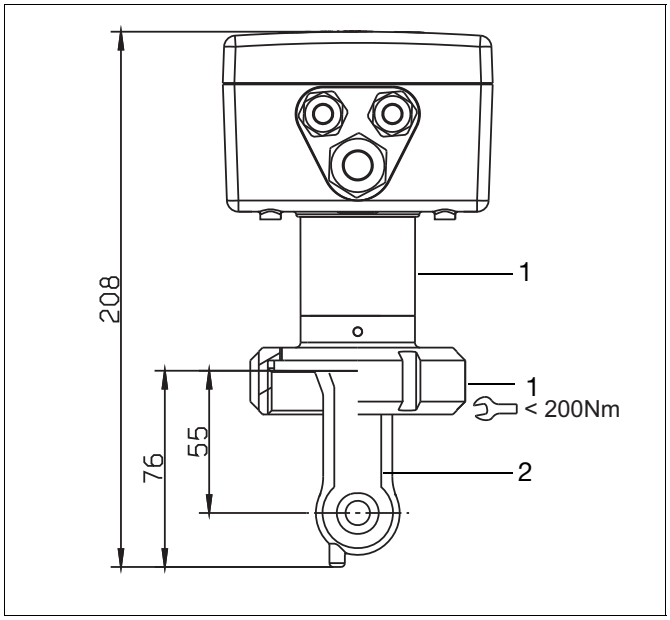
Version with process connection
686 = VARIVENT® DN 50/40
and extra code 767 and 941

1 = 1.4301 2 = PEEK 3 = PVDF 4= PPS GF 40

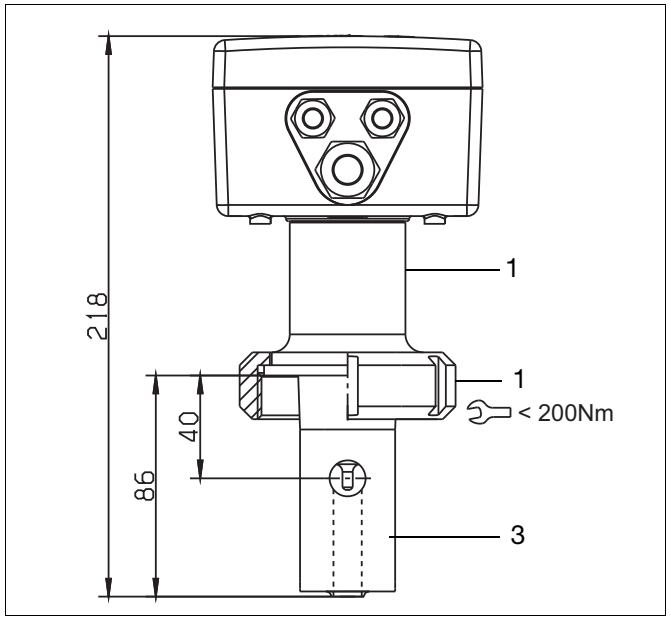
JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14,
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

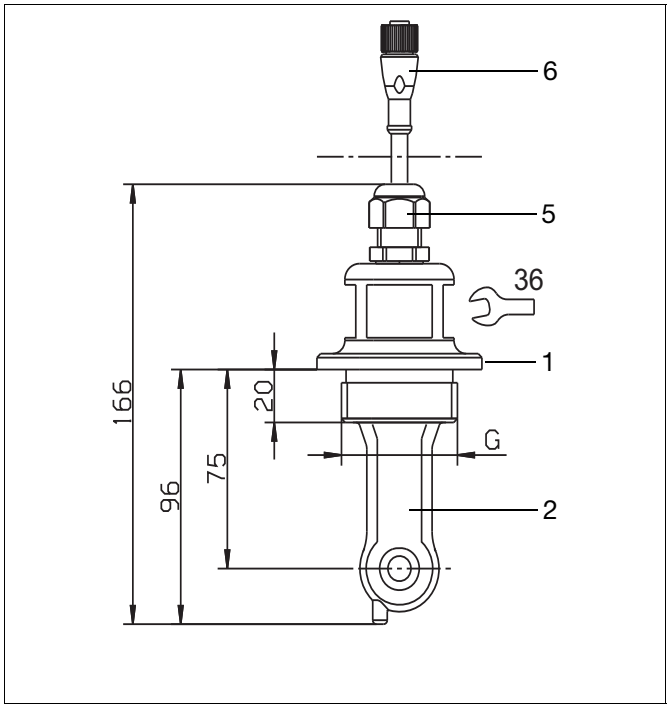


Version with process connection
690 = SMS 2"(< 200Nm)
and extra code 767 and 941

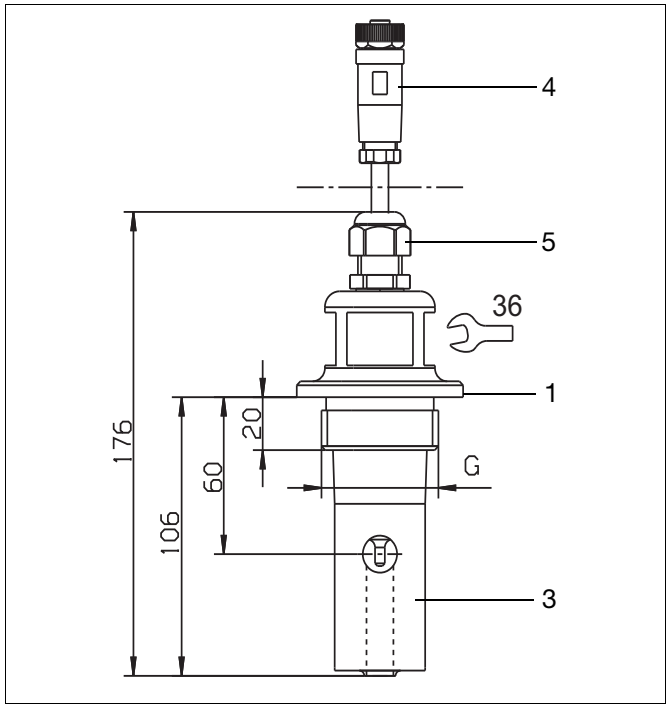


Version with process connection
690 = SMS 2" (< 200Nm)
and extra code 768

Separate sensor



Version with process connection
108 = screw-in thread G 1 1/2 A
110 = screw-in thread G 2 A
and extra code 767



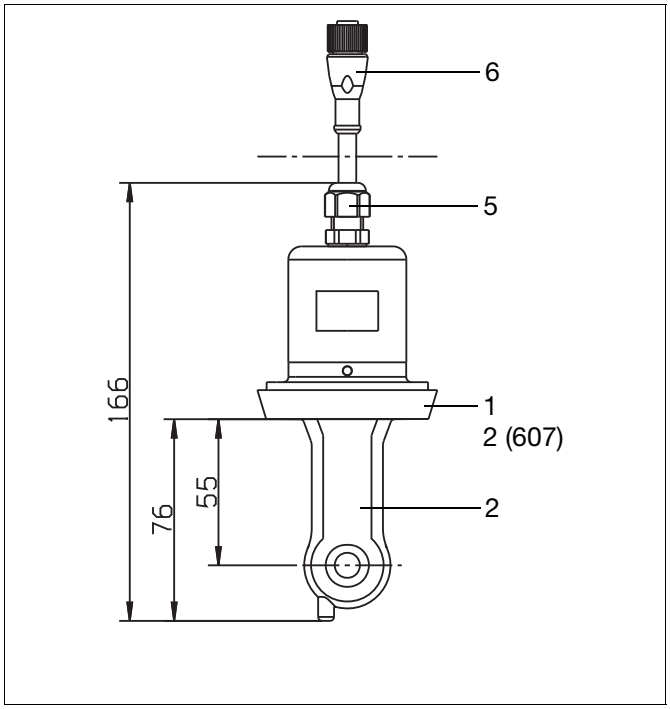
Version with process connection
107 = screw-in thread G 1 1/4 A
108 = screw-in thread G 1 1/2 A
110 = screw-in thread G 2 A
and extra code 768

1 = 1.4301 2 = PEEK 3 = PVDF 4 = PBT 5 = PA 6 = TPU

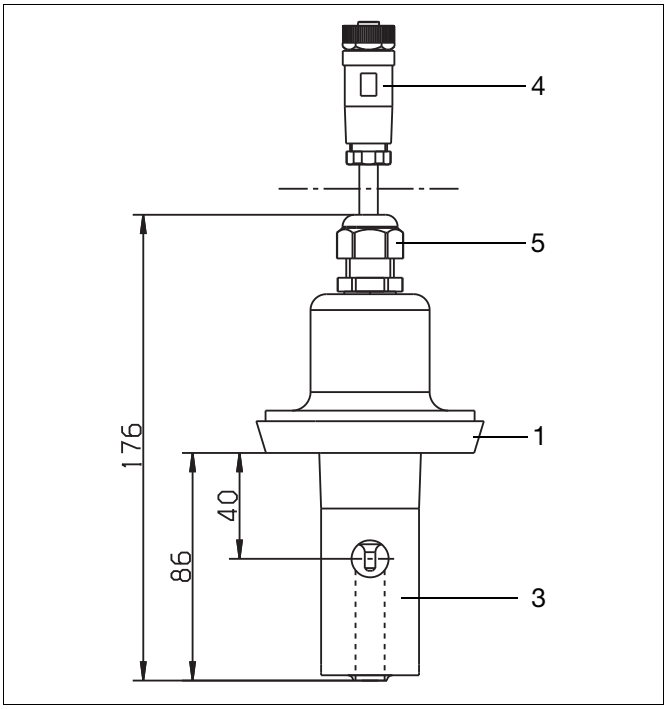
JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14,
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us



Split version with process connection
607 = MK DN 50
608 = MK DN 65
609 = MK DN 80
and extra code 767
(retaining clip not included in delivery)



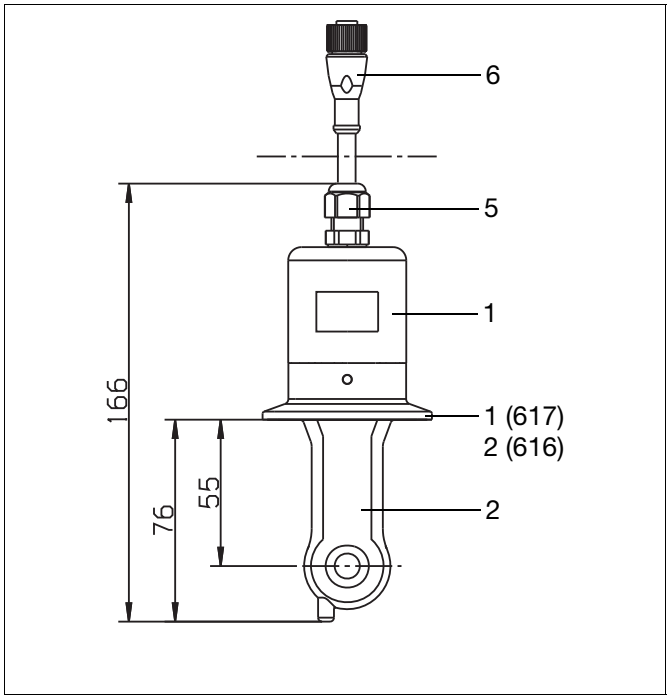
Split version with process connection
606 = MK DN40
607 = MK DN50
608 = MK DN65
609 = MK DN80
and extra code 768
(retaining clip not included in delivery)

1 = 1.4301 2 = PEEK 3 = PVDF 4 = PBT 5 = PA 6 = TPU

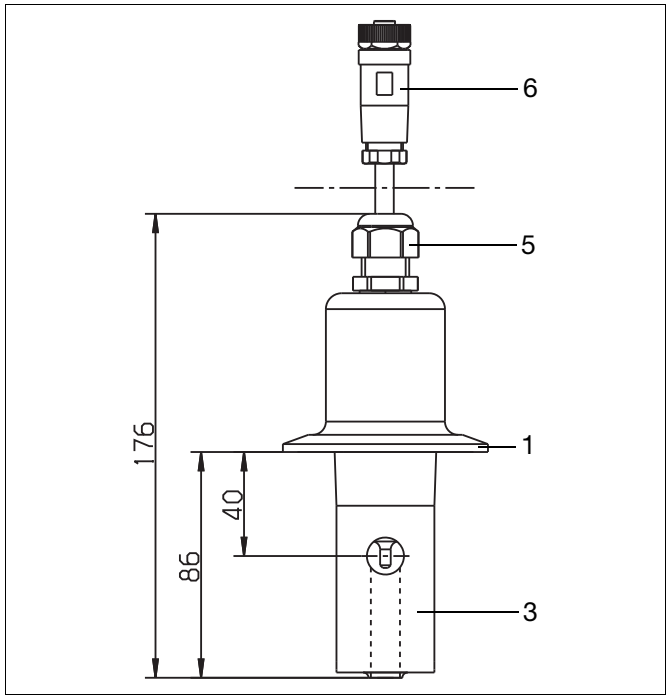
JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14,
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us



Split version with process connection
616 = Clamp 2"
617 = Clamp 2 1/2"
and extra code 767
(retaining clip not included in delivery)



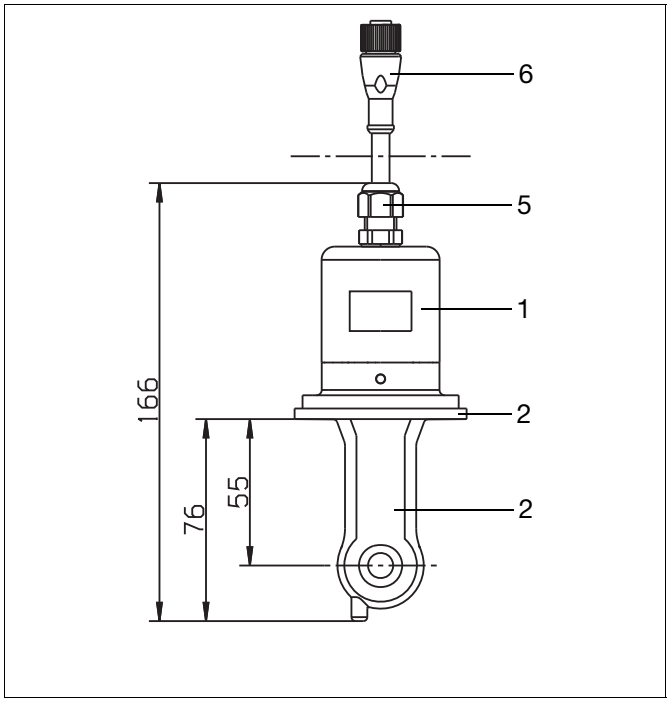
Split version with process connection
617 = Clamp 2 1/2"
and extra code 768
(retaining clip not included in delivery)

1 = 1.4301 2 = PEEK 3 = PVDF 4 = PBT 5 = PA 6 = TPU

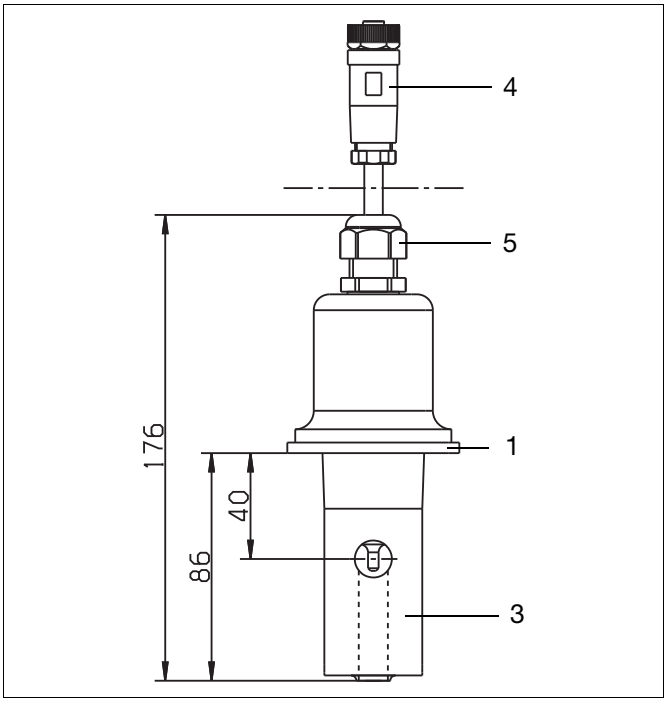
JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14,
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us



Split version with process connection
690 = SMS 2"
and extra code 767
(Union nut (⌓ < 200Nm) not included in delivery)



Split version with process connection
690 = SMS 2"
and extra code 768
(Union nut (⌓ < 200Nm) not included in delivery)

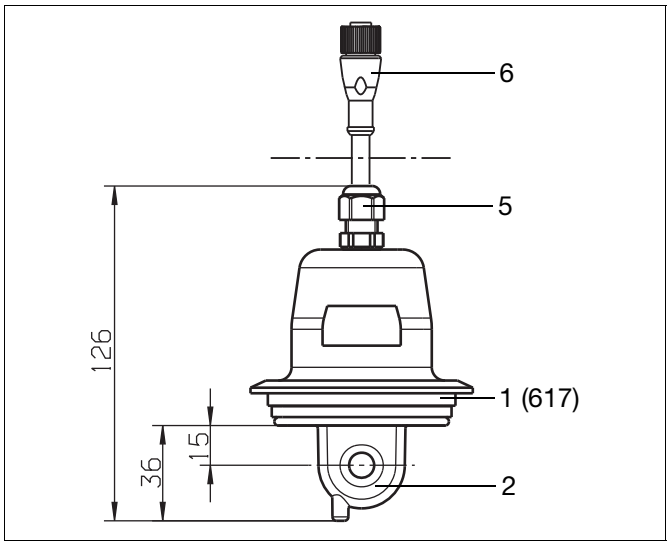
1 = 1.4301 2 = PEEK 3 = PVDF 4 = PBT 5 = PA 6 = TPU

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
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Varivent®



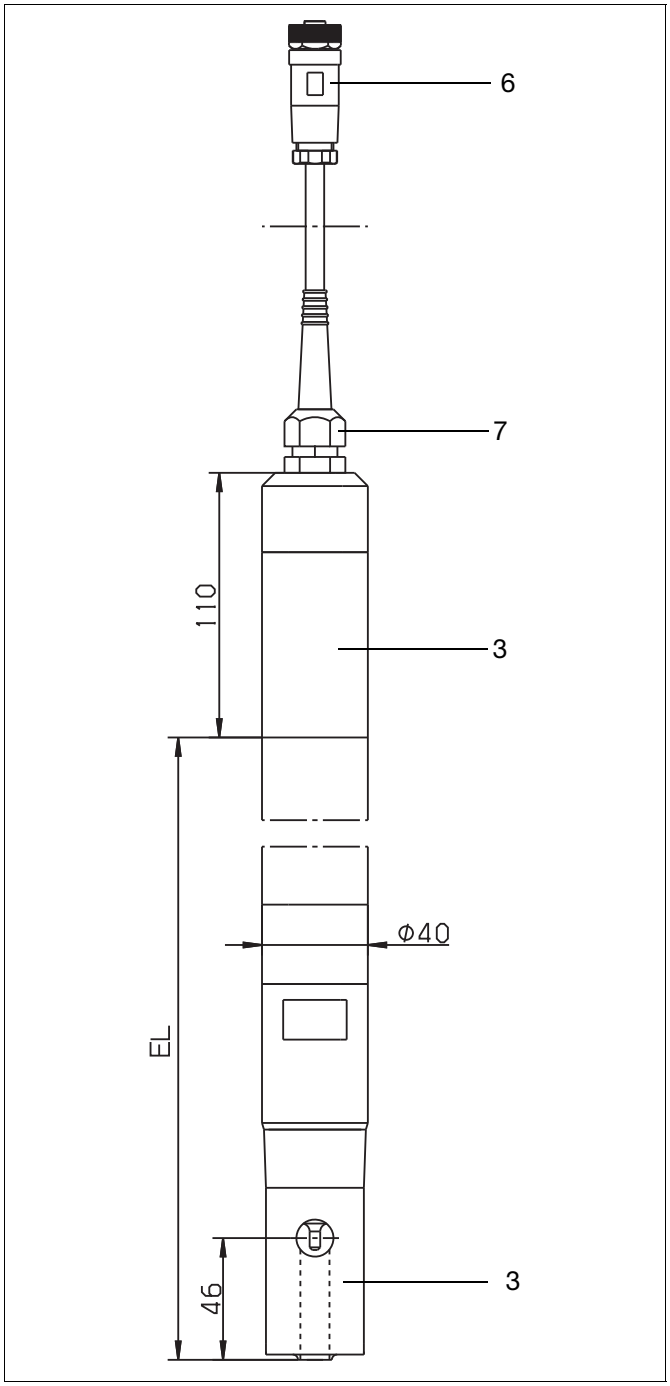
Split version with process connection
686 = VARIVENT® DN 50/40
and extra code 767 and 941
(retaining clip not included in delivery)

1 = 1.4301 2 = PEEK 5 = PA 6 = TPU

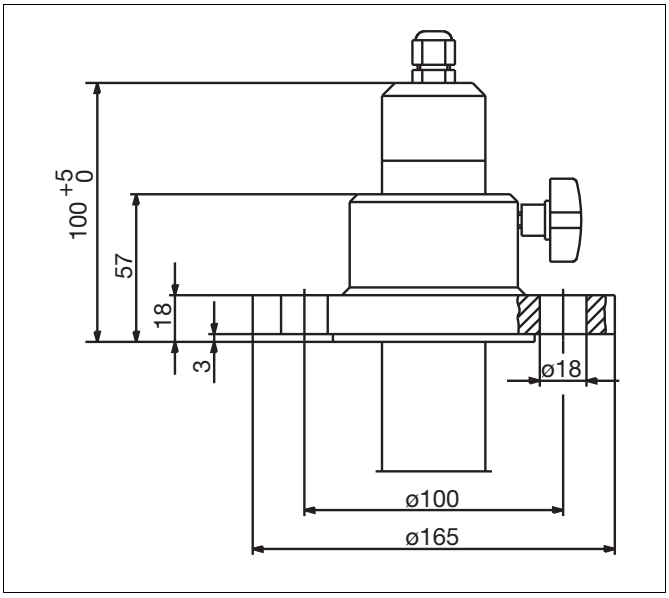
JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14,
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

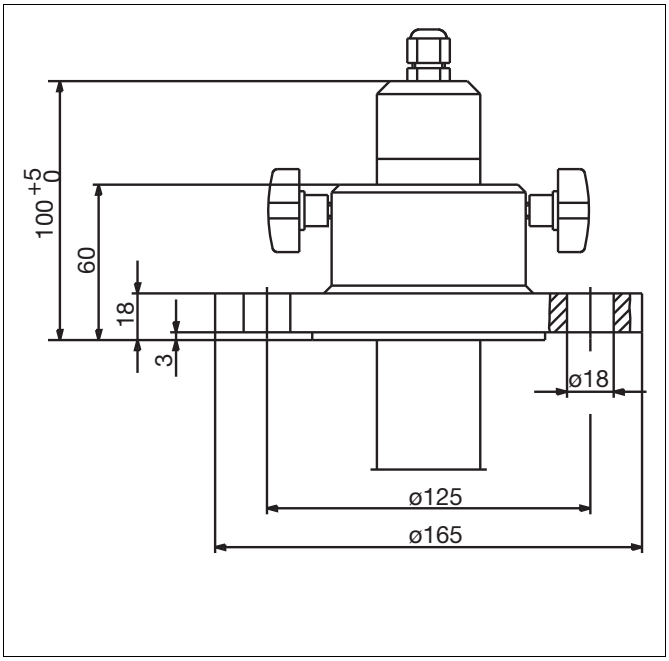
JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us



Split version with process connection 706
immersion model
(pipe clips included in delivery)



Optional accessory
DN 32 Flange
Part no. 00083375



Optional accessory
DN 50 Flange
Part no. 00083376

3 = PVDF 6 = PBT 7 = brass nickel plated EPDM

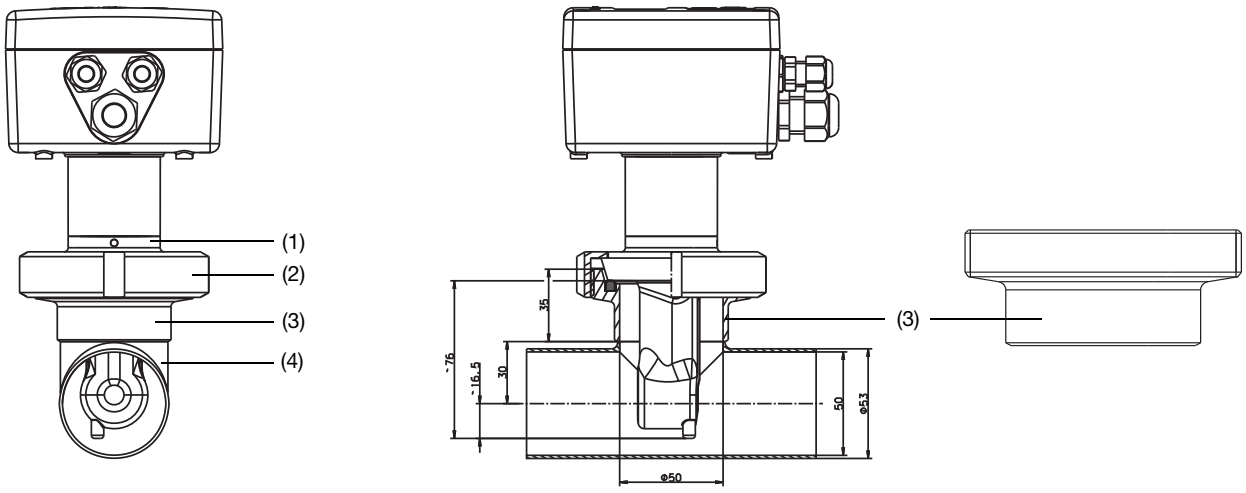
JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14,
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

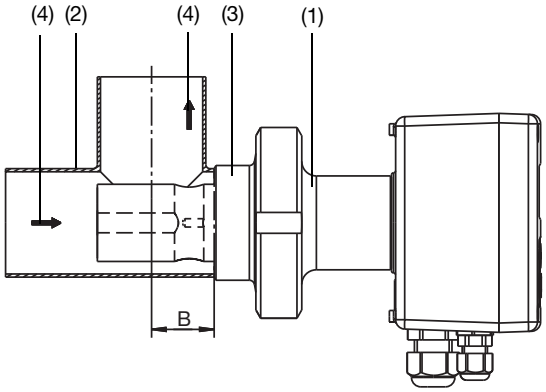
JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Mounting examples

Threaded pipe adapter



(1) Process connection 607, screwed pipe fitting DN 50, DIN 11851 (MK DN 50, milk cone), PEEK
(2) Ring nut DN 50, 1.4301
(3) Weld-on threaded pipe adaptor DN 50, DIN 11851, 1.4404 (matching part for process connection 607)
(4) Tee DIN 11852, short, DN50, 1.4301 (to be provided by the plant operator; **not** supplied by JUMO)



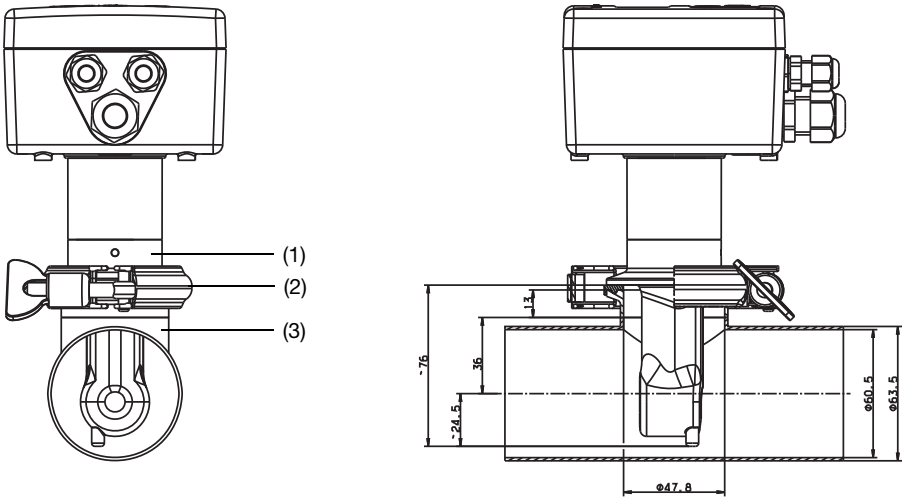
(1) Process connection 607, screwed pipe fitting DN 50, DIN 11851 (MK DN 50, milk cone), 1.4301
(2) Tee DIN 11852, SSS DN50, 1.4301, Dim. B shortened to 30 mm (to be provided by the plant operator; **not** supplied by JUMO)
(3) Weld-on threaded pipe adaptor DN 50, DIN 11851, 1.4404 (matching part for process connection 607)
(4) Flow direction

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
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Clamp

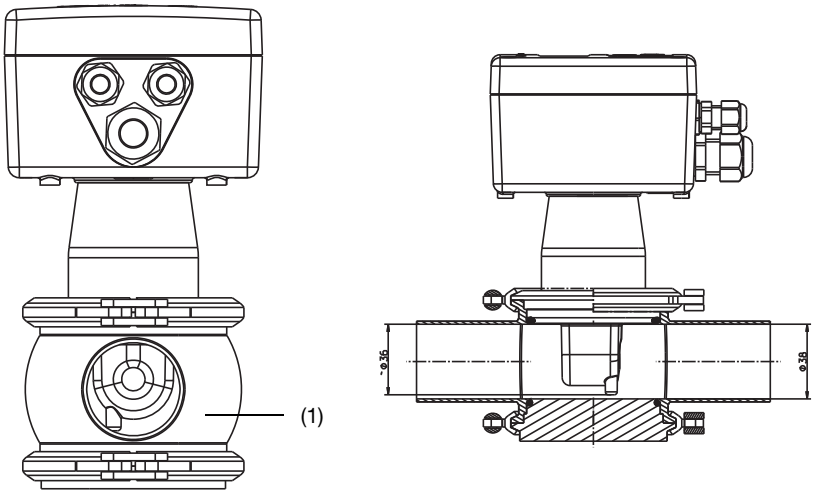


(1) Process connection 617, Clamp 2 1/2", PEEK

(2) Clamping ring, 1.4301,

(3) Tee, short, 2.5" to 2" similar to DIN 11852, and 2" clamp adapter, 1.430 (to be provided by the plant operator; **not** supplied by JUMO)

Varivent®



(1) Tee, VARIVENT®, DN 50, 1.4404 (to be provided by the plant operator; **not** supplied by JUMO)

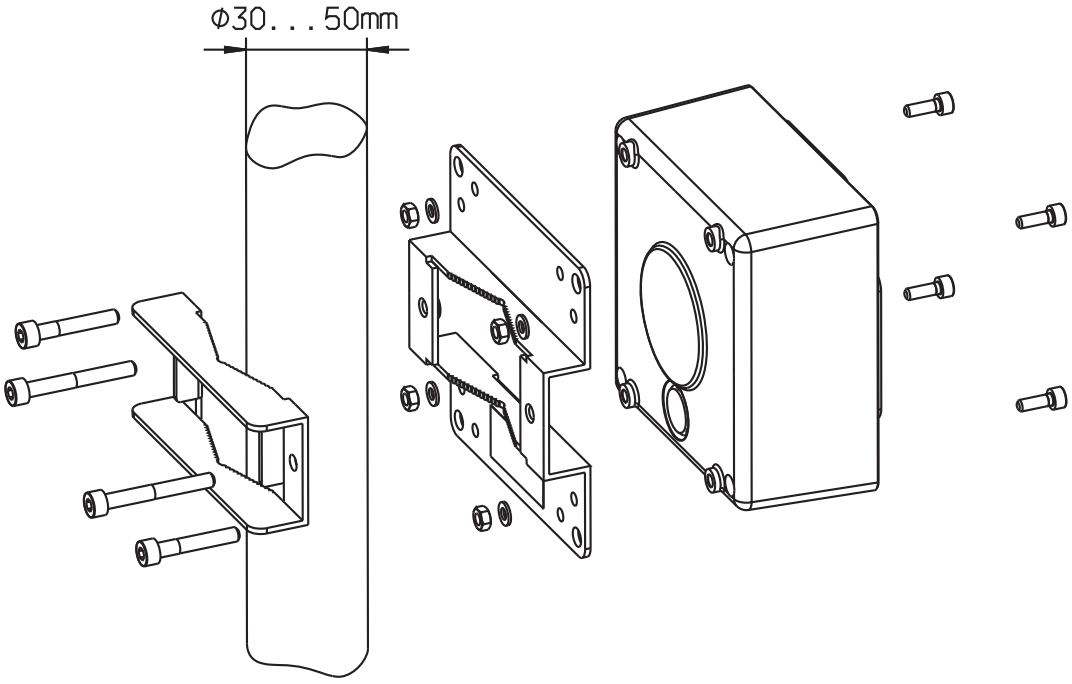
JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14,
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

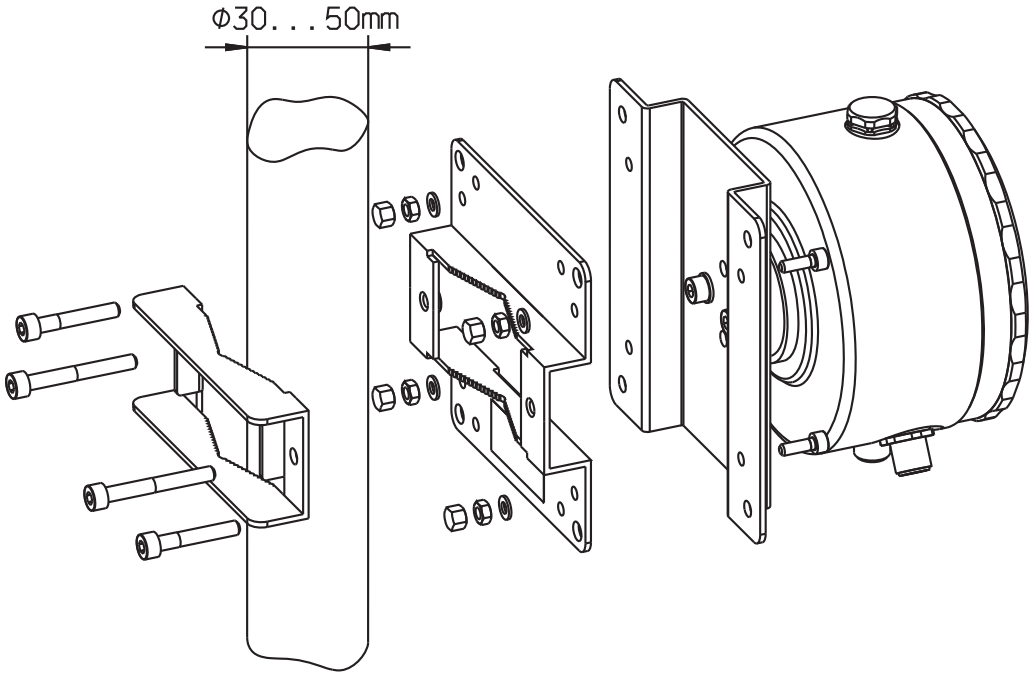
JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Kit for pipe mounting

for type 202756, part no. 00515128



for type 202756, part no. 00515128



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
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Order details

JUMO CTI-750 as "Head transmitter"

	(1)	**Basic type**
202756/10		JUMO CTI-750 - Head transmitter in plastic housing, without display/keypad[a]
202756/15		JUMO CTI-750 - Head transmitter in plastic housing, with display/keypad
202756/16		JUMO CTI-750 - Head transmitter in stainless steel housing, with display/keypad
	(2)	**Process connection**
108		Screw connection G 1 ½ A
110		Screw connection G 2 A
607		Taper socket with union nut DN 50 DIN 11851 (dairy pipe fitting)
608		Taper socket with union nut DN 65 DIN 11851 (dairy pipe fitting)
609		Taper socket with union nut DN 80 DIN 11851 (dairy pipe fitting)
617		Clamping socket (Clamp) 2 ½" [b], similar to DIN 32676
686		VARIVENT® connection DN 50/40 [b, c, d]
690		SMS DN 2"
	(3)	**Insertion length**
0000		See “Dimensions for head transmitter"
	(4)	**Electrical connection**
82		Cable glands[e]
83		M12 plug/socket connectors (instead of the cable glands)[f]
84		Two M16 cable glands and one blanking plug[g]
	(5)	**Extra code**
268		Internal temperature sensor
767		Sensor material PEEK[h]
768		Sensor material PVDF[i]
844		Supply voltage 24 V AC
941		Hygienic design

[a] The PC setup program is required for programming the device, see accessories.
[b] Mounting items (mounting brackets) not included in delivery.
[c] Only in conjunction with extra code 767 (sensor material PEEK).
[d] Hygienic process connection.
[e] Not for basic type 202756/16.
[f] If required, order 1 set M12 plug/socket connectors, part no. 00529482.
[g] Standard on basic type extension 16.
[h] Temperature sensor always internal.
[i] Not in combination with extra code 941.

	(1)		(2)		(3)		(4)		(5)	
Order code		-		-		-		/		, ...[a]
Order example	202756/10	-	607	-	0000	-	82	/	767	

[a] List extra codes in sequence, separated by commas.

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
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

CTI-750 as "Transmitter with separate sensor"

	(1)	**Basic type**
202756/20		JUMO CTI-750 Transmitter in plastic housing, without display/keypad (without sensor) [a, b]
202756/25		TJUMO CTI-750 transmitter in plastic housing, with display/keypad (without sensor) [b]
202756/26		JUMO CTI-750 transmitter in stainless steel housing, with display/keypad (without sensor) [b]
202756/60		JUMO CTI-750 transmitter in plastic housing, without display/keypad (with sensor) cable length 10 m [a]
202756/65		JUMO CTI-750 transmitter in plastic housing, with display/keypad (with sensor) cable length 10 m
202756/66		JUMO CTI-750 transmitter in stainless steel housing, with display/keypad (with sensor) cable length 10 m
202756/80		JUMO CTI-750 replacement sensor with 10 m cable for transmitter in plastic housing (without transmitter) [b, c]
202756/85		JUMO CTI-750 replacement sensor with 10 m cable for transmitter in stainless steel housing (without transmitter) [b, c]
	(2)	**Process connection**
000		Without process connection
108		Screw connection G 1 ½ A
110		Screw connection G 2 A
607		Taper socket with union nut DN 50 DIN 11851 (dairy pipe fitting)
608		Taper socket with union nut DN 65 DIN 11851 (dairy pipe fitting)
609		Taper socket with union nut DN 80 DIN 11851 (dairy pipe fitting)
617		Clamping socket (Clamp) 2 ½" [c], similar to DIN 32676
686		VARIVENT® connection DN 50/40 [c, d, e]
690		SMS DN 2"
706		Immersion model[f]
	(3)	**Insertion length** (see "Dimensions for separate sensor")[f]
0000		Not available
0500		500 mm
1000		1000 mm
1500		1500 mm
2000		2000 mm
xxxx		Special length (in 250 mm increments, e.g. 0250, 0750, 1250, 1750)
	(4)	**Electrical connection**
21		Fixed cable with M12 socket connector on separate sensor[g]
82		Cable glands on the operating unit
83		M12 plug/socket connectors on operating unit
	(5)	**Extra code**
000		No extra code
268		Internal temperature sensor
767		Sensor material PEEK[h]
768		Sensor material PVDF[i]
844		Supply voltage 24 V AC
941		Hygienic design

[a] The PC setup program is required for programming the device, see accessories.
[b] A calibration kit is absolutely essential for commissioning. If not available, please include in your order (see accessories).
[c] Mounting items (mounting brackets) not included in delivery.
[d] Only in conjunction with extra code 767 (sensor material PEEK).
[e] Hygienic process connection.
[f] Only in conjunction with extra code 768 (cell material PVDF).
[g] Only for basic types 202756/80 and /85.
[h] Temperature sensor always internal.
[i] Not in combination with extra code 941.

	(1)		**(2)**		**(3)**		**(4)**		**(5)**
Order code		-		-		-		/	, ...[a]
Order example	202756/65	-	607	-	0000	-	82	/	000

[a] List extra codes in sequence, separated by commas.

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
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us

Stock items

(shipment: 3 working days after receipt of order)

Type	Part No.
202756/10-607-0000-82/767/941	00553551
202756/15-607-0000-82/767/941	00544540
202756/15-607-0000-82/768	00470099
202756/15-617-0000-82/767/941	00551874
202756/65-607-0000-82/767/941	00547023

Accessories

Type	Part No.
Flange DN 32, material: PP	00083375
Flange DN 50, material: PP	00083376
Weld-on threaded adapter DN 50, DIN 11851	00085020
Ring nut DN 50, DIN 11851	00343368
Ring nut SMS DN 2“, Mutter	00345162
M12 plug connector, 8-pole, straight, for assembly by user	00444307
M12 socket connector, 8-pole, straight, for assembly by user	00486503
M12 socket connector, 8-pole, straight, for assembly by user	00444312
M12 socket connector, 5-pole, straight, for assembly by user	00444313
Connector set (TN 00444307 and TN 00444313) for 202755/202756 (PG209791)	00529482
Cover with LC-display and keyboard CTI-500/750	00443725
Cover with LC-display and keyboard for VA-version	00525488
DIN rail mounting set	00459903
Pipe installation kit for CTI-750	00515128
Switching mode power supply, type PS5R-A24 for DIN rail mounting; Input voltage 100 ... 240 V AC	00374661
Adjustment set (for calibrating a replacement transmitter)	00459436
PC interface (USB/TTL), 2 adapter setup cable	00456352
Concentration curve for CTI-750 for input via setup software	00592816
Holder for wall mounting for CTI-750 in stainless steel housing	00477194

Software

Type	Part No.
Setup CTI-750	00454710