Ultrasonic filling level sensor UFM 200 / 600 C2

Features

- Measuring range UFM 600 up to 6 metres
- Measuring range UFM 200 up to 2 metres
- for distance, volume and filling level measurement
- for containers, open basins or channels
- simple installation via connection threads
- contact-free measuring principle

www.asv-stuebbe.com/produkte/mess-und-regeltechnik

PVDF

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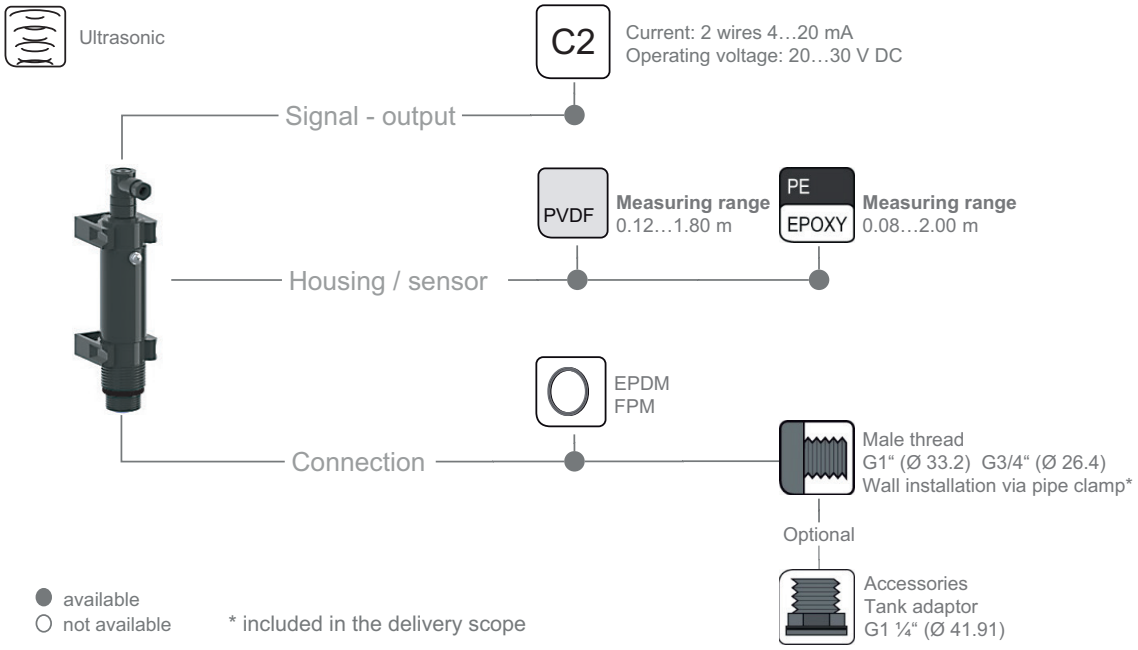
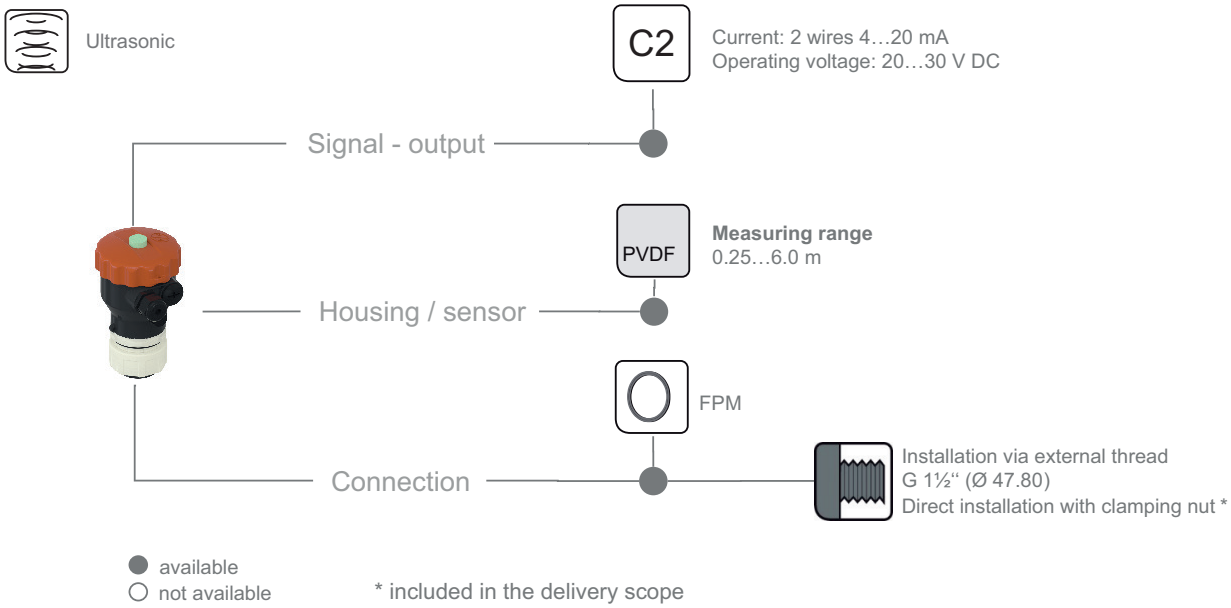
Issue 2017.07.03-en
Print No. 301194
TR MA DE Rev003

Pictogram Ultrasonic filling level sensor UFM 200 / 600 C2

UFM 200 C2



UFM 600 C2



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Application
- The UFM is an ultrasonic sensor for continuous contact-free filling level measurement of liquid medium types.

Use
- In containers or tanks in almost all industrial sectors
- Suitable for neutral and aggressive fluids in atmospheric air, provided the sensor components in contact with the medium are resistant to the medium (medium vapours) according to the ASV Stübbe resistance guide

The following factors limit accuracy:
- foaming medium types
- heavily turbulent surfaces
- strong deposit build-up or condensate on the sensor
- interfering reflections
- quick temperature changes

Application limits
- heavy foam generation
- gas emitting medium types (steam pressure ›50 mbar)
- gaseous atmospheres (e.g. carbon dioxide)

ASV resistance guide
www.asv-stuebbe.de/pdf_resistance/300051.pdf

Version
- UFM 200: measuring range up to max. 2 metres
- UFM 600: measuring range up to max. 6 metres

Operation
- 2-wire current version UFM 600:
  using the section actuator installed on the circuit board
- 2-wire current version UFM 200:
  no operation required

Function
- The sensor consists of an ultrasonic transducer which continuously transmits short ultrasonic pulses to the surface of the medium to be measured. The pulses are received by the sensor as echoes.
- The time between the transmission and receipt of the pulses is measured. This time is proportional to the distance and therefore to the filling height of the medium. The values such as distance, filling height and volume are converted in the connection housing.
- The current module transmits the filling level, distance or volume via a standard 4–20 mA signal. The same wire is used for measured value output and voltage supply. Cannot be used with Uni display

Measuring value
- Filling level

Device connection
- see Pictogram
  „Ultrasonic filling level sensor UFM 200“
- see Pictogram
  „Ultrasonic filling level sensor UFM 600“

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Technical data

			Value		
			UFM 600 PVDF	UFM 200 PVDF	UFM 200 PE/Epoxy
Measuring					
Measuring range		cm	25–600	12–180	8–200
Dead zone 0–0.25 m		cm	0–25	0–12	0–8
Measuring resolution		mm		≤ 1	
Ultrasonic frequency		kHz	75	200	200
Angle of reflected beam (–3 dB)		°	14	10	14
Measuring interval		s	0.8–1.5	0.4–0.6	0.4–0.6
Accuracy: of the maximum value		%	0,2%	0,4%	0,4%
Power up		s		15	
Step response (10–90%)		s		‹ 1.5	
Temperature compensation				Automatic	
Voltage supply					
Voltage supply		V DC	20–30	18–30	18–30
Power consumption		W		0.1	
Signal output		mA		4–20	
Connection cable					
Cable outside diameter		mm		5–11	
Nominal cross-section	Voltage supply	mm²		0.25	
material coming into contact with the media					
Sensor			PVDF	PVDF	PE, Epoxy
Sensor housing			PVDF	PVDF	PE
Sensor seal			FPM	FPM, EPDM	FPM, EPDM
Union nut			PVDF	–	–
Process sealing			FPM	FPM, EPDM	FPM, EPDM
material not coming into contact with the media					
Housing				PP-GF	
Housing cover				PP-GF / PA transparent	
Cover seal				NBR	
Connection cable, UV-resistant (Flex)				TPE-V	
Process conditions					
Ambient temperature		°C		–20–70	
Atmospheric ambient pressure		bar		0.8–1.1	
Relative humidity		%		20–85	
Process temperature		°C		–20–70	
Process pressure		bar		1	
Mechanical data					
Weight of Compact		kg	0.4	0.2	0.2
Mounting position				vertical	
Mounting the threaded neck			1 1/2“	1“, 3/4“	1“, 3/4“
Type of protection				IP 67	

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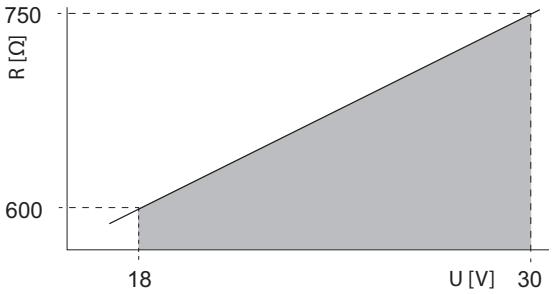
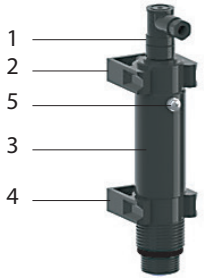
Ohmic resistance



	Description
R	Max. ohmic resistance
U	Voltage supply

Components UFM 200



No.	Description
1	Connection cable connector
2	Fastening clamp
3	Sensor housing
4	Fastening clamp
5	Protective earth connection

Components UFM 600

No.	Description
1	Housing cover
2	Connection and sensor housing
3	Device connection
4	Sensor
5	Cable lead throughs

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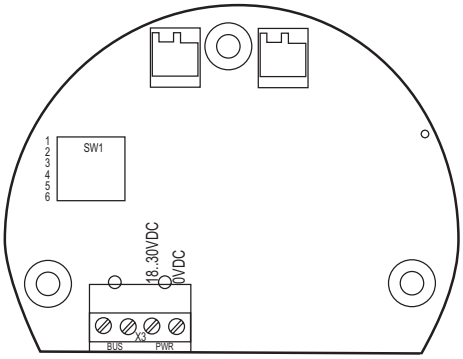
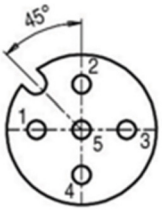
Ultrasonic filling level sensor UFM 200 / 600 C2

Connection plan UFM 600, 2-wire current version, Process connection



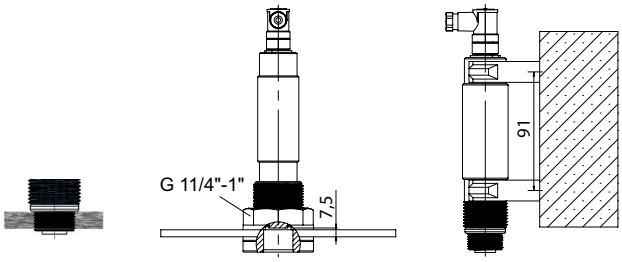
Terminal	Connection
Connector X3	
PWR: 18–30 V DC	+4–20 mA
PWR: 0 V DC	-4–20 mA

Connection plan UFM 200, Process connection

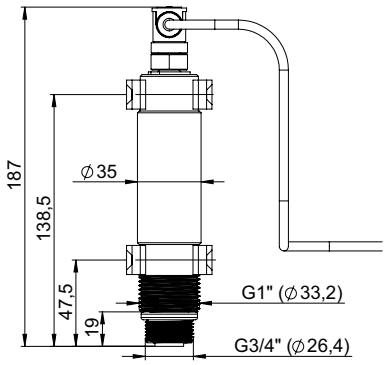


Pin.	Connection
1	+4–20 mA
2	-4–20 mA

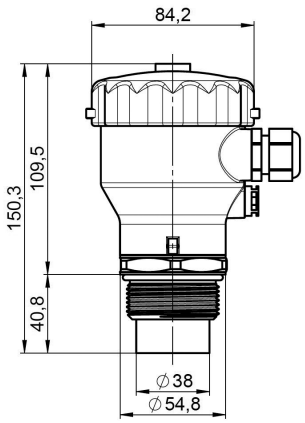
Assembly example



UFM 200



UFM 600



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