Shuttle®

ULTRASONIC LEVEL TRANSMITTER

2.1

General

Shuttle® is an ultrasonic level meter with an intelligent and very precise measuring system. It provides simple and logical operation using advanced technology. This results in a high quality product at a competitive price.

Shuttle® is designed to measure water levels as well as other fluids and contaminated or/and aggressive media, where the ultrasonic sensor is not in contact with the media.

Features

- Multiple sensors with measuring ranges from 10 cm to 25 m.
- Learns how the tank is arranged with piping, pumps and other items interfering with the measurement.
- Ignores turbulence and electrical interference (even a slow moving mixer can pass through without influencing the measurement).
- Two output relays for level/system alarm or alternating pump control with duty and standby cycles.
- 4-20 mA output with zero and span adjustment.
- Indicates strength of echo signal with a bar graph.
- Narrow ultrasonic pulse signal concentrates signal strength for minimum sensitivity to foam/sludge on the liquid surface.
- Easy to read LCD-display for both setup and indication.
- Actual level indicated with bar graph and digits in millimeters, centimeters, meters, feet and inches.
- Readout can be chosen as relative or absolute level.
- 10-30 V DC or 230 V AC supply.
- FM approved sensors for hazardous areas.

Applications

- Stormflow tanks
- Pump stations
- Tanks in sewage treatment plants
- Tanks in water plants
- Tanks and vessels in process and food industries.

Datasheet

EN 2.1 Shuttle datasheet 1906

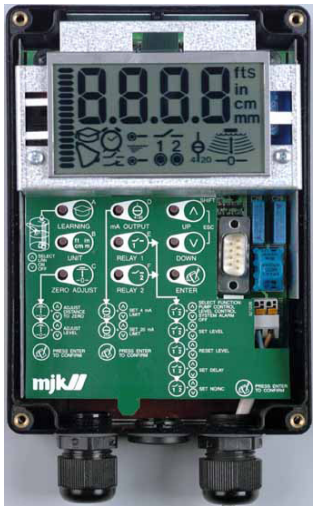
mjk a xylem brand

Shuttle® Ultrasonic Level Transmitter

Operation

Shuttle® is fully automatic after initial setup. Six function-buttons behind the front panel are used to configure the following:

- Unit selection in either feet, inches, metres, centimetres or millimetres.
- Adjustment of zero level of the measurement and selection of relative or absolute reference.
- Zero and span for the mA-output.
- Function for the two 2-output relays - off, level alarm, system alarm or pump control with alternation.
- The relays can be set to either NO or NC function with an optional delay function.
- Learning function helping the level meter recognize how the wet well is arranged with pumps, piping and other elements so the measurement is not affected by false echoes.



Specifications Transmitter

Shuttle® Level Transmitter	
Range:	0-12 m., 0-15 m., 0-25 m. (depending on sensor)
Span:	(4/20 mA) From 0-10 cm to 0-12 m/15 m/25 m
Supply voltage:	230/115 V AC ± 10 % or 10-30 V DC
Power consumption:	Approx. 2 W
Temperature range:	- 20° to + 60° C
Input:	From ultrasonic sensor
Measurement accuracy:	Better than ± 0.2 %
Outputs:	Analog: 4 - 20 mA, max. load 500 Ω Digital: 2 x relays with programmable NO/NC function Max. 1 A resistive load @ 50 V
Indication:	LCD display with four digits and symbols
Operation:	Function keypad behind front panel
Enclosure:	IP 67
Test approvals:	CE: EN 50081-1, EN 50082-1 UL: File E194021

Shuttle® Ultrasonic Level Transmitter

Ultrasonic Sensors

Standard range version

Shuttle® Ultrasonic Sensor 200570/200571	
Range:	15 m (fluids) 6 m (solids)
Frequency:	30 kHz
Spread:	3°
Deadband:	35 cm
Temperature:	- 20° to + 60° C
Materials:	PP, POM. Mounting: ISO
Cable:	Shielded, oil resistant PVC insulation, length 12 m/50 m
Enclosure:	IP 68, watertight, withstands max. 1 bar submersion
CE-approvals:	EN 50081-1, EN 50082-1

Standard range version

Shuttle® Ultrasonic Sensor: 200642	
Range:	12 m (fluids), 5 m (solids)
Frequency:	40 kHz
Spread:	7°
Deadband:	35 cm
Temperature:	- 20° to + 60° C
Materials:	PTB+PC, glass reinforced epoxy. Mounting: NPT
Cable:	Shielded, oil resistant PVC insulation, length 12 m. (Max. 100 m. extension with 690010 cable.)
Enclosure:	IP 68, watertight, withstands max. 1 bar submersion
CE-approvals:	EN 50081-1, EN 50082-1

Extended range version

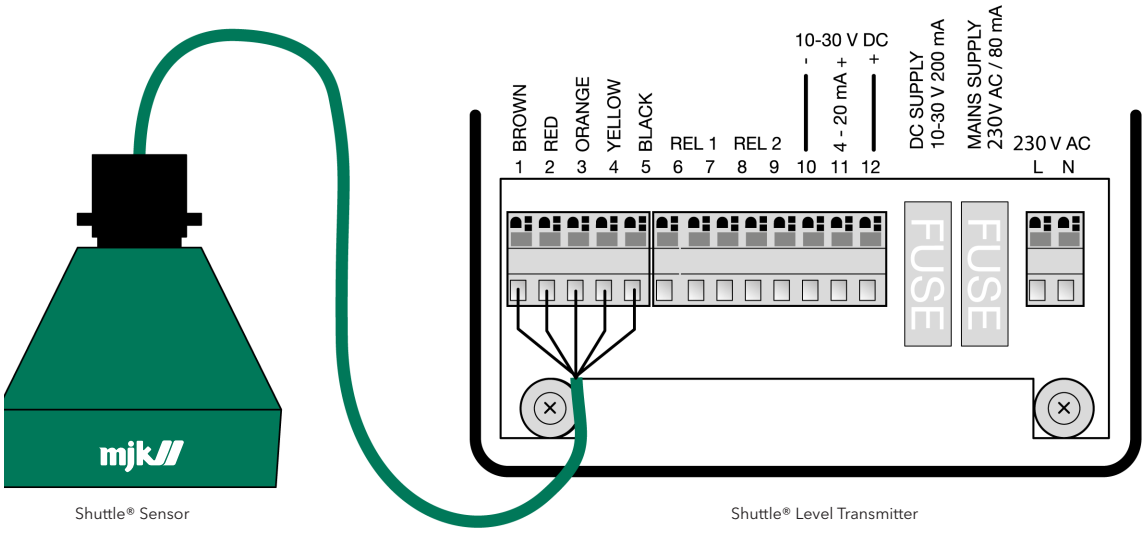
Shuttle® Ultrasonic Sensor: 200632	
Range:	25 m (fluids), 10 m (solids)
Frequency:	30 kHz
Spread:	6°
Deadband:	80 cm
Temperature:	- 20° to + 60° C
Materials:	PTB+PC, glass reinforced epoxy. Mounting: NPT
Cable:	Shielded, oil resistant PVC insulation, length 12 m. (Max. 100 m. extension with 690010 cable.)
Enclosure:	IP 68, watertight, withstands max. 1 bar submersion
CE-approvals:	EN 50081-1, EN 50082-1

Chemically resistent version

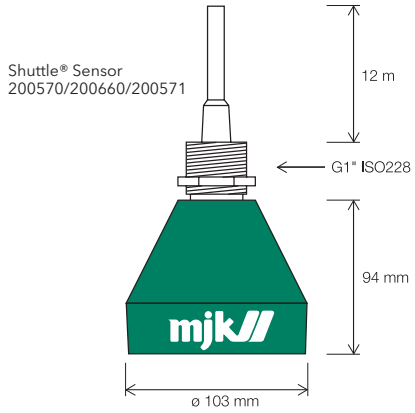
Shuttle® Ultrasonic Sensor: 200660	
Range:	10 m (fluids), 5 m (solids)
Frequency:	50 kHz
Spread:	6°
Deadband:	35 cm.
Temperature:	- 20° to + 60° C
Materials:	PP, PVDF. Mounting: ISO
Cable:	Shielded, oil resistant PVC insulation, length 12 m. (Max. 100 m. extension with 690010 cable.)
Enclosure:	IP 68, watertight, withstands max. 1 bar submersion
CE-approvals:	EN 50081-1, EN 50082-1

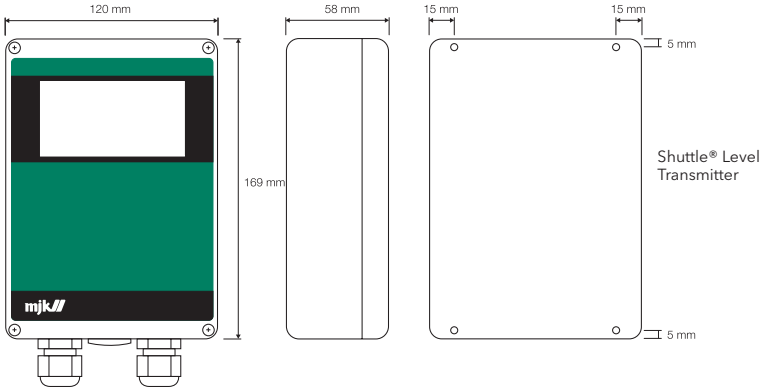
Shuttle® Ultrasonic Level Transmitter

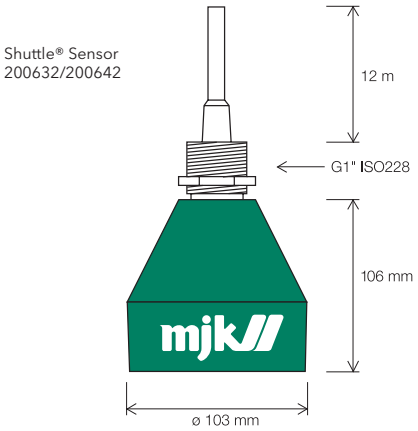
Electrical Connections

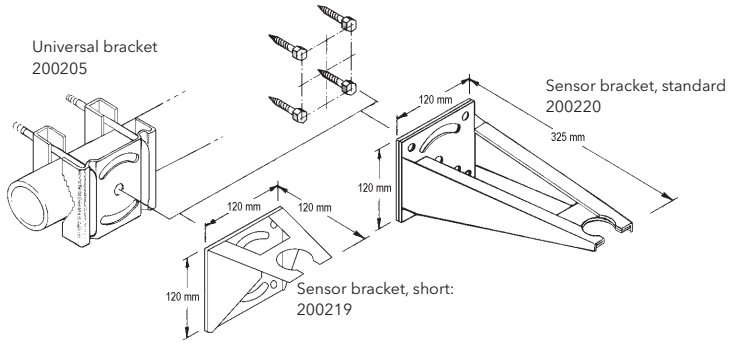


Dimensions









Shuttle® Level Transmitter

Order Numbers

Shuttle® Ultrasonic Level Transmitters	
201209	Shuttle® level transmitter 115VAC w/o sensor
201210	Shuttle® level transmitter 230VAC w/o sensor
201211	Shuttle® level transmitter 230VAC w/o sensor, Spanish label
201213	Shuttle® level transmitter 115VAC w/ sensor 200570 0-15/0-6m, Spanish label
201214	Shuttle® level transmitter 115VAC w/ sensor 200570, 0-45/15ft
201215	Shuttle® level transmitter 230VAC w/ sensor 200570, 0-15/0-6m
201216	Shuttle® level transmitter 230VAC w/ sensor 200570, 0-15/0-6m Spanish label
201225	Shuttle® level transmitter 230VAC w/ sensor 200632, 0-25/0-10m
201235	Shuttle® level transmitter 230VAC w/ sensor 200642, 0-12/0-5m
201240	Shuttle® level transmitter 230VAC w/ sensor 200660, 0-10/0-5m
201244	Shuttle® level transmitter 115VAC w/ sensor 200660, 0-30/15ft

Accessories

Shuttle® Ultrasonic Sensors	
200570	Shuttle® sensor 30 KHz, 0-15/0-6m, 12m cable. ISO
200571	Shuttle® sensor 30 KHz, 0-15/0-6m, 50m cable. 1" ISO
200532	Shuttle® sensor 30 KHz, 0-25/0-10m 12m cable, 1" NPT
200542	Shuttle® sensor 40 KHz, 0-12/0-5m 12m cable, 1" NPT
200560	Shuttle® sensor 50 KHz, 0-10/0-5m 12m cable. 1" ISO

Accessories	
109113	MJK product test certificate. Must be requested upon order
200035	Shuttle panel mounting frames
200115	Field mounting kit with rain-roof/sun shield
200205	Universal bracket
200219	Sensor bracket, short, 120 mm
200220	Sensor bracket, standard, 325 mm
200240	Mounting plate for Shuttle® for pole mounting
200590	MJK Connection box IP67/NEMA4X for Shuttle/SuSix/Oxix sensors
200595	Cable length, not standard Ultrasonic cable
201290	Shuttle® Profibus unit
690010	Ultrasonic sensor cable per m

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