

Shuttle

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 0-4 in. to 80 ft.
- 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 115 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.

Class 1, Division 1
Hazardous Areas
Approved Sensors



mjk
a xylem brand

DATASHEET

US 2.1 Shuttle datasheet 1910

Shuttle® 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 wetwell is arranged with pumps, piping and other elements so the measurement is not affected by false echoes.



Specifications

Shuttle® Level Transmitter	
Range:	0-35 ft., 0-45 ft, 0-75 ft.
Span:	From 0-4 in. to 0-75 ft.
Power supply:	115 V AC $\pm$ 10 % 10-30 V DC
Consumption:	Approx. 2 W
Temperature:	- 5 to + 150 °F
Input:	From ultrasonic sensor
Accuracy:	$\pm$ 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:	NEMA 4X
Approvals:	CE: EN 50081-1, EN 50082-1 UL: File E194021

Shuttle® Level Transmitter

Ultrasonic Sensors

Standard range version



Shuttle® Ultrasonic Sensor 200570 / 200571

Range:	45 ft. (fluids) 15 ft. (solids)
Frequency:	30 kHz
Spread:	3 °
Deadband:	14 "
Temperature:	- 5 to + 150 °F
Materials:	PP, POM. Mounting: ISO
Cable 200570:	Shielded, oil resistant PVC insulation, length 39 ft.
Cable 200571:	Shielded, oil resistant PVC insulation, length 164 ft. (Max. 300 ft. with 690010 cable.)
Enclosure:	NEMA 6P, watertight, withstands max. 30 ft. submersion
CE-approvals:	EN 50081-1, EN 50082-1

Standard range version



Shuttle® Ultrasonic Sensor: 200640 / 200641

Range:	35 ft. (fluids), 15 ft. (solids)
Frequency:	40 kHz
Spread:	7 °
Deadband:	14 "
Temperature:	- 5 to + 150 °F
Materials:	PTB+PC, Glass reinforced Epoxy. Mounting: NPT
Cable 200640:	Shielded, oil resistant PVC insulation, length 39 ft.
Cable 200641:	Shielded, oil resistant PVC insulation, length 164 ft. (Max. 300 ft. with 690010 cable.)
Enclosure:	NEMA 6P, watertight, withstands max. 30 ft. submersion
CE-approvals:	EN 50081-1, EN 50082-1
Hazardous areas approvals:	FM Class 1, Div. 1, Groups A-G

Extended range version



Shuttle® Ultrasonic Sensor: 200630 / 200631

Range:	80 ft. (fluids), 30 ft. (solids)
Frequency:	30 kHz
Spread:	6 °
Deadband:	32 "
Temperature:	- 5 to + 150 °F
Materials:	PTB+PC, Glass reinforced Epoxy. Mounting: NPT
Cable 200630:	Shielded, oil resistant PVC insulation, length 39 ft.
Cable 200631:	Shielded, oil resistant PVC insulation, length 164 ft. (Max. 300 ft. with 690010 cable.)
Enclosure:	NEMA 6P, watertight, withstands max. 30 ft. submersion
CE-approvals:	EN 50081-1, EN 50082-1
Hazardous areas approvals:	FM Class 1, Div. 1, Groups A-G

Chemically resistant version



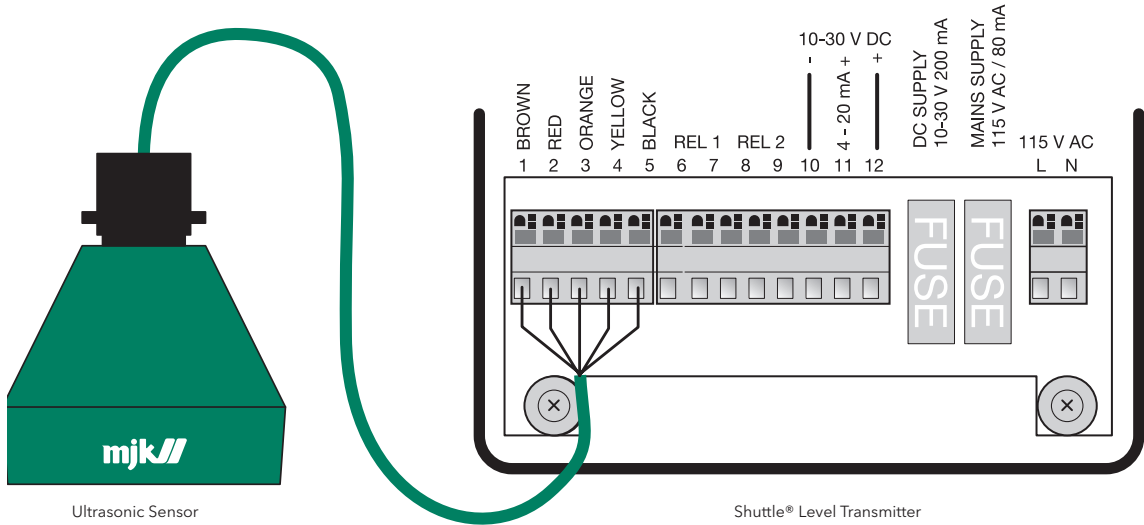
Shuttle® Ultrasonic Sensor: 200660

Range:	30 ft. (fluids), 15 ft. (solids)
Frequency:	50 kHz
Spread:	6 °
Deadband:	14 "
Temperature:	- 5 to + 150 °F
Materials:	PP, PVDF. Mounting: ISO
Cable:	Shielded, oil resistant PVC insulation, length 39 ft. (Max. 300 ft. with 690010 cable.)
Enclosure:	NEMA 6P, watertight, withstands max. 30 ft. submersion
CE-approvals:	EN 50081-1, EN 50082-1

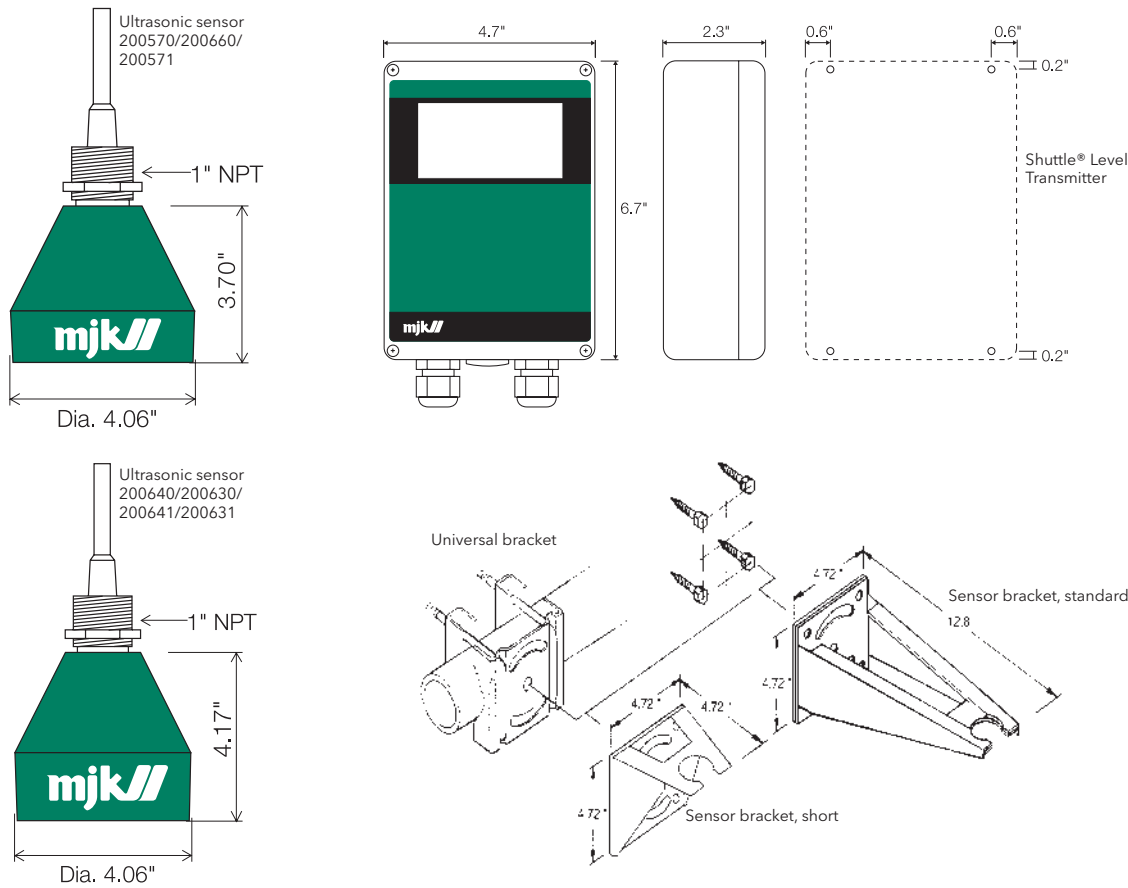
Shuttle® Level Transmitter



Electrical Connections



Dimensions



Shuttle® Level Transmitter

Order Numbers

Shuttle® Ultrasonic Level Transmitters			
MJK201209	Shuttle® level transmitter 115 VAC w/o sensor		UL
MJK201214	Shuttle® level transmitter 115VAC w/ sensor 200570, 0-45/15 ft.		UL
MJK201224	Shuttle® level transmitter 115VAC w/ sensor 200630, 0-80/30 ft.	FM APPROVED	UL
MJK201226	Shuttle® level transmitter 115VAC w/ sensor 200631, 0-80/30 ft.	FM APPROVED	UL
MJK201234	Shuttle® level transmitter 115VAC w/ sensor 200640, 0-35/15 ft.	FM APPROVED	UL
MJK201236	Shuttle® level transmitter 115VAC w/ sensor 200641, 0-35/15 ft.	FM APPROVED	UL
MJK201244	Shuttle® level transmitter 115VAC w/ sensor 200660, 0-30/15 ft.	FM APPROVED	UL

Shuttle® Ultrasonic Sensors			
MJK200570	Shuttle® sensor 30 KHz, 0-15/6 m, 0-45/15 ft. 12m/39 ft. cable. ISO		
MJK200570-75	Shuttle® sensor 30 KHz, 0-15/6 m, 0-45/15 ft. 25m/75 ft. cable. ISO		
MJK200570-100	Shuttle® sensor 30 KHz, 0-15/6 m, 0-45/15 ft. 30m/100 ft. cable. ISO		
MJK200570-150	Shuttle® sensor 30 KHz, 0-15/6 m, 0-45/15 ft. 50m/150 ft. cable. ISO		
MJK200570-200	Shuttle® sensor 30 KHz, 0-15/6 m, 0-45/15 ft. 60m/200 ft. cable. ISO		
MJK200630	Shuttle® sensor 30 KHz, 0-25/10 m, 0-80/30 ft., 12m/39 ft. cable. FM, NPT	FM APPROVED	
MJK200631	Shuttle® sensor 30 KHz, 0-25/10 m, 0-80/35 ft., 50m/150 ft. cable. FM, NPT	FM APPROVED	
MJK200640	Shuttle® sensor 40 KHz, 0-12/5 m, 0-35/12 ft., 12m/39 ft. cable. FM, NPT	FM APPROVED	
MJK200641	Shuttle® sensor 40 KHz, 0-12/5 m, 0-35/15 ft., 50m/150 ft. cable. FM, NPT	FM APPROVED	
MJK200660	Shuttle® sensor 50 KHz, 0-10/5 m, 0-30/15 ft., 12m/39 ft. cable, 1". ISO		
MJK200660-125	Shuttle® sensor 50 KHz, 0-10/5 m, 0-30/15 ft. 40m/125 ft. cable. ISO		

Accessories

Accessories	
MJK200219	Sensor bracket, short
MJK200220	Sensor bracket, standard
MJK200240	Mounting plate for Shuttle® for pole mounting
MJK200205	Universal bracket
MJK200590	MJK Connection box IP67/NEMA6 for Shuttle®/SuSix/Oxix sensors
MJK690010-ft	Ultrasonic sensor cable per ft.

