

## Level measurement

Continuous level measurement  
Ultrasonic transducers

### EchoMax XRS-5

#### Overview



EchoMax XRS-5 ultrasonic transducer provides reliable, continuous level monitoring of liquids and slurries in narrow lift stations/wet wells, flumes, weirs and filter beds using a beam angle of just 10° and a CSM rubber face.

#### Benefits

- Narrow beam angle of only 10°
- Chemically resistant PVDF copolymer enclosure and CSM rubber face
- Measuring range: 8 m (26 ft) for measurement of liquids and slurries
- Fully submersible: IP68 degree of protection
- Easy installation with 1" NPT or R 1" BSPT connection

#### Application

The XRS-5 is non-contacting with a measuring range from 0.3 to 8 m (1 to 26 ft). Advanced echo processing ensures reliable data even in conditions with obstructions, turbulence, and foam.

The hermetically sealed CSM rubber face and the PVDF copolymer enclosure are designed for maximum resistance to methane, salt water, caustics, and harsh chemicals common to wastewater installations. With an IP68 degree of protection, this rugged sensor is fully submersible in the event of flood conditions. Use a submergence shield if full submergence is possible in the application. A submergence shield will maintain a high level reading output during submerged conditions.

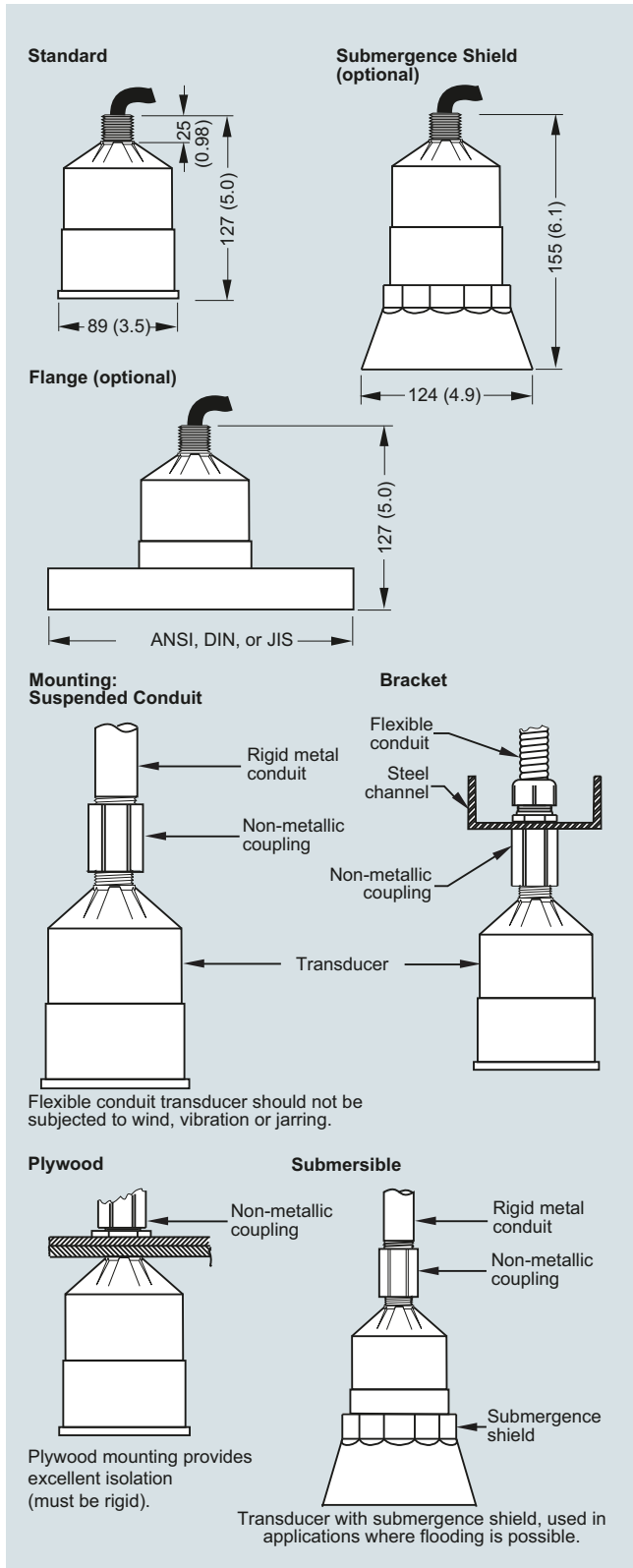
The low-cost XRS-5 transducer is compatible with a full range of Siemens controllers, from a basic system for high/low alarm or simple pump control, up to advanced control systems with communications, telemetry and SCADA integration capabilities.

- Key Applications: wet wells, flumes, weirs, filter beds

#### Technical specifications

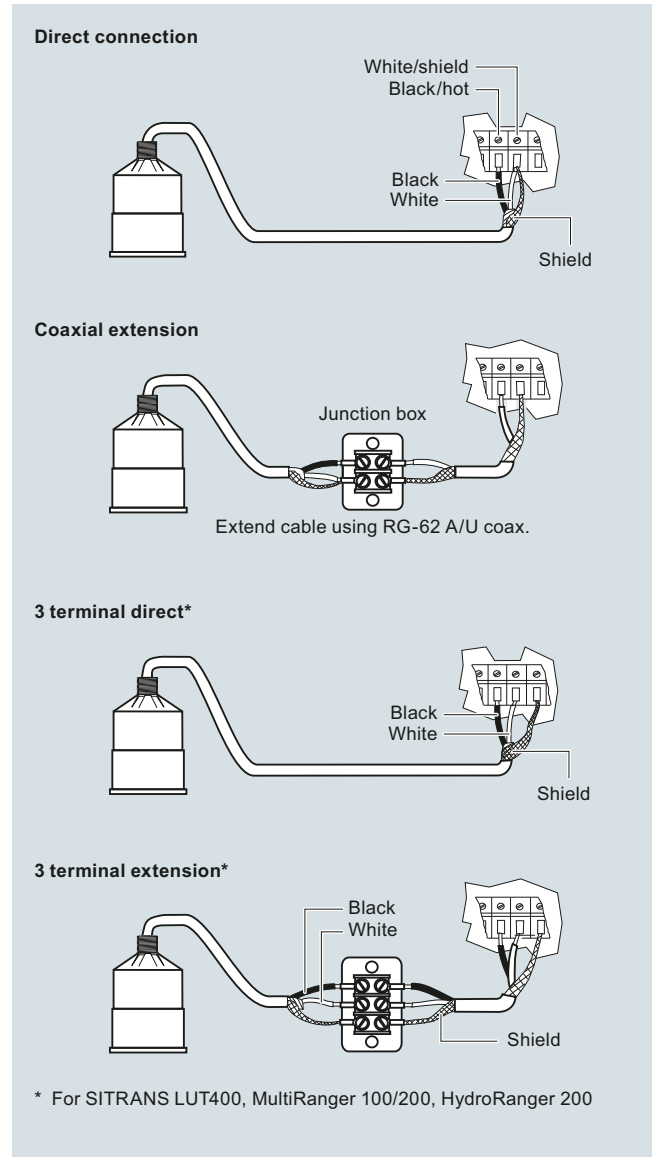
<b>Mode of operation</b>	
Measuring principle	Ultrasonic transducer
<b>Input</b>	
Measuring range	0.3 ... 8 m (1 ... 26 ft), dependent on application
<b>Output</b>	
Frequency	44 kHz
Beam angle	10°
<b>Accuracy</b>	
Temperature error	Compensated by integral temperature sensor
<b>Rated operating conditions</b>	
Vessel pressure	Normal atmospheric pressure
Ambient Conditions	
• Ambient temperature	-20 ... +65 °C (-4 ... +149 °F)
• Storage temperature	-20 ... +65 °C (-4 ... +149 °F)
<b>Design</b>	
Weight (approximate shipping weight of sensor with standard cable length)	1.2 kg (2.6 lb)
Material (enclosure)	PVDF copolymer enclosure and CSM face
Process connection	1" NPT [(Taper), ANSI/ASME B1.20.1] or R 1" [(BSPT), EN 10226]
Degree of protection	IP65/IP68
Cable connection	2-core shielded/twisted, 0.5 mm <sup>2</sup> (20 AWG), PVC sheath
Cable (max. length)	<ul style="list-style-type: none"> <li>• 365 m (1 200 ft) with RG 62 A/U coaxial cable</li> <li>• 365 m (1 200 ft) with 2-core twisted pair, foil shield, 0.5 mm<sup>2</sup> (20 AWG), PVC sheath, only for MultiRanger 100/200</li> </ul>
<b>Options</b>	
Flange version	Factory flange with PTFE face for ASME, EN or JIS configuration
Submergence shield	For applications with flooding possible
<b>Certificates and approvals</b>	
CE, RCM, KCC CSA Class I, Div. 2, Groups A, B, C, D, Class II, Div. 1 Groups E, F, G FM Class I, Zone 1, AEx m IIC, T6 Class II, III, Div. 1, Groups E, F, G T6 ATEX II 2GD / IECEx / INMETRO Ex mb IIC T6 Gb, Ex tb IIIC T85 °C Db	

**Dimensional drawings**



XRS-5 ultrasonic transducer, dimensions in mm (inch)

**Circuit diagrams**



XRS-5 ultrasonic transducer connections