QSR1® System

GULSCANNING

Technical Specifications

The QSR® Scanner is GUL's Quantitative Short Range (QSR) device. The patented analysis technique permits quantitative measurement of the average and remaining wall of the inspected area without needing to get direct access to it. This means that a pipe can be reliably inspected where it is supported and where it penetrates a wall without needing to lift the pipe or damage the entrance. The system is comprised of the QSR® electronics pod (ePod) combined with either QSR1® circumferential sensors or the Axial QSR® sensor.

QSR1® TECHNICAL SPECIFICATION SUMMARY (*Subject to change*)

Application Areas	
Designed for	Inspecting contact supports without lifting the pipe
Inspection Capabilities	
Pipe Diameter	6" to 24" (Nominal API 5L)
Pipe Wall Thickness	6 mm to 13 mm [0.236" to 0.512"]
Pipe Orientation	Horizontal (±15°)
Surface Preparation	Surface must be wiped clean of loose debris Coatings thicker than 1 mm must be removed under the sensor
Physical Characteristics	
ePOD Dimensions: W x D x H, Weight *(approx.)* (1)	25 x 25 x 9 cm [10 x 10 x 3.5 inches], < 4 kg [9 lbs]
Sensor Cart Dimensions W x D x H, Weight *(approx.)*	35 x 11 x 5 cm [14 x 4.5 x 2 inches], 3.45 kg [7.6 lbs]
Unit Weight *(approx.)*	12 kg [26.5 lbs]
Clearance	Varies according to diameter(2)
Software	
Controlling Software	WaveProQSR™
Analysis Method	Uses frequency based, patented, QSR quantitative analysis method
Assisted Interpretation	Via online Scanning Studio
Communication Interfaces	
USB	USB 2.0 (3)
LAN	10/100 Base-T Ethernet
Power Ratings	
Battery type (Removable)	6.6 Ah, 14.8 V Li-Ion
External power supply to charge instrument	18-20 VDC (60W min)

QSR1® KIT COMPONENTS

- QSR® electronics pod (ePOD)
- QSR1® Circumferential Transmitter Sensor Cart
- QSR1® Circumferential Receiver Sensor Cart
- ePOD to Sensor Cables
- Available Frames Set: 6", 8", 10", 12", 14", 16", 18", 20", 24" (4)
- USB Cable & Ethernet Cable
- ePOD Charger
- Rugged Packing/Transport Case

(1) Dimensions and Weight of the Electronic POD without frames, handles, or sensors.
(2) Clearance only required on approximately half of the pipe circumference.
(3) Instrument appears as a disk drive on the PC.
(4) Frames are diameter specific.

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AXIAL QSR®

GULSCANNING

Technical Specifications

The Axial QSR® Sensor combines with the QSR® electronics pod to send guided waves axially along a pipe.

TECHNICAL SPECIFICATION SUMMARY (*Subject to change*)

Application Areas				
Designed for	Inspecting supports without lifting the pipe Inspecting wall penetrations			
Inspection Capabilities				
Pipe Diameter (5) (6)	***Manual Scan:***	4" to 36" [DN 100-900]	***Motorized Scan:***	6" to 16" [DN 150-400]
Pipe Wall Thickness (2)	6 mm to 15 mm [0.236" to 0.590"] (2)			
Axial Inspection Range	5 cm to 50 cm [2" to 20"] from the sensor			
Pipe Orientation	Any			
Surface Preparation	Surface must be wiped clean of loose debris Coatings thicker than 1 mm must be removed under the sensor Sharp protruding features greater than 1 mm should be removed			
Physical Characteristics				
Axial Length	39 cm [15.4"]			
Radial Height (Sensor) (7)	Less than 28 mm [1.1"]			
Radial Height (Traction Unit) (8)	Less than 85 mm [3.4"]			
Unit Weight	Less than 10 kg [22 lbs]			
Compatibility				
Electronics Compatibility	Used with a standard QSR® Electronics Pod connected via a special adaptor Cable(9)			
Software Compatibility	WaveProQSR™ (5)			
Assisted Interpretation	To be supported in Scanning Studio			
Analysis Method	Uses the frequency based, patented, QSR quantitative analysis method			

KIT COMPONENTS

- Axial Sensor Unit
- Axial Traction Unit
- Traction Unit to QSR ePOD Adapter Cable
- Traction Unit to Sensor Harness
- Motorized Frames Set: 6", 8", 10", 12", 14", 16" (10)
- Frame Release Mechanism
- Rugged Packing/Transport Case

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(5) Pipes sizes are Nominal API 5L.
(6) Support for further pipe sizes and pipe wall thicknesses is planned.
(7) The Radial Height of the Sensor is the clearance required in the region that is being measured.
(8) The Radial Height of the Traction Unit is the clearance required in at least one section of pipe.
(9) The firmware on the QSR® electronics pod and the version of WaveProQSR™ must be March 2022 or newer.
(10) Frames for motorized scanning, which are diameter specific.

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