



# Protran® PR9500 & RX9500

Wireless Heavy Duty Pressure  
Transmitter and Receiver



- Wireless for lower installation cost and maintenance
- Silicon-on-Sapphire sensor technology for outstanding performance and reliability
- Pressure ranges up to 1,500 bar
- All stainless steel, robust construction for harsh environments
- Wetted parts in various materials
- Paired with RX9500 radio receiver



## Description

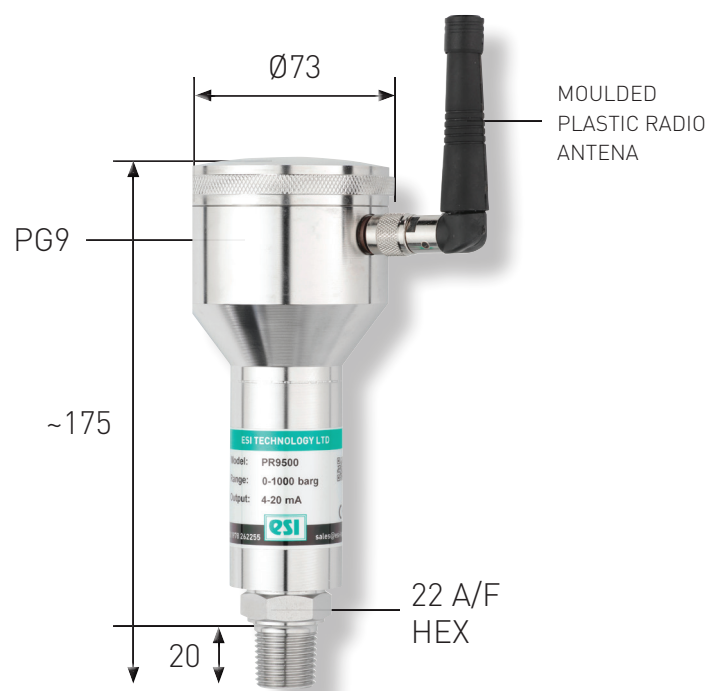
The PR9500 pressure transmitter, used in conjunction with the RX9500 receiver, provides a wireless solution for safe operation in tough industrial and process applications eliminating the need for hard wiring. The PR9500 transmitter can be situated in inaccessible areas, allowing the operator to monitor at safe distances on site. No hard wiring means lower installation cost and maintenance.

The unique Silicon-on-Sapphire sensor technology provides outstanding performance and gives excellent stability over a wide temperature range. The advanced sensor design consists of a piezoresistive silicon strain gauge circuit, which is epitaxially grown onto the surface of a sapphire diaphragm to form a single crystalline structure. The sapphire sensor element is then molecularly bonded to a titanium alloy sub-diaphragm. This enables the sensor to endure higher over-pressures and provides superb corrosion resistance. The sensor exhibits virtually no hysteresis and excellent long-term stability. With outstanding insulation properties, the sapphire substrate allows

the sensor to operate over a very wide temperature range without loss of performance.

Robustly constructed from stainless steel, the PR9500 transmitter offers optimum stability and repeatability in all industrial and process environments. The PR9500 transmitter operates by sending data signals by radio telemetry to a RX9500 receiver which provides a 4-20 mA output signal. Powered by an internal battery or 8-30Vdc supply, the transmitter is capable of sending data signals at distances of up to 500 feet/ 200 metres. Typical applications include mechanical and civil engineering installations, process plant, water utilities, petrochemical, power generation and any application on fluid or gas requiring a stable, repeatable and accurate pressure measurement at distances on site. The removal of the large cap at the head of the unit, allows easy access for zero/span adjustment and re-calibration or for battery replacement. Standard pressure connection is 1/2" BSP or optionally 1/2" NPT is available. Pressure ranges are from 0-500 mbar to 0-1,500 bar.

## Dimensions (in mm)





## Technical Data

Type	PR9500
<b>Sensor Technology:</b>	Silicon-on-Sapphire (ranges >1 bar)/ Isolated Piezoresistive Silicon (ranges ≤1 bar)
<b>Output Signal:</b>	Radio transmission
<b>Power Supply:</b>	Replaceable 3.2 Vdc (1/2AA) Lithium Thionyl Chloride battery or 8 – 30 Vdc supply
<b>Pressure Reference:</b>	Gauge
<b>Protection of Supply Voltage:</b>	Protected against supply voltage reversal up to 50 V
<b>Standard Pressure Ranges (bar):</b>	0 – 1 bar Vac; 0 – 500 mbar; 0 – 1 bar; 0 – 10 bar; 0 – 25 bar; 0 – 100 bar; 0 – 250 bar; 0 – 700 bar; 0 – 1,500 bar (Other options available)
<b>Standard Pressure Ranges (psi):</b>	0-30 in Hg; 0-7.5 psi; 0-15 psi; 0-150 psi; 0-300 psi; 0-1,500 psi; 0-3,000 psi; 0-10,000 psi; 0-20,000 psi (other options available)
<b>Overpressure Safety:</b>	2x for ranges 1 bar to 600 bar; 1.5x for 1,000 bar range; 1.1x for 1,500 bar range
<b>UHF Radio Transmitter:</b>	Low power (license free), transmission frequency 433.92 MHz
<b>Wireless Receiver:</b>	RX9500 radio receiver station (contact sales team for more information)
<b>Transmission Range:</b>	Point-to-point radio transmission up to 500m line-of-sight
<b>Data Transmission Rate:</b>	Serial radio packet at 4800/9600 baud (up to 4 samples per second)
<b>Resolution:</b>	> ±0.05 %FS (12 bit ADC)
<b>Load Driving Capability:</b>	n/a
<b>Accuracy NLHR:</b>	≤ ±0.3 % of span BFUL
<b>Zero Offset and Span Tolerance:</b>	±0.5 %FS at room temperature; ±5 %FS (approx.) adjustment with easy access trimming potentiometers
<b>Operating Ambient Temperature:</b>	-10 °C to +55 °C (+14 °F to +131 °F)
<b>Operating Media Temperature:</b>	-20 °C to +85 °C (-4 °F to +185°F)
<b>Storage Temperature:</b>	+5 °C to +40 °C (+41 °F to +104°F) Recommended Best Practice
<b>Temperature Effects:</b>	±1.5 %FS total error band for -10 °C to +55 °C. Typical thermal zero and span coefficients ±0.02 %FS/ °C
<b>Electromagnetic Compatibility:</b>	ETSI EN 301 489; Certification: CE Marked
<b>Radio Type Approvals:</b>	ETSI EN 300 220
<b>Insulation Resistance:</b>	> 100 MΩ @ 50 VDC
<b>Wetted Parts:</b>	Ranges >1 bar; SAE 316 stainless steel and titanium alloy; Ranges ≤1 bar; SAE 316 stainless steel and Nitrile NBR O-ring
<b>Pressure Media:</b>	Ranges >1 bar; all fluids compatible with SAE 316 stainless steel and titanium alloy; Ranges ≤1 bar; all fluids compatible with SAE 316 stainless steel and Nitrile NBR O-ring
<b>Pressure Connection:</b>	1/4" BSP male (G1/2); 1/2" NPT male (other options available)
<b>Electrical Connection:</b>	Screw terminals for conductor sizes 0.2 – 2.0 mm <sup>2</sup> are located beneath the screw lid. Cable entry to head is through an IP68 cable gland with compression seal for cable sizes 4 – 8 mm. Optional M20 Conduit fitting is available.
<b>Net. Weight (Kg):</b>	1.3 kg

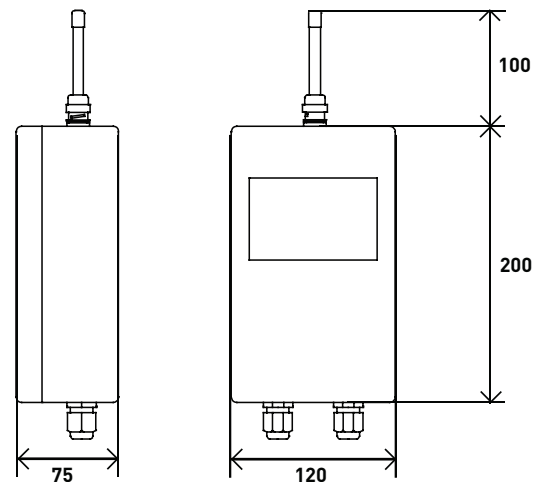
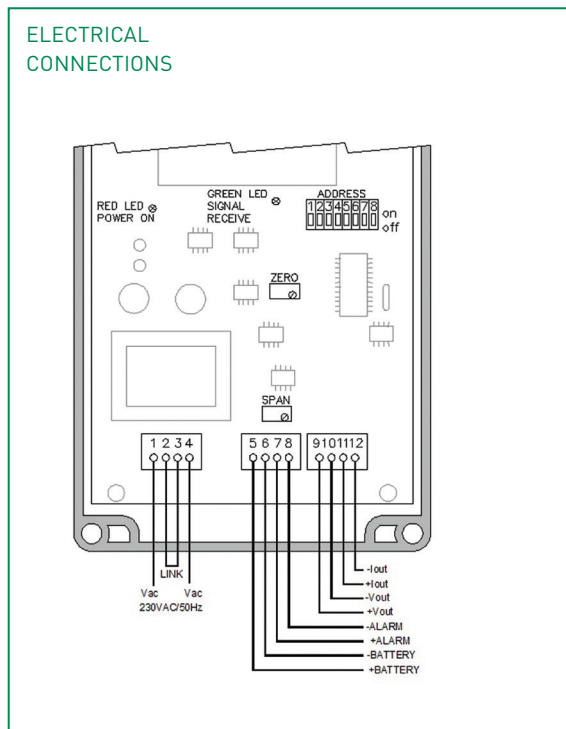
## Description

The RX9500 receiver is for use with the Protran PR9500 Wireless pressure transmitter.

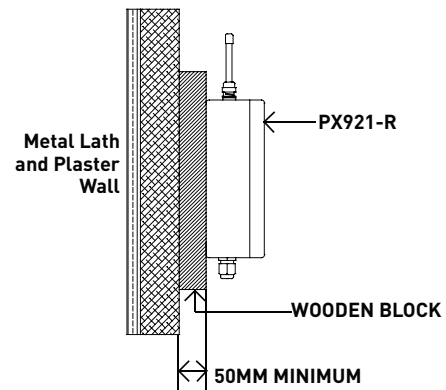
It will decode the received message and verify that the addresses match and that the check-sum is valid. Once this is complete the receiver will convert the pressure reading to a 4-20mA output signal.

## Dimensions

(in mm)



### MOUNTING DETAIL





## Technical Data

Type	RX9500
Radio Type:	FM Receiver
Sensitivity:	-107 dBm (range of 200m line of sight)
Identification Address:	8 bit, 256 selectable combinations
Communication Watchdog:	128 seconds before alarm output is activated
Alarm Output:	Open drain switch, max. current 250 mA
Analogue Output:	4-20 mA (2 wire)
Output Compliance:	8.5 Vdc
Resolution:	> ±0.05 %FS (12 bit ADC)
Power Requirements:	110/240 V, 50-60 Hz or 10.5-30 VDC
Current Requirements:	32 mADC
Housing:	High impact polycarbonate, rated to IP65
Dimensions:	200 x 120 x 75 mm
Weight:	~ 1 Kg
Operating Temperature:	-10 °C to +55 °C (+14 °F to 131 °F)
Storage Temperature:	-20 °C to +65 °C (-4 °F to +149 °F)
Antenna:	1/4 wave helical in plastic moulding
RF Connector:	External BNC
Cable Entry:	IP65 nylon cable gland for cable diameter 4 – 8 mm
Electrical Connections:	Screw terminal plug & socket. Wire size from 0.5 – 1.5 mm <sup>2</sup>
Net. Weight (Kg):	0.4 kg



## Order Matrix

Output	Option	Type	Electrical Connection/Options	Pressure Range	Process Connection	Options
Radio Transmission	Wireless	PR9500				
Radio Receiver to be used with PR9500 Wireless Transmitter, 433.92 MHz		RX9500-433				
Radio Receiver to be used with PR9500 Wireless Transmitter, 418 MHz		RX9500-418				
<b>Electrical Connection/Options</b>						
Cable gland IP68			-			
<b>Pressure Range in bar</b>						
0-1 bar Vac				V001		
0-0.5 bar				00.5		
0-1 bar				0001		
0-10 bar				0010		
0-25 bar				0025		
0-100 bar				0100		
0-250 bar				0250		
0-700 bar				0700		
0-1,500 bar				1500		
<b>Process Connection</b>						
1/2" BSP male (G1/2)					AC	
1/2" NPT male					AN	
<b>Options</b>						
M20 Conduit						M20
<b>Order Number Example</b>		PR9500-0250AC				

For options not listed please contact the sales team

**DISCLAIMER :** ESI Technology Ltd operates a policy of continuous product development. We reserve the right to change specification without prior notice. All products manufactured by ESI Technology Ltd are calibrated using precision calibration equipment, traceable to national measurement standards.

