Ingersoll Rand
Construction Technologies

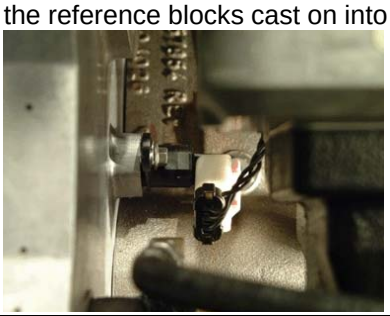
Technical Service Bulletin

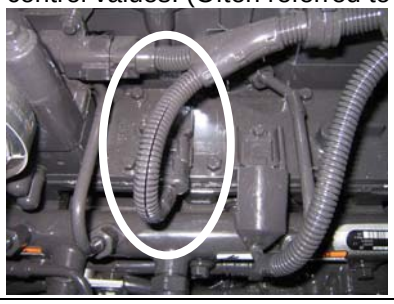
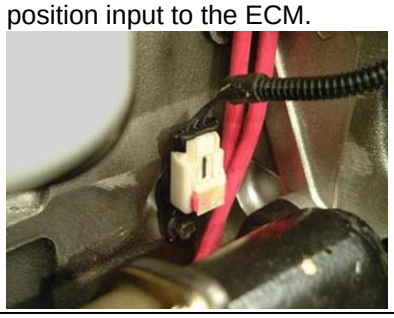
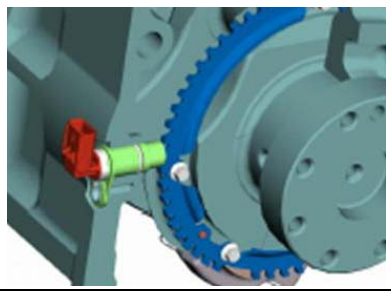
Bulletin #:	CMP-2007-001	**Date:**	12/02/07
Product:	☒ Compressor	☐ Generator	☐ Tools
Subject:	QSL9 Tier III sensor information		

Models

9/270, 9/300,12/235	From SN893000
17/235, 21/215	From SN881500

This document is intended to give an overview of the different sensors present on the QSL9 Tier III engine with common rail fuel injection system.

Ref.	Description	Comments
1	Electronic Control Module	Available as new or reconditioned
2	Engine Oil Pressure Sensor	The engine oil pressure can be either monitored by a Normally Closed pressure ***switch*** (one wire) or measured by a pressure ***sensor*** (three wires). In both cases this is an input for engine protection. The oil pressure on the control panel gauge is measured via another oil pressure sender fitted by IR.  
3	"O" Ring for Engine Oil Pressure Sensor	
4	Camshaft Position Sensor	The Camshaft Position Sensor (EPS) is mounted on the front gear cover; it is a Hall effect sensor and provides the primary engine position signal and secondary speed input into the ECM for fuelling and timing. The Sensor reads the reference blocks cast on into the solid camshaft gear.  
5	"O" Ring for Camshaft Position Sensor	

Ref.	Description	Comments
6	Coolant Temperature Sensor	The Coolant Temperature Sensor is located on the front right side of the cylinder block between the water-pump and oil cooler casting bosses. This input allows the ECM to control fan operation, grid heater, fuelling and timing control and engine protection. 
7	"O" Ring for Coolant Temperature Sensor	
8	Ambient Air Pressure Sensor	The ambient pressure sensor is mounted on the intake manifold top cover. It is used to adjust fuelling to protect the turbo charger during high altitude operation. 
9	Combined Intake Temperature and Pressure Sensor	This dual purpose sensor is located in the Intake Manifold top cover. The sensor provides Temperature and Pressure signals for the ECM to calculate Air fuel control values. (Often referred to as the TMAP sensor) 
10	"O" Ring for Combined Intake Temperature and Pressure Sensor	
11	Crankshaft Position sensor	The Crankshaft Speed Sensor (ESS) is mounted on the left rear side of the block and detects uniformly spaced, machined targets of the tone ring mounted on the crankshaft; this signal provides the primary speed input and secondary position input to the ECM.  

Ref.	Description	Comments
12	"O" Ring for Crankshaft Position sensor	
13	High Pressure Fuel Rail Pressure Sensor	The Fuel Rail Pressure Sensor is mounted in the fuel rail. This signal is sent to the ECM and is used to calculate fuelling and timing and control fuel rail pressure via the M-prop valve on the high pressure fuel pump.