DIESEL TEST STAND
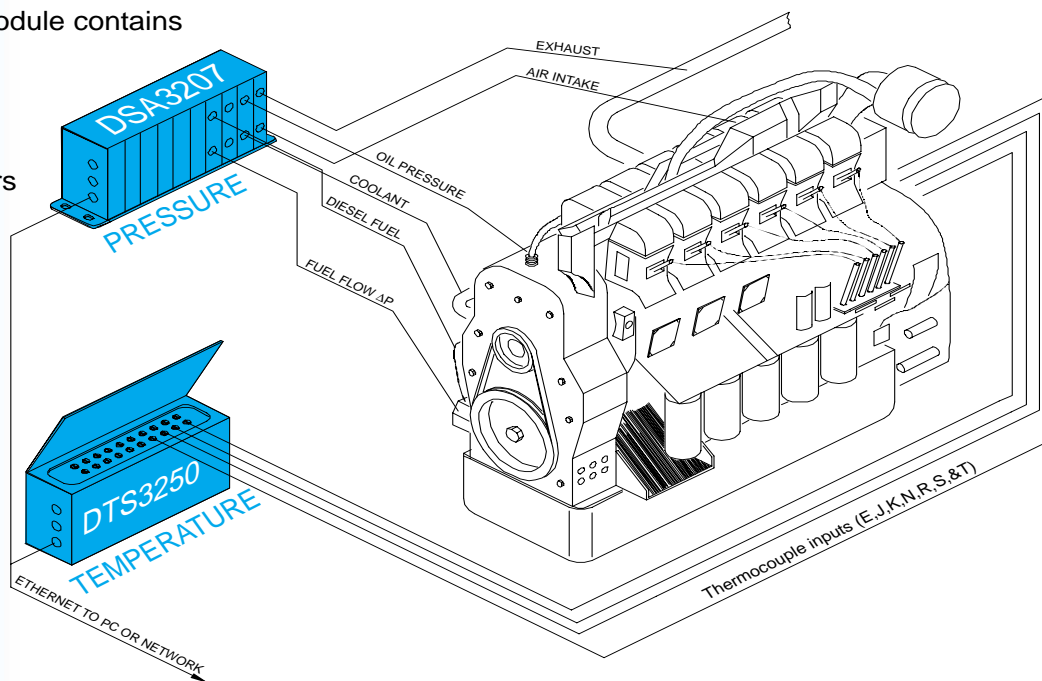## Pressure & Temperature Measurement

General Description

Scanivalve has developed a line of Intelligent Pressure and Temperature Scanners that are ideally suited for use in Diesel engine development and production test cells. Both units are rugged, built in a stainless steel box that is splash resistant, thus making them suitable for mounting in the test cell. Both modules communicate Ethernet using TCP/IP protocol. This digital approach eliminates many analog wires and signal conditioners as well as possible noise problems. LabVIEW drivers are available.

Pressure Measurement

The Model DSA3207 Intelligent Pressure Scanner measures both liquid and gas pressures to monitor engine conditions by measuring fuel, lubricating oil, coolant, and air pressures. This module contains as few as 2 up to 16 temperature compensated pressure sensors packaged in a rugged compact box with a microprocessor and 16 bit A/D. Each piezoresistive pressure sensor is isolated from the media by a stainless steel diaphragm and body; therefore, each pressure input channel could be a different fluid.

Output is Engineering Units (gauge or absolute).

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Temperature Measurement

The Model DTS3250 Temperature scanner is similar to our Pressure module. It incorporates a microprocessor and a 22 bit A/D for each thermocouple input. In addition it has an Isothermal block incorporated for the Uniform Temperature Reference (UTR). This module accepts up to 16 each 2 or 3 wire thermocouples from various parts of the engine. NIST thermocouple tables for standard thermocouple wire,Type E, J, K, N, R, S, B, and T thermocouples are stored in flash memory. The microprocessor uses these look-up tables to convert mV inputs to Engineering Units of degrees C or F. Multiple thermocouple types maybe used with one DTS3250.

The DTS3250 is typically mounted in close proximity to the Diesel Engine, thus minimizing thermocouple wire lengths. Shorter thermocouple wires not only reduce errors, but also lower costs due to the elimination of extention wires.

Communication

Both intelligent modules use industry proven Ethernet communications. The Model DTS3250 16 channel thermocouple scanner incorporates an embedded Web server for communication and configuration. Any Web browser such as Internet Explorer or Netscape can communicate with the DTS module.
Communication to both the DSA and DTS modules can also be made directly with ASCII commands via Telnet. LabVIEW drivers and an OPC server are optionally available.

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