



DET-1600 DETONATION SENSING MONITOR

- Moderately-priced system protects natural gas-fueled engines from destructive knock/detonation
- Monitors the engine for in-cylinder misfire conditions
- Automatic load reduction and engine shutdown functionality
- Can be connected to most Altronic digital ignition systems for automatic timing retard control in the event of detonation
- Certified by the Canadian Standards Association (CSA) for use in Class I, Division 2, Group C and D hazardous areas

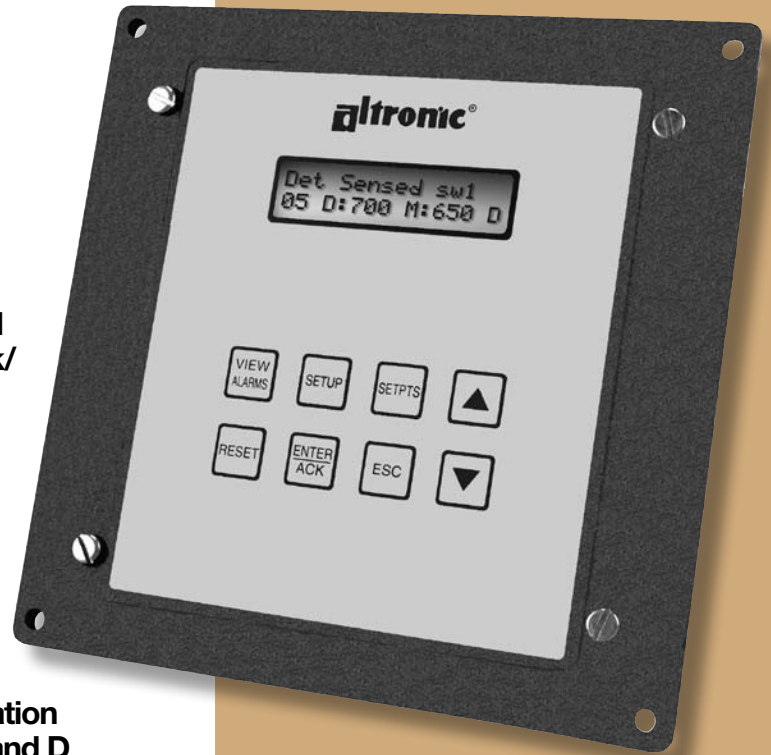
The Altronic DET-1600 Detonation Sensing Monitor is a 24VDC-powered, 32-bit microprocessor-based electronic instrument designed for use on natural gas-fueled engines to detect detonation and misfire and avoid consequential engine damage. Industry-standard, low-cost, piezoelectric vibration sensors are mounted directly on the engine and are used to transform the vibrations caused by combustion into electrical signals which are then evaluated by the DET-1600. These values – generated for every cylinder on a cycle-by-cycle basis – are then measured against misfire and detonation setpoints configured by the user for the monitored engine. The monitor accepts up to 16 detonation sensors that are wired to pluggable Phoenix-type connectors; the recommended configuration is one sensor per cylinder.

The DET system can be configured to take a number of control actions to protect the monitored engine upon indication of detonation (or misfire). In many applications, the DET will utilize one of two solid-state output switches to activate an external unloader to reduce engine load. Should that remedial action be unsuccessful addressing the detonation issue, the DET can be configured (when used in conjunction with a digital ignition system) to automatically retard the ignition timing. In the event that an ignition timing adjustment also proves to be ineffective in eliminating engine detonation, the second output switch – typically tied to a digital annunciator or other monitoring device – acts as a final safety measure to shut down the engine.

The DET system is housed in a rugged, powder-coated, aluminum enclosure and features an integral 2x16 backlit LCD to display the detonation and misfire reference level numbers, engine cylinder labels, control and output switch status, the cause of shutdown log, and all diagnostic messages. System configuration is accomplished using an on-board RS485 serial port and a powerful, yet easy to use, system configuration and monitoring program.



CERTIFIED CLASS I,
DIVISION 2
GROUP C AND D



HOME SCREEN

GLOBAL SYSTEM STATUS



CYLINDER NUMBER

REF. NUMBER VS. DET. SETPOINT

REF. NUMBER VS. MISFIRE SETPOINT

DETONATION SENSED

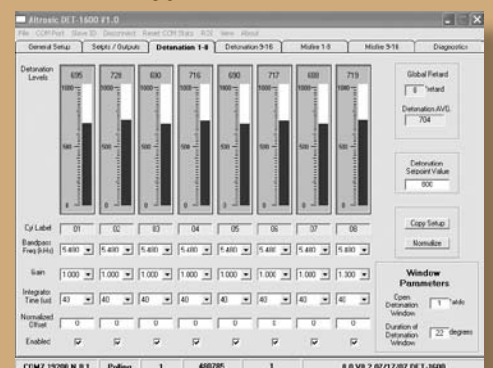
INDIVIDUAL CYL STATUS



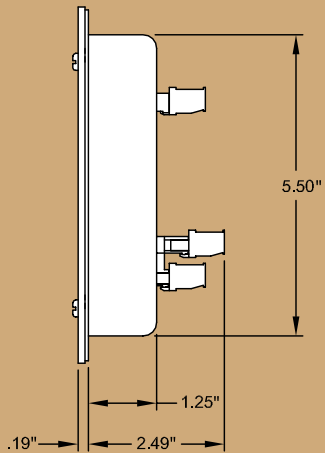
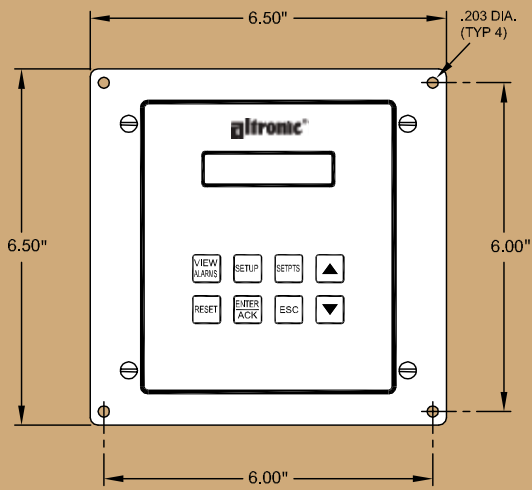
BARGRAPH DISPLAY OF ALL CYLINDERS



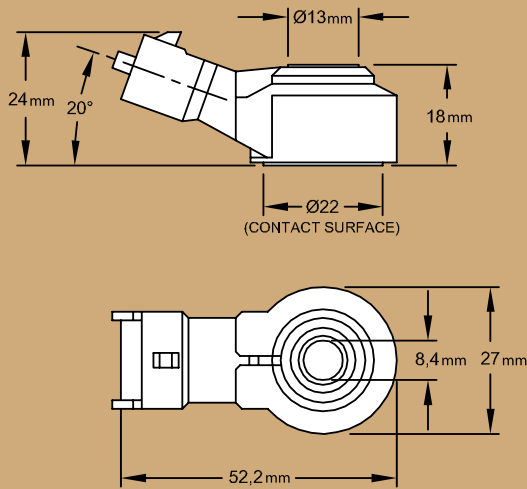
TERMINAL PROGRAM



DIMENSIONS



SENSOR DIMENSIONS



SPECIFICATIONS

Power Requirement	DC powered, 10-32VDC, 0.30 AMP max.
Ambient Temperature Range	-40°C to 85°C (-40°F to 185°F)
Sensors	Up to 16
Sensor Type	Piezoelectric Vibration Sensor, Bosch 0 261 231 148 or equivalent
Keypad	8-key, membrane
Display	Backlit, 2x16 character, LCD
Display Update Rate	0.5 seconds nominal
Sensor Scan Rate	On Firing Event
Output Switch	2 programmable, solid-state rated 200VDC, 0.2 AMP continuous, optically isolated from power supply, one for Alarm, one for Shutdown
Switch Response Time	Tied to Filter Value and Display Reading (with filter at 1, max response time is approx. 0.5 sec.)
RS485 Serial Outputs	2
Current Loop Output	4-20mA
Hazardous Area Classification	Class I, Div. 2, Groups C & D for direct hook-up, Temp Code T4, max ambient temp 85°C

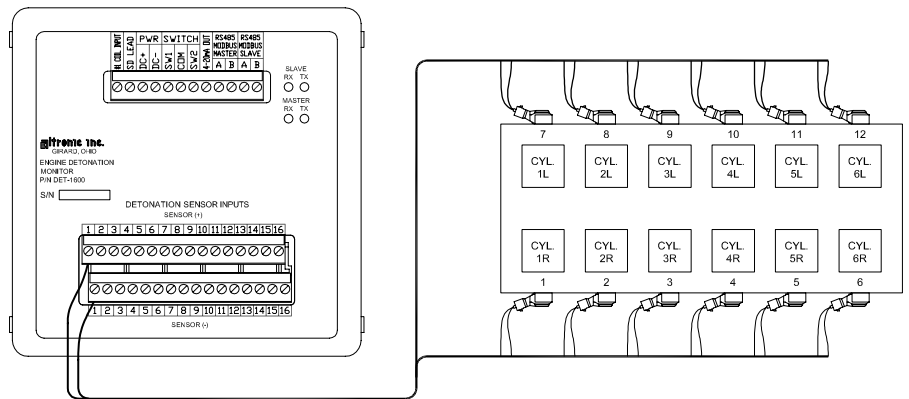
ORDERING INFORMATION

DET-1600	
Detonation Sensing Monitor	DET-1600
Vibration Sensor	615107
Sensor Cable, 10'	693134-1
Sensor Cable, 20'	693134-2
Sensor Cable, 30'	693134-3
Sensor Cable, 40'	693134-4
Sensor Cable, 50'	693134-5
Sensor Cable, 100'	693134-6

APPLICATIONS

Engines equipped with Altronic CD200, DISN, CPU-90, or CPU-95 ignition systems. For CPU-95 units with dual capacitors, contact the factory.

SYSTEM DIAGRAM (OVERVIEW)



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