

# DET-1600/1620 DETONATION SENSING MONITORS

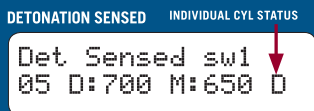
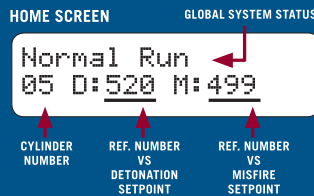
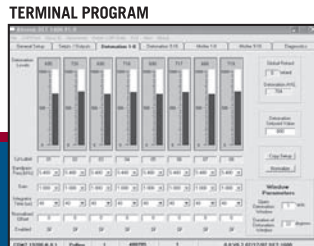
- Moderately-priced system protects natural gas-fueled engines from destructive knock/detonation
- Monitors the engine for in-cylinder misfire conditions
- Automatic load reduction and engine shutdown functionality
- Can be connected to most Altronic digital ignition systems for automatic timing retard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

The Altronic DET-1600/1620 Detonation Sensing Monitors are 24VDC-powered, 32-bit microprocessor-based electronic instruments 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 device. 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.



## Specifications

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

## Ordering Information

<b>Detonation Sensing Monitor</b> <sup>(1)</sup> .....	DET-1600
<b>Detonation Sensing Monitor</b> <sup>(2)</sup> .....	DET-1620
<b>Adapter, DET-1620</b> .....	691015
<b>Vibration Sensor</b> .....	615107
<b>Sensor Cable, 10'</b> .....	693134-1
<b>Sensor Cable, 20'</b> .....	693134-2
<b>Sensor Cable, 30'</b> .....	693134-3
<b>Sensor Cable, 40'</b> .....	693134-4
<b>Sensor Cable, 50'</b> .....	693134-5
<b>Sensor Cable, 100'</b> .....	693134-6

<sup>(1)</sup> For engines equipped with Altronic CD200, DISN, or CPU-95 ignition systems. For CPU-95 units with dual capacitors, please contact the factory.

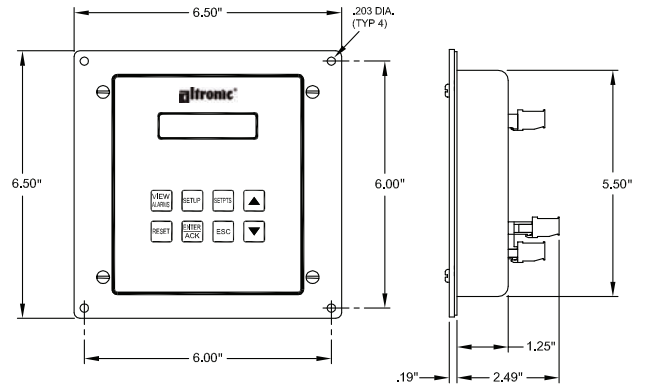
<sup>(2)</sup> For engines equipped with Altronic CPU-2000 ignition system. Requires adapter 691015.



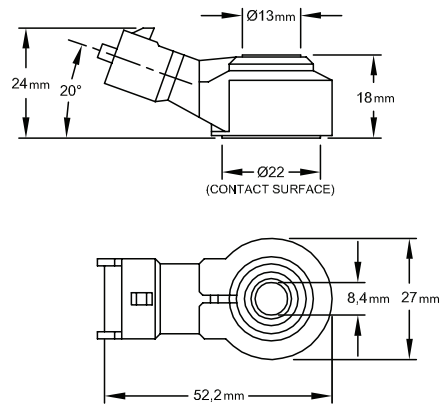
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## Display Module Dimensions



## Sensor Dimensions



## System Diagram (Overview)

