



DIGITAL ANNUNCIATOR DD SERIES

U.S. Patents 4,246,493 and 4,336,463

- PROTECTS VITAL EQUIPMENT
- MONITORS UP TO 40 ELECTRICAL CONTACTS
- POWERED FROM C.D. IGNITION, 12-24 VDC, 110-220 VAC
- NUMERICAL DISPLAY OF FAULT AND MODE OF OPERATION
- LOCK-OUT TIMER, FIELD ADJUSTABLE TO A KNOWN TIME
- OPTIONAL MODEL OUTPUTS FAULT CODE FOR USE WITH COMMUNICATION SYSTEM
- 2 BASIC MODELS AVAILABLE INTRINSICALLY SAFE (DIV. 1) NON-INCENDIVE (DIV. 2)

The Altronic DD digital annunciators are solid state monitor and shutdown devices. The DD line is designed as the successor to the widely used Altronic DA and DC annunciator series.

The Altronic annunciator connects to electrical contacts (either normally open or normally closed) which may represent limits on functions such as pressure, temperature, level, etc. Upon sensing a fault on one of the sensor lines, the annunciator displays a 2-digit number representing the first-out fault and generates an output signal. The annunciator can be powered from C.D. ignition systems, 12-24 VDC or 110-220 VAC.

The Altronic annunciator reduces the voltage and current to switch gauges and other sensors to non-incendive levels thus eliminating contact arcing and providing safe operation in hazardous areas. A common annunciator logic unit, available in either 20 or 40 points, is used for all applications. If intrinsically-safe operation is required for a Class I, Division 1, Group D area, specify the 690 power supply series. For Class I, Division 2, Group D or non-classified areas, use the more economical 691 power supply series.

The DD series annunciators are packaged in a rugged anodized, aluminum case with stainless steel hardware for long life; a quick-disconnect terminal strip is used for all connections for ease of installation and troubleshooting. The DD annunciators can be mounted in the same panel opening as the Altronic DA and DC series annunciators.

Optional models are available which output the BCD code for the first-out fault to allow hook-up to a communication system.



CERTIFIED
CLASS I, DIVISION 2, GROUP D

ALTRONIC ANNUNCIATOR ELIMINATES THE DRAWBACKS OF RELAY-TYPE SYSTEMS

No Contact Arcing—Hazardous Area Certification

The voltage and current to switch gauges and other sensors are reduced to intrinsically safe or non-incendive levels. Contact arcing and burning are eliminated. Explosion-proof enclosures and conduit are not required. The DD annunciators feature "transient protected" sensor inputs which can withstand momentary contact with ignition primary leads.

Field Adjustable Lock-Out Timer

The lock-out timer on Class B sensors is field adjustable from 1 to 9 minutes. A digital switch on the front of the annunciator unit is scaled to allow setting to a known lock-out time. This unique feature of the Altronic DD annunciators is valuable for use in changing field conditions or where frequent start-ups are required during operating tests. The lock-out timer can be recycled through use of the RESET button or cancelled by moving the timer switch to "0".

Faults at Start-up

Pushing the RESET button before start-up causes all points not disabled by the timer to be scanned. A faulted sensor's number is displayed so the operator knows exactly where to correct the problem. When all sensors are clear [00] is displayed indicating the system is ready for start-up.

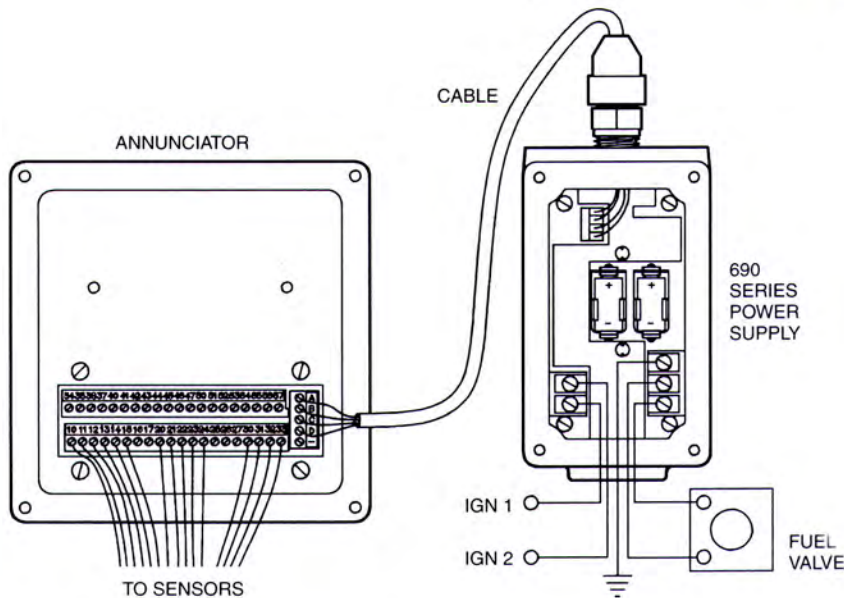
Test Capability

The TEST mode permits each sensor and associated wiring to be checked without shutting down the monitored equipment. As each sensor is faulted, its number is latched on the display. When the fault is cleared and the TEST button pushed, the display reverts to the TEST mode reading of [09].

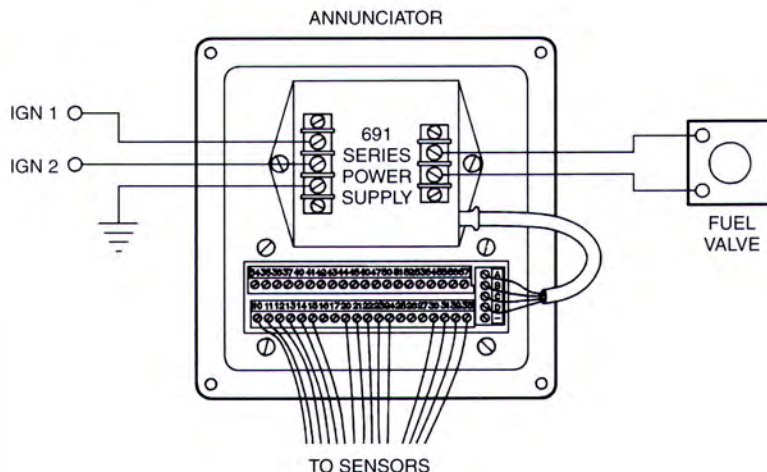
Communications Compatible

Optional models of the DD annunciator make available the BCD code of the displayed number. This allows hook-up to a communications system for transmittal of the annunciator status and first-out fault code.

INTRINSICALLY SAFE (DIV. 1) SYSTEM



NON-INCENDIVE (DIV. 2) SYSTEM



OPERATION

DISPLAY FUNCTION

- [80] Equipment down, TEST button held depressed, indicates satisfactory battery voltage.*
- [00] Equipment down, annunciator reset, all Class A sensors clear.
- [00] Equipment running, timer disarming Class B points, Class A points being monitored. The timer is field adjustable from 1 to 9 minutes. The timer may be recycled by pushing RESET or cancelled by turning the timer switch to position "0".
- [01] Equipment running, all points being monitored. The transition from [00] to [01] indicates the end of the start-up timer interval.
- [89] Equipment running, TEST button depressed, indicates satisfactory operating voltage.
- [09] TEST button released, timed period for testing sensors without shutting down equipment. Fault number is displayed until sensor is cleared and the TEST button is pushed again which resets the timer for the next point.
- [10-57] Equipment down, shutdown caused by the sensor number indicated which remains displayed until the fault is cleared and the annunciator is reset.
- [60] Equipment down, STOP button has been pushed.

*NOTE: When the monitored machine is not running in ignition-powered applications, power is supplied by a special lithium battery developed for integrated circuit memory applications. Current draw in this mode is only 15 microamps (0.000015 amp).



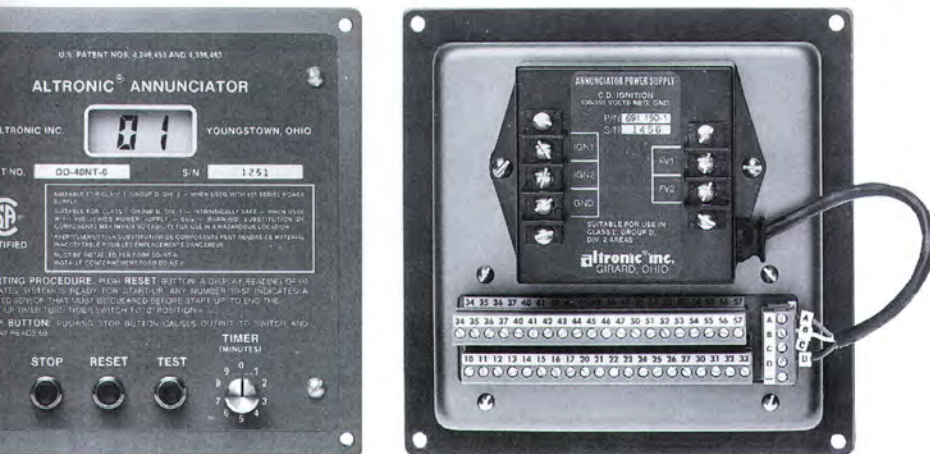
DD ANNUNCIATOR - COMMON LOGIC UNIT FOR EITHER DIVISION 1 OR DIVISION 2 APPLICATION

A common annunciator logic unit, available in either 20 or 40 points models, is used for all applications.

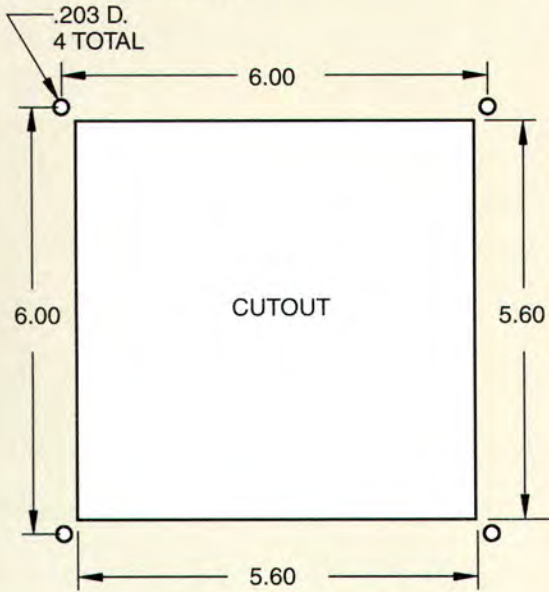
For intrinsically-safe operation (Class I, Division 1, Group D), the 690 power supply series is used. These house all power input and barrier circuits in a separate explosion-proof enclosure and output an intrinsically-safe signal to the DD annunciator logic unit.

For non-incendive operation (Class I, Division 2, Group D) or for non-rated areas, the 691 power supply series is used. These can be mounted directly to the back of the DD logic unit, making a one-piece assembly.

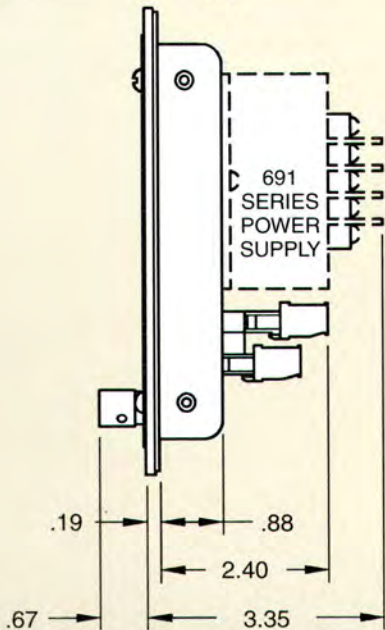
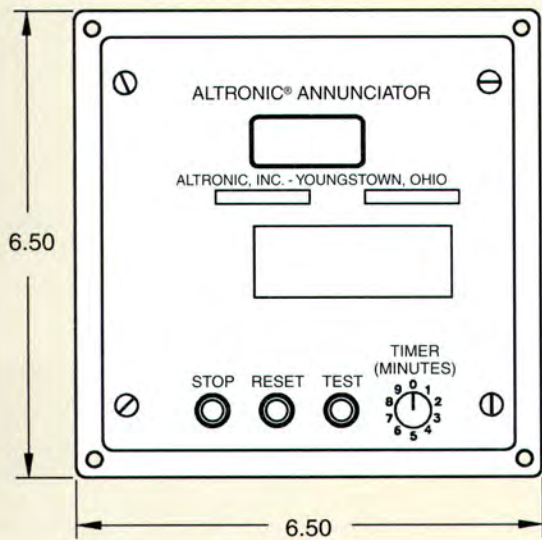
Either power supply series is available powered from C.D. ignition systems or from 12-24 VDC. See the back page for available models.



MOUNTING DIMENSIONS



RECESSED MOUNTING



ORDERING INFORMATION

ANNUNCIATOR UNIT, STANDARD MODELS

| | |
|--|-----------|
| 20-Point, 12/8 class A/B, normally closed | DD-20NT-C |
| 20-Point, 12/8 class A/B, normally open | DD-20NT-O |
| 40-Point, 24/16 class A/B, normally closed | DD-40NT-C |
| 40-Point, 24/16 class A/B, normally open | DD-40NT-O |

ANNUNCIATOR UNIT WITH DISPLAY BCD OUTPUT (not CSA certified)

| | |
|--|------------|
| 20-Point, 12/8 class A/B, normally closed | DD-20NTL-C |
| 20-Point, 12/8 class A/B, normally open | DD-20NTL-O |
| 40-Point, 24/16 class A/B, normally closed | DD-40NTL-C |
| 40-Point, 24/16 class A/B, normally open | DD-40NTL-O |

POWER SUPPLY-DIVISION 1 APPLICATION

| | |
|-------------------------------------|-----------|
| Negative Ground, C.D. Ignition | |
| 100-350V., solid state output | 690 101-3 |
| 120-350V., relay output | 690 112 |
| Positive Ground, C.D. Ignition | |
| 150-350V., relay output | 690 110 |
| 12-24 VDC, relay output | 690 105 |

POWER SUPPLY - DIVISION 2 OR GENERAL PURPOSE

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|--|-----------|
| C.D. Ignition, solid state output | 691 150-1 |
| 12-24VDC, solid state, w/battery | 691 155-1 |
| 12-24VDC, relay output | 691 160-1 |
| 12-24VDC, 4 solid state, w/battery | 691 180-1 |

CABLE ASSEMBLIES

| | |
|--|-----------|
| For 690 Series Power Supplies | 693 109-1 |
| Replace DA-16N with equivalent DD-20 model | 693 111-1 |
| Replace DA-32N with equivalent DD-40 model | 693 112-1 |
| Replace DC-8N with DD-20NT-O/691 150-1 | 693 113-1 |
| Replace DC-8R with DD-20NT-O/691 160-1 | 693 113-1 |
| Replace DC-24N with DD-40NT-O/691 150-1 | 693 114-1 |
| Replace DC-24R with DD-40NT-O/691 160-1 | 693 114-1 |

ACCESSORIES

Sensor Adaptors

| | |
|--|-----------|
| Common sensor to multiple panels (1/panel) | 691 003 |
| Class A to Class B, N/O | 691 030 |
| Class B isolator, N/C | 691 055 |
| Class C sensor, N/C | 691 012 |
| Class C sensor, N/O | 691 013 |
| Loss of ignition power, negative ground, N/O | 691 029 |
| Loss of ignition power, positive ground, N/O | 691 054 |
| Loss of 24 VDC power, N/O | 691 098 |
| Barrier | 690 107 |
| Barrier cable | 693 106-1 |

Communication Module for NTL Models

| | |
|---------------------|-----------|
| BCD to RS232C | 691 085-1 |
| BCD to RS422 | 691 085-2 |

110-220 VAC Power Option

Use 12-24 VDC Power Supply listed above and:

| | |
|-------------------------------|-----------|
| Converter, 110VAC-12VDC | 690 106-1 |
| Converter, 220VAC-12VDC | 690 106-2 |

Solenoid Valves

| | |
|-------------------|-----------|
| 2-way valve | 690 019-1 |
| 3-way valve | 690 019-2 |

Batteries for 690 101-3 Power Supply

| | |
|--|---------|
| Sanyo 2CR-1/3N or Duracell PX28L | 601 248 |
|--|---------|

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