

altronic[®] DISN[®] 800

DIGITAL IGNITION SYSTEM FOR INDUSTRIAL ENGINES 4-16 CYLINDERS

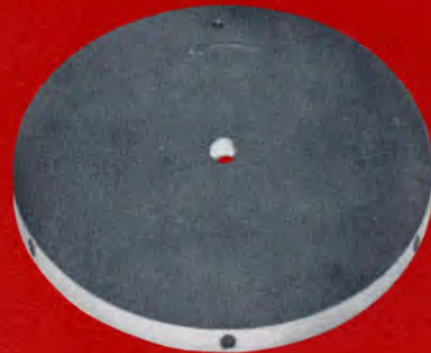
- UNIVERSAL MODELS FIT A WIDE VARIETY OF ENGINES
- HIGH ENERGY, CAPACITOR DISCHARGE SUITABLE FOR LEAN-BURN ENGINES
- SINGLE PICKUP SYSTEM — EASY INSTALLATION, RELIABLE OPERATION
- ACCURATE IGNITION TIMING IMPROVES ENGINE PERFORMANCE AND STARTABILITY
- ALARM OUTPUT MONITORS SYSTEM OPERATION
- ON-BOARD SIMPLE DIAGNOSTICS FOR SYSTEM TROUBLESHOOTING
- WATERTIGHT ENCLOSURE FOR HARSH ENVIRONMENTS

The Altronic DISN 800 is a 12-24 Vdc powered, micro-circuit-based digital ignition system applicable to small and medium-sized stationary gas engines. These systems, which are offered in 8, 12 and 16 output versions, eliminate moving parts and deliver high timing accuracy and stability by eliminating magneto drive gears and couplings. DISN 800 systems apply to engines with up to 16 cylinders, with even or odd firing patterns. Incorporating capacitor discharge technology, the DISN 800 systems provide maximum engine performance and extended spark plug life.

The DISN 800 series unit has multiple firing patterns stored in its memory (EPROM), allowing a single unit to fit a number of engine models. For advanced timing control, the DISN 800 units incorporate an analog input for adjustment from an external potentiometer or 4-20 mA current loop. This capability allows for many timing control strategies such as one-step timing adjustment (for example, to retard at high ambient temperatures or for a change in fuel type); operation from discrete instruments outputting 4-20 mA signals (such as the Altronic DSG speed, pressure, temperature, timing and universal digital setpoint gauges); or from an engine control computer. A 16-position manual timing switch is provided for those applications where the analog input is not utilized.

On-board diagnostics assist in determining problems with the basic input signals to the ignition: power; pickup, gap and cable; and correct magnet disc pattern for the selected application.

The required 12-24 Vdc can be derived from a stand-alone power supply or from one of Altronic's engine-driven 24 Vdc alternator power packages (see form ALT for additional details). The DISN 800 systems operate with Altronic's negative ground ignition coil family and are compatible with safety shutdown panels operating from negative ground C.D. ignition systems.



CERTIFIED
CLASS I, DIVISION 2
GROUP D

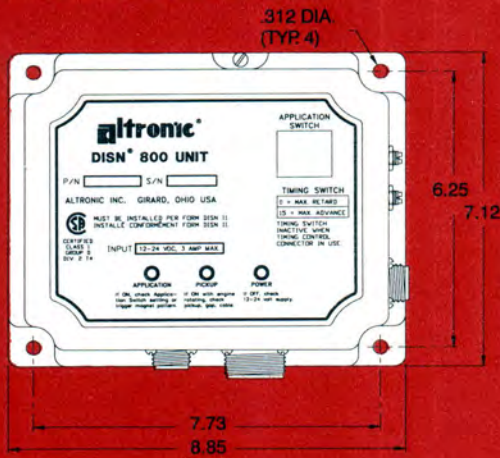
DESCRIPTION & OPERATION:

The DISN ignition system consists of the DISN unit, Hall-effect pickup, magnet timing disc, wiring harnesses and an ignition coil for each spark plug. In operation, the input DC voltage is stepped up to charge an energy storage capacitor. The Hall-effect pickup and magnet disc, referenced to the engine's camshaft or crankshaft, provide accurate engine reference signals. The DISN unit's micro-circuits calculate the proper timing point and trigger outputs through the solid state distributor circuit to the ignition coils, one per spark plug.

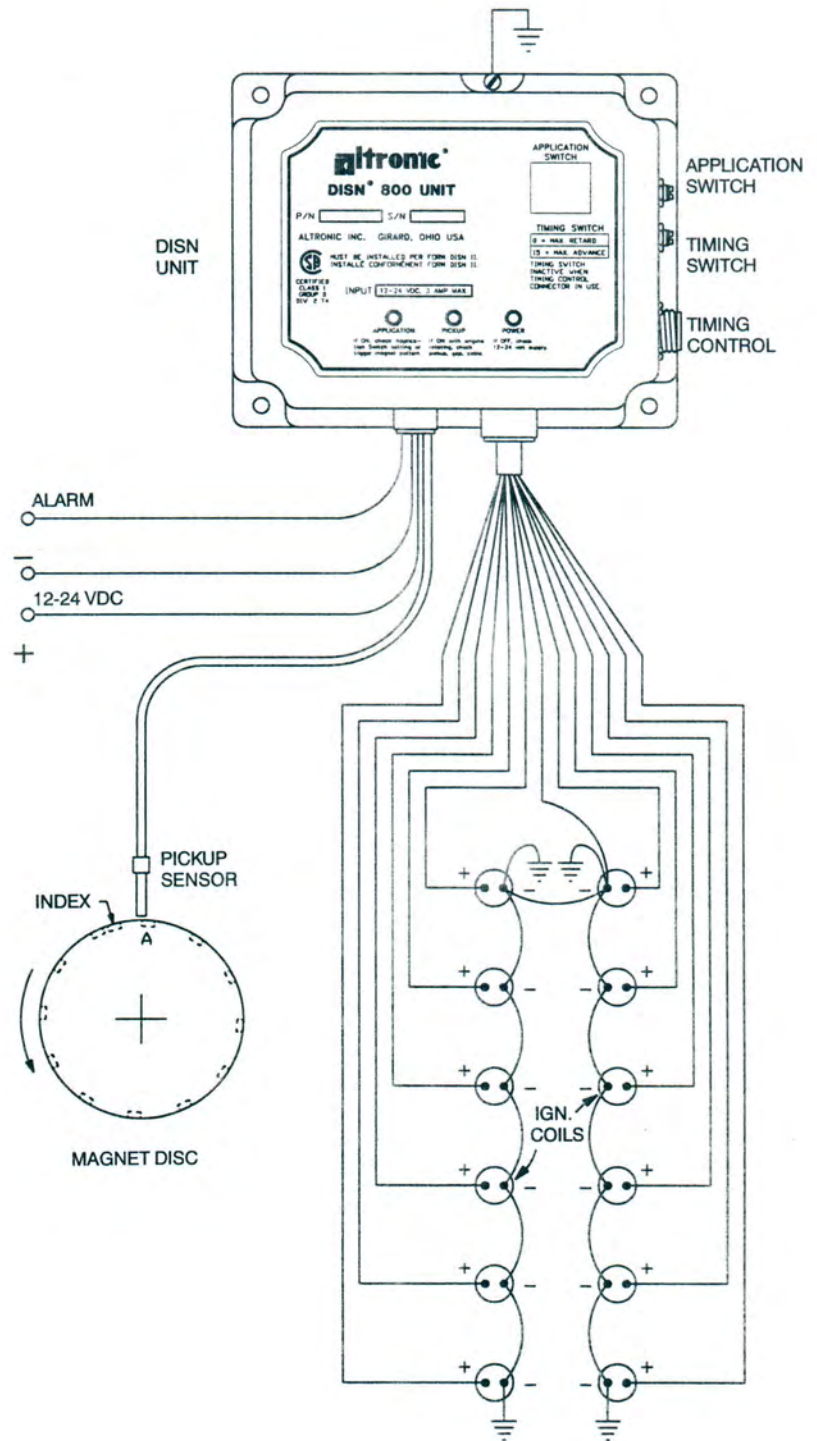
The DISN system timing accuracy is assured by the precision-manufactured magnet disc, machined on CNC equipment in Altronic's factory to an accuracy exceeding 0.1 degree. This eliminates variances caused by drilling timing holes in the field.

The single Hall-effect pickup used provides for simple, reliable installation and operation. This type pickup has a constant output at any operating speed and operates with a wider air gap specification than magnetic reluctance pickups used with other systems.

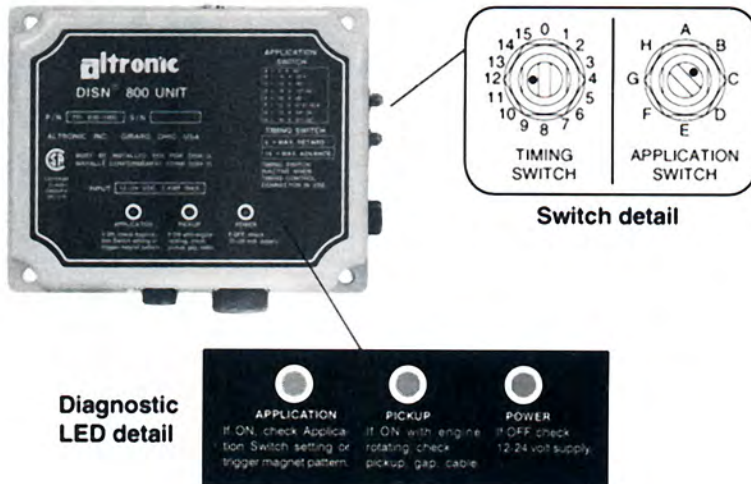
DIMENSIONS:



DISN WIRING DIAGRAM:



DISN 800 SERIES FEATURES:



- 16-position manual timing switch with protective cap stays locked in a known position; requires a screwdriver to adjust.
- Application switch with protective cap allows user to quickly see and verify setting; requires a screwdriver to adjust.
- Analog timing input operates from 4-20 millamp or 0-1,000 ohm potentiometer signal
- LED diagnostics for key input signals:
 - Power
 - pickup operation
 - Magnet disc pattern matches selected application
- Failsafe features:
 - Lockout if magnet disc pattern does not match application switch setting.
 - Alarm switch output trips on pickup or primary connection fault.
- Models and Applications, "C" Series
 - MODEL 791 808-100C:**
 - Replaces DISN 400 units with 4-8 outputs.
 - All in-line 4, 5, 6 and 8-cylinder engines.
 - MODEL 791 812-100C:**
 - Replaces DISN 400 units with 10-12 outputs.
 - MODEL 791 816-100C:**
 - Universal model for 4-16 cylinder engines.
 - Applies to many popular engine series:
 - Caterpillar
 - Clark BA, HBA, MA, HMA, RA, HRA
 - I-R JVG, KVG, PVG, SVG, XVG
 - MEP
 - Superior
 - Waukesha
 - MODEL 791 816-101C:**
 - Universal European model for 4-16 cylinder engines.
 - Applies to many popular engine series:
 - Caterpillar
 - Dorman
 - Jenbacher
 - MAN
 - MWM
 - SACM
 - Waukesha

DISN IGNITION SYSTEM INCLUDES:

- 800 SERIES IGNITION UNIT**
 - 8-16 outputs
 - Up to 8 applications stored in EPROM
 - 16-position manual timing switch
 - 4-20 mA timing input
 - 0-1,000 ohm timing input
 - Diagnostic LED's for power, pickup and application
 - Alarm output for ignition fault
- MAGNET DISC**
- HALL-EFFECT PICKUP SENSOR**
- PICKUP SENSOR CABLE**
- WIRING HARNESS**
- IGNITION COILS**
 - (one per spark plug) Unshielded, Shielded, Integral, Flange

SPECIFICATIONS:

NUMBER OF OUTPUTS	8-16
POWER REQUIRED	12VDC, 3.0 amp 24VDC, 1.5 amp
VOLTAGE OUTPUT	45 KV
SPARK DURATION	300-600 microseconds
UNIT SIZE:	
Enclosure	3.70"H x 8.85"L x 7.12"W
Mounting centers	7.73"L x 6.25"W

DISN IGNITION COILS:

Altronic ignition coils cover all application requirements, unshielded or shielded. Shielded coils are available in the external type, flange mounted type, and integral coil series mounting directly to 13/16"-20 or 1"-20 spark plugs.

UNSHIELDED COIL



FLANGE COIL



SHIELDED COIL



INTEGRAL COIL



ACCESSORY EQUIPMENT

POWER SOURCE

The DISN ignition systems can be powered from a source of 12-24 Vdc or from Altronic's engine-driven 24 Vdc alternator power packages — see form ALT for full details.



IGNITION TEST UNIT

The Altronic Ignition Test Unit 791 022-1 allows a qualified technician to perform the following tests on a complete engine installation:

- Excite the output circuits without the engine rotating to test the DISN unit, primary wiring and ignition coils.
- Indicates whether the Hall-effect pickup is generating signals when the engine is rotated.



MAGNET DISC MOUNTING KIT FOR CATERPILLAR G379/G398/G399

Adaptor kit 790 005 provides for mounting the DISN magnet disc and pickup on Caterpillar G379, G398 and G399 engines. The kit consists of a drive, pickup mounting bracket and mounting adaptor that fits the existing service meter drive making for an easy retrofit on these popular engines.



**altronic[®]
inc.**

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NOTE: Area code changes from 216 to 330 as of March, 1996.