

ALTRONIC®, INC.  
712 TRUMBULL AVENUE  
GIRARD, OHIO 44420

DIGITAL TIMING INDICATOR DI-1400

INSTALLATION INSTRUCTIONS DI14 II 1-88

**WARNING:** Read these instructions carefully before installing or operating the DI device. An improperly installed or operating device may result in an unsafe operating condition of the monitored machine which consequently could pose the threat of personal injury to operators or other nearby personnel.

## 1.0 DESCRIPTION

- 1.1 The Altronic digital timing indicator is a solid state unit giving a numerical readout of the ignition system timing point in degrees before or after top dead center on a LCD display. A display bar indicates BTDC or ATDC. The readout range is from 45 degrees BTDC [- 45] to 45 degrees ATDC [\_ 45]. Power for the device is from the engine C.D. ignition system; a magnetic pick-up is used to input a signal for top dead center reference.
- 1.2 For reliable operation, the following instructions must be adhered to strictly.

## 2.0 MOUNTING

- 2.1 Mount the timing indicator inside a control panel or to a suitable flat surface so that the display is at a convenient viewing height. This device fits an industry standard cutout for a round 4-1/2" diameter gauge.

NOTE: Avoid mounting with the LCD display facing direct sunlight. The display temperature range is -40°F. to +175°F.

## 3.0 WIRING (SEE GENERAL HOOK-UP DIAGRAM)

- 3.1 TOP DEAD CENTER MAGNETIC PICK-UP WIRING - Connect the magnetic pick-up leads to terminals no. 8 and 9 on the back of the device so that the pick-up lead "A" (terminal 8) goes negative as the reference screw approaches and positive as the reference screw recedes.
- 3.2 NO. 1 CYLINDER COIL PRIMARY CONNECTION - Use the 24 AWG wire provided to connect to terminals no. 1 and 2 on the device observing the correct polarity indication (see connection chart on next page).
- 3.3 IGNITION SHUTDOWN LEAD AND GROUND - Use the 24 AWG wire provided to connect to terminals no. 4 and 5 on the device observing the correct polarity indication (see connection chart on next page). Connect all ground connections directly to panel ground which should be the same as engine ground. DO NOT ground this device directly to the ignition system common coil ground on the engine.

NOTE: Device DI-1401P is powered from 12-36 VDC and does not use the ignition shutdown lead power connection. Refer to Installation Instructions Form P II for complete details regarding this device.

### 3.4 CONNECTION CHART

IGNITION SYSTEM	IGNITION SHUTDOWN		NO. 1 CYLINDER COIL	
	TERM. 4 (-)	TERM. 5 (+)	TERM. 1 (-)	TERM. 2 (+)
Altronic I	Ground	Shutdown Term.	Ground	#1 coil (+)
Altronic I-6	Ground	"E" Lead	Ground	"A" Lead
Altronic II	"N" Lead	Ground	#1 coil (-)	Ground
Altronic III	Ground	"G" Lead	Ground	"A" Lead
Altronic V	Ground	"E" or "G"	Ground	"A" Lead
Bendix BLAR	Ground	"G" Lead	"A" Lead	"G" Lead
Bendix S1800/S1850	Ground	"N" Lead	"A" Lead	"N" Lead
Bendix SS	Ground	"V" Lead	"A" Lead	"V" Lead
F-M 3000	Ground	"G" Lead	Ground	"A" Lead
F-M 9000	Ground	"H" Lead	Ground	"A" Lead
F-M SCSA	"H" Lead	Ground	"A" Lead	Ground
U.T. Mag-tronic	Ground	"P" or "N"	Ground	"A" Lead

### 4.0 INSTALLING THE MAGNETIC PICK-UP AND REFERENCE SCREW

- 4.1 Follow the steps below and reference the General Hook-up diagram.
- A. Determine a point adjacent to the flywheel where the magnetic pick-up can be mounted. This can be adjacent to the face or outside diameter. NOTE: While a crankshaft pulley may be used, a larger diameter wheel will give more accurate results over a wide speed range.
  - B. Be sure the point selected can allow a projectile of 1/8" to 1/4" for the complete 360° of rotation.
  - C. Set the engine with #1 firing cylinder as follows:
    - Top dead center (TDC) for engines with maximum operating speed below 500 RPM;
    - 1° BTDC for engines with maximum operating speed at or above 500 RPM.
 This is the point where the pick-up and projectile should line up.
  - D. Use a ferrous #8 or #10 threaded screw for the TDC reference. Cut off the head of the screw and file the end smooth. This should project 1/8" to 1/4" from the face of the flywheel.
  - E. Mount the magnetic pick-up on a secure, rigid bracket - preferably one allowing for slight angular adjustment. NOTE: Be sure that neither the pick-up nor the projecting reference screw interferes with other engine parts for the full 360° of rotation.
- 4.2 Once the installation is complete, it is recommended that the timing reading be compared to a timing light indication. If necessary, adjust the magnetic pick-up until the display reading agrees with the timing light indication.

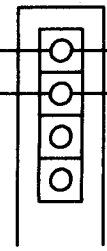
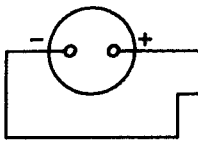
# GENERAL HOOK-UP - DI-1400

## IGNITION GROUND POLARITY

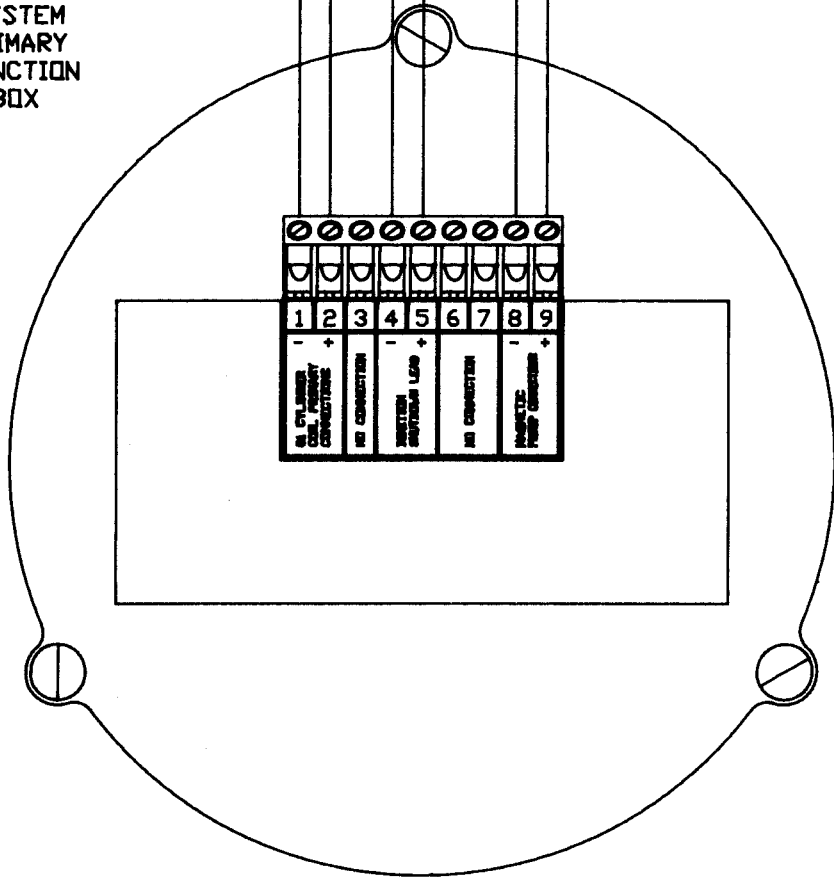
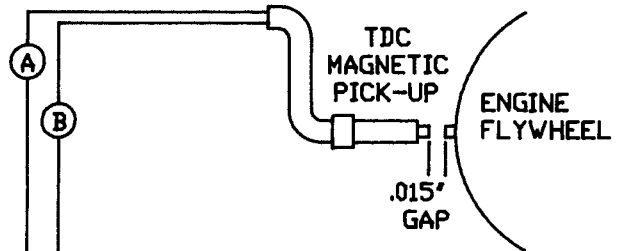
NEGATIVE      POSITIVE

SHUTDOWN LEAD	GROUND
GROUND	SHUTDOWN LEAD

IGNITION COIL  
#1 CYLINDER



IGNITION  
SYSTEM  
PRIMARY  
JUNCTION  
BOX



1	2	3	4	5	6	7	8	9
-	+	-	+	-	+	-	+	-
#1 CYLINDER COIL PRIMARY CONNECTION	#2 CYLINDER COIL PRIMARY CONNECTION	NO CONNECTION	SHUTDOWN LEAD	NO CONNECTION	MAGNETIC PICK-UP	NO CONNECTION	MAGNETIC PICK-UP	NO CONNECTION