



## DIGITAL/BAR-GRAPH IGNITION TIMING INDICATOR DSG-1401 SERIES

- ADVANCED DEVICE FOR MEASUREMENT, DISPLAY, CONTROL AND PROTECTION
- DIGITAL READOUT OF IGNITION TIMING WITH ANALOG BAR GRAPH DISPLAY
- TWO ADJUSTABLE SETPOINTS: PROGRAMMABLE HIGH OR LOW, N.O. OR N.C. OUTPUTS
- PERFORMS ROTATION-CONFIRM AND FIRE-CONFIRM FUNCTIONS
- 4-20 MA OUTPUT AVAILABLE
- STANDARD 4-1/2" ROUND WEATHER-RESISTANT CASE

The Altronic DSG-1401 series is an advanced digital/bar-graph setpoint gauge for monitoring and displaying ignition timing on spark ignited engines. The input signals are from the number 1 cylinder ignition coil primary and a magnetic pickup providing a top-dead-center reference signal. Power requirement is 12-36 Vdc, 50mA maximum.

The front panel of the microprocessor-based gauge has a sealed membrane keypad for easy selection or adjustment of the setpoints and readout filtering. The DSG-1401 models have two timing setpoints with individual solid state outputs which can be programmed for either high or low, N.O. or N.C. operation. In addition, each setpoint is individually adjustable for hysteresis, trip delay time and reset delay time. The third and fourth outputs are used to provide rotation-confirm and fire-confirm signals that can be used, for example, in an engine start-up sequence. The precise, programmable nature of the output switch operation allows these gauges to be used as control devices.

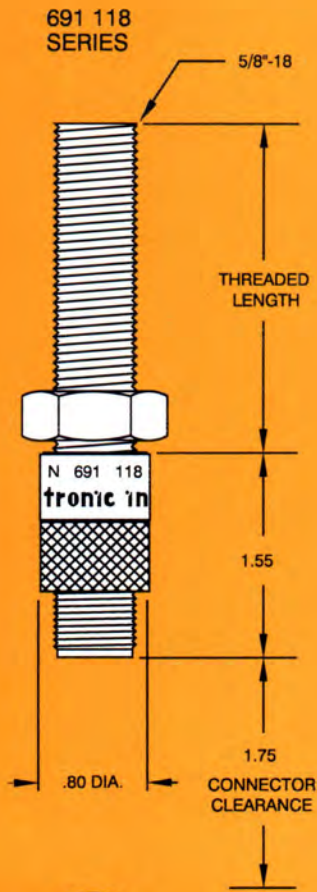
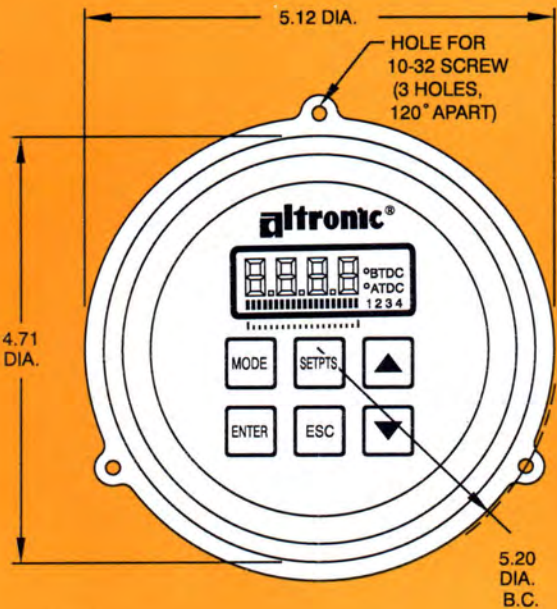
A unique feature of the DSG series gauges is the digital readout/bar-graph display. The analog bar-graph gives the operator an immediate indication of the reading as a percent of (user selectable) timing span or span between high/low setpoints, as well as a reference to direction and amplitude of a rapid change in reading. The display also indicates ° BTDC or ° ATDC and annunciates alarms by number.

The optional DSG-1401DUP model offers a 4-20 mA output option which is user-programmable from the front keypad. This feature can be used for remote readout of engine timing or for feedback of the actual engine timing to an engine management control system.



CERTIFIED  
CLASS I,  
DIVISION I AND 2,  
GROUP D

# DIMENSIONS



10SL-4P  
CONNECTOR

# SPECIFICATIONS

## DSG-1401 SERIES GAUGES:

POWER REQUIREMENT .....	12-36 VDC, 50 MA MAX.
HAZARDOUS AREA CLASSIFICATION .....	CLASS I, DIV. 2, GROUP D; CLASS I, DIV. 1, GROUP D WITH BARRIER (SEE "TO ORDER")
INSTRUMENT DISPLAY:	
TYPE .....	4-DIGIT LCD, 0.4 INCH HEIGHT WITH 20-SEGMENT BAR-GRAPH
UNITS DISPLAYED .....	°BTDC OR °ATDC
RANGE .....	180° BTDC TO 180° ATDC
INSTRUMENT ACCURACY .....	±0.3%, ±1UNIT
DISPLAY UPDATE RATE .....	3 TIMES PER SECOND
OUTPUT SWITCHES .....	4 SOLID STATE, N.O. OR N.C. 200 VDC, 140 MA CONTINUOUS
AMBIENT TEMPERATURE RANGE .....	-40°F. TO +175°F. / -40°C. TO +80°C.

# TO ORDER

## DIGITAL/BAR-GRAPH SETPOINT GAUGE:

Ignition Timing Display with Two Setpoints:	
Standard Model .....	DSG-1401DU
4-20 mA Output Model .....	DSG-1401DUP

## MAGNETIC PICKUPS (TDC INPUT):

1.75" threaded length .....	691 118-1
2.50" threaded length .....	691 118-2
3.00" threaded length .....	691 118-3
4.50" threaded length .....	691 118-4

## Cable Assemblies, Magnetic Pickups:

Unshielded type .....	693 104-x*
Shielded type, 180° connector .....	593 048-x**
Shielded type, 90° connector .....	593 054-x**

\* See current Price List, under CPU-90 for available lengths.

\*\* See current Price List, under PARTS for available lengths.

## CLASS I, DIVISION 1, GROUP D HAZARDOUS AREA APPLICATION

### Intrinsically Safe Option:

Power from a CSA certified zener barrier rated 30 volts max., 120 ohms min. such as Stahl part no. 9001/01-280-165-10.

For signal from no. 1 coil primary of C.D. ignition system:

Barrier, negative ground ignition .....	690 107
Barrier, positive ground ignition .....	690 108
Cable assembly, 690 barriers .....	693 106-1

### Class I, Group D Enclosure Option:

Add -X to above gauge part number.



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