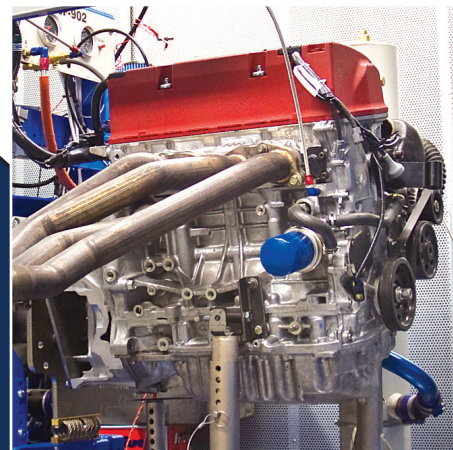
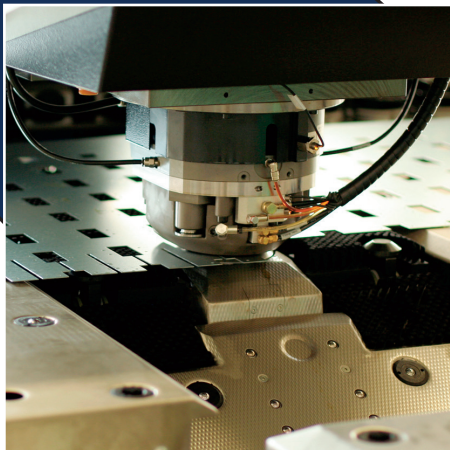


SC-2440

Self contained analog output
displacement sensors



Features

- Self-contained electronics
- Built-in temperature sensor
- Fixed gain output
- Reverse polarity and short circuit protection
- No calibration required
- Low cost
- Excellent performance with ferrous targets
- Variable voltage input from 15 to 30 volts DC
- Compact and rugged, IP-67
- Extremely low hysteresis

Ideal for

- High-precision automated assembly
- OEM applications with on-board computing power
- High repeatability requirements

Operation

The SC-2440 system operates on a traditional Colpitts oscillator circuit where the sensor acts as the resonating coil for the oscillator.

The proximity of the target to the sensor face pulls the oscillator, changing its frequency and amplitude of modulation, and controlling a variable gain oscillator section within the electronic circuit.

The signal is half-wave rectified and filtered to obtain an analog voltage proportional to the target position or displacement. The input power is diode protected and regulated to provide a clean low-noise signal. The output is short-circuit current protected.



Temperature Compensation

All sensors are affected by temperature changes to some degree. The SC-2440 is unique in that the temperature of the sensor is continuously monitored, and the circuit provides a voltage output of 0.5 to 1.2 VDC from 0 to 70° C.

This temperature-proportional voltage can be monitored by a microprocessor or PLC for active correction of the displacement output with changing temperature conditions. When used in precision automation applications, the output is as accurate at the beginning of the first shift on a cold January morning as it is at the end of the first shift on a hot July afternoon.

Sensors

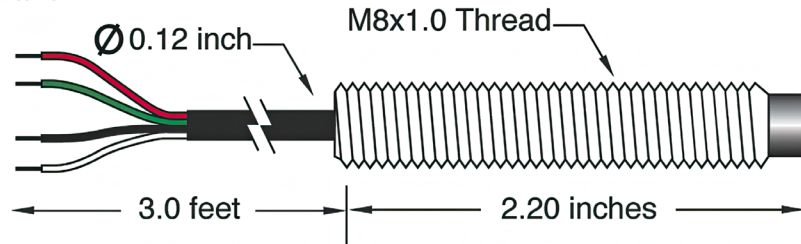
28 AWG multi-strand

Red – Vin

Green – Ground

Black – Vout

White – Vtemp



ORDERING INFORMATION

Sensor model

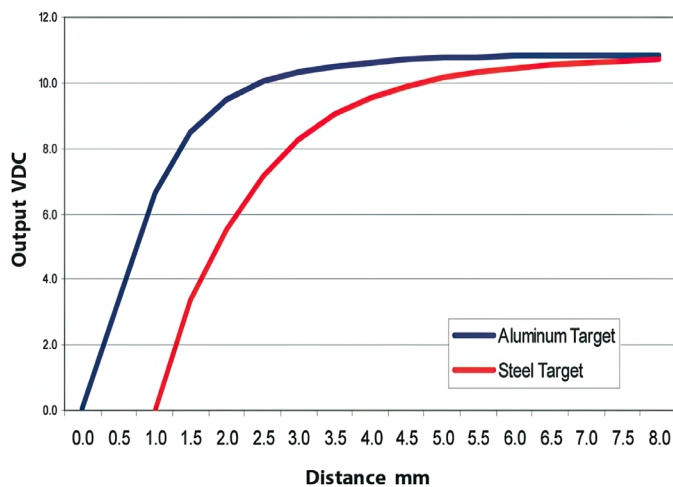
SC-2440-8

Part number

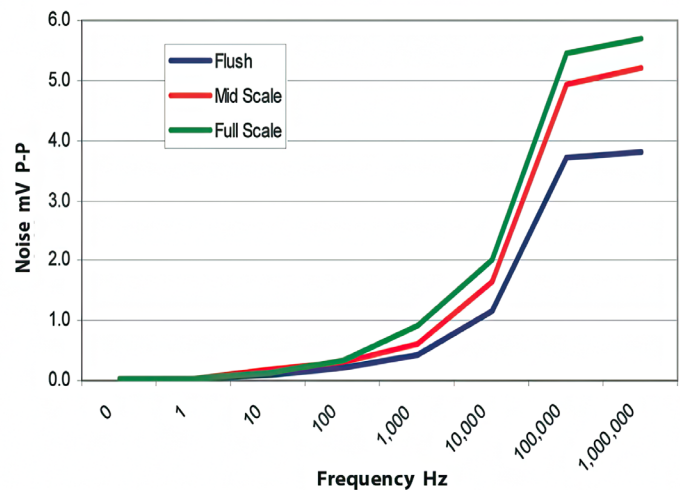
855680-001

TYPICAL PERFORMANCE DATA

SC-2440 output with 24VDC input



Noise (resolution)



Specifications

Performance

Range	
Steel target	4.0 mm (0.16 in.) with 1.0 mm offset
Aluminum target	2.5 mm (0.10 in.) with no offset
Resolution	0.001 mm (0.00004 in.) at full range
Output	0 to 10 Vdc*
Thermal Stability	0.02% FS w/ext TC
Repeatability	0.01% FS
Response Time	0.10 ms

General

Environmental	IP-67
Integral cable jacket	PVC
Body	Nickel-plated steel
Maximum jam nut torque	14 in-lbs (1.6 N-m)

Temperature

Operating range	0° to 70°C (32° to 158°F)
Storage range	0° to 70°C (32° to 158°F)
Compensation range	15° to 55°C (59° to 131°F)

Temperature Output

Temperature output voltage	0.50 to 1.20 VDC, 0 to 70° C
Sensitivity	10mV/°C
Convert V temperature out to °C	Sensor °C = (Vtemp – 0.50) x 100

Analog Output

Continuous load current	<50 mA
Short circuit and overload protection	Yes
Warm-up time	<1 minute

Input

Supply voltage required	15 to 30 Vdc
Current limit (no load current input)	<50 mA
Reverse polarity protection	Yes
Short circuit protection	Yes

*Application dependent, see ourput curves on previous page