

FEATURES:

- Allows "one man" sensor calibration in hazardous areas without area declassification.
- Provides true one man calibration.
- Requires only a simple magnetic wand. No other special electronic devices are needed.
- Provides continuous digital readout of the engineering units being monitored by the sensor.
- 4-20mA output sends constant 1.5mA "In Cal" signal during calibration periods.
- 1 minute "Power-Up" & "Post Cal" Delay Modes lock 4-20mA output at 4 mA to allow sensor stabilization and prevent erroneous alarm trips.
- Standard "Fault Supervision" circuitry continuously monitors for failed sensor. 4-20mA output transmits 0mA during failures.
- Standard ST-46 models include the ST-46LEL for catalytic bead sensors, the ST-46EC for electrochemical sensors and the ST-46I for 4-20mA inputs.
- The NEMA 7 (Explosion-Proof) instrument enclosure also meets NEMA 4 requirements with the standard "O" ring.
- Available options include isolated 4-20mA output, 5 amp form "C" HIGH - WARN - FAULT alarm contacts and RS-485 Modbus® interface.



The R. C. Systems Co., Inc. Model ST-46 Non-Intrusive Sensor Transmitter allows complete "end to end" calibrations be performed on sensors and analyzers without opening their enclosures. This is useful when the area is potentially hazardous and declassification is required to open explosion-proof enclosures. The only tool required is a small magnetic wand designed to be carried on a technician's key chain. The 3½ digit L.C.D. readout may be calibrated in engineering units to allow direct reading of units measured by the sensor.

Calibration is accomplished by first activating the unit by briefly holding the magnet to the front panel "CAL" location. The ST-46 responds by illuminating a steady arrow on the L.C.D. Next, excite the sensor with ZERO & SPAN values and hold the magnet to the UP / DOWN ZERO or UP / DOWN SPAN controls as needed to obtain the desired readings. Any "Power On" or "CAL exit" is followed by a 1 minute delay during which the 4-20mA output is locked at 4mA.

Non-volatile memory retains all calibration values during power interruptions.

Three ST-46 models are available. The ST-46I accepts 4-20mA inputs. The ST-46LEL accepts catalytic bead combustible detectors. The ST-46EC accepts electrochemical sensors. Each provide calibrated 4-20mA outputs. All models include dual ¼ inch N.P.T. conduit hubs. One of these may be used for mounting the sensor head.

A "Unity Gain Reset" control allows instant recall of ZERO and SPAN settings at the time a new sensor was installed. By recording the "new sensor" readings, it may be possible to monitor a sensor's signal response degradation over time. This may allow a prediction of sensor life expectancy for preventative maintenance purposes.

Three option boards are available to provide an isolated 4-20mA output, 5 amp HIGH, WARN and FAULT alarm contacts, or Modbus® protocol RS-485 serial interface.

SPECIFICATIONS

SENSOR INPUTS BY MODEL

Model ST-46I:

4-20mA into 100 ohms input impedance.

Model ST-46EC:

Accepts uAmps into 10 ohms, or, millivolts into 100 megohms.

Model ST-46LEL:

Bridge input supplies adjustable 2-6 VDC 3 watt sensor power.

ANALOG OUTPUTS

All models provide 4-20mA into a maximum load of 750 ohms when 24VDC is the primary power supply.

DISPLAY

3½ digit LCD display provides readout of the monitored variable in engineering units.

CALIBRATION RANGE AND RESOLUTION

ZERO = ±15% of full scale range with .1% resolution.

SPAN = Gain adjustment range of .5-2 with .1% resolution.

ACCURACY

±.1% of full scale ± 1 count.

AMBIENT TEMPERATURE RANGE

-10 - 60 degrees C

TEMPERATURE DRIFT

Less than .1% per degree C over ambient temperature range.

POWER SUPPLY

19 - 30 VDC at less than 100mA; 12 VDC available by special order (add sensor watts to LEL model power consumption).

HOUSING

Instrument enclosure suitable for Class 1, Groups B,C,D; Class 2, Groups E,F,G. Also meets NEMA 4 with included 'O' ring.

ORDERING INFORMATION

Use the numbering scheme described below to define the correct input and optional features for the ST-46.

ST-46XX/YYY is the format of the ST-46 part number.

XX defines the input sensor type. Substitute the following letters to select the ST-46 model:

I - specifies 4-20mA only inputs.

EC - specifies electrochemical sensors.

LEL - specifies catalytic bead combustible sensors.

AVAILABLE OPTIONS:

Space is provided for an "OPTION BOARD" which allows addition of *any one* of the following functions.

YYY defines the option. Substitute the following letters to select which single option, if any, is to be supplied.

ISO - 1500V isolated 4-20mA output (4 wire hook-up).

AHI - 5 amp resistive S.P.D.T. HIGH, WARN & FAULT alarm relays. Allows "FAIL SAFE" or normal operation of HIGH & WARN relays. Also allows latching of HIGH & WARN relays.

ALO - Same as AHI except HIGH & WARN relays trip as inputs fall below set-points. This feature is often required in oxygen monitors.

485 - RS-485 Modbus® serial interface allows multi-drop connection to 128 ST-46's on a single cable.

ALL DIMENSIONS IN INCHES

