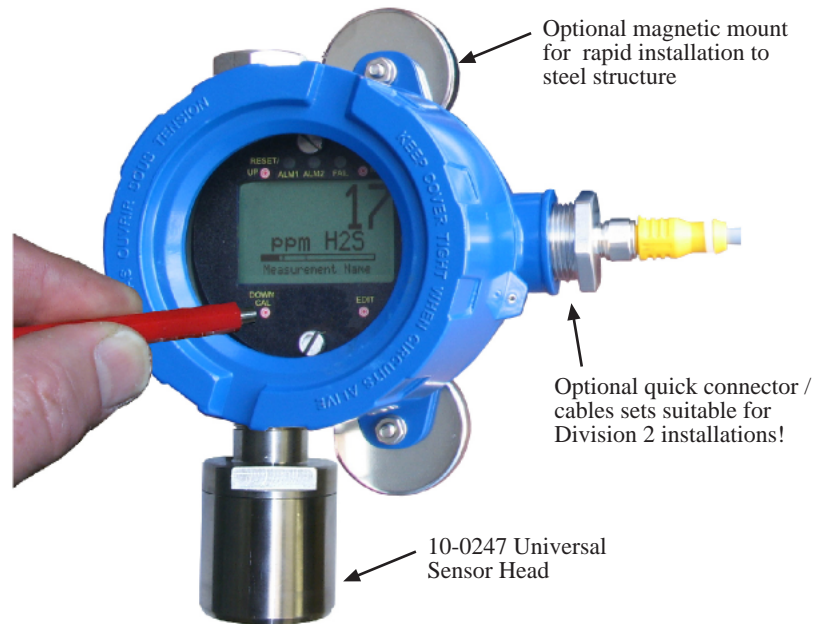


## FEATURES:

- Accepts 4-20mA, electrochemical and bridge style sensors into single or dual channels. Dual model has two readouts and 4-20mA outputs
- Wireless and 2-wire 4-20mA models for electrochemical sensor
- NRTL / ATEX certifications
- “Smart” sensor interface allows sensor type, range, calibration and other variables be stored in sensor
- Allows "one man" sensor calibration in hazardous areas without area declassification
- Requires only a simple magnetic wand. No other special electronic devices are needed
- LCD readout is .6” engineering units and graphically as a 30-minute trend or bar-graph
- Five front panel alarm LED indicators for A1 , A2 , Fail, IN CAL & RS-485 are standard
- Available options: HIGH - WARN - FAULT alarm contacts with RS-485 Modbus, isolated 4-20mA, quick connect cables suitable for Div 2, magnetic mounting
- 4-20mA output sends constant "In Cal" signal during calibrations
- User programmable "Power-Up" & "Post Cal" Delay locks output at zero during sensor stabilization
- Standard "Fault Supervision" circuitry continuously monitors for failed sensor. 4-20mA output transmits low mA during failures
- Security mode allows locking of critical parameters
- The NEMA 7 enclosure also available in stainless-steel



The R. C. Systems Inc. ST-48 Monitor is a truly “state of the art” sensor transmitter designed specifically for gas detection applications. For low power gas sensors it functions in a 2-wire 4-20mA “sink” mode, or, may provide excitation for higher power consuming sensors in a 3-wire 4-20mA “source” mode. Inputs include electrochemical toxic / O<sub>2</sub> sensors, catalytic bridge sensors and many other voltage and current input sources. A dual monitor mode allows one toxic and one bridge sensor into the same ST-48 reducing installation costs by half! Values are scaled into the appropriate engineering units for numeric and graphic display on the backlit LCD.

A “smart sensor” interface allows a tiny memory chip in the sensor provide the ST-48 with parameters such as calibration, range, engineering units and important dates. A real time clock and calendar allows logging events such as sensor replacement, alarms and calibrations. Calibration offset and gain factors may be viewed and are useful for predicting sensor “end of life” conditions.

Industry standard “simple” sensors without the integrated data storage are also easily accepted.

Operator interface is via a menu driven magnetic keypad allowing full access without opening the enclosure. There are no potentiometers and all adjustments are performed through the keypad. ST-48 configuration variables may also be entered via a PC’s USB port with our USB Interface box.

ST-48 options include Isolated 4-20mA outputs, a 5-amp Form C alarm relays PCB with Modbus RS-485 port, magnetic mount, and quick connect cable sets suitable for Division 2 hazardous areas. Visual alarm & RS-485 Tx / Rx LED indicators located on the front panel are standard.

Users may program warm up and calibration exit delays to avoid false alarms. Delays hold outputs at zero until sensor signals stabilize. IN / OUT alarm trip delays may also be programmed.

A security menu allows entry of an authorization code to lock critical parameters.

## SPECIFICATIONS

### ST-48 INPUTS BY MODEL

Model ST-48EC:

EC sensor input (see order guide) with 2-Wire 4-20mA output

Model ST-48Bridge:

Dual EC & Bridge sensor inputs (both EC & Bridge inputs)

Model ST-48EC-I:

4-20mA into 10 ohms input impedance

### ANALOG OUTPUTS

ST-48EC has standard 2-Wire 4-20mA current sink output.

(2-Wire 4-20 not available with ST-48Bridge or 10-0234 option)

ST-48Bridge models have 3-Wire 4-20mA current source output.

With nominal 24VDC power supply, 2-Wire max loop R is 500 ohms and 3-Wire max loop R is 750 ohms

### 10-0234 Relays / RS-485 Modbus (Optional)

Relays are Form C 5AMP @ 30VDC & 240VAC **RESISTIVE**.

RS-485 is 2-Wire Modbus RTU

### NRTL CSA APPROVALS (File # 219995)

ST-48 with 10-0247 is Div. 1 & 2 Gr. B,C,D Exia. Suitable for Explosion Proof and Intrinsically Safe installations

ST-48IS 10-0247IS is Div. 1 & 2 Gr. A,B,C,D. Suitable for Intrinsically Safe installations only

**IMPORTANT:** Intrinsically Safe installations require IS barrier # 10-0263 (MTL 7787P+) or equivalent.

ATEX certified w/o sensor head and with 10-2072 sensor head

### DISPLAY

64 x 128 pixel LCD displays 30-minute trend, bar-graph & large engineering units. Backlight active in 3-wire 4-20mA mode

### ACCURACY

±5% of full scale ± 1 count

### AMBIENT TEMPERATURE RANGE

-40 - 60 degrees C

### TEMPERATURE DRIFT

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

### POWER SUPPLY

10 - 30 VDC at less than .75 watts in 2-Wire 4-20mA.

10 - 30 VDC at less than 3 watts in 3-Wire 4-20mA with Relays

### HOUSING

Instrument enclosure suitable for Cl. 1, Div. 1 & 2, Gr. B,C,D

## ORDERING INFORMATION

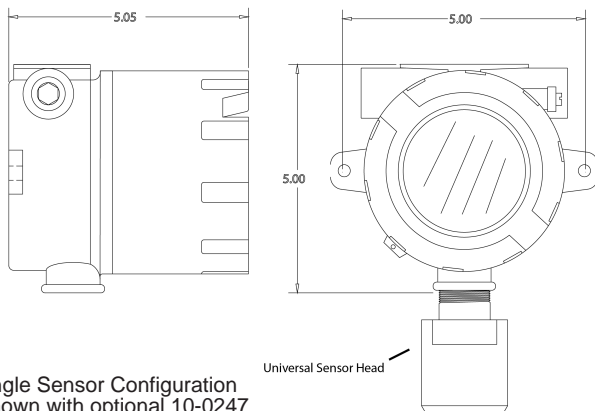
### ST-48 OPTIONS

- \*10-0234 ALARM RELAYS (3) WITH RS-485 MODBUS
- \*\*10-0250 DUAL ISOLATED 4-20mA OUTPUTS
- 10-0247IS SMART SENSOR HEAD ALUMINUM (INTRINSICALLY-SAFE)
- 10-0247 SMART SENSOR HEAD STAINLESS STEEL INTRINSICALLY-SAFE / EXPLOSION-PROOF)
- \*ARCTIC CONSULT FACTORY; ADDS 1w HEATER TO SENSOR HEAD & 4w HEATER IN ELECTRONICS
- 10-0248IS ST-49 4-20mA TRANSMITTER ALUMINUM (INTRINSICALLY-SAFE)
- 10-0248 ST-49 4-20mA TRANSMITTER STAINLESS STEEL (INTRINSICALLY-SAFE / EXPLOSION-PROOF)
- 10-0242EC SMART EC SENSOR PCB (LESS SENSOR; FITS 10-0247 OR 10-0248)
- 10-0242CAT SMART LEL SENSOR PCB (LESS PELLISTORS; FITS 10-0247)
- 10-0263 MTL 7787P IINTRINSICALLY SAFE BARRIER
- 0010-1200 "Y" FITTING FOR DUAL SENSOR HEADS
- 10-0319 MAGNETIC MOUNTING KIT
- 1000-2281 QUICK CONNECTOR; 3/4" NPT; DIVISION 2
- 1000-2282 QUICK CONNECTOR; PANEL; DIVISION 2
- 1000-2283 LOCKFAST CABLE GUARD; DIVISION 2
- 1000-2284 10 FOOT CABLE SET; DIVISION 2
- 1000-2285 25 FOOT CABLE SET; DIVISION 2
- 1000-2286 50 FOOT CABLE SET; DIVISION 2
- 1000-2287 100 FOOT CABLE SET; DIVISION 2

Add "SS" suffix to substitute stainless steel enclosure in place of the standard epoxy painted aluminum enclosure

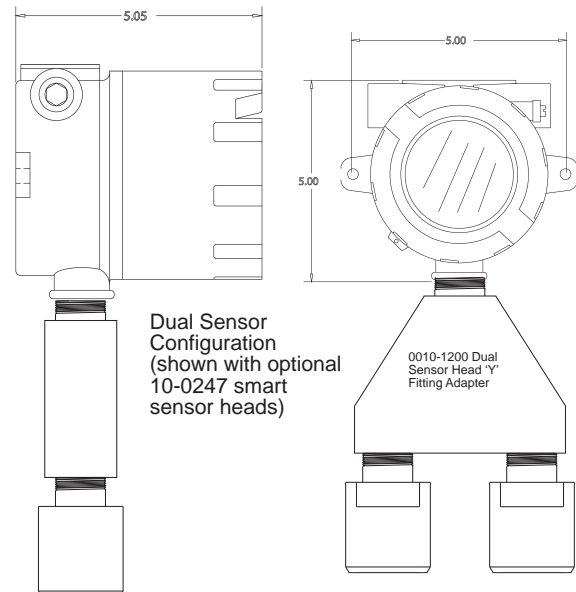
\*NOT AVAILABLE ON ST-48EC 2 WIRE

\*\*NOT AVAILABLE ON ST-48EC 2 WIRE OR WITH 10-0234 ALARMS / MODBUS OPTION



Single Sensor Configuration (shown with optional 10-0247 smart sensor head)

ALL DIMENSIONS IN INCHES



Dual Sensor Configuration (shown with optional 10-0247 smart sensor heads)

0010-1200 Dual Sensor Head "Y" Fitting Adapter