

Solutions for Hazardous Gas Detection

ST-48EC 2-Wire Gas Monitor

Graphic LCD Display; Smart Toxic or Oxygen Sensors

FEATURES:

- The ST-48 is a truly "universal" monitor accepting oxygen and many toxic sensors into the same sensor head
- Graphic LCD displays gas values as engineering-units and graphically as bar-graph and 30-minute trend
- Front panel LEDs and LCD indicate alarm and Cal In Progress status
- Standard Real Time Clock and Calendar time and date stamps alarm, power-up and calibration events
- "Gen 1" Smart-Sensor technology stores parameters such as gas type, and "born on date" in each sensor module. SmartSensor editable parameters include: 2 user info fields, 3 alarm levels, temperature compensation and gas range
- Available in rugged stainless steel and cast aluminum; certified CL1 Div 1 XP with sensor head sinter or CL1 Div 2 non-incendive without sinter. Also available in economical UL-94 poly certified CL1 Div 2 non-incendive
- Magnetic keypad allows "one man" sensor calibration in hazardous areas without area declassification
- Password protected security levels prevents unauthorized configuration
- Available options include Division 2 quick connect cable sets, magnetic mount and pole mount



Non-metallic
Poly "PY" model



Aluminum "AL"
XP model

The ST-48EC 2-Wire 4-20mA Loop Powered Gas Monitor detects oxygen and many toxic gases by offering a wide variety of electrochemical gas sensors. ST-48ECs utilize our popular "GEN 1" smart sensor proprietary technology to provide sensor recognition and temperature compensation within the ST-48EC. Each GEN 1 smart sensor has its' own non-volatile memory to store records of serial number, born-on date, initial calibration values, engineering units and temperature compensation algorithm.

No other Loop Powered gas detector offers standard features comparing to the ST-48EC. Two level alarm LEDs and a FAULT LED indicate alarm status on the front panel. A "Real Time Clock & Calendar" record events such as calibrations, alarms and cycling of power. Sensor temperature is monitored and compensated for over the entire -40C to +60C operating range. The graphic LCD displays monitored values as large engineering units, bar-graph and 30-minute trend.

Operator interface is via the magnetic keypad so it is never necessary to open the enclosure to calibrate or configure an ST-48. No potentiometer or jumper settings are required. "CAL MODE" provides on-screen prompts when to apply Zero/Span gases during calibrations. The "Sensor Life" bar-graph updates after each SPAN calibration indicating when to install a new sensor. The 30-minute trend screen displays rate of change of calibrations and gas exposures. Modular design affords efficient installation and plug in sensors allow changing target gases even after installation

ST-48ECs are supplied in either rugged cast aluminum or UL94 poly enclosures. The cast aluminum model is CSA certified for explosion-proof CL1 Div 1 Gr. ABCD when supplied with the sensor head sinter, or, intrinsically safe (10-0263 barrier required for IS) without sinter. Both the poly and the cast aluminum (less sinter) models are also CSA certified for CL1 Div 2 non-incendive.

The ST-48EC Gas Monitor is a user friendly and easy to install complete GAS DETECTION SOLUTION.

SPECIFICATIONS

ANALOG OUTPUTS

2-wire 4-20mA non-polar current sink

Max loop R=600 ohms with nominal 24VDC

CSA APPROVALS (File # 219995)

The ST-48 EC is available with 3 methods of protection for hazardous areas

CAST ALUMINUM ENCLOSURE:

Explosion-Proof Cl 1 Div 1 Gr ABCD with 10-0247 (includes sinter)

Intrinsically-Safe Cl 1 Div 1 Gr ABCD Exia with 10-0247IS (without sinter; requires 10-0263 IS barrier)

Non-Incendive Cl 1 Div 2 Gr ABCD with 10-0247 or 10-0247IS

UL94 POLY BLACK PLASTIC ENCLOSURE:

Non-Incendive Cl 1 Div 2 Gr ABCD

DISPLAY

64 x 128 pixel LCD displays 30-minute trend, bar-graph and large engineering units.

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

ORDERING INFORMATION

ST-48 2-Wire Order Guide

ST48EC- ABC-D-E/F/G

"A"	Enclosure Type: AL=Aluminum SS=Stainless Steel PY=Poly
"B"	Area Classification: 1=Division 1 2=Division 2 3=Intrinsically Safe 4=General Purpose
"C"	Splash Guard Option: 0= No Splash Guard 1= Splash Guard
"D"	Output Option: Standard 4-20mA Sink
"E"	EC Sensor Location: 0=No EC Sensor L=Local Mount R=Remote Mount * should we offer all 3?
"F"	Channel 1 Sensor Pick from EC List:
"G"	EC Sensor Type: STD=Gen 1 EC Smart Sensor HDL=Gen 1 EC for Hot and Dry Locations * no arctic circuit
*Reactive gases compatible with AL3, AL4, SS3, SS4 and PY1	

Available Sensor Types

Electrochemical	
O	None
NH3	*Ammonia
AsH3	Arsine
CO	Carbon Monoxide
CL2	*Chlorine
CLO2	*Chlorine Dioxide
C2H4O	Ethylene Oxide
F2	*Flourine
H2	Hydrogen
HCL	*Hydrogen Chloride
HCN	*Hydrogen Cyanide
HF	*Hydrogen Fluoride
H2S	Hydrogen Sulfide
NO	Nitric Oxide
NO2	Nitrogen Dioxide
O2	Oxygen
O3	*Ozone
SO2	Sulfur Dioxide
SPE	EC Specify Gas

*Reactive gases require use of sensor head without stainless steel flame arrestor

*Configure on www.rcsystemsco.com to confirm your selection is accurate

Representatives:

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Solutions for Hazardous Gas Detection

ST-48 3-Wire Gas Monitor

Graphic LCD Display; Single or Dual Smart Sensors

FEATURES:

- The ST-48 is a truly "universal" monitor accepting interchangeable catalytic, infrared, electrochemical and PID sensors into the same sensor head. Dual 4-20mA input also available
- Graphic LCD displays gas values as engineering-units and graphically as units and monitored data graphically bar graph and 30-minute trend
- Dual gas feature offers split-screen dual gas readout and dual 4-20 mA source outputs
- Front panel LEDs and LCD indicate alarm, Cal In Progress and serial communication status
- Standard Real Time Clock and Calendar, time and date stamps alarm, power and calibration events
- "Gen 1" Smart-Sensor technology permanently stores parameters such as gas type, and "born on date" in each sensor module. Smart-Sensor editable parameters include: 2 user info fields, 3 alarm levels, temperature compensation and gas range
- 3 alarm levels, gas range and other parameters are stored in each ST-48's Smart Sensor module and may be edited by the user
- Available in rugged stainless steel and cast aluminum; certified CL1 Div 1 XP with sensor head sinter or CL1 Div 2 non-incendive without sinter. Also available in economical UL-94 poly: certified CL1 Div 2 non-incendive
- Magnetic keypad allows "one man" sensor calibration in hazardous areas without area declassification
- Password protected security levels prevents unauthorized configuration
- Available options include alarm relays/RS485 modbus RTU, isolated 4-20 mA output, Division 2 quick connect cable sets, magnetic mount and pole mount



Dual Local "Smart"
Sensors available



Non-metallic
Poly "PY" model



Diffusion "Smart" Sensor

The ST-48 Gas Monitor is a universal device. It accepts many sensor types and signal ranges including catalytic, infrared, electrochemical, photoionization (PID) and mA inputs. RC Systems proprietary "smart sensor" technology provides sensor recognition and temperature compensation within the ST-48. An "Arctic" option adds a 4-watt heater within the electronics and 1-watt in the sensor head to extend the temperature range to -55C. The ST-48 is available with 3-wire (source) and galvanically isolated 4-20mA outputs. Utilization of the ST-48's "Dual Monitor Mode" dramatically reduces installation costs by supporting two sensors and transmitting both 4-20mA outputs to the alarm controller from a single device. Alarm relays and RS-485 Modbus and HART are also available.

Operator interface is via the magnetic keypad so it is never necessary to open the enclosure to calibrate or configure an ST-48. ST-48s support single or dual gas configurations and offer an optional 15 feet sensor separation kit to make it easier to detect lighter and heavier than air gases.

On-screen status messaging and LEDs indicate system conditions to users with only a glance. No potentiometer or jumper settings are required. A "CAL MODE" provides on-screen prompts when to apply Zero/Span gases during calibrations. A "Sensor life" bargraph updates after each SPAN calibration indicating when to install a new sensor. The 30-minute trend screen displays rate of change of calibrations and gas exposures. Modular design affords efficient installation and plug in sensors allow changing target gases even after installation.

The ST-48 Gas Monitor is a user friendly and easy to install complete GAS DETECTION SOLUTION.

SPECIFICATIONS

ANALOG OUTPUTS

ST-48 3-wire models have 4-20mA current source output
With nominal 24VDC power supply max loop R is 750 ohms

Optional Isolated 4-20mA Output

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

Relays are Form C 5AMP @ 30VDC and 240VAC RESISTIVE

RS-485 is 2-wire Modbus® RTU

NRTL CSA APPROVALS (File # 219995)

Cast Aluminum Enclosure:

Explosion-Proof Cl 1 Div 1 Gr ABCD with 10-0247 (includes sinter)

Non-Incendive Cl 1 Div 2 Gr ABCD with 10-0247 or 10-0247IS

UL94 Poly Black Plastic Enclosure:

Non-Incendive Cl 1 Div 2 Gr ABCD

DISPLAY

64 x 128 pixel backlit LCD displays 30-minute trend, bar-graph and large engineering units.

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 3 Watts in 3-wire 4-20mA with relays

ORDERING INFORMATION

ST-48 3-Wire Order Guide

ST48EC- A-B -C- D

"A"	Enclosure Type
	AL1= Aluminum Explosion Proof AL2= Aluminum Explosion Proof w/Splash Guard AL3= Aluminum Intrinsically Safe AL4= Aluminum Intrinsically Safe w/Splash Guards SS1= Stainless Steel Explosion Proof SS2= Stainless Steel Explosion Proof w/Splash Guard SS3= Stainless Steel Intrinsically Safe SS4= Stainless Steel Intrinsically Safe w/Splash Guard SS5= Stainless Steel Ordinary Location SS6= Stainless Steel Ordinary Location w/Splash Guard SS7= Stainless Steel Ordinary Location w/Dual Local Sensors SS8= Stainless Steel Ordinary Location w/Dual Local Sensors and Splash Guards PY1= Polycarbonate w/Splash Guard
"B"	Channel 1 Sensor Pick from EC List 00= None
"C"	Channel 2 Sensor Pick from full list except EC 00= None
"D"	Output Options 0= None 1= 10-0234 Modbus RTU + 3 Relays 2= 10-0250 Dual Isolated 4-20 mA Output 4= 10-0351 4-20 mA HART

*Reactive gases compatible with AL5, AL6, AL7, AL8, SS5, SS6, SS7, SS8 and PY1

Available Sensor Types

Electrochemical		PID	
AM	*Ammonia	PI1	Benzene (10.0eV)
AR	Arsine	PI2	Specify Gas/Range (10.6eV)
CX	Carbon Monoxide	Catalytic Bead	
CH	*Chlorine		
CD	*Chlorine Dioxide	CB1	Methane LEL
EO	Ethylene Oxide	CB2	Propane LEL
FL	*Flourine	CB3	Hydrogen LEL
HY	Hydrogen	CB4	LEL Specify Gas
HC	*Hydrogen Chloride	Smart IR (Series 4)	
HN	*Hydrogen Cyanide		
HF	*Hydrogen Fluoride	IR3	Carbon Dioxide 0-5%
HS	Hydrogen Sulfide	IR1	Methane LEL
NO	Nitric Oxide	IR2	Propane LEL
ND	Nitrogen Dioxide	Analog Input	
OX	Oxygen		
OZ	*Ozone	MA	4-20mA Input
SD	Sulfur Dioxide		

*Reactive gases require use of sensor head without stainless steel flame arrestor

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