RC Systems has engineered and manufactured industrial electronic products for the instrumentation industry since 1979. As critical alarm monitoring experts, we specialize in interfacing various sensors and analyzer devices to our alarm and display products. Our products are known for their reliability, performance, and ease of use for applications where maintenance and safety are crucial. Some of these applications include fixed and temporary ambient gas detection as well as numerous other multi signal monitoring applications. In addition, we provide various solutions for hard wire or wireless systems. Our wireless monitoring ability/strategy continues to provide recognized solutions for countless customers worldwide.

**ST-90 Dual Controller with Serial Interface**

The ST-90 Dual Channel Controller provides simultaneous display and alarm functions for two monitored variables. Easy to configure and user friendly, the ST-90 Dual can function as a critical alarm controller for toxic or combustible gases, vibration, tank levels and other process values.

**FEATURES**

- Accepts inputs from one or two local or remote mounted sensors or transmitters. 24VDC @ 10 Watts max provides external device power.
- Three adjustable independent alarm levels per channel. Relay acknowledge feature allows silencing of external audible devices during existing alarm conditions.
- Graphic LCD readout displays monitored data as bar graphs, engineering units, and 30 minute trends. Alarm LED’s flash when new and become steady after acknowledged.
- Two standard SPDT common alarm relays are configurable for HIGH and WARN or FAULT alarm conditions. Optional discrete channel alarm relays are also available.
- Cal Mode offers push button zero/span calibration for direct sensor interface applications. Authorization mode allows locking of critical configuration variables.
- Touch and magnetic keypad standard for non-intrusive operation in potentially hazardous locations.
- NEMA 4X (Division 2 certified) and NEMA 7 explosion-proof wall mount packaging options available.
- Models certified to CSA C22.2 NO. 152 for combustible detection and Class I, Division 2, Groups A,B,C,D CE Mark.
- Non-volatile memory retains all configuration data indefinitely.
- RS-485 Modbus® slave port for up to 128 ST-90s to be multidropped on a single data highway for interrogation by another Modbus® master. Modbus® slave RS-485 serial port interfaces to Modbus® masters such as PCs, PLCs and DCS.
**SPECIFICATIONS**

**INPUTS**
Sensor input PCB’s are available for dual bridge sensors, dual toxic (electrochemical), one bridge sensor / one toxic, and dual 4-20mA. All versions may be configured for 4-20mA inputs.

**COMMON ALARM RELAYS (STANDARD)**
Two, 5 amp 30VDC or 250VAC resistive Form C

**ANALOG OUTPUTS (OPTIONAL)**
10 bit 4-20mA output. Max load 800 ohms with nominal 24VDC power supply

**DISCRETE ALARM RELAYS (OPTIONAL)**
Six 5 amp 30VDC or 250VAC resistive Form C

**SERIAL PORT (OPTIONAL)**
Slave RS-485 port with Tx/Rx LED’s
Protocol is Modbus® RTU

**DISPLAY**
128 x 64 pixel graphic LCD with backlight displays bar graphs, and engineering units
6 discrete LED’s indicate alarm status for three alarms per channel

**AMBIENT TEMPERATURE RANGE**
-25 to +60 degrees C

**POWER SUPPLY**
100-240 VAC / 24 VDC are standard primary power supplies

**HOUSING OPTIONS**
NEMA 4X / IP66 wall mount approved for Division 2
NEMA 7 explosion-proof wall mount Division 1 and 2

**APPROVALS**
CSA C22.2 No 1010.1 and 152 for combustibles and ISA S82.02; UL 1604 / C22.2 No 213 (NEMA 4X = Division 2 Groups A,B,C,D, NEMA 7 = Division 1 Groups B,C,D); EN55011 and EN61000 (CE Mark)

**OPTIONS**

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<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>90-03</td>
<td>ST-90PY/Dual NEMA 4X non metallic extended enclosure</td>
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<tr>
<td>90-04</td>
<td>ST-90PCS/Dual NEMA 4 painted carbon steel extended enclosure</td>
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<tr>
<td>90-05</td>
<td>ST-90SS/Dual NEMA 4X stainless steel extended enclosure</td>
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<td>90-02</td>
<td>ST-90XP/Dual bolt on lid NEMA 7 enclosure</td>
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<td>90-01</td>
<td>ST-90N4/Dual NEMA 4X compact non metallic enclosure</td>
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<td>10-0221/2</td>
<td>Two Channel 4-20mA analog input PCB option</td>
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<tr>
<td>10-0222</td>
<td>Optional alarm relay board with six 5 amp Form C relays</td>
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<tr>
<td>10-0223</td>
<td>Dual 4-20mA output option</td>
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<tr>
<td>10-0216</td>
<td>One echem (Channel 1) and 1 bridge (Channel 2) sensor input option</td>
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<td>10-0219</td>
<td>Dual bridge sensor input option</td>
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<tr>
<td>10-0220</td>
<td>Dual electrochemical sensor input option</td>
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<td>10-0253</td>
<td>RS-485 / RS-232 Modbus® RTU interface option</td>
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<td>10-0377</td>
<td>100dB piezo audible option</td>
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<td>10-0284</td>
<td>Division 2 red xenon strobe light option</td>
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<td>10-0314</td>
<td>NEMA 4X/7 Division 1, 50 Watt 24VDC external power supply</td>
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<tr>
<td>10-0315</td>
<td>NEMA 4X Division 2, 50 Watt 24VDC external power supply</td>
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*These items only available with NEMA 4X Enclosure

**DIMENSIONS**
All dimensions in inches

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