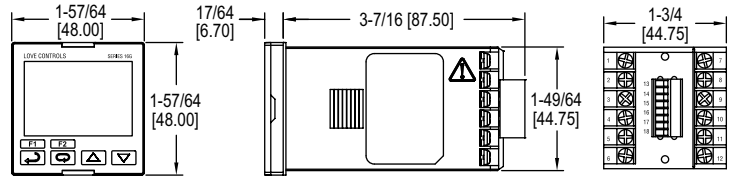


# TEMPERATURE/PROCESS LOOP CONTROLLERS

Universal Input, Dual Output, On/Off PID or FUZZY Logic Output Control



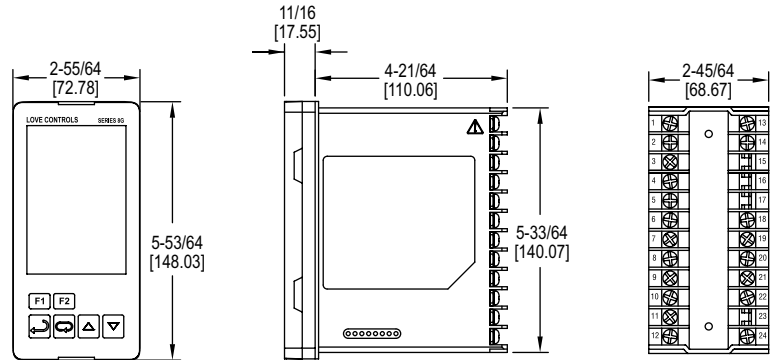
16G



16G



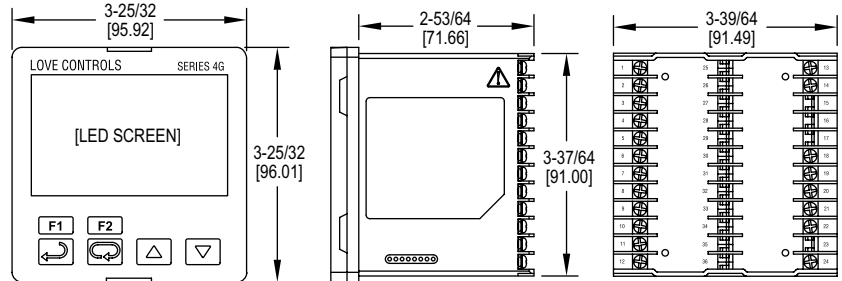
8G



8G



4G



4G



The **Series 16G, 8G, & 4G Temperature/Process Loop Controllers** allow for monitoring and control of temperature or process conditions. The controller features two independent control outputs for dual loop control using on/off, auto-tune or self-tune PID, fuzzy logic, or manual control methods. RS-485 interface is included with Modbus® communication protocol, for easy bench-top configuration or integration with a PLC or data control system.

## BENEFITS/FEATURES

- On/off, PID, fuzzy logic, or manual output control
- Constant, sloped, program (ramp/soak), or remote set point control
- 2 primary control outputs, 2 secondary/alarm relay outputs, and RS-485 standard on all models
- Remote set point, input retransmission, or event input functions available with optional hardware

## APPLICATIONS

- Oven control
- Packaging equipment
- Parts washers

## SPECIFICATIONS

**Inputs:** Thermocouple, RTD, DC voltages or DC current.  
**Display:** Process value: 4 digit, 0.47" H (12 mm), orange LCD; Set point value: 4 digit, 0.47" H (12 mm), green LCD.  
**Accuracy:**  $\pm 1.8^{\circ}\text{F}$  plus  $\pm 0.3\%$  of span ( $\pm 1^{\circ}\text{C}$  plus  $\pm 0.3\%$  of span) at  $77^{\circ}\text{F}$  ( $25^{\circ}\text{C}$ ) after 20 minutes warm up.  
**Power Requirements:** 100-240 VAC  $-20/+8\%$ , 50/60 Hz; Optional 24 VDC,  $\pm 10\%$ .  
**Power Consumption:** 5 VA max.  
**Operating Temperature:**  $32$  to  $122^{\circ}\text{F}$  ( $0$  to  $50^{\circ}\text{C}$ ).  
**Storage Temperature:**  $-42$  to  $150^{\circ}\text{F}$  ( $-20$  to  $65^{\circ}\text{C}$ ).  
**Memory Backup:** Nonvolatile memory.  
**Control Output Ratings:** Relay: SPST, 5 A @ 250 VAC resistive; Voltage pulse: 12 V (max. 40 mA); Current: 4-20 mA; Linear voltage: 0-10 V.  
**Alarm Relay Ratings:** 3 A @ 250 VAC resistive.  
**Communication:** RS-485 Modbus® ASCII/RTU communication protocol.  
**Weight:** 9 oz (255g).  
**Front Panel Rating:** IP66.  
**Compliance:** CE, cULus.

# TEMPERATURE/PROCESS LOOP CONTROLLERS

Universal Input, Dual Output, On/Off PID or FUZZY Logic Output Control

| MODEL CHART - 16G |                |          |                |           |
|-------------------|----------------|----------|----------------|-----------|
| Model             | Output 1       | Output 2 | Option 1       | Option 2  |
| 16G-23-11         | Voltage pulse  | Relay    | Event          | Event     |
| 16G-23-31         | Voltage pulse  | Relay    | Input retrans. | Event     |
| 16G-23-32         | Voltage pulse  | Relay    | Input retrans. | Remote SP |
| 16G-33-11         | Relay          | Relay    | Event          | Event     |
| 16G-33-31         | Relay          | Relay    | Input retrans. | Event     |
| 16G-33-32         | Relay          | Relay    | Input retrans. | Remote SP |
| 16G-53-11         | Current        | Relay    | Event          | Event     |
| 16G-53-31         | Current        | Relay    | Input retrans. | Event     |
| 16G-53-32         | Current        | Relay    | Input retrans. | Remote SP |
| 16G-63-11         | Linear voltage | Relay    | Event          | Event     |
| 16G-63-31         | Linear voltage | Relay    | Input retrans. | Event     |
| 16G-63-32         | Linear voltage | Relay    | Input retrans. | Remote SP |

| MODEL CHART - 8G |               |          |                |           |
|------------------|---------------|----------|----------------|-----------|
| Model            | Output 1      | Output 2 | Option 1       | Option 2  |
| 8G-23-31         | Voltage pulse | Relay    | Input retrans. | Event     |
| 8G-23-32         | Voltage pulse | Relay    | Input retrans. | Remote SP |
| 8G-33-31         | Relay         | Relay    | Input retrans. | Event     |
| 8G-33-32         | Relay         | Relay    | Input retrans. | Remote SP |
| 8G-53-31         | Current       | Relay    | Input retrans. | Event     |
| 8G-53-32         | Current       | Relay    | Input retrans. | Remote SP |

| MODEL CHART - 4G |                |          |                |           |
|------------------|----------------|----------|----------------|-----------|
| Model            | Output 1       | Output 2 | Option 1       | Option 2  |
| 4G-23-11         | Voltage pulse  | Relay    | Event          | Event     |
| 4G-23-32         | Voltage pulse  | Relay    | Input retrans. | Remote SP |
| 4G-33-11         | Relay          | Relay    | Event          | Event     |
| 4G-33-31         | Relay          | Relay    | Input retrans. | Event     |
| 4G-33-32         | Relay          | Relay    | Input retrans. | Remote SP |
| 4G-53-11         | Current        | Relay    | Event          | Event     |
| 4G-53-31         | Current        | Relay    | Input retrans. | Event     |
| 4G-53-32         | Current        | Relay    | Input retrans. | Remote SP |
| 4G-63-11         | Linear voltage | Relay    | Event          | Event     |
| 4G-63-31         | Linear voltage | Relay    | Input retrans. | Event     |
| 4G-63-32         | Linear voltage | Relay    | Input retrans. | Remote SP |

**Application Note:**

When using a relay output to operate a contactor or solenoid an R/C snubber should be installed across the coil to prevent damage to the controller relays.

| INPUT RANGES |                                  |
|--------------|----------------------------------|
| Input Types  | Range                            |
| K Type TC    | -328 to 2372°F (-200 to 1300°C)  |
| J Type TC    | -148 to 2192°F (-100 to 1200°C)  |
| T Type TC    | -328 to 752°F (-200 to 400°C)    |
| E Type TC    | 32 to 1112°F (0 to 600°C)        |
| N Type TC    | -328 to 2372°F (-200 to 1300°C)  |
| R Type TC    | 32 to 3092°F (0 to 1700°C)       |
| S Type TC    | 32 to 3092°F (0 to 1700°C)       |
| B Type TC    | 212 to 3272°F (100 to 1800°C)    |
| L Type TC    | -328 to 1562°F (-200 to 850°C)   |
| U Type TC    | -328 to 932°F (-200 to 500°C)    |
| TXK Type TC  | -328 to 1472 °F (-200 to 800 °C) |
| JPt 100 RTD  | -4 to 752 °F (-20 to 400 °C)     |
| Pt 100 RTD   | -328 to 1562 °F (-200 to 850 °C) |
| Ni 120 RTD   | -112 to 572 °F (-80 to 300 °C)   |
| Cu 50 RTD    | -58 to 302 °F (-50 to 150 °C)    |
| 0-5 V        | -999 to 9999                     |
| 0-10 V       | -999 to 9999                     |
| 0-20 mA*     | -999 to 9999                     |
| 4-20 mA*     | -999 to 9999                     |
| 0-50 mV      | -999 to 9999                     |

\*Requires 250 Ω precision resistor across input terminals.

| ACCESSORIES |                                                   |
|-------------|---------------------------------------------------|
| Model       | Description                                       |
| A-277       | 250 Ω precision resistor                          |
| A-600       | R/C snubber                                       |
| A-900       | Weatherproof front mount enclosure                |
| A-901       | Weatherproof internal mount enclosure with window |
| MN-1        | Mini-Node™ RS-485 to USB Converter                |
| SCD-SW      | Configuration software                            |



A-600



MN-1



A-900



A-901