7SL 1/16 DIN Limitrol
FM Approved Safety Limit

Features:

- 4-Digit LED Display
- Universal Input (T/C, RTD, mV, mA or V)
- 3 Level Passcode Security
- High Limit, Low Limit or High/Low Limit
- Time in Reset Display
- Peak Temperature Display
- FM Approved
- NEMA 4X, IP65
- Optional Digital Communications

The compact and cost effective 7SL Limitrol provides a process safety limit in a 1/16 DIN package. The 7SL is designed specifically for equipment manufacturers who require an FM approved high limit safety. NEMA 4X faceplates allow these units to be used in severe environments. The red 4-digit, 7-segment numeric and 2-digit alphanumeric displays allow the operator to configure the 7SL with easy to use codes. The 7SL has an FM approved Form C relay output that can be configured for a high (heating process), low (cooling process) or high/low limit (special process). In the high/low mode, the process must be within the two independent setpoints or the relay resets. The FM alarm can be configured for automatic or manual restart on power-up. The 7SL has an optional additional alarm that can be configured as a process high, low, band or deviation alarm with direct or reverse action. This alarm acts as a process event to begin data acquisition or recording as the process nears an unsafe condition. It can also be configured for automatic or manual reset and for a standby sequence to mask alarms on start-up. Options include a digital input for alarm acknowledgement, serial Modbus® or JBUS communications and a 24 Vac/Vdc power supply. The unit can be either panel mounted, or wall or DIN rail mounted using the DIN Rail mounting accessory.

Specifications:

Supply Voltage: 100-240 Vac (+10%, -15%), 50/60 Hz or 24 Vac/Vdc (±10%)

Operating Ambient: 0-50°C, 20-85% RH non-condensing

Inputs: T/C Types J, K, T, E, N, S, R, B, L, U, G, D, C & Platinel II (°C, °F); Pt 100 3W RTD (°C, °F) Ranges: See Table B, page 2-10; mAdc, mVdc, Vdc

Logic Input: requires contact rated at 0.5 mA, 5 Vdc minimum

Output Ratings:
Output 1: Relay, Form C, 3A/250V, Resistive
High Limit, Low Limit, High/Low Limit
Alarm 1, Failsafe, FM Approved
Output 2: Optional Relay, Form A, 2A/250V, Resistive
Process, Band, Deviation Alarm
Alarm 2, Direct or Reverse Acting

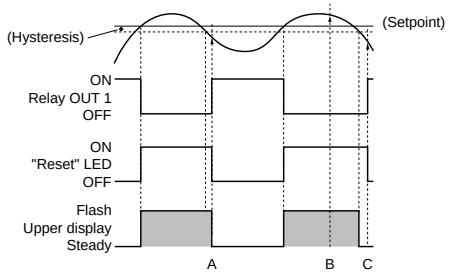
Serial Communications: EIA RS-485 Modbus®, JBUS

Mounting: Panel Mount or optional DIN Rail/Wall Mount

Failsafe Mode

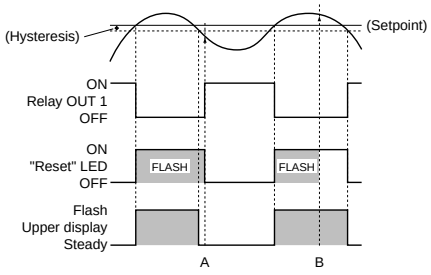
The FM approved Form C relay operates in a failsafe mode. During powerup, the relay is off and can be selected to restart either manually or automatically. In normal operation when an alarm occurs and the relay resets, the process can be restarted by operator actions as prescribed by process and configuration conditions. In order to restart, the process must return within setpoint AND the operator must acknowledge the process either by the front panel, digital input or serial link.

Limit Function when Alarm Type (C1) = Hi and Rearming Mode = Clear Only (C2 = 0)



A, B, C = Acknowledgement by "Reset" Key, Digital Input or Serial Link.
Note that Acknowledgement B has no effect.

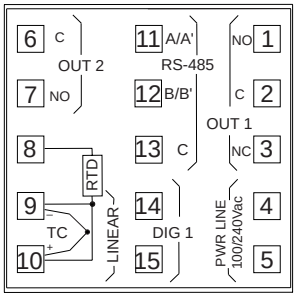
Limit Function when Alarm Type (C1) = Hi and Rearming Mode = Clear or Alarm (C2 = 1)



A, B = Acknowledgement by "Reset" Key, Digital Input or Serial Link.

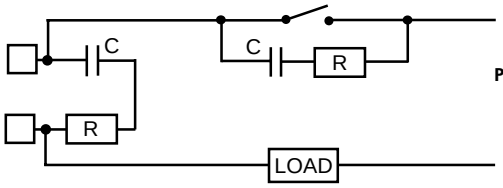
Terminal Connections and Mounting:

7SL



Wiring

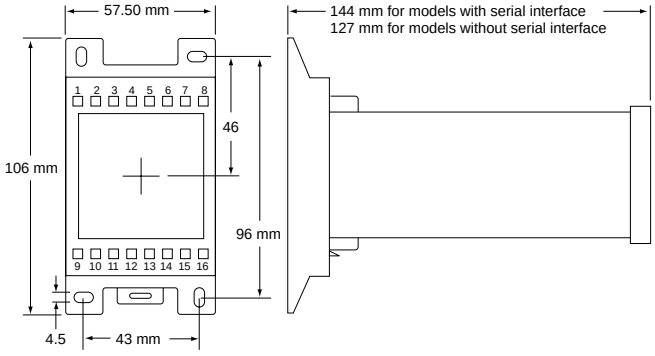
When inductive loads (such as mercury contactors) are used, or external switches are connected in series with internal contacts, high voltage transients may affect performance of the instrument. In this case it is recommended to install an additional RC snubber network across the contacts as shown. Contact Barber-Colman.



External Switch in Series with the Internal Contact
Snubber Part Number: CZ140398

Mounting (Panel)

Dimensions: 48W x 48H x 105D mm (without RS-485)
48W x 48H x 122D mm (with RS-485)
Cutout: 45W (-0, +0.6 mm) x 45H mm (-0, +0.6 mm)
60 mm min. center-to-center vertical spacing
75 mm min. center-to-center horizontal spacing
Weight: 250 gm



DIN Rail or Wall Mounting

Ordering Codes:

Model	Input	Output	Options	Power Supply	Reserved	Mounting	Reserved
7SL	- 9	1			- 0		00

Input

9	T/C Type J, K, T, E, N, S, R, B, L, U, G, D, C & Platinel II (°C, °F) Pt100 3W RTD (°C, °F)* 0 to 20 mAdc & 4 to 20 mAdc 0 to 60 mVdc & 12 to 60 mVdc 0 to 5 Vdc & 1 to 5 Vdc 0 to 10 Vdc & 2 to 10 Vdc

* Ranges - See Table B, page 2-10

Output

1	Form C Relay

Options

00	None
10	RS-485 Communications* and 1 Logic Input
11	RS-485 Communications*, 1 Logic Input and 1 Form A Alarm Relay

* RS-485 Communications requires longer case - see Mounting Dimensions.

Power Supply

3	100 to 240 Vac
5	24 Vac/Vdc

Mounting

0	Panel Mount
R	Wall or Rail Mount