



INFORMATION

The limit control L91 is an over temperature or a high limit safety device with a latching output that could remove the power while the process is in abnormal condition, for example the process higher than high limit set point or lower than the low limit set point.

STANDARD SPECIFICATIONS

POWER

Power Supply	90 – 250 VAC, 47 – 63 Hz, 10VA, 5W maximum
Power Consumption	11 – 26 VAC / VDC, SELV, Limited Energy, 10VA, 5W maximum

SIGNAL INPUT

Input	Characteristics
Resolution	18 bits
Sampling Rate	5 times / second
Maximum Rating	-2 VDC minimum, 12 VDC maximum(1 minute for mA input)
Temperature Effect	±1.5 uV/ °C
Sensor Lead Resistance Effect	T/C: 0.2uV/ohm 3-wire RTD: 2.6 °C/ohm of resistance difference of two leads 2-wire RTD: 2.6 °C/ohm of resistance sum of two leads
Burn-out Current	200nA
Common Mode Rejection Ratio (CMRR)	120dB
Sensor Break Detection	Sensor open for TC, RTD and mV inputs, below 1 mA for 4-20 mA input, below 0.25V for 1 – 5 V input, unavailable for other inputs.
Sensor Break Responding Time	Within 4 seconds for TC, RTD and mV inputs, 0.1 second for 4-20 mA and 1 – 5 V inputs.

Characteristics			
Type	Range	Accuracy @ 25 °C	Input Impedance
J	-120 ~ 1000 °C (-184 ~ 1832 °F)	±2 °C	2.2MΩ
K	-200 ~ 1370 °C (-328 ~ 2498°F)	±2 °C	2.2MΩ
T	-250 ~ 400°C (-418 ~ 752°F)	±2 °C	2.2MΩ
E	-100 ~ 900 °C (-148 ~ 1652 °F)	±2 °C	2.2MΩ
B	0 ~ 1820 °C (32 ~ 3308 °F)	±2 °C (200°C – 1820°C)	2.2MΩ
R	0 ~ 1768 °C (32 ~ 3214 °F)	±2 °C	2.2MΩ
S	0 ~ 1768 °C (32 ~ 3214 °F)	±2 °C	2.2MΩ
N	-250 ~ 1300 °C (-418 ~ 2372 °F)	±2 °C	2.2MΩ
L	-200 ~ 900 °C (-328 ~ 1652 °F)	±2 °C	2.2MΩ
PT100 (DIN)	-210 ~ 700 °C (-346 ~ 1292 °F)	±0.4°C	1.3KΩ
PT100 (JIS)	-200 ~ 600 °C (-328 ~ 1112 °F)	±0.4°C	1.3KΩ
mV	-8 ~ 70mV	±0.05%	2.2MΩ
mA	-3 ~ 27mA	±0.05%	70.5Ω
V	-1.3 ~ 11.5V	±0.05%	302KΩ

EVENT INPUT

Logic Low	Logic -10V minimum, 0.8V maximum.
Logic High	2V minimum, 10V maximum.
Functions	Remote reset, remote lockout.

OUTPUT 1 / OUTPUT 2

Relay Rating	2A/240 VAC, life cycles 200,000 for resistive load
Pulsed Voltage	Source Voltage 5V, current limiting resistance 66Ω

TRIAC (SSR) OUTPUT

Rating	1A / 240 VAC
Inrush Current	20A for 1 cycle
Min. Load Current	50 mA rms
Max. Off-state Leakage	3 mA rms
Max. On-state Voltage	1.5V rms
Insulation Resistance	1000 Mohms min. at 500 VDC
Dielectric Strength	2500 VAC for 1 minute

DC Voltage Supply Characteristics (Installed at Output 2)

Type	Tolerance	Max. Output Current	Ripple Voltage	Isolation Barrier
20V	±1 V	25 mA	0.2 Vp-p	500 VAC
12V	±0.6 V	40 mA	0.1 Vp-p	500 VAC
5V	±0.25 V	80 mA	0.05 Vp-p	500 VAC

DATA COMMUNICATION

Interface	RS-232 (1 unit), RS-485 (up to 247 units)
Protocol	Modbus Protocol RTU mode
Address	1 – 247
Baud Rate	0.3 ~ 38.4 Kbits/sec
Data Bits	8 bits
Parity Bit	None, Even or Odd
Stop Bit	1 or 2 bits
Communication Buffer	50 bytes

USER INTERFACE

4-digit LED Displays	0.4" (10mm),
Keypad	4 keys
Programming Port	For automatic setup, calibration and testing
Communication Port	Connection to PC for supervisory control
Limit Control	High Limit, Low Limit and High/Low Limit programmable

DIGITAL FILTER

Function	First order
Time Constant	0, 0.2, 0.5, 1, 2, 5, 10, 20, 30, 60 seconds programmable

ENVIRONMENTAL & PHYSICAL

Operating Temperature	-10°C ~ 50°C
Storage Temperature	-40°C ~ 60°C
Humidity	0 to 90 % RH (non-condensing)
Insulation Resistance	20 Mohms min. (at 500 VDC)
Dielectric Strength	2000 VAC, 50/60 Hz for 1 minute
Vibration Resistance	10 – 55 Hz, 10 m/s ² for 2 hours
Shock Resistance	200 m/s ² (20 g)
Moldings	Flame retardant polycarbonate
Dimensions	48mm(W) X 48mm(H) X 94mm(D), 86 mm depth behind panel
Weight	150 grams
Dimensions	96mm(W) X 96mm(H) X 65mm(D), 53 mm depth behind panel
Mounting	panel mount, cutout 92 X 92 (mm)
Weight	250 grams

APPROVAL STANDARDS

Safety	FM Class 3545 (Oct. 1998), UL873 (11'th edition, 1994) , CSA C22.2 No. 24-93 , EN61010-1 (IEC1010-1)
Protective Class	IP30 front panel, indoor use, IP20 housing and terminals (with protective cover).
EMC	EN61326