

ZEL-L41 / ZEL-L91 Limit Controller



ZEL-L41

Available From
Stock



ZEL-L91

FEATURE

- Fast Sampling Rate of 200 ms
- Universal Input
- High or Low or High/Low Limit
- Normal/Latching Alarm Output
- Limit Annunciator
- Remote Reset / Remote Lock via Event Input
- PV/SP Retransmission
- Connect with HMI for Alarm Monitoring
- Network up to 247 Controllers on RS-485 Modbus
- FM, UL, CSA, CE, RoHS, REACH Approval
- Available in ¼ DIN and 1/16 DIN Size

The ZEL-L41 / ZEL-L91 is a microprocessor-based limit controller designed for the protection of equipment from high and/or low temperatures.

A latching relay cuts power to the process if safe values are exceeded. The controller must be reset before the process continues.

The limit controller's universal input will accept thermocouple (types J, K, T, E, B, R, S, N, L, C, P), RTD (PT100 DIN, PT100 JIS) and 0~60mV. Other inputs types are also available: voltage (0-1, 0-5, or 0-10 VDC), and milliamperes (0-20 mA).

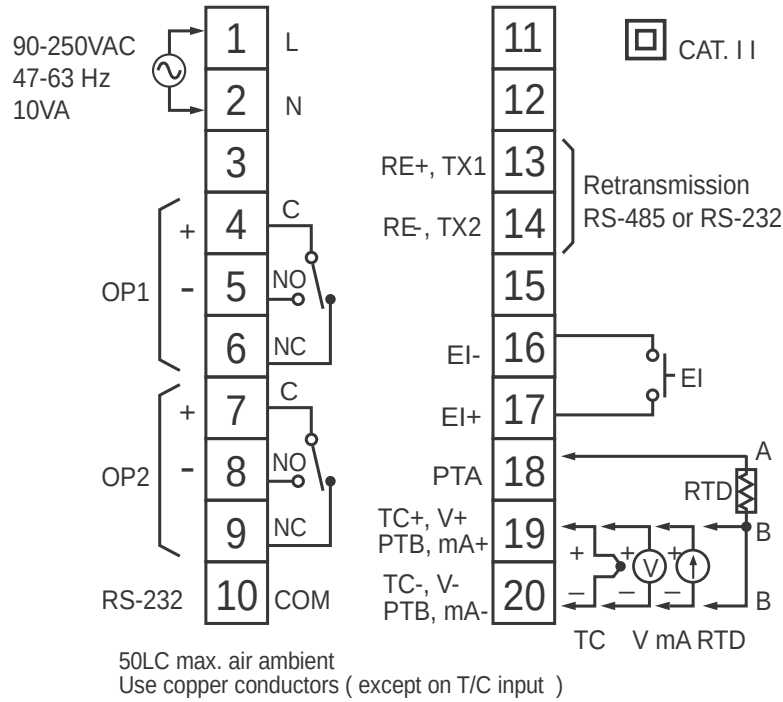
The controller also comes equipped with a 2 Amp form C relay as the limit control output, with optional RS-232 or RS-485 communications, retransmit, or event input.

Specification	ZEL-L41	ZEL-L91		
Power Supply	90-250 VAC, 47-63 Hz, 11-26 VAC/VDC, SELV, Limited Energy			
Power Consumption	10VA, 5W Maximum			
Over Voltage Category	II			
Signal Input				
Type	Thermocouple: J, K, T, E, B, R, S, N, L, P(ZEL-L41 only), C(ZEL-L41 only); RTD: PT100 DIN, PT100 JIS; mV: 0~60 mV; Current: 0~20mA; Voltage: 0~1 V, 0~10V			
Resolution	18 Bits			
Sampling Rate	5 Times / Second (200 ms)			
Input Characteristics	Type	Range	Accuracy @ 25° C	Input Impedance
	J	-120° C to 1000° C (-184° F to 1832° F)	± 2° C	2.2 MΩ
	K	-200° C to 1370° C (-328° F to 2498° F)	± 2° C	2.2 MΩ
	T	-250° C to 400° C (-418° F to 752° F)	± 2° C	2.2 MΩ
	E	-100° C to 900° C (-148° F to 1652° F)	± 2° C	2.2 MΩ
	B	0° C to 1820° C (- 32° F to 3308° F)	± 2° C (200° C to 1800° C)	2.2 MΩ
	R	0° C to 1767.8° C (- 32° F to 3214° F)	± 2° C	2.2 MΩ
	S	0° C to 1767.8° C (- 32° F to 3214° F)	± 2° C	2.2 MΩ
	N	-250° C to 1300° C (-418° F to 2372° F)	± 2° C	2.2 MΩ
	L	-200° C to 900° C (-328° F to 1652° F)	± 2° C	2.2 MΩ
	P (L41 only)	0° C to 1395° C (32° F to 2543° F)	± 2° C	2.2 MΩ
	C (L41 only)	0° C to 2315° C (32° F to 4199° F)	± 2° C	2.2 MΩ
	PT100(DIN)	-210° C to 700° C (-346° F to 1292° F)	± 0.4° C	1.3 KΩ
	PT100(JIS)	-200° C to 600° C (-328° F to 1112° F)	± 0.4° C	1.3 KΩ
	mV	-8mV to 70mV	± 0.05%	2.2 MΩ
	mA	-3mA to 27mA	± 0.05%	L41: 70.5 Ω, L91: 100Ω
VDC	-1.3VDC to 11.5VDC	± 0.05%	L41: 302 KΩ, L91: 510 KΩ	
Temperature Effect	1.5μV / °C			
Sensor Lead Resistance Effect	Thermocouple: 0.2 μV / ° Ω 3-wire RTD: 2.6° C / Ω of Difference of Resistance of two leads 2-wire RTD: 2.6° C / Ω of Sum of Resistance of two leads			
Burn-out Current	200nA			
CMRR	120 dB			
NMRR	55dB			
Sensor Break Detection	Sensor open for Thermocouple, RTD, mV inputs, Below 1mA for 4 to 20mA, Below 0.25V for 1 to 5V			
Sensor Break Response Time	Within 4 seconds for TC, RTD and mA inputs, 0.1 second for 4-20 mA and 1-5V inputs			

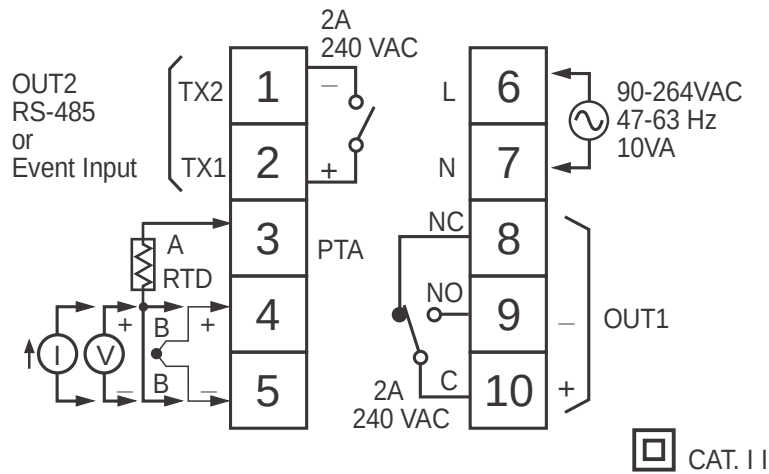
Specification	ZEL-L41	ZEL-L91			
Output 1 / Output 2					
Relay Rating	2A / 240 VAC, life cycles 200,000 for resistive load				
Pulsed Voltage	Source Voltage 5V, current limiting resistance 66Ω				
Triac Output	Rating: 1A / 240 VAC, Inrush Current: 20A for 1 cycle, Min. Load Current: 50 mA rms, Max. 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				
Limit Control Function	High Limit, Low Limit and High / Low Limit programmable				
Alarm Function	Process Value High, Process Value Low				
Alarm Mode	Normal, Latching				
Transmitter Power Supply (Output 2)					
Transmitter Power Supply Output Characteristics	Type	Tolerance	Maximum Output Current	Ripple Voltage	Isolation Barrier
	20V	± 1V	25mA	0.2V p-p	500 VAC
	12V	± 0.6V	40mA	0.1V p-p	500 VAC
	5V	± 0.25V	80mA	0.05V p-p	500 VAC
Digital Filter					
Function	First Order				
Time Constant	0, 0.2, 0.5, 1, 2, 5, 10, 20, 30, 60 Seconds Programmable				
Event Input					
Logic Low	-10V minimum, 0.8V maximum				
Logic High	2V minimum, 10V maximum				
Event Input Functions	Remote reset, remote lockout				
Data Communication					
Interface	RS-485 or RS-232				
Protocol	Modbus RTU (Slave Mode)				
Address	1 to 247				
Baud Rate	2.8 KBPS to 115.2 KBPS				
Parity Bit	None, Even or Odd				
Stop Bit	1 or 2 Bits				
Data Length	7 or 8 Bits				
Communication Buffer	50 Bytes				
Analog Retransmission					
Output Signal	4-20mA, 0-20mA, 0-10VDC, 0-5VDC, 1-5VDC				
Resolution	15 Bits				
Accuracy	± 0.05% of Span ± 0.0025% / °C				
Load Resistance	0 to 500Ω for current output, 10kΩ minimum for Voltage Output				
Output Regulation	0.01% for full load change				
Output Setting Time	0.1 second (stable to 99.9%)				
Isolation Breakdown	1000VAC min				

Specification	ZEL-L41	ZEL-L91
Analog Retransmission		
Integral Linearity Error	± 0.005% of span	
Temperature Effect	± 0.0025% of span / °C	
Saturation Low	0mA or 0VDC	
Saturation High	22.2mA or 5.55V, 11.1V min	
Linear Output Ranges	0 - 22.2mA (0 - 20mA / 4 - 20mA), 0 - 5.55VDC (0 - 5VDC / 1 - 5VDC), 0 - 11.1VDC (0 - 10VDC)	
User Interface		
Keypad	4 Keys	
Display Type	4 Digit LCD Display	
No of Display	2	1
Upper Display Size	0.55"(14mm)	0.4"(10mm)
Lower Display Size	0.55"(14mm)	N/A
Environmental and Physical Specifications		
Operating Temperature	-10 °C to 50 °C	
Storage Temperature	-40 °C to 60 °C	
Humidity	0 to 90% RH (Non-Condensing)	
Altitude	2000 Meters Maximum	
Pollution	Degree II	
Insulation Resistance	20MΩ Minimum (@500VDC)	
Dielectric Strength	2000VAC, 50/60 Hz for 1 Minute	
Vibration Resistance	10 to 55 Hz, 10m/s ² for 2 Hours	
Shock Resistance	200 m/s ² (20g)	
Housing	Flame Retardant Polycarbonate	
Mounting	Panel Mounting	
DIN Size	1 / 4	1/16
Dimensions (W*H*D) (mm)	96*96*65 mm	48*48*94 mm
Mounting (W*H) (mm)	92*92 mm	45*45 mm
Depth behind Panel	53 mm	86 mm
Weight (grams)	250 grams	150 grams
Approval Standards		
Safety	FM Class 3545 (Oct. 1998), UL61010C-1, CSA C22.2 No. 24-93, EN61010-1 (IEC1010-1), RoHS, REACH	
Protective Class	IP65 for panel with additional option, IP50 for panel without additional option, IP20 for terminals and housing with protective cover. All indoor use	IP30 front panel, indoor use, IP20 housing and terminals (with protective cover)
EMC	EN61326	

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ZEL-L41- 1 2 3 4 5 6

1. Power Input:

- 4 = 90-250 VAC, 47-63 HZ
- 5 = 11-26 VAC or VDC, SELV, Limited Energy

2. Signal Input:

- 1 = Standard Input
Thermocouple: J, K, T, E, B, R, S, N, L, C, P
RTD: PT100 DIN, PT100 JIS
mV: 0~60 mV
- 2 = Voltage: 0-1 V
- 3 = Voltage: 0-10 V
- 4 = Current: 0-20mA
- 5 = Voltage: 0-5 V

3. Output 1:

- 1 = Form C relay rated 2A / 240VAC
- 2 = Pulsed voltage to drive SSR, 5V / 30mA
- 6 = Triac Output 1A / 240VAC, SSR
- C = Pulsed voltage to drive SSR, 14V / 40mA

4. Output 2:

- 0 = None
- 1 = Form C Relay 2A / 240VAC
- 2 = Pulsed voltage to drive SSR, 5V / 30mA
- 6 = Triac Output, 1A / 240VAC, SSR
- 7 = Isolated 20V / 25mA DC Output Power Supply
- 8 = Isolated 12V / 40mA DC Output Power Supply
- 9 = Isolated 5V / 80mA DC Output Power Supply
- C = Pulsed voltage to drive SSR, 14V / 40mA

5. Communications:

- 0 = None
- 1 = RS-485 Interface
- 2 = RS-232 Interface
- 3 = Retransmit 4-20mA / 0-20mA
- 4 = Retransmit 1-5V / 0-5V
- 5 = Retransmit 0-10V

6. Options:

- 0 = IP50 Standard



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2. Signal Input:

- 1 = Standard Input
Thermocouple: J, K, T, E, B, R, S, N, L, C, P
RTD: PT100 DIN, PT100 JIS
mV: 0~60 mV
- 2 = Voltage: 0-1 V
- 3 = Voltage: 0-10 V
- 4 = Current: 0-20mA
- 5 = Voltage: 0-5 V

3. Output 1:

- 1 = Form C relay rated 2A / 240VAC
- 2 = Pulsed voltage to drive SSR, 5V / 30mA
- 6 = Triac Output 1A / 240VAC, SSR
- C = Pulsed voltage to drive SSR, 14V / 40mA

4. Output 2:

- 0 = None
- 1 = Form C Relay 2A / 240VAC
- 2 = Pulsed voltage to drive SSR, 5V / 30mA
- 6 = Triac Output, 1A / 240VAC, SSR
- 7 = Isolated 20V / 25mA DC Output Power Supply
- 8 = Isolated 12V / 40mA DC Output Power Supply
- 9 = Isolated 5V / 80mA DC Output Power Supply
- C = Pulsed voltage to drive SSR, 14V / 40mA
- A = RS-485
- B = Event Input
- H = Special Order
- C = Pulsed voltage to drive SSR, 14V/40mA
- D = Retransmit 4-20mA / 0-20mA
- E = Retransmit 1-5V / 0-5V
- F = Retransmit 0-10V



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