

Dual Trip Amplifiers 2002ALM



The 2002ALM family of trip-amplifiers can accept a wide range of inputs including 4-20mA, thermocouple, RTD and voltage types

- Wide range of configurable inputs
- Configurable trip action and failsafe mode
- Isolated input stage
- Setpoints available on front panel
See 4002ALM for mains version



Options and ordering codes

2002ALM	HL	-	A	-	XXX	-	6
Input type					24VDC/24VAC		
4-20mA	HL		A				
0-20mA	HL		B				
0-30mA 2 sec delay	HL		C				
0-1mA	HL		D				
0-5VDC	HL		E				
1-5VDC	HL		F				
0-10VDC	HL		G				
18-26VDC	HL		H				
Type K 0-150 °C	TC		P				
Type K 0-200 °C	TC		Q				
Type K 0-250 °C	TC		R				
Type K 0-500 °C	TC		S				
Type K 0-600 °C	TC		T				
Type K 0-1200 °C	TC		U				
Type J 0-250 °C	TC		W				
Pt100 3 wire ±100 °C	RTD		Y				
Pt100 3 wire ±50 °C	RTD		Z				
Pt100 3 wire ±30 °C	RTD		1				
Pt100 3 wire 0-50 °C	RTD		2				
Pt100 3 wire 0-100 °C	RTD		3				
Pt100 3 wire 0-150 °C	RTD		4				
Pt100 3 wire 0-200 °C	RTD		5				
Pt100 3 wire 0-250 °C	RTD		6				
Pt100 3 wire 0-400 °C	RTD		7				

Other ranges and thermocouple types are available as detailed in the product description, please contact our sales department.

Description

The unit can have up to two relay outputs and each can operate as a high or a low trip.

The relay outputs are single pole change-over relays with mains voltage rating. Each trip can be configured so that the alarm condition can be above or below setpoint. The relays can be energised or de-energised in the alarm condition, satisfying fail-safe and non-fail-safe applications. In addition the alarm LEDs can be selected to light when the relay is either on or off. All these options may be specified at point of order but are user configurable using internal link selectors. This minimises the number of spare units required.

The input stage is fully isolated as an option and the input type can be user-configured. For the current and voltage input version the range may also be re-configured. For the thermocouple the RTD input versions the device type and range are selectable. Again these can also be specified at point of order.

It is also possible to specify a latching function on the relay outputs, making the unit ideal for lock-out applications. The unit can be powered from a wide range of power supplies, ranging from 12Vdc to 24Vac, please specify with order.

Description

Inputs

The input types and ranges included below are our standard ones only. Contact sales for others.

2002ALMHL and DC current and voltage

0-20mA, 4-20mA, 0-10mA into 15Ω/30Ω

0-1V, 0-10V, 1-5V into 100kΩ/1MΩ

Min and Max full scale ranges:

DC current	0 to 50μA	0 to 10A
DC voltage	0 to 100mV	0 to 300V

Note: For input voltages greater than 30Vac or 60Vdc a divider unit must be specified.

2002ALMTC for Thermocouples

Types E, J, K, N, R, S and T non-linearised

Ranges 0-250, 0-500, 0-1200 °C (Others available)

Auto cold junction compensation. Open cct t/c can drive either upscale or downscale.

2002ALMRTD for Resistance Thermometers

2 or 3 wire Pt100 or other, linearised output

Ranges 0-250, 0-500, -100-100 °C (others available)

Outputs

Mains rated relays are 3A resistive at 240Vac.

Note: If one relay is switching >115Vac the isolation between the two relay outputs is not safety isolation.

The default setting on the relay operation is set to Hi/Lo. The LED is set on when energised.

Please specify the correct operation when ordering, if different from above.

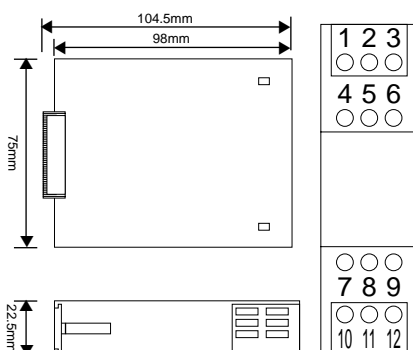
Specification

Parameter	Min	Typ	Max	Comments
Supply voltage		24Vdc		Options: 12, 24Vdc or 24Vac
Supply current			45mA	24V supply, both relays energised
Input impedance (volt)	100kΩ	1MΩ	10MΩ	Dependent on range (Typ=10V)
Input impedance (mA)	0.02Ω	15Ω	5kΩ	Dependent on range (Typ=20mA)
Volt drop (mA input)		0.3	0.35	At 20mA input
Trip point accuracy			±0.25%	
Temperature coefficient			±100ppm/°C	
Trip point drift			-100ppm/°C	
Time constant (10-90%)		10ms		
Operating ambient	0 °C		55 °C	
Relative humidity	0%		90%	
Isolation voltage	1kV			
Surge voltage		2.5kV for 50μS		Transient of 10kV/μS

Notes

Setpoints are adjusted by 20 turn potentiometers on the front panel. Setpoints can be checked by measuring the 0-1V (0-100%) voltage on the front panel terminals. H/H, H/L, L/H, LL, fail-safe, non-fail-safe and LED options are user selectable using internal links. Hysteresis is set at 1.0% but other values are possible, please specify if required. The process input level is available as 0-1V (0-100%) on terminal 9. Figures based on HL version, 24Vdc supply, 20 °C ambient.

Dimensions and connections



Connection details

- 10. Power input -ve
- 11. Power input +ve
- 7. Process input -ve T/C -ve RTD -ve
- 8. Process input +ve T/C +ve RTD +ve
- 9. Signal O/p (0-1V) T/C shield RTD 3rd wire
- 12. Setpoint -ve
- 1. Relay 1 common
- 2. Relay 1 N/C
- 3. Relay 1 N/O
- 4. Relay 2 common
- 5. Relay 2 N/C
- 6. Relay 2 N/O

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