



## NEW 2002ALM-HL

### DUAL TRIP AMPLIFIER

- Wide Range of User Configurable Inputs
- Configurable Trip Action and Fail-safe Mode using internal switches
- Isolated Input Stage
- Setpoints Available as 0-10V (0-100%) on terminals 9 & 12
- D.C or A.C. Power Supply Options  
See 4002-ALM for Mains Version



#### Description

The **NEW** 2002-HL trip amplifier can accept a wide range of user configurable inputs including 4-20mA, 0-20mA, 0-5V and 0-10V. The unit can have up to two relay outputs and each can operate as a high or a low trip; alternatively latching operation using both trip points can be configured.

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 DIP switches. This minimises the number of spare units required.

The input stage is fully isolated as an option and the high level input current or voltage and range may be configured. Separate products are available for thermocouple and RTD inputs.

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.

#### Inputs

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

##### **NEW 2002-HL Standard Ranges**

0-20mA, 4-20mA, 0-10mA into 12Ω/15Ω/24Ω

0-5V, 0-10V into 1MΩ

Min and Max Full Scale Ranges available to order:

DC Current 0 to 1mA 0 to 5A

DC Voltage 0 to 100mV 0 to 300V

Note: For input voltages greater than 60Vdc a Divider unit must be specified.

##### **2002-ALM-TC for Thermocouples**

Refer to 2002-ALM datasheet

##### **2002-ALM-RTD for Resistance Thermometers**

Refer to 2002-ALM datasheet

#### Outputs

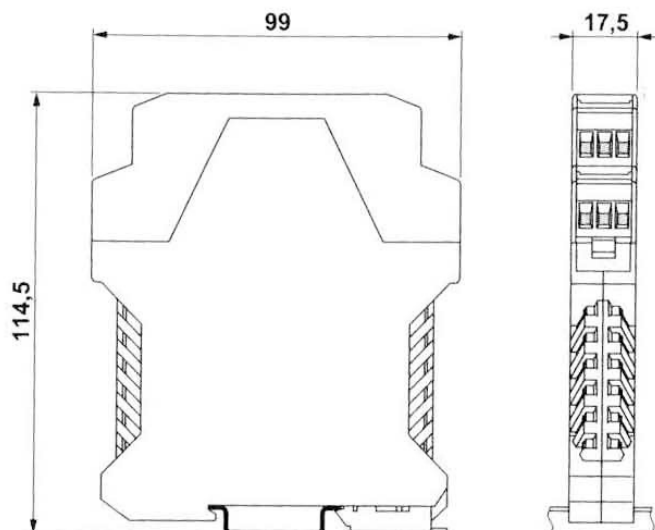
Mains Rated Relays

3A resistive at 240V ac



## Performance Characteristics

Parameter	Min	Typ	Max	Comments
Supply Voltage		24Vdc		Options: 12, 24Vdc, or 24Vac
Supply Current			45mA	24V Supply, Both Relays Energised
Input Impedance (Volt)	100k $\Omega$	1M $\Omega$	10M $\Omega$	Dependent on range (Typ = 0-10V)
Input Impedance( mA)	0.02 $\Omega$	15 $\Omega$	5k $\Omega$	Dependent on range (Typ = 4-20mA)
Volt drop (mA input)		0.3	0.35	At 20mA input
Trip Point Accuracy			$\pm 0.25\%$	
Temp Coefficient			$\pm 100\text{ppm}/^\circ\text{C}$	
Trip Point Drift			$\pm 100\text{ppm}/^\circ\text{C}$	
Hysteresis		1% Span		Other values to order
Time Constant (10-90%)		10ms		
Operating Ambient	0 $^\circ\text{C}$		55 $^\circ\text{C}$	
Relative Humidity	0%		90%	
Isolation Voltage	1kV			
Surge Voltage	2.5kV for 50 $\mu\text{s}$			Transient of 10kV/ $\mu\text{s}$
Notes	Setpoints are adjusted by 20 turn potentiometers on the front panel. Setpoints can be checked by measuring the 0-10V (0-100%) voltage on terminals 9 & 12 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. Figures based on 24Vdc supply, 20 $^\circ\text{C}$ ambient			



## Installation Data

<b>Mounting</b>	DIN Rail TS35
<b>Orientation</b>	Any
<b>Connections</b>	Screw Clamp with pressure plate
<b>Conductor size</b>	0.5-4.0mm
<b>Insulation Stripping</b>	12mm
<b>Weight</b>	Approx 120g

## Connection Details

10.	Power Input	-ve
11.	Power Input	+ve
7.	Process Input	-ve and Setpoint common
8.	Process Input	+ve
9.	Setpoint 1 (0-10V =0-100%)	
12.	Setpoint 2 (0-10V =0-100%)	
1.	Relay 1 Common	4. Relay 2 Common
2.	Relay 1 N/C	5. Relay 2 N/C
3.	Relay 1 N/O	6. Relay 2 N/O

## Ordering Information

### Please supply:

<b>Part Number:</b>	2002-HL
<b>Input Type:</b>	e.g mA, Volt
<b>Input Range:</b>	e.g 4-20, 0-10
<b>Trip Action 1:</b>	e.g RLY1>SP1<LED1
<b>Trip Action 2:</b>	e.g RLY2<SP2>LED2
<b>Power Supply:</b>	e.g 24Vdc
<b>Isolation:</b>	Input
<b>Further Notes:</b>	