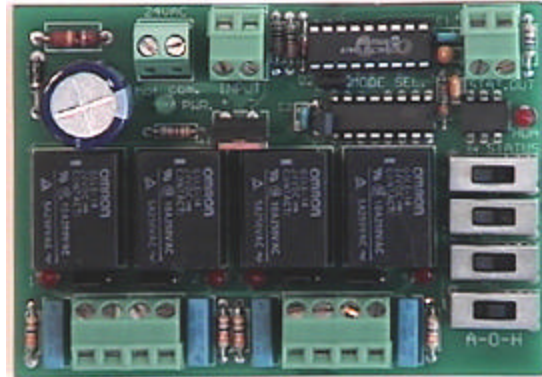


FOUR CHANNEL OUTPUT EXPANDER

FEATURES:

- ◆ Cost Effective Solution - only one Analog Output required to control four 5A relays.
- ◆ User selectable mode of operation:
 - simple sequencer (ramping up & down)
 - universal sequencer (any combination of relays)
- ◆ Manual output override with H-O-A status indication.
- ◆ Ease of installation, wiring.


APPLICATION:

The ETUS4 interface expands the DDC/PLC output capacity allowing the control of four relays by a single analog signal.

This board provides a practical solution for situations that require switching of up to four loads in sequence or in any combination.

Typical applications include the control of multi-stage HVAC equipment, roof top units, washroom fans, and lighting systems.

PRODUCT DESCRIPTION:

The ETUS4 interface board accepts a 0-10 VDC signal from a DDC/PLC panel and provides ON/OFF control for four 5A NO relays.

The 'Logic Table' to the right indicates the input voltages required in 'universal sequencer' mode. The input voltages follows a simple equation that use a binary code principle. A DDC/PLC resident program sets the required input voltage to operate any combination of relays.

In 'simple sequencer' mode the relays are activated sequentially in 2.50 VDC steps (ramped up or down). An on board jumper selects between 'universal' (jumper ON) and 'simple sequencer' (jumper OFF).

The board is equipped with H-O-A switches that override the outputs. Their position may be remotely monitored via an open collector status output that is 'off' only while all of the switches are in the AUTO position.

The ETUS4 board utilizes easy to wire angular terminal blocks. Each relay contact is protected by an RC circuit and their On/Off status is indicated by red LEDs.

SPECIFICATIONS:

Excitation: 24 VAC, 40 mA RMS; dedicated Class 2 transformer is recommended.

Input: 0-10 VDC

Output: Four 5A normally open relay contacts; each protected by an RC circuit; HOA status opto-coupler, open collector; OFF if all switches are in AUTO position.

Indication: power supply - green LED;
relay status & HOA status - red LEDs.

Dimensions: 2.753.85 (70 x 98 mm); mounts in snap track (provided).

Universal Sequencer Algorithm:

$$\text{Input V} = 4.0 \cdot \text{CH1} + 2.0 \cdot \text{CH2} + 1.0 \cdot \text{CH3} + 0.5 \cdot \text{CH4} + 0.25\text{V}$$

(about +/- 0.1 V Vin tolerance allowed)

Vin	OUTPUT			
	1	2	3	4
0	0	0	0	0
0.75	0	0	0	1
1.25	0	0	1	0
1.75	0	0	1	1
2.25	0	1	0	0
2.75	0	1	0	1
3.25	0	1	1	0
3.75	0	1	1	1
4.25	1	0	0	0
4.75	1	0	0	1
5.25	1	0	1	0
5.75	1	0	1	1
6.25	1	1	0	0
6.75	1	1	0	1
7.25	1	1	1	0
7.75	1	1	1	1

0 - off, 1 - on,