

## EIGHT-CHANNEL MULTIPLEXER (v3) EMU305

### DESCRIPTION

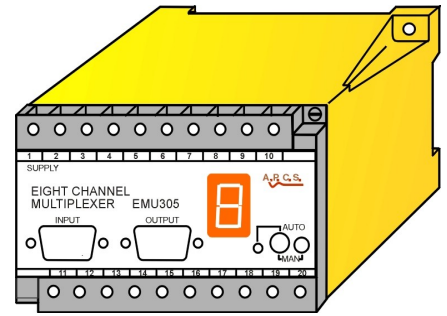
The EIGHT-CHANNEL MULTIPLEXER EMU305 is for applications where 1 of 8 low level signal channels need to be selected. It operates in the same fashion as a double pole, 8 position switch combining the benefits of isolation and electronic switching. Applications are numerous falling into the categories of measuring and monitoring. They include:

- battery cell voltage monitoring
- multi-point temperature (thermocouples, RTDs).
- load cells.
- output of current shunts.
- current loops.

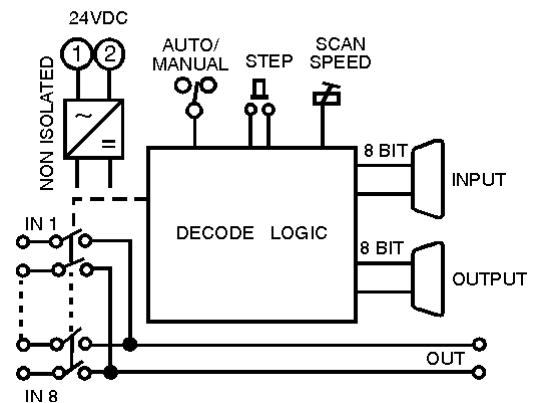
The EMU305 has two operating modes, local and remote.

- In "local" mode the EMU305 operates as a stand alone unit. Its internal clock will sequentially step through each channel.
- In "remote" mode an external device such as a PLC (programmable logic controller), another EMU305 (set up in "local" mode) or a thumb wheel switch can address each channel.

Up to 32 EMU305s may be cascaded to enable the selection of 1 to 256 channels that are then addressed using a simple 8 bit binary code. A front panel display indicates which channel number (relay) is active. The internal relay contacts use break before make operating method. Each relay channel has protection against over voltage surges by means of a series/parallel resistor/ zener diode combination. Various power supply choices are available ranging from 240Vac down to 8Vdc all featuring power isolation and power transient protection.



**Block Diagram**



### General Specifications

Mounting:	35mm DIN-RAIL, gear plate (Hole centre 90 x 57mm)
Termination:	Screw terminals, D Plug male
Size:	110W x 70H x 110D mm (+60 for D-connectors on front)
Weight:	0.700 kg
Housing material:	ABS/Hostaform
Protection category:	IP40 (IP65 enclosure opt.)
Operating temp:	-10...+60°C
Power requirement:	ac supply 4W, dc supply 3W.
Electromagnetic compatibility:	Complies with AS/NZS 4251.1 (EN 50081.1)

### Channel Ratings

Input clipping:	100mV for mV, 30V for voltage, 5V for current loop.
Maximum current:	100mA
Channel resistance:	250m $\Omega$ max.
Resistance difference between channels:	150m $\Omega$ max.

### Isolation:

Channel to interface:	100Vac.
Channel to supply:	2kV except for 24Vdc non- isolated version.
Interface to supply:	2kV except for 24Vdc non- isolated version.

### Channel selection

Input connector:	9 pin D male connector
Logic high:	> 3.3 volts or contact > 100k $\Omega$ to common.
Logic low:	< 1.9 volts or contact < 20k $\Omega$ to common.

### Relay Specifications

Contact ratings:	0.3A at 125Vac, 1A at 30Vdc resistive load
Minimum load:	10uA at 10mVdc.
Mechanical life:	>100 million operations
Electrical life:	> 50 million operations at < 100mA operating current.
Break before make:	typically 20 milliseconds.

For input / output combinations refer to TYPE NO. DESIGNATION overleaf.

## TYPE NO. DESIGNATION

**EMU305 - X X X 0 00 X**

### Power Supply:

- |                                   |                             |
|-----------------------------------|-----------------------------|
| 1 = 240V, 50Hz ±10%.              | *) 6 = 8 - 60Vdc Isolated.  |
| 2 = 120V, 50Hz ±10%.              | *) 8 = 60 - 240Vdc Isolated |
| 3 = 24V, 50Hz ±10%.               | *) 9 = Other (Specify).     |
| 4 = 24Vdc ±15% 250mA Non-Isolated |                             |

### Switched Signal Type:

- 1 = Low voltage up to 100mV such as thermocouple(diode protection)
- 2 = Voltage 100mV to 50V (load>200k)
- 3 = Current loop (7.5V zener loop continuity) up to 100mA
- 4 = 2-wire resistive sensor (Pt100 etc).
- \*) 9 = Other (specify)

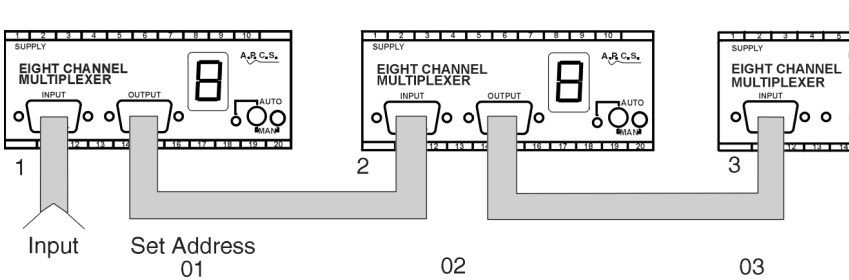
### Operating Mode:

- 1 = Local self scan (stand alone, or as a master controller for other remote units).  
Specify the scan speed from the following
  - > 0.4 – 4, 1 – 10, 2 – 20, 4 – 40 seconds per step
  - > 0.1 – 1, 0.2 – 2, 0.4 – 4, 1 – 10 minutes per step
- 2 = Remote external scan (external input such as master EMU305, etc.)
  - > Specify address (1 to 32)

### Options:

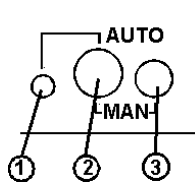
- 0 = None.
- \*) 9 = Other (Specify).

### Example - 3 Units Cascaded (24 channels).

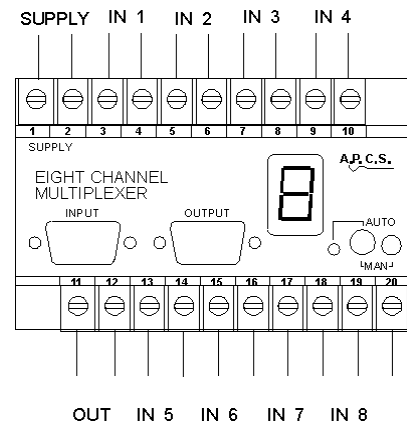


### Controls (for local self scan)

- 1 = Scan speed adjust.
- 2 = Auto / manual scan selector.
- 3 = Channel advance in manual mode.



### Connection Diagram



\*) Price Extra.

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