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Instruction Manual

SSI Encoder Multiplexer

E-MUX 005/24

All technical data subject to change without notice.

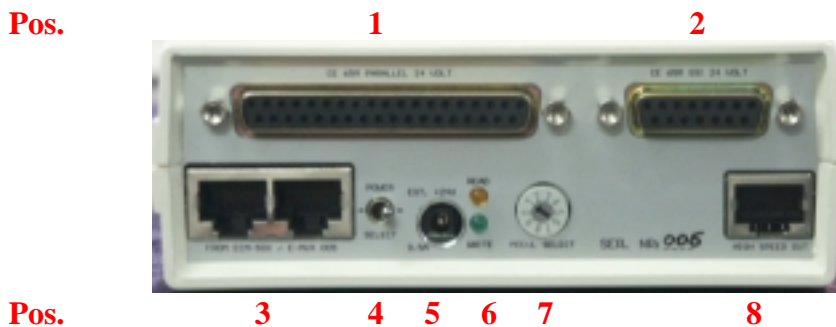
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General Features

The E-MUX 005 is an interface box for absolute encoders of various manufacturers. It works together with VME SSI-55x modules. Up to four boxes can be daisy chained on the same bus. The distance between the E-MUX box and the VME card can be up to 300 m maximum.

Description

Switches and Connectors: Rear Side



Position	Description
1	37 pin connector for absolute encoder type CE65M, parallel, 24V, encoder PORT 7
2	15 pin connector for absolute encoder type CE65M, SSI, 24V, encoder PORT 6
3	8 pin RJ45 parallel double connector to SSI 55x and/or other E-MUX boxes
4	Power selector
5	External power input max. 35V/0.5A
6	Communication LEDs
7	Module select switch
8	High speed data output (option)

Pin Assignment:

Position 1, 37 pin connector for absolute encoder type CE65M, parallel, 24V:

Pin	Function	Input/Output	Signal level
1..24	D0..D23	Output	0V/24V
27	Preset 1	Input	0V/24V
29	Latch	Input	0V/24V
30	Direction	Input	0V/24V
32	Preset 2	Input	0V/24V
34	Ser. Program +	In-/Output	RS485
35	Ser. Program -	In-/Output	RS485
36	Supply Voltage	Output	24V/200mA
37	Supply Voltage Ground	Output	0V

Position 2, 15 pin connector for absolute encoder type CE65M, SSI, 24V :

Pin	Function	Input/Output	Signal level
1	SSI Clock -	Output	RS422
2	SSI Clock +	Output	RS422
3	SSI Data +	Input	RS422
4	SSI Data -	Input	RS422
5	Ser. Program +	In-/Output	RS485
6	Ser. Program -	In-/Output	RS485
8	Direction	Output	0V/24V
9	Preset 1	Output	0V/24V
10	Preset 2	Output	0V/24V
11	Supply Voltage	Output	24V/200mA
12	Supply Voltage Ground	Output	0V

all other pins are reserved

Position 3, 8 pin RJ45 parallel double connector to SSI 55x and/or other E-MUX boxes

Double Connector			
Pin	RJ45 A	RJ45 B	Function
1	1	1	SSI, Data +
2	2	2	SSI, Data -
3	3	3	SSI, Address +
4	4	4	SSI, Address -
5	5	5	SSI, clock +
6	6	6	SSI, clock -
7	7	7	reserved
8	8	8	reserved

Position 4, Power selector

Left position	Right position
Module power supply from the double connector (Pos. 3)	Module power supply from external input (Pos. 5)

Position 5, External power input max. 35V/0.5A

Negative voltage on the central pin.

With the E-MUX 005/24 comes one Power Supply “Alpha Elettronica” Model BE 224,

Pri: 230V/50Hz/100mA

Sec: 24V/500mA DC

Position 6, Communication LEDs

READ: When the module is selected and accessed from VME, then the READ LED is activated.

WRITE: Reserved for optional functions.

Position 7, Module select switch

The module select switch defines the upper address bits A 3 and A 4. This is the **base address** of the module.

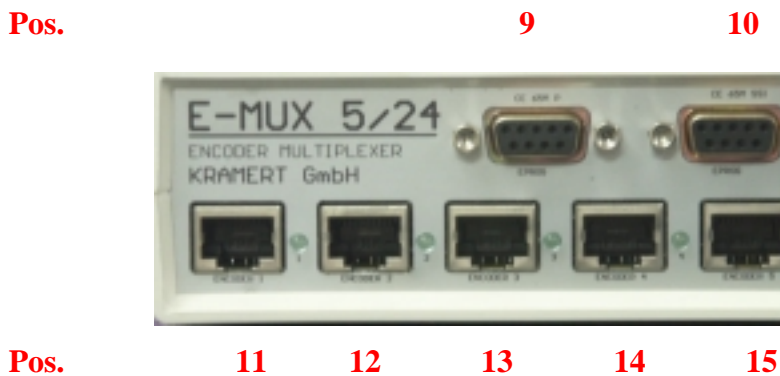
Pos.	Sensor Address Range
0	0..7
1	8..15
2	16..23
3	24..31

all other positions are not used

Position 8, High speed data output (option)

This port is reserved for optional functions.

Front Side



Position	Description
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- 9** 9 pin EPROG connector for programming absolute encoder type CE65M, parallel, 24V
- 10** 9 pin EPROG connector for programming absolute encoder type CE65M, SSI, 24V
- 11** 8 pin RJ45 connector, encoder **PORT 1**
- 12** 8 pin RJ45 connector, encoder **PORT 2**
- 13** 8 pin RJ45 connector, encoder **PORT 3**
- 14** 8 pin RJ45 connector, encoder **PORT 4**
- 15** 8 pin RJ45 connector, encoder **PORT 5**

Position 9, 9 pin EPROG connector for programming absolute encoder type CE65M, parallel, 24V

This port connects directly to the programming pins of the CE65M, parallel encoder (Pos. 1).

Pin	Function	Input/Output	Signal level
1	nc		
2	nc		
3	nc		
4	nc		
5	nc		
6	Ser. Program -	In-/Output	RS485
7	Supply Voltage Ground	Output	0V
8	Supply Voltage	Output	24V/50mA
9	Ser. Program +	In-/Output	RS485

Position 10, 9 pin EPROG connector for programming absolute encoder type CE65M, SSI, 24V

This port connects directly to the programming pins of the CE65M, SSI encoder (Pos. 2).

Pin	Function	Input/Output	Signal level
1	nc		
2	nc		
3	nc		
4	nc		
5	nc		
6	Ser. Program -	In-/Output	RS485
7	Supply Voltage Ground	Output	0V
8	Supply Voltage	Output	24V/50mA
9	Ser. Program +	In-/Output	RS485

Positions 11..15, 8 pin RJ45 connector, encoder **PORT 1..5**

Ports for SSI absolute encoder, e.g. BOSH-58 (Baumer Electronics)

RJ45 Connector			
Pin	Function	In-/Output	Signal level
1	SSI, Data +	Input	RS422
2	SSI, Data -	Input	RS422
3	SSI, clock +	Output	RS422
4	SSI, clock -	Output	RS422
5, 7	Encoder Supply	Output	+5V/150mA
6, 8	Encoder Supply Ground	Output	0V

Sensor-Address Assignment:

Memory 8 x 32 Bit

The address range is selected by the module selector (Pos. 5). This address range is accessible via read commands from SSI-55x module.

Base address + offset:		
	0x00	Port 1 (Pos. 11)
	0x01	Port 2 (Pos. 12)
	0x02	Port 3 (Pos. 13)
	0x03	Port 4 (Pos. 14)
	0x04	Port 5 (Pos. 15)
	0x05	Port 6 (Pos. 2)
	0x06	Port 7 (Pos. 1)
	0x07	reserved