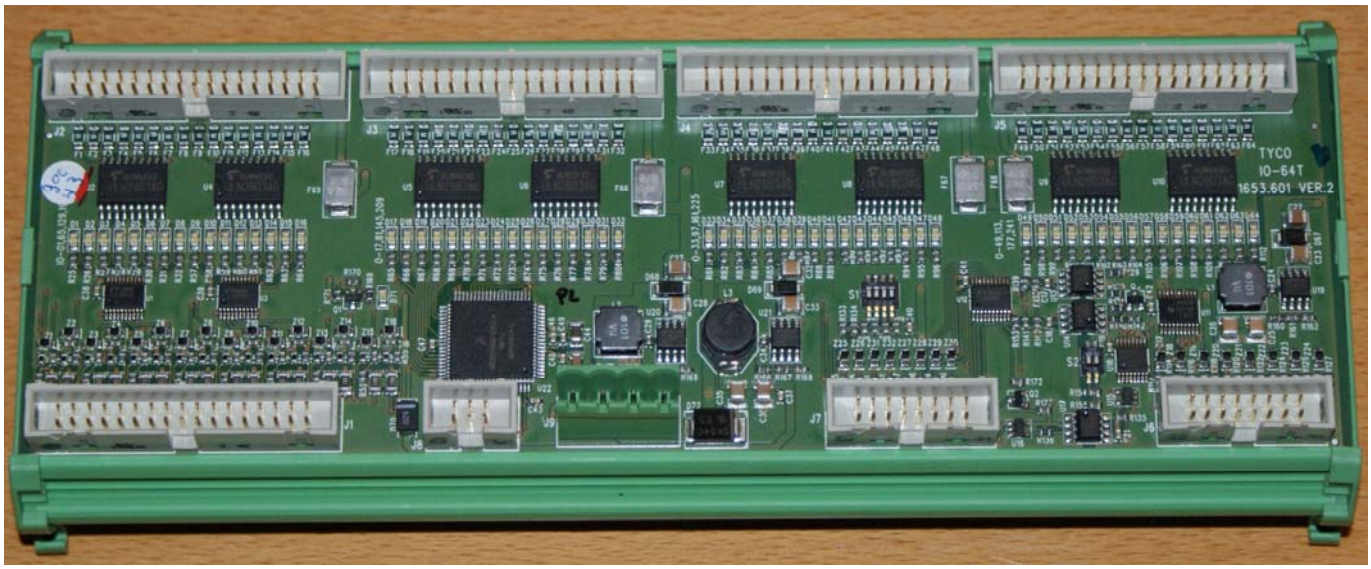
IO-64T, Interface Card for Mimic Panels

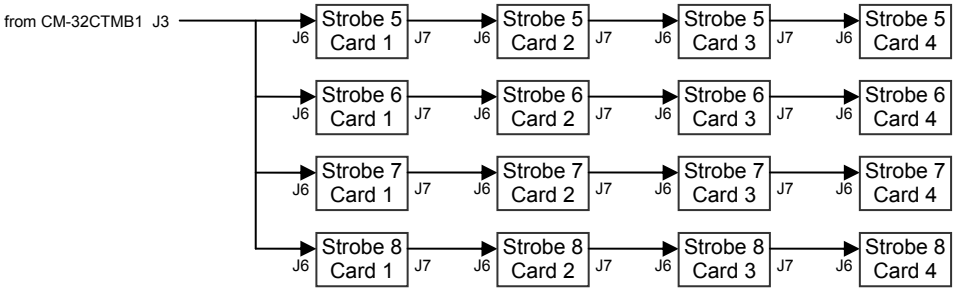
Description:

The IO-64T is an input/output card specially designed for Mimic panels. The IO-64T is used together with the mimic controller MC-32 or the repeater panel SRP-32. The card provides 64 open collector inputs with common +24V and 16 supervised inputs. Each output is protected by a 100mA electronic auto resettable fuse. To limit the total current consumption the +24V of each group of 16 outputs are in addition protected by a 500mA electronic auto resettable fuse. Each output has a green LED for indicating that the output is ON. Up to 16 IO-64T's can be connected together for a total of 1024 driver outputs and 256 supervised inputs.



Installation in the panel:

The IO-64T is connected to the 16 pin connector J3 of the repeater panel motherboard CM-32CTMB1 and is controlled by the CM-32C/2 via its external SPI channels. Up to 16 IO-64T's can be connected in a matrix (4 x 4) as shown below providing a total of 1024 driver outputs and 256 supervised inputs.



Ribbon cable connector J6
The J6 header is used to connect the IO-64T to either the CM-32CTMB1 SPI connector J3 or to another IO-64T's SPI connector J7. Four of the six strobe lines are passed trough the IO-64T making it possible to control up to 16 IO-64T's in a matrix setup. The connection also supplies 24V and GND (0V) for the optical isolation of the SPI communication interface.

Ribbon cable connector J7
The J7 header is used to connect the IO-64T to another IO-64T's SPI connector J6. Four strobe lines are passed trough the IO-64T making it possible to control up to 16 IO-64T's in a matrix setup. The connection also supplies 24V and GND (0V) for the optical isolation of the SPI communication interface.

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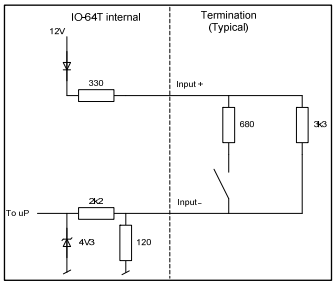
Ribbon cable connector J1

The ribbon cable connector J1 on IO-64T is used to connect to the 16 supervised inputs. The inputs can monitor switches, relay contacts or any clean contact device. The inputs are activated by a 680Ω resistor. The input lines can be monitored for open- and short circuit. If the inputs are to be supervised an End of Line Resistor of 3.3k must be fitted.



Pin #	Brief description		Pin #	Brief description
1	Input 1 +		19	Input 10 +
2	Input 1 ÷		20	Input 10 ÷
3	Input 2 +		21	Input 11 +
4	Input 2 ÷		22	Input 11 ÷
5	Input 3 +		23	Input 12 +
6	Input 3 ÷		24	Input 12 ÷
7	Input 4 +		25	Input 13 +
8	Input 4 ÷		26	Input 13 ÷
9	Input 5 +		27	Input 14 +
10	Input 5 ÷		28	Input 14 ÷
11	Input 6 +		29	Input 15 +
12	Input 6 ÷		30	Input 15 ÷
13	Input 7 +		31	Input 16 +
14	Input 7 ÷		32	Input 16 ÷
15	Input 8 +		33	0V - referred to the 24V
16	Input 8 ÷		34	0V - referred to the 24V
17	Input 9 +			
18	Input 9 ÷			

None of the inputs has a default operation. If these inputs are used, their operation must be specified by the FAST2000® custom program utility.

Ribbon cable connector J2, J3, J4 and J5

The connectors J2, J3, J4 and J5 are used to connect to the 64 outputs of the IO-64T. Each driver output is protected by an individual 100mA electronic fuse. The +24V outputs on each connector are protected by a common 500mA electronic fuse. The pin specification is given in the table below:

Pin #	Connector J2	Connector J3	Connector J4	Connector J5
1	Output 1 +24V	Output 17 +24V	Output 33 +24V	Output 49 +24V
2	Output 1 ÷ (driver output)	Output 17 ÷ (driver output)	Output 33 ÷ (driver output)	Output 49 ÷ (driver output)
3	Output 2 +24V	Output 18 +24V	Output 34 +24V	Output 50 +24V
4	Output 2 ÷ (driver output)	Output 18 ÷ (driver output)	Output 34 ÷ (driver output)	Output 50 ÷ (driver output)
5	Output 3 +24V	Output 19 +24V	Output 35 +24V	Output 51 +24V
6	Output 3 ÷ (driver output)	Output 19 ÷ (driver output)	Output 35 ÷ (driver output)	Output 51 ÷ (driver output)
7	Output 4 +24V	Output 20 +24V	Output 36 +24V	Output 52 +24V
8	Output 4 ÷ (driver output)	Output 20 ÷ (driver output)	Output 36 ÷ (driver output)	Output 52 ÷ (driver output)
9	Output 5 +24V	Output 21 +24V	Output 37 +24V	Output 53 +24V
10	Output 5 ÷ (driver output)	Output 21 ÷ (driver output)	Output 37 ÷ (driver output)	Output 53 ÷ (driver output)
11	Output 6 +24V	Output 22 +24V	Output 38 +24V	Output 54 +24V
12	Output 6 ÷ (driver output)	Output 22 ÷ (driver output)	Output 38 ÷ (driver output)	Output 54 ÷ (driver output)
13	Output 7 +24V	Output 23 +24V	Output 39 +24V	Output 55 +24V
14	Output 7 ÷ (driver output)	Output 23 ÷ (driver output)	Output 39÷ (driver output)	Output 55 ÷ (driver output)
15	Output 8 +24V	Output 24 +24V	Output 40 +24V	Output 56 +24V
16	Output 8 ÷ (driver output)	Output 24 ÷ (driver output)	Output 40 ÷ (driver output)	Output 56 ÷ (driver output)
17	Output 9 +24V	Output 25 +24V	Output 41 +24V	Output 57 +24V
18	Output 9 ÷ (driver output)	Output 25 ÷ (driver output)	Output 41 ÷ (driver output)	Output 57 ÷ (driver output)
19	Output 10 +24V	Output 26 +24V	Output 42 +24V	Output 58 +24V
20	Output 10 ÷ (driver output)	Output 26 ÷ (driver output)	Output 42 ÷ (driver output)	Output 58 ÷ (driver output)
21	Output 11 +24V	Output 27 +24V	Output 43 +24V	Output 59 +24V
22	Output 11 ÷ (driver output)	Output 27 ÷ (driver output)	Output 43 ÷ (driver output)	Output 59 ÷ (driver output)
23	Output 12 +24V	Output 28 +24V	Output 44 +24V	Output 60 +24V
24	Output 12 ÷ (driver output)	Output 28 ÷ (driver output)	Output 44 ÷ (driver output)	Output 60 ÷ (driver output)
25	Output 13 +24V	Output 29 +24V	Output 45 +24V	Output 61 +24V
26	Output 13 ÷ (driver output)	Output 29 ÷ (driver output)	Output 45 ÷ (driver output)	Output 61 ÷ (driver output)
27	Output 14 +24V	Output 30 +24V	Output 46 +24V	Output 62 +24V
28	Output 14 ÷ (driver output)	Output 30 ÷ (driver output)	Output 46 ÷ (driver output)	Output 62 ÷ (driver output)
29	Output 15 +24V	Output 31 +24V	Output 47 +24V	Output 63 +24V
30	Output 15 ÷ (driver output)	Output 31 ÷ (driver output)	Output 47 ÷ (driver output)	Output 63 ÷ (driver output)
31	Output 16 +24V	Output 32 +24V	Output 48 +24V	Output 64 +24V
32	Output 16 ÷ (driver output)	Output 32 ÷ (driver output)	Output 48 ÷ (driver output)	Output 64 ÷ (driver output)
33	0V - referred to the 24V	0V - referred to the 24V	0V - referred to the 24V	0V - referred to the 24V
34	0V - referred to the 24V	0V - referred to the 24V	0V - referred to the 24V	0V - referred to the 24V

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Output numbers in C&E

	Card 1	Card 2	Card 3	Card 4
Strobe 5	R1[1:64]	R1[65:128]	R1[129:192]	R1[193:256]
Strobe 6	R2[1:64]	R2[65:128]	R2[129:192]	R2[193:256]
Strobe 7	R3[1:64]	R3[65:128]	R3[129:192]	R3[193:256]
Strobe 8	R4[1:64]	R4[65:128]	R4[129:192]	R4[193:256]

Input numbers in C&E

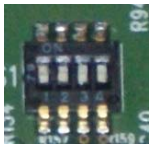
	Card 1	Card 2	Card 3	Card 4
Strobe 5	I1[1:16]	I1[17:32]	I1[33:48]	I1[49:64]
Strobe 6	I2[1:16]	I2[17:32]	I2[33:48]	I2[49:64]
Strobe 7	I3[1:16]	I3[17:32]	I3[33:48]	I3[49:64]
Strobe 8	I4[1:16]	I4[17:32]	I4[33:48]	I4[49:64]

DIP Switches S1 and S2

A four way DIP switch S1 is used to:

- select the card number in sequence
- turn off the internal 12V regulator used for the inputs when they are not in use
- to be able to use the 16 LED's normally indicating the output status of output 1-16 to indicate the input status instead. (Output 1-16 can in this case not be used as outputs).

A two way DIP switch S2 is used to select the SPI strobe output.



Switch no.	Brief description
DIP S1 **Sw 1,2**	**Selects card number in sequence(1 of 4)** **Sw2 Sw1** OFF OFF **Card 1 (C&E RX[1:64])** OFF ON **Card 2 (C&E RX[65:128])** ON OFF **Card 3 (C&E RX[129:192])** ON ON **Card 4 (C&E RX[193-256])** **Substitute X with 1,2,3,4 for R1[], R2[], R3[], R4[]**
DIP S1 **Sw 3**	ON: **Selects output 1-16 as LED indication for input 1-16.** OFF: **Selects output 1-16 as normal outputs.**
DIP S1 **Sw 4**	OFF: **Feeds power to the input circuitry 8.5V regulator.** ON: **No power to the input circuitry 8.5V regulator. (Saves power when inputs not in use)**
DIP S2 **Sw 1,2**	**Selects strobe input (1 of 4)** **Sw2 Sw1** OFF OFF **Strobe 5 (C&E R1[])** OFF ON **Strobe 6 (C&E R2[])** ON OFF **Strobe 7 (C&E R3[])** ON ON **Strobe 8 (C&E R4[])**

Power terminal block J9

Terminal block J9 is used to connect power to the IO-64T.

Terminal#	Brief description
1	+24V
2	+24V
3	GND (0V)
4	GND (0V)

CM-32/2 / PCT Settings

To make the IO-64T work with the CM-32/2 the following settings must be made on the CM-32/2 card:
JP2 / RACK must be removed (standalone mode), JP9-JP12 must be in position 1-2

In addition the following settings have to be made in the CM-32/2's advanced configuration in PCT:
System configuration box 6 (RU32 mode), 8 (Standalone mode) and 26 (IO-64T Enable) must be ticked off.

Communication fault LED D71

The yellow communication fault LED D71 indicates fault in the SPI communication between the CM-32/2 and the IO-64T. The LED is turned on if there is a CRC error in a transmission and turned off again if a transmission is OK. This means the LED will be on for around 0.5 seconds for each single CRC error, and permanently on if all transmissions give a CRC error. The LED will also be permanently on if the IO-64T has not received a transmission from the CM-32/2 in around 5 seconds. In all cases the LED will go off when a successful transmission has taken place.

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Technical data:

Operating Voltage @24V:	typ: 27,1V DC, min. 19V, max. 30V		
Current consumption @24V:	All outputs OFF, input 12V (Sw.6) OFF		6 mA
	All outputs OFF, input 12V (Sw.6) ON		10 mA
	All outputs ON no external load, input 12V ON.		30mA
	Add for each supervised input		3.2mA
	Add for each activated input		10.6mA
Output load:	Individual output	max	100mA
	Each group of 16 outputs	max	500mA
PCB dimensions:	72 x 220 mm		
Housing dimensions:	90 x 222 mm		

Part-Nos.

Interface Card for Mimic Panels	IO-64T	K02459006

Options

Mimic Controller	MC-32:	K02459005
Repeater Panel with zone indication	SRP-32-ZI	K02459002
Repeater Panel with Scandinavian front	SRP-32-SC	K02459004
Network Termination board 30mA	CM-32 CTCM1	K09900113
Network Termination board RS232	CM-32 CTCM232	K09900114
Network Termination board RS422/485	CM-32 CTCM422	K09900115
Network Termination board Fibre Optic	CM-32 CTCMOPT1	K09900117

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