

### APPLICATION

Optical isolated digital expansion module for monitoring five digital inputs with a single analog input of the controller.

### DESCRIPTION

The PCU5I module is a digital to analog converter, transforming a logical combination of five digital inputs to an analog voltage signal. Using an ultra-precision electronic components, output voltage is stable in time, temperature, and precisely maps the input states.

Fig.1 The PCU5I module.

Giving the voltage  $U_{1...5}$  to optically isolated digital inputs, the voltage output is generated by the formula:

$$U_{OUT} = (0,32*DI1 + 0,64*DI2 + 1,28*DI3 + 2,56*DI4 + 5,12*DI5) [V]$$

where:  $U_{1...5} < 3VAC/DC \Rightarrow DI1...5 = 0$   
 $U_{1...5} > 7VAC/DC \Rightarrow DI1...5 = 1$

### TECHNICAL DATA

Power supply	24 V AC/DC
Current consumption for $R_L = 1k\Omega$	55mA
Input current for $U_{1...5} = 24V AC/DC$	2mA
Max. input voltage $U_{1...5}$	40V AC/DC (option 230V)
Output signal	0 - 9,92V
Max. output current	10mA
Protection class of the case	IP-40
Protections	against reverse polarisation of power supply
Compliance with EU standards	2004/108/EC
Ambient temperature range	-10...+55°C
Diameter of terminals	2,5 mm <sup>2</sup>
Mounting	DIN-35 rail
Dimensions (L x W x H)	90mm x 17,5mm x 56mm
Weight	55 g

# PCU5I

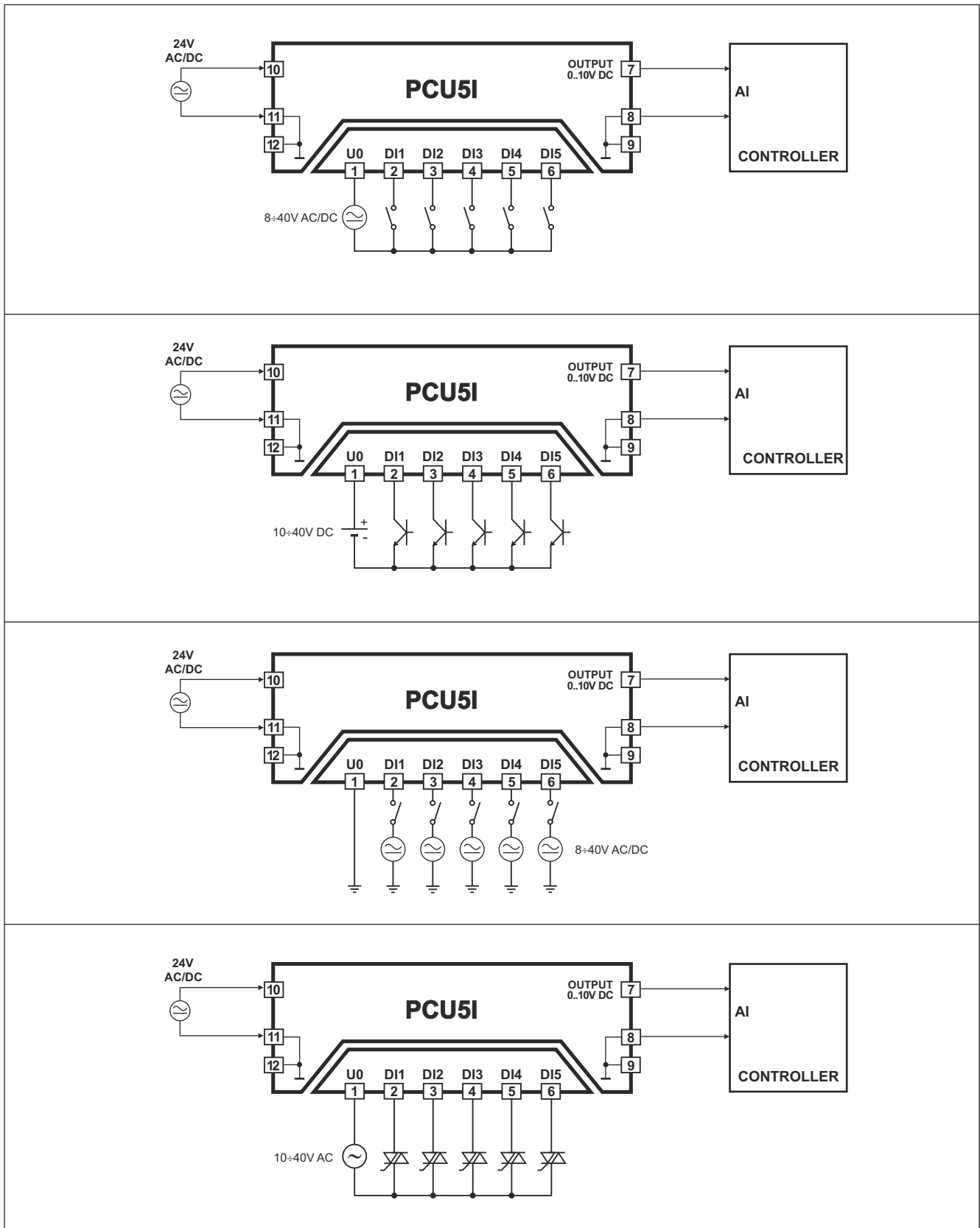


Fig.2 Connection methods examples of the PCU5I.

## TABLE OF STATES

State	Digital inputs					U <sub>OUT</sub> [V DC]
	DI1	DI2	DI3	DI4	DI5	
0	0	0	0	0	0	0,00
1	1	0	0	0	0	0,32
2	0	1	0	0	0	0,64
3	1	1	0	0	0	0,96
4	0	0	1	0	0	1,28
5	1	0	1	0	0	1,60
6	0	1	1	0	0	1,92
7	1	1	1	0	0	2,24
8	0	0	0	1	0	2,56
9	1	0	0	1	0	2,88
10	0	1	0	1	0	3,20
11	1	1	0	1	0	3,52
12	0	0	1	1	0	3,84
13	1	0	1	1	0	4,16
14	0	1	1	1	0	4,48
15	1	1	1	1	0	4,80
16	0	0	0	0	1	5,12
17	1	0	0	0	1	5,44
18	0	1	0	0	1	5,76
19	1	1	0	0	1	6,08
20	0	0	1	0	1	6,40
21	1	0	1	0	1	6,72
22	0	1	1	0	1	7,04
23	1	1	1	0	1	7,36
24	0	0	0	1	1	7,68
25	1	0	0	1	1	8,00
26	0	1	0	1	1	8,32
27	1	1	0	1	1	8,64
28	0	0	1	1	1	8,96
29	1	0	1	1	1	9,28
30	0	1	1	1	1	9,60
31	1	1	1	1	1	9,92

Possible compensation of the controller should be made for the state no. 31.

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