

APPLICATION

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

DESCRIPTION

The PCU5 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 PCU5 module.

Connecting discrete inputs (DI1 ÷ DI5) to the GND (⊥) voltage output is generated by the formula:

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

where: DI1...5 = 0 for opened terminals
DI1...5 = 1 for closed terminals

TECHNICAL DATA

Power supply	24 V AC/DC
Current consumption for $R_L = 1k\Omega$	55mA
Input signal	5 x digital inputs connected to the GND
Input current for $R_{IN} = 0\Omega$	0,3mA
Max. resistance for input terminals	20k Ω
Output signal	0 - 9,92V
Max. output current	10mA
Protection class of the case	IP-40
Protections	- against reverse polarisation of power supply - against reverse polarisation of digital inputs
Compliance with EU standards	2004/108/EC
Ambient temperature range	-10...+55°C
Diameter of terminals	2,5 mm ²
Mounting	DIN-35 rail
Dimensions (L x W x H)	90mm x 17,5mm x 56mm
Weight	55 g

PCU5

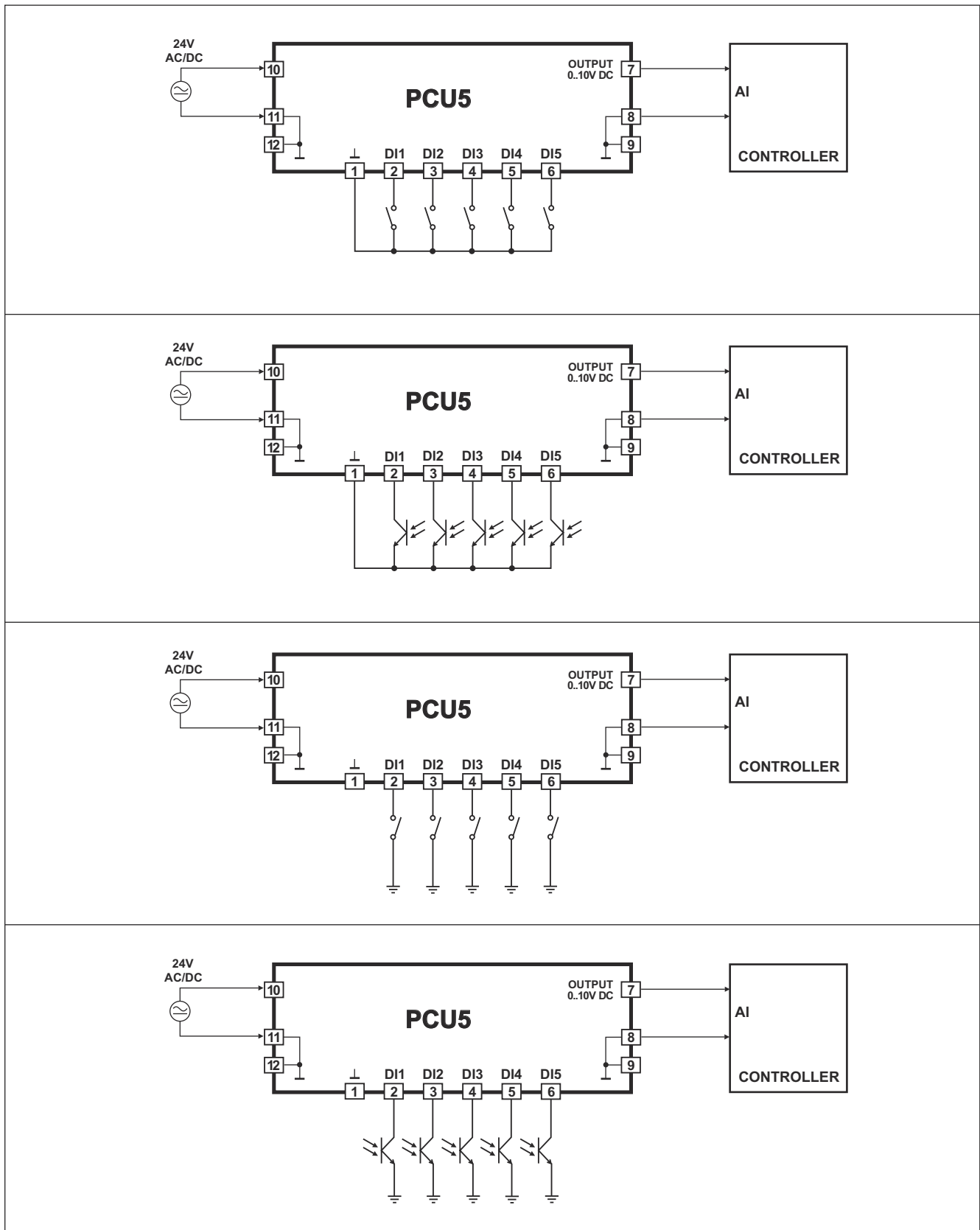


Fig.2 Connection methods examples of the PCU5.

TABLE OF STATES

State	Digital inputs					U _{OUT} [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

0 - opened contacts, 1 - closed contacts

Possible compensation of the controller should be made for the state no. 31 (all inputs shorted to the GND).

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