

APPLICATION

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

DESCRIPTION

The PCU6 module is a digital to analog converter, transforming a logical combination of six 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 PCU6 module.

Connecting discrete inputs (DI1 ÷ DI6) to the GND (⊥) voltage output is generated by the formula:

$$U_{OUT} = (0,15 \cdot DI1 + 0,3 \cdot DI2 + 0,6 \cdot DI3 + 1,2 \cdot DI4 + 2,4 \cdot DI5 + 4,8 \cdot DI6) [V]$$

where: DI1...6 = 0 for opened terminals
DI1...6 = 1 for closed terminals

TECHNICAL DATA

Power supply	24 V AC/DC
Current consumption for $R_L = 1k\Omega$	55mA
Input signal	6 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 - 9,45V
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

PCU6

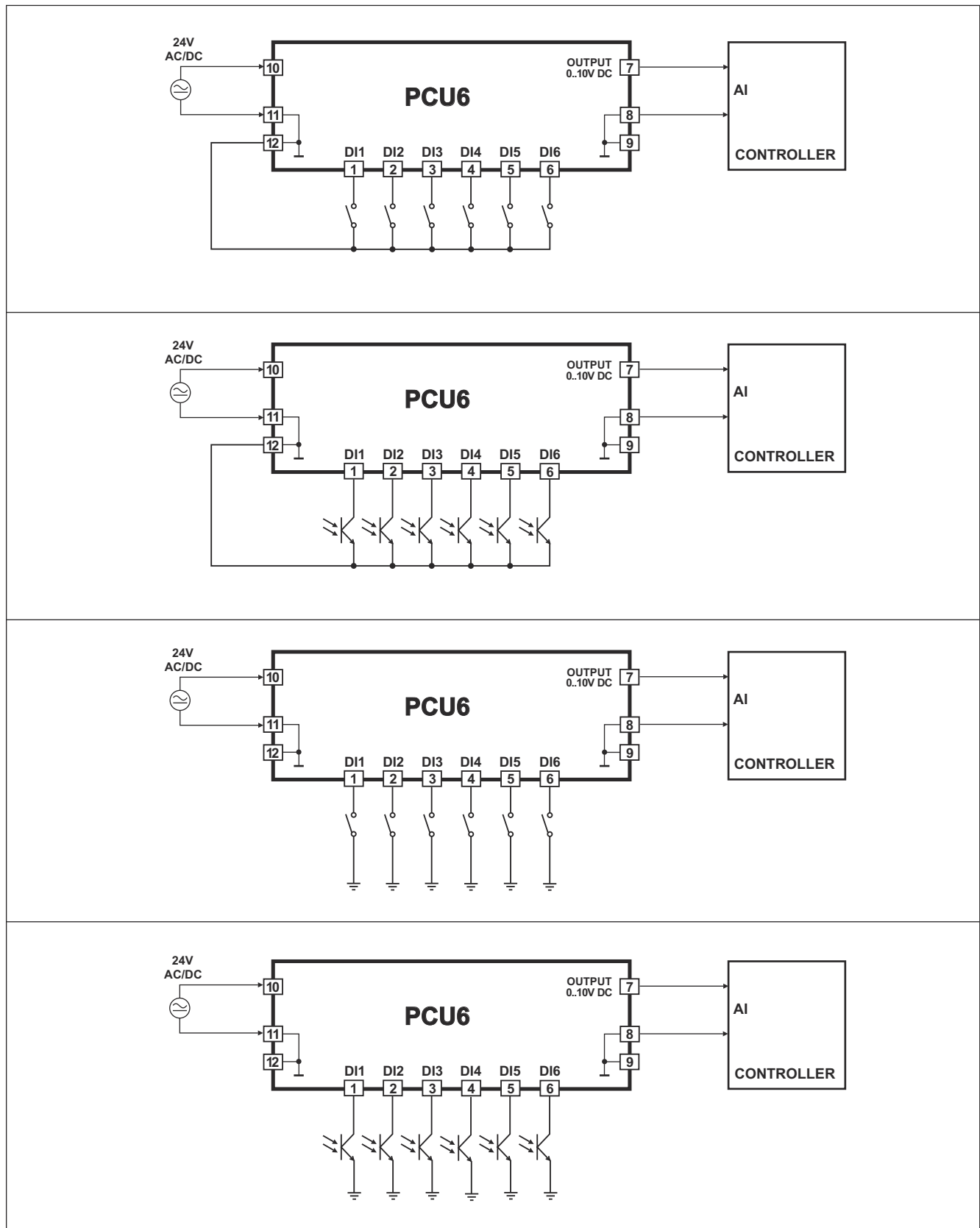


Fig.2 Connection methods examples of the PCU6.

TABLE OF STATES

State	Digital inputs						U _{OUT} [V DC]	State	Digital inputs						U _{OUT} [V DC]
	DI1	DI2	DI3	DI4	DI5	DI6			DI1	DI2	DI3	DI4	DI5	DI6	
0	0	0	0	0	0	0	0,00	32	0	0	0	0	0	1	4,80
1	1	0	0	0	0	0	0,15	33	1	0	0	0	0	1	4,95
2	0	1	0	0	0	0	0,30	34	0	1	0	0	0	1	5,10
3	1	1	0	0	0	0	0,45	35	1	1	0	0	0	1	5,25
4	0	0	1	0	0	0	0,60	36	0	0	1	0	0	1	5,40
5	1	0	1	0	0	0	0,75	37	1	0	1	0	0	1	5,55
6	0	1	1	0	0	0	0,90	38	0	1	1	0	0	1	5,70
7	1	1	1	0	0	0	1,05	39	1	1	1	0	0	1	5,85
8	0	0	0	1	0	0	1,20	40	0	0	0	1	0	1	6,00
9	1	0	0	1	0	0	1,35	41	1	0	0	1	0	1	6,15
10	0	1	0	1	0	0	1,50	42	0	1	0	1	0	1	6,30
11	1	1	0	1	0	0	1,65	43	1	1	0	1	0	1	6,45
12	0	0	1	1	0	0	1,80	44	0	0	1	1	0	1	6,60
13	1	0	1	1	0	0	1,95	45	1	0	1	1	0	1	6,75
14	0	1	1	1	0	0	2,10	46	0	1	1	1	0	1	6,90
15	1	1	1	1	0	0	2,25	47	1	1	1	1	0	1	7,05
16	0	0	0	0	1	0	2,40	48	0	0	0	0	1	1	7,20
17	1	0	0	0	1	0	2,55	49	1	0	0	0	1	1	7,35
18	0	1	0	0	1	0	2,70	50	0	1	0	0	1	1	7,50
19	1	1	0	0	1	0	2,85	51	1	1	0	0	1	1	7,65
20	0	0	1	0	1	0	3,00	52	0	0	1	0	1	1	7,80
21	1	0	1	0	1	0	3,15	53	1	0	1	0	1	1	7,95
22	0	1	1	0	1	0	3,30	54	0	1	1	0	1	1	8,10
23	1	1	1	0	1	0	3,45	55	1	1	1	0	1	1	8,25
24	0	0	0	1	1	0	3,60	56	0	0	0	1	1	1	8,40
25	1	0	0	1	1	0	3,75	57	1	0	0	1	1	1	8,55
26	0	1	0	1	1	0	3,90	58	0	1	0	1	1	1	8,70
27	1	1	0	1	1	0	4,05	59	1	1	0	1	1	1	8,85
28	0	0	1	1	1	0	4,20	60	0	0	1	1	1	1	9,00
29	1	0	1	1	1	0	4,35	61	1	0	1	1	1	1	9,15
30	0	1	1	1	1	0	4,50	62	0	1	1	1	1	1	9,30
31	1	1	1	1	1	0	4,65	63	1	1	1	1	1	1	9,45

0 - opened contacts, 1 - closed contacts

Possible compensation of the controller should be made for the state no. 63 (all inputs shorted to the GND).

Updated: January 2018