

PiDi-3809

User Guide

The logo for DIAMS S.R.O. features the word "DIAMS" in a large, blue, outlined font. The letter "I" is stylized with a vertical line and a small square at its base. To the right of "DIAMS" is "S.R.O." in a smaller, blue, sans-serif font.

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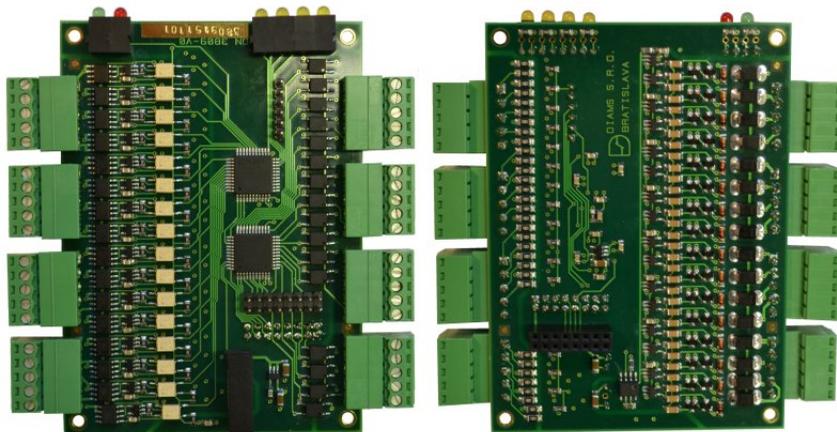
1. Control Board PiDi-3809

Control board PiDi-3809 is universal control board designed for use with various industrial machines. It can also be used to expand the number of binary IOs of CNC machine.

Board contains:

- 16 binary inputs, (24V)
- 16 binary outputs, (24V, max 2,5A)

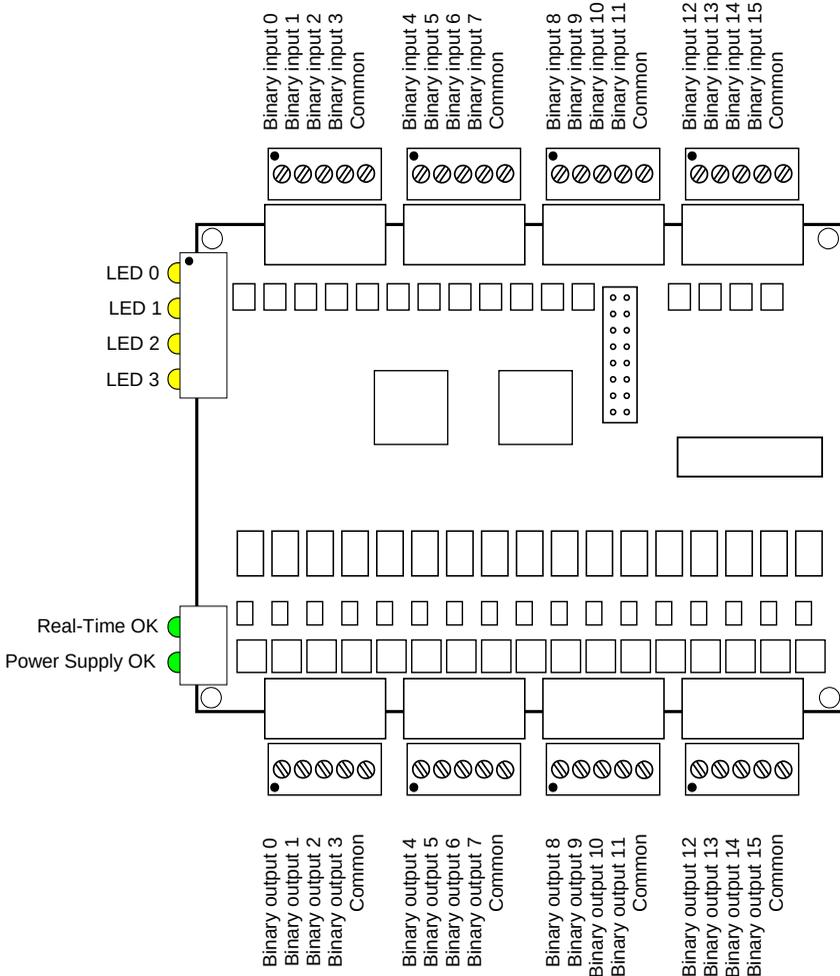
For greater variability, the inputs and outputs are grouped into foursomes. Each foursome of outputs can be switched to power supply or to the ground and each foursome of inputs can have a common power supply or ground.



Pic. 1: Control board PiDi-3809

1.1 Description of connectors

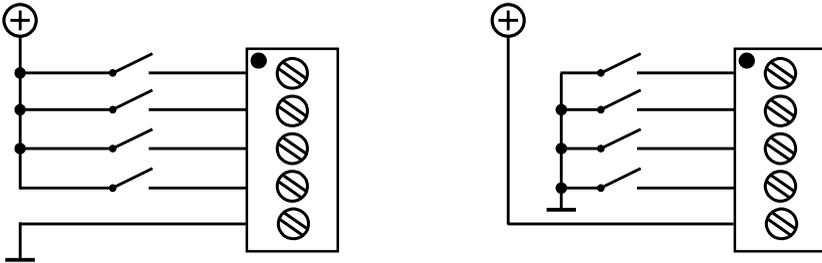
The connectors are located on the top and bottom of the board for better availability of the cables to the cable channel. There are signal LEDs placed on the top which are protected by a transparent cover.



Pic. 2: Description of connectors of PiDi-3809

1.2 Binary inputs

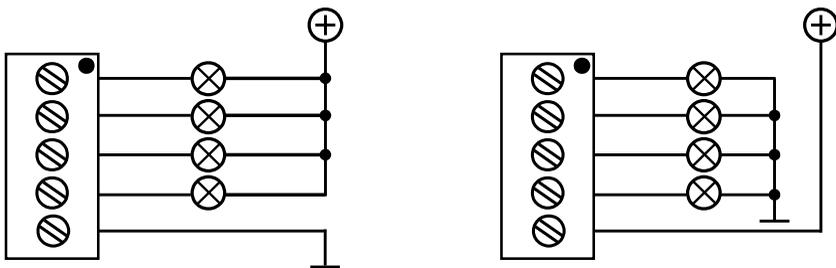
Binary inputs are optically isolated. Input voltage is in the range of 0-24V. Inputs are grouped to foursomes. Each foursome can have common supply or ground.



Pic. 3: Examples of use of inputs in one foursome

1.3 Binary outputs

Binary outputs are galvanically isolated and can switch currents up to 2,5A at 24V. Outputs are grouped to foursomes. Each foursome can be switched to power supply or to the ground. Outputs are protected by diodes (TVS-diodes) against voltage peaks at switching to an induction load. Switching is realized contactlessly by semiconductor components.



Pic. 4: Examples of use of outputs in one foursome

1.4 Signaling LED

The front side of the board carries yellow LEDs which are not permanently assigned to specific inputs or outputs, but they can be flexibly assigned by a HAL file. Parameter "*pidi-3809.N.bled.M.out*" is a variable output for displaying status on the LED.

Other LEDs that indicate the status of the device are:

- **Real-Time OK** – Cyclic communication is OK
- **Power supply OK** – Supply voltage is OK

1.5 Overview of input-output variables and parameters

pidi-3809.N.bin.M.in

Status of binary inputs, where:

- N – order of board N=0,1...n-1
- M – order of channel M=0,1...15

pidi-3809.N.bin.M.in-not

Status of inverted inputs.

pidi-3809.N.bout.M.out

Variable for binary outputs, where:

- N – order of board N=0,1...n-1
- M – order of channel M=0,1...15

pidi-3809.N.bout.M.invert

Bit for inversion of binary output

pidi-3809.N.bled.M.out

Output variable for control of LED statuses, where:

- N – order of board N=0,1...n-1
- M – order of led M=0,1...3

1.6 Table variables and parameters

Typ	Smer	Názov premennej	Default
bit	OUT	pidi-3809.N.bin.M.in	0
bit	OUT	pidi-3809.N.bin.M.in-not	1
s32	IN	pidi-3809.N.bled.M.out	0
bit	IN	pidi-3809.N.bout.M.invert	0
bit	IN	pidi-3809.N.bout.M.out	0
s32	IN	pidi.N.type	3809

Tab. 1: Overview of variables and parameters