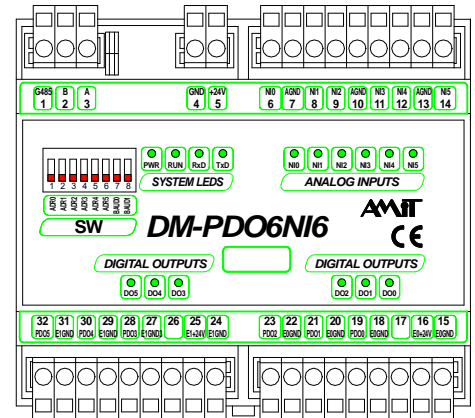


DM-PDO6NI6

Combined I/O Extension Module with ARION Protocol

- 6 × digital output 24 V
- 6 × input Ni1000
- Control over RS485 line (ARION protocol)



TECHNICAL DATA

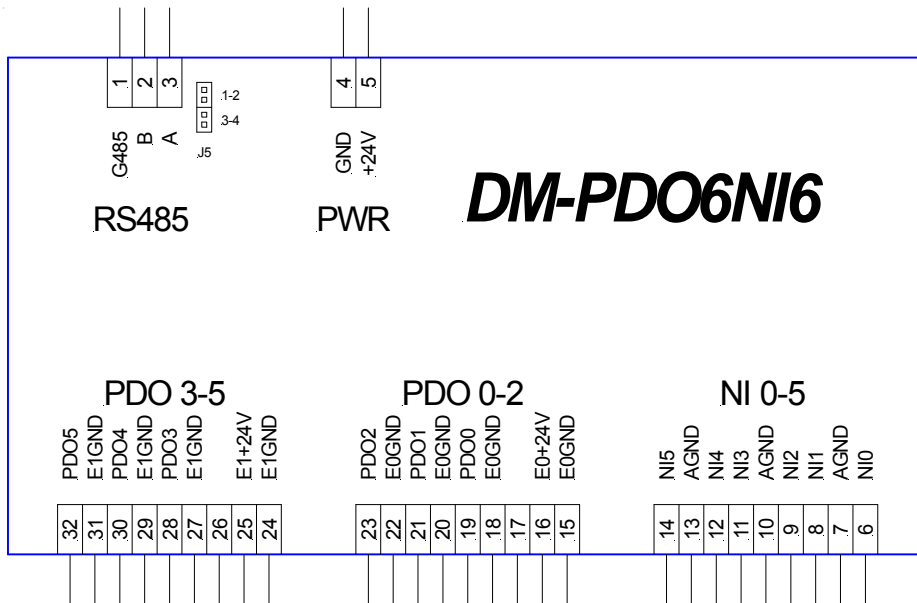
| | |
|---|--------------------------------|
| Inputs | 6 × Ni1000 |
| Accuracy, range Ni1000/6180 | T = -50 °C 0.6 °C |
| Depends on measured value, for others value is necessary to interpolate | T = 0 °C 0.8 °C |
| | T = 150 °C 1.5 °C |
| A/D converter resolution | 12 bits |
| Thermal dependence | 70 ppm/°C |
| Common lead | Analogue ground |
| Input overvoltage protection | Diodes |
| Outputs | 6 × 24 V DC |
| Switched voltage tolerance | 24 V DC ±20 % |
| Switch type | Switch Ex+24V |
| Switching element | MOS |
| User's defined save state | Not supported |
| Galvanic separation of outputs | Yes *) |
| Max. current of current protection circuit | 2.5 A DC |
| Switched current (permanently) | 1 A DC |
| Switch on time | 40 µs |
| Switch off time | 100 µs |
| Short circuit protection | Electronic |
| Inductive load protection | Transil 600 W |
| Communication | |
| Serial interface | RS485 |
| Galvanic separation of RS485 | Yes *) |
| Serial interface overvoltage protection | Transil 600 W |
| Communication rates | 9600 to 57600 Bd |
| Max. number of modules on RS485 line | 31 |
| Max. number of modules on RS485 segment | 31 |
| Power supply | 24 V DC ±20 % |
| Power consumption (without outputs) | Max. 150 mA at 24 V DC |
| Others | |
| Signal connection | WAGO 231 cage clamp connectors |
| Cover protection rate | IP20 |
| Operating temperature | 0 to 50 °C |
| Max. ambient humidity | < 95 % non-condensing |
| Weight | 250 g |
| Dimensions (w × h × d) | 105 × 90 × 74 mm |

*) Insulation strength 500 V AC / 1 minute, galvanic separation may not be used for safe and unsafe parts separation.

ORDERING INFORMATION

| | |
|-------------------|--|
| DM-PDO6NI6 | Combined I/O expansion module, data sheet, warranty card |
|-------------------|--|

RECOMMENDED DIAGRAM SYMBOL



DIP SWITCH SETTING

Jumpers – RS485 line

| | |
|---------|--|
| J5, 1-2 | Idle state definition + A line termination |
| J5, 3-4 | Idle state definition + B line termination |

Transmission rates

| | |
|----------|--------------------------|
| 9600 Bd | BAUD0 = OFF, BAUD1 = OFF |
| 19200 Bd | BAUD0 = ON, BAUD1 = OFF |
| 38400 Bd | BAUD0 = OFF, BAUD1 = ON |
| 57600 Bd | BAUD0 = ON, BAUD1 = ON |

DIP SW8

| | |
|-------|------------------------------|
| SW8.1 | Address, binary weight of 1 |
| SW8.2 | Address, binary weight of 2 |
| SW8.3 | Address, binary weight of 4 |
| SW8.4 | Address, binary weight of 8 |
| SW8.5 | Address, binary weight of 16 |
| SW8.6 | Address, binary weight of 32 |
| SW8.7 | BAUD0, transmission rate |
| SW8.8 | BAUD1, transmission rate |

An example of address construction: Addr = 37, switches 1, 3 and 6 are ON (1 + 4 + 32).

Module takes always two addresses – example for address 37 and 38.

Digital outputs (PDO or DO) state is entered to the address 37. PDO (power digital outputs) are controlled like analogue outputs by PWM in the range of 0 to 100 %. This is achieved by entering value of 0 to 100 at physical range of 0 to 16384. Pulse period from 1 to 100 second is set on virtual output PDO6. This output is also controlled like analogue output by entering the value of 1 to 100 at physical range of 0 to 16384. The default period value is 1 second.

Voltage values on Ni1000 sensors are entered to the address 38. Values are read as analogue inputs at electrical range of 0 to 5 V at physical range of 0 to 5. Conversion to the temperature provides Ni1000U2T software module included in application software.

For examples and further information see application note AP0005 – Communication in ARION network.

TERMINALS ASSIGNMENT

| Terminal | Label | Assignment |
|----------|--------|--------------------------|
| 1 | G485 | RS485, shielding |
| 2 | B | RS485, B line |
| 3 | A | RS485, A line |
| 4 | GND | Power supply, ground |
| 5 | +24V | Power supply 24 V DC |
| 6 | NI0 | Input NI0 |
| 7 | AGND | Analogue ground |
| 8 | NI1 | Input NI1 |
| 9 | NI2 | Input NI2 |
| 10 | AGND | Analogue ground |
| 11 | NI3 | Input NI3 |
| 12 | NI4 | Input NI4 |
| 13 | AGND | Analogue ground |
| 14 | NI5 | Input NI5 |
| 15 | E0GND | External GND |
| 16 | E0+24V | Switched voltage PDO0..2 |

| Terminal | Label | Assignment |
|----------|--------|--------------------------|
| 17 | - | |
| 18 | E0GND | External GND |
| 19 | PDO0 | Output 0 |
| 20 | E0GND | External GND |
| 21 | PDO1 | Output 1 |
| 22 | E0GND | External GND |
| 23 | PDO2 | Output 2 |
| 24 | E1GND | External GND |
| 25 | E1+24V | Switched voltage PDO3..5 |
| 26 | - | |
| 27 | E1GND | External GND |
| 28 | PDO3 | Output 3 |
| 29 | E1GND | External GND |
| 30 | PDO4 | Output 4 |
| 31 | E1GND | External GND |
| 32 | PDO5 | Output 5 |

DM-PDO6NI6

Combined I/O Extension Module with ARION Protocol

WIRING EXAMPLE

