Probiz Controls

## PC-SERIES IO MODULE

# PC-2DI1DO



## -FEATURES & BENEFITS

- 2 digital inputs for volt-free status contacts
- 1 relay output (C / NO), rated 230 V,3 A
- Compact 110 × 70 × 70 mm housing for small panels
- Modbus RTU slave on RS485 (B, A, GND), multiple baud rate options
- Works with PC-CPU-V7 or any third-party Modbus master
- No configuration required — ready to poll from the master
- Customer-specific IO configuration available on request
- Failed modules are replaced on site without reprogramming
- Modular design for fast, repeatable panel builds

## -APPLICATIONS

| | | | |
|---|---|---|---|
| **FCU Control**<br>Run / trip status with start / stop | **Exhaust Fans**<br>Run status and system command | **Pumps**<br>Run / trip status and start / stop | **Filter & A/M Status**<br>Filter and auto / manual contacts |

| | | | | |
|---|---|---|---|---|
| **2 DI**<br>Volt-free contact inputs | **1 DO**<br>Relay output (C / NO) | **3 A**<br>Relay rating at 230 V | **110 × 70**<br>Compact footprint (mm) | **24 V**<br>AC/DC supply |

**2 DI** **2 DO** **Modbus RTU** **REST API**

The PC-2DI1DO is a compact DIN-rail mounted extension IO module with 2 digital inputs and 1 relay output. It communicates over Modbus RTU on RS485 with multiple baud rate options, so it works as an expansion module for the PC-CPU-V7 controller or with any third-party Modbus master. Its small 110 × 70 mm footprint suits local panels where one equipment item needs run / trip status and a start / stop command — FCUs, exhaust fans and pumps.

## -TECHNICAL DATA

| INPUTS & OUTPUTS | |
|---|---|
| Digital inputs | 2, volt-free contact |
| Digital outputs | 1, relay (C / NO) |
| Relay rating | 230 V, 3 A |

| COMMUNICATION | |
|---|---|
| Protocol | Modbus RTU (slave) |
| Interface | RS485 — B, A, GND |
| Baud rate | Multiple baud rate options |
| Compatible masters | PC-CPU-V7, third-party Modbus masters |

| CONFIGURATION | |
|---|---|
| Set-up | No configuration required |
| Custom IO | Customer-specific configuration on request |
| Commissioning | Modbus master utility (e.g. Modscan) via USB-to-RS485, or PC-CPU-V7 over IP |

| POWER | |
|---|---|
| Supply voltage | 24 V AC/DC |
| Power consumption | To be confirmed |

| OPERATING ENVIRONMENT | |
|---|---|
| Operating temperature | 0 °C to 50 °C |
| Operating humidity | 0–95 % RH |

| MECHANICAL | |
|---|---|
| Dimensions (L × W × H) | 110 × 70 × 70 mm |
| Mounting | DIN rail |
| Enclosure | ABS |

| STANDARDS & CERTIFICATIONS | |
|---|---|
| Certifications | CE, RoHS |

## -ORDERING INFORMATION

| PART NUMBER | DESCRIPTION |
|---|---|
| **PC-2DI1DO** | SmartNova DDC Controller — Modbus master for PC-series IO modules (ordered separately) |
| **PC-2DI1DO** | PC-series IO module — 2 DI (volt-free), 1 DO (relay 230 V, 3 A), Modbus RTU RS485, 24 V AC/DC, DIN rail, 110 × 70 × 70 mm |

## - TERMINALS & WIRING




*Terminal layout as viewed from the front of the module.*

| NO. | GROUP | TERMINALS | SIGNAL | DESCRIPTION |
|---|---|---|---|---|
| 1 | **Digital output** | **DO1: C, NO** | Relay, 230 V, 3 A | Relay contact — C = common, NO = normally open |
| 2 | **Digital inputs** | **+24V, DI2, DI1, GND** | Volt-free contact | Status inputs; connect each contact between +24V and its DI terminal |
| 3 | **Power supply** | **P, N** | 24 V AC/DC | Module supply input — P: + supply, N: – supply |
| 4 | **Modbus RS485** | **B, A, GND** | Modbus RTU | Connection to an PC-CPU-V7 RS485 port or third-party Modbus master |

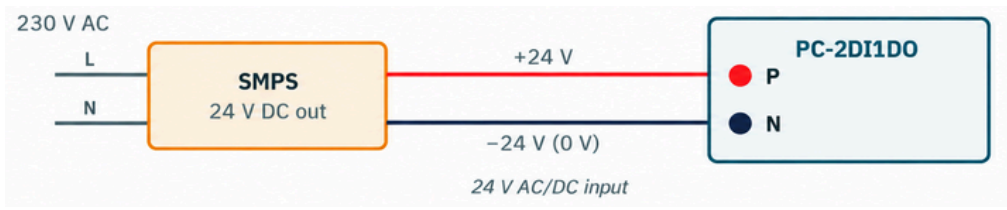
## - IOWIRING

- Digital inputs accept volt-free (dry) contacts only — do not apply external voltage.
- Connect each contact between the +24V terminal and its DI terminal.
- The relay output switches loads up to 230 V, 3 A; use an interposing relay or contactor for larger loads.
- Keep relay output wiring separate from digital input and RS485 cabling.

## - RS485 BUS WIRING

- Use shielded twisted-pair cable and daisy-chain modules on the bus.
- Connect B, A and GND to the same terminals on the master and every module.
- Fit 120 Ω termination at both ends of long bus segments.
- Segment length up to 1200 m per TIA/EIA-485, reduced at higher baud rates.

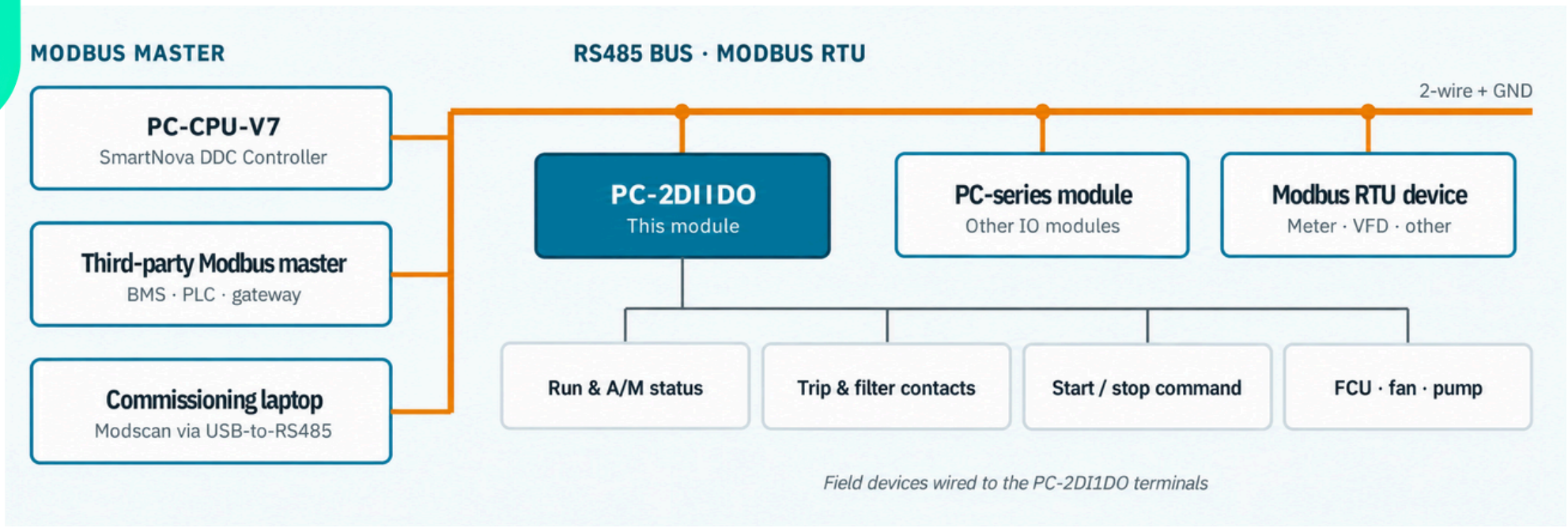
## - POWER SUPPLY WIRING




*24 V AC/DC input*

- Supply from a 24 V AC/DC source, such as a 230 V AC to 24 V DC SMPS.
- Connect + supply to terminal P and – supply to terminal N.
- One SMPS can feed several modules; size it for the total load.

## - SYSTEM ARCHITECTURE




## - MODBUS COMMUNICATION

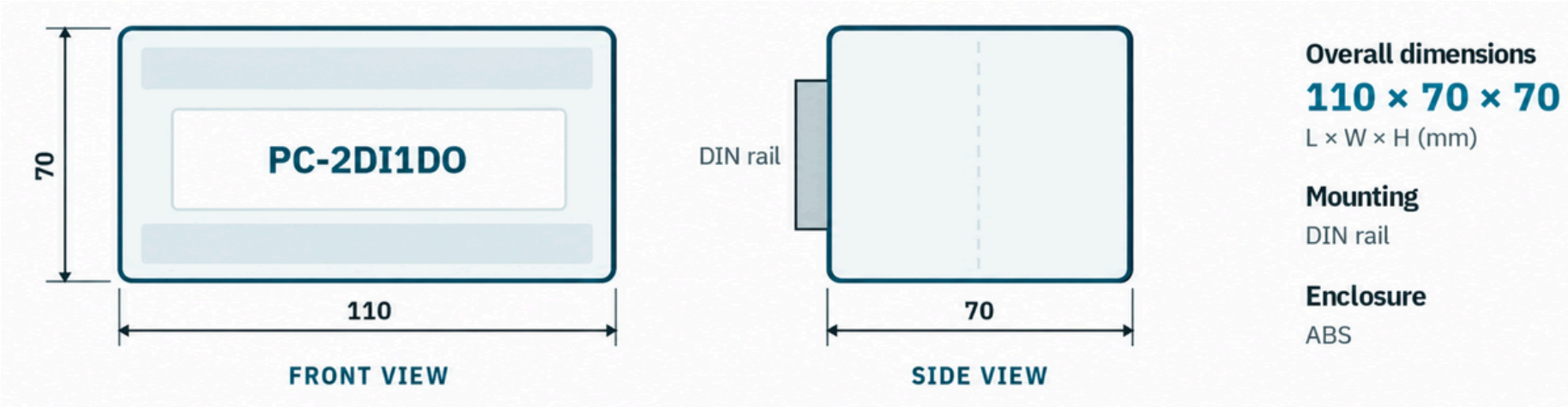
| COMMUNICATION SETTINGS | |
|---|---|
| Protocol | Modbus RTU, slave |
| Physical layer | RS485, 2-wire + GND |
| Baud rate | Multiple options |
| Default slave address | To be confirmed |
| Data format | To be confirmed |
| Function codes | 01, 02, 05 |

**MODBUS REGISTER MAP**

| NO. | IO POINT | ADDRESS | TYPE | ACCESS |
|---|---|---|---|---|
| 1 | DI-1 | 10002 | Input status | R |
| 2 | DI-2 | 10003 | Input status | R |
| 3 | DO-1 | 00001 | Coil status | R/W |

Addresses use the standard Modbus 0x / 1x notation, as listed in the module address details.

## - DIMENSIONS




## - INSTALLATION

- Mount on DIN rail inside a control panel or enclosure.
- Leave space around the unit for ventilation and cable access.
- Isolate the power supply before wiring or servicing.
- Route RS485 and digital input cables away from relay output wiring.
- A failed module can be replaced on site and the system resumes without re-programming.

## - COMMISSIONING

- Mount the module and connect the 24 V AC/DC supply.
- Wire digital inputs and relay outputs as per the wiring drawing.
- Connect RS485 B, A, GND to the PC-CPU-V7 port or Modbus master.
- Poll the module using the Modbus register map.
- Verify points with Modscan over USB-to-RS485 or through PC-CPU-V7 over IP.

## - SYSTEM REQUIREMENTS

- PC-CPU-V7 controller or any third-party Modbus master
- Modbus master utility (e.g. Modscan) for commissioning USB-to-RS485 converter for commissioning over serial
- 24 V AC/DC power supply
- DIN rail mounting inside a control panel

## - SAFETY INFORMATION

- Installation, wiring and maintenance must be carried out by qualified personnel in line with local electrical regulations.
- Disconnect all power before connecting or removing terminal wiring.
- Install inside a closed control panel, protected from dust, water and direct sunlight.
- Operate only within the supply voltage and environmental limits stated in this datasheet.
- Observe ESD precautions when handling the unit.
- Dispose of the product as electronic waste in accordance with local e-waste regulations.

## - SERVICES & SUPPORT

**Technical support** | **Installation & setup** | **Maintenance** | **Application support**

**Hardware support** | **Warranty**

PROBIZ CONTROLS

## PC-SERIES IO MODULE

# PC-2DI1DO




**Probiz Controls by Probiz Automation**

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