

Remote input/output modules



PDM

Pyro Distributed IO Modules

Communicating | Adaptable | Economical



Pyro Distributed IO Modules

Economical, adaptable,
high-performance
signal converters

Let Pyrocontrole handle your signal!



An acknowledged expert in temperature process control, Pyrocontrole has developed an automation offering for industry.

This is based on a complete, reliable solution bringing together the PDM I/O Modules and the CPS Touch® new-generation Human-Machine Interface.



A Complete Range

Digital, thermal, analog: the PDM range of I/O modules is designed to meet every type of requirement.



Simple Configuration

Advanced programming of the modules is easy with the PDM Studio programming software. Configurations created in this way can then be saved for archiving or duplication.



Compatibility

Thanks to the Modbus RTU protocol, the PDM modules can be used with any type of instrument: PC, CPS Touch® human-machine interface, PLCs, SCADA system, etc.



Versatility

Remote control, remote surveillance, production control, automation, etc. The PDM range can be used in a wide range of applications.



Simplified Installation

Thanks to Bus support for PDM-DIN modules, a single power and data-bus connection is all that is necessary.



Adaptable

All the connectors are unpluggable for easier installation and maintenance.



Communication Interfaces

To facilitate integration in your system, the PDM range of modules includes wireless transmission modules and Modbus TCP gateways.



Supervision

LEDs for indicating the I/O, communication and power-supply statuses.



Configuration Input

3.5mm stereo jack / RS232 programming input for the analog and temperature modules.

Power supply: 19/40 Vdc or 19/28 Vac

Operating temperature: 0 to +55 °C

Storage temperature: 0 to +70 °C

Protection: IP20

Mounting: 35 mm DIN rail

Dimensions: 17.5 x 100 x 112 mm
(except PDM-Supply : 35 x 100 x 112 mm)

Weight: 140 g (except PDM-Supply: 215 g)

Technical Specifications

A PDM for each signal

Name	PDM-PID	PDM-4AI	PDM-8AI	PDM-3AO
Inputs / outputs	1 universal input	1 configurable input	4 configurable analog inputs	8 configurable analog inputs
Logic	-	PWM On-Off (voltage or current)	-	-
Relay	-	-	-	-
Voltage		0-10 V analog		-10 to 10 V analog
Current		0/4 - 20 mA analog		
Potentiometer	1 kohm to 100 kohm	-	-	-
RTD	Pt100,Pt500,Pt1000, Ni100, with 2, 3 or 4 wires	-	-	-
Thermocouple	J, K, R, S, T, B, E, N	-	-	-
Cold junction compensation	+/- 2°C	-	-	-
TC linearization error	0.2°C to 1.5° depending on type	-	-	-
Millivoltmeter	-10 to +80 mV	-	-	-
Resolution	14 bits		15 bits + sign	12 bits
Accuracy (% full scale)		0.1 %		0.2 %
Thermal stability		< 100 ppm/°C		
Input / output impedance	Current: 50 Ω Other: > 5 MΩ	Current: Max 600 Ω Voltage: Min 1 kΩ	Current: 50 Ω Voltage: 100 kΩ	Current: Max 600 Ω Voltage: Min 600 Ω
Advanced functions	Auxiliary power supply 17 V / 25 mA to power the sensor 3 functions: <ul style="list-style-type: none">• conversion without PID, analog or On-Off output• independent input and output• conversion with PID, analog or On-Off output	Auxiliary power supply 13V / 90 mA to power the sensors	Auxiliary power supply 13V / 2 x 90 mA to power the sensors	Default value programmable in the event of communication loss Configurable scale start and end
Power supply and bus connection	Power supply: PDM-DIN bus system or screw terminals Communication: PDM-DIN bus system only	PDM-DIN bus system or screw terminals	PDM-DIN bus system	PDM-DIN bus system or screw terminals
Consumption	< 2 W	< 2.5 W	< 3.5 W	< 1.8 W
Insulation	1,500 V RMS between inputs / outputs / power supply / RS485	1,500 V RMS between inputs / power supply / RS485	1,500 V RMS between inputs / power supply / RS485	1,500 V RMS between inputs / power supply / RS485



PDM-5RO	PDM-10DI	PDM-10DO	PDM-DIO	PDM-4RTD	PDM-4TC	PDM-8TC	PDM-SUPPLY
5 relays	10 logic inputs	10 logic outputs	6 logic inputs / 2 relays		4 inputs	8 inputs	<p>Input: 100...260 Vac, 47...63 Hz / 100...315 Vdc Output: 24 Vdc +/-2%</p>
-	12 / 30 V logic inputs Dry contact, NPN, PNP	Mosfet outputs, 500 mA, 6 to 30 Vdc	12 / 30V logic inputs Dry contact, NPN, PNP	-	-	-	-
NO relay, 5A / 250Vac, with common point	-	-	NO relay, 5A / 250vac, with common point				
-	-	-	-				
-	-	-	-				
-	-	-	-				
-	-	-	-	same as RTD values	-	-	
-	-	-	-	PT100, PT500, PT1000, NI100 with 2, 3 or 4 wires	-	-	
-	-	-	-	-	J, K, R, S, T, B, E, N	J, K, R, S, T, B, E, N	
-	-	-	-	-	< 2°C	< 1°C	
-	-	-	-	-	< 0.05°C		
-	-	-	-	-	+/- 160 mV	-10 to +80 mV	
-	-	-	-	14 bits	14 or 15 bits depending on settings		
-	-	-	-	0.05°C	0.1°C		
-	-	-	-	< 50 ppm/°C	< 100 ppm/°C		
-	-	-	-	-	> 10 MΩ		
Programmable safety status in the event of communication loss Inversion of default relay status by programming	Auxiliary power supply for dry-contact inputs 8 x 100 Hz inputs with 16-bit counters 2 x 10 kHz inputs with 32-bit counters 10kHz frequency measurement Period, Frequency, Ton/Toff 100 Hz	Programmable safety status in the event of communication loss Protection against short-circuits and overvoltages	Auxiliary power supply for dry-contact inputs Inputs / Outputs mode Autonomous modes: • Motor control • Valve control Choice of default relays status by jumper	Adjustable measurement filtering			
				Probe breakage detection: Status register + Forcing of value	Common negative terminals TC breakage detection: Status register + forcing of value	Isolated inputs in groups of 2 TC breakage detection: Status register + forcing of value	Possible redundancy between two PDM-SUPPLY modules via the IDC 10 connector and the PDM-DIN bus system Normal operation indicator relay
PDM-DIN bus system or screw terminals	PDM-DIN bus system			PDM-DIN bus system	PDM-DIN bus system or screw terminals	PDM-DIN bus system	<p>Input connection: unpluggable screw screw terminals</p> <p>Output connection: IDC connector for bus system or removable screw terminals</p>
< 2.5 W		< 1.5 W	< 2 W	< 0.7 W	< 1 W		-
1,500 V RMS between power supply / RS485 2,500 V between outputs / power supply + RS485	1,500 V RMS between inputs / power supply / RS485		1,500 V RMS between inputs / power supply / RS485 3,750 V between the outputs and the other groups	1,500 V RMS between inputs / power supply / RS485	1,500 V RMS between inputs / power supply / RS485	1,500 V RMS between the 4 groups of 2 inputs / power supply / RS485	3,000 V RMS between input and output

Communication interfaces

Radio Module | PDM-LINK

RS485 half-duplex Radio interface module. RF communication system for wireless data transmission:

- interfaces with the PDM-DIN bus system
- replaces a RS485 data bus link.



PDM-LINK	
Frequency	869 MHz
Power	10 mW
Distance	300 m free field
Advanced functions	Configurable as Modbus Master or Slave - The PDM-LINK modules operate in a meshed network, with each transmitter serving as a repeater
Power-supply and bus connections	PDM-DIN BUS system or removable connectors
Insulation	1,500 Vac between power supply and bus
Accessory: external antenna	ANT-EXT-LINK
Accessory: directional antenna	ANT-DIR-LINK

Ethernet Module | PDM-ETH

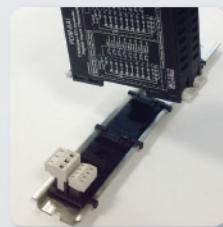
Modbus RTU-Modbus TCP interface (up to 8 clients).



PDM-ETH	
RS485	2 ports configurable independently: - 1 port on PDM-DIN Bus system - 1 port on plug-in connector
RJ45	1 RJ45 port, 10/100Mbps Ethernet
USB	1 mini-USB 2.0 type-B port for configuration
Protocols	Modbus RTU Master, Modbus TCP, http
Configurable parameters	IP address, serial transmission speed, Modbus address mapping of the slaves in the buffer
Adjustments	Dip switches, WEB interface, PDM-Studio software

Accessories

Bus Support | Série PDM-DIN



- Adaptable: connection of 1 to 8 modules
- Stackable: up to 32 modules on the same assembly
- Installation without interrupting the process

Model	Interface
PDM-DIN-2S	2 modules - 17.5 mm
PDM-DIN-8S	8 modules - 17.5 mm
PDM-DIN-1L	1 module - 35 mm
PDM-DIN-C-2S	2 modules + screw terminals for serial buses and power supply - 17,5 mm
PDM-DIN-C-1L	1 module + screw terminals for serial buses and power supply - 35 mm



Portable Converter PCM-USB-485

The PCM-USB-485 is a USB-to-RS485 converter.

PCM-USB-485	
Description	Portable USB/RS485 converter
Power supply	Power supply via USB port
Consumption	60 mA
Operating system	Windows 98, 2000, XP, Windows 7; Linux 2.24.0
Compatibility	USB 1.1 and 2.0
Dimensions	40 x 48 x 20 mm

Connection cables

LRMCABL-000	RS232 programming cable, DB9 to 3.5 mm jack
LRMCABL-001	RS232 programming cable, DB9 to 3.5 mm jack, for PDM-LINK

Configuration and recording

Simple configuration of your modules with the **PDM Studio** software

- configuration of modules online or offline
- online testing
- backup of configurations
- unlimited duplication of the configurations created

The PDM Studio software can be downloaded free of charge from www.pyro-controle.com

Data acquisition, display and recording: the **PyroDAQ** solution

- PyroDAQ data acquisition software for Windows is ideal for managing the data from Modbus slaves.
- Several PC / instrument links are possible: RS232/RS485/Modbus serial interface, Ethernet and MODBUS TCP connection
- Comprising **Real Time Viewer** and **Historical Viewer**, PyroDAQ records and can process all the data.



Real Time Viewer

- Recording of up to 2,048 tags
- Up to 200 pages with 24 tags per page
- Display of curves in real time
- Adjustment of amplitude and speed for the curves
- Mathematical channels and virtual simulation channels
- Processing tools: 100 timers, 50 counters, 50 totalizers
- Alarm management, up to 5 alarms per channel
- 2 tasks per alarm: dispatch of email, event recording, etc.

Historical Viewer

- Data and event histories
- Evaluation of the values on the curves
- Addition of remarks on the curves
- Criteria-based search function
- Printing of curves, lists of events / alarm, reports and tag values
- Export of data and events / alarm as CSV files

A free trial version of PyroDAQ can be downloaded from the www.pyro-controle.com website.

A full version delivered with a USB licence key is available for purchase (order code LR00DAQ-000)

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