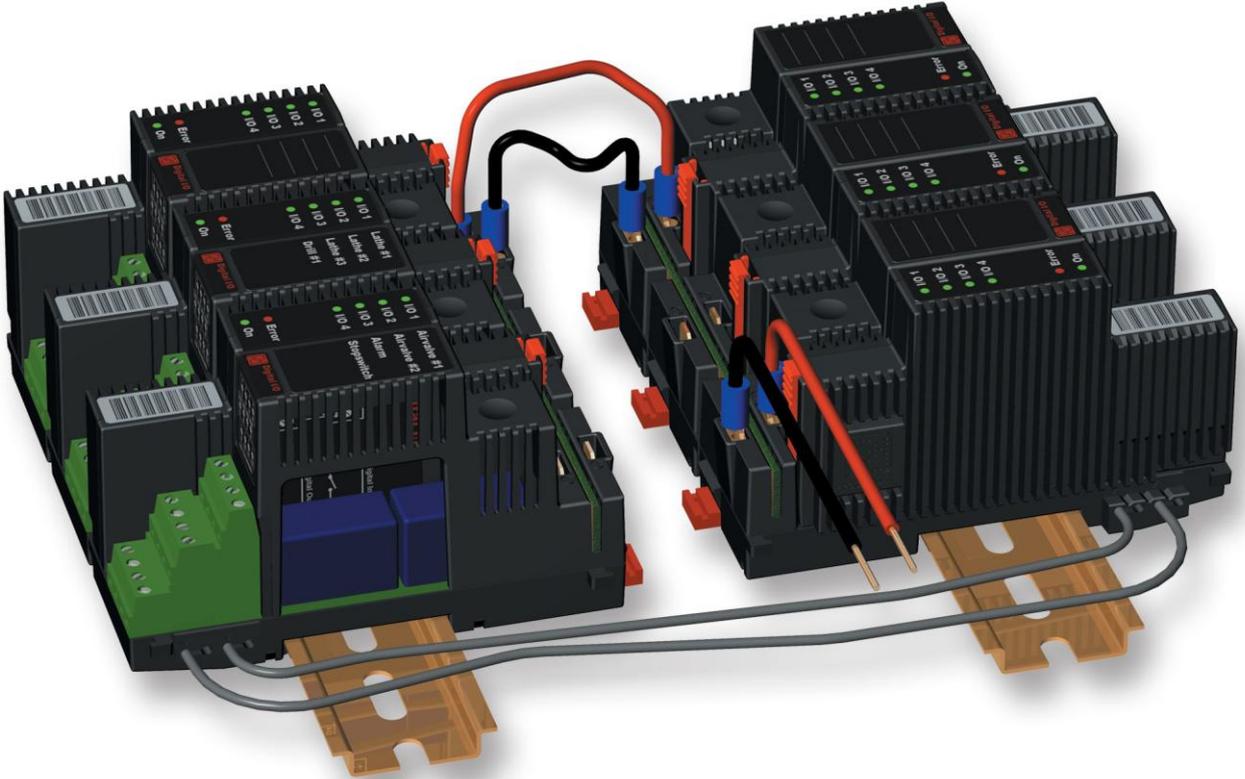




# PD 600 Series

## Introduction

The PD 600 Series from PROCES-DATA has been designed as a complete range of P-NET interface Modules, consisting of multifunction I/O slave devices and transmitters, communication devices, and programmable process automation controllers.



## Features

- M36 DIN rail format for convenient mounting and housing.
- Intelligent terminal block, eliminating additional wiring within the control panel or mounting box
- Two part construction – electronics module and Base Module.
- Adjacent modules communicate via P-NET using built in fibre optics.
- Electronics can be exchanged without interfering with power or terminal wiring (hot swap).
- Common clip in power rail eliminates inter-module wiring.
- Single side wiring with no common terminals.
- Reduced material, installation and maintenance costs.

## Innovative Design

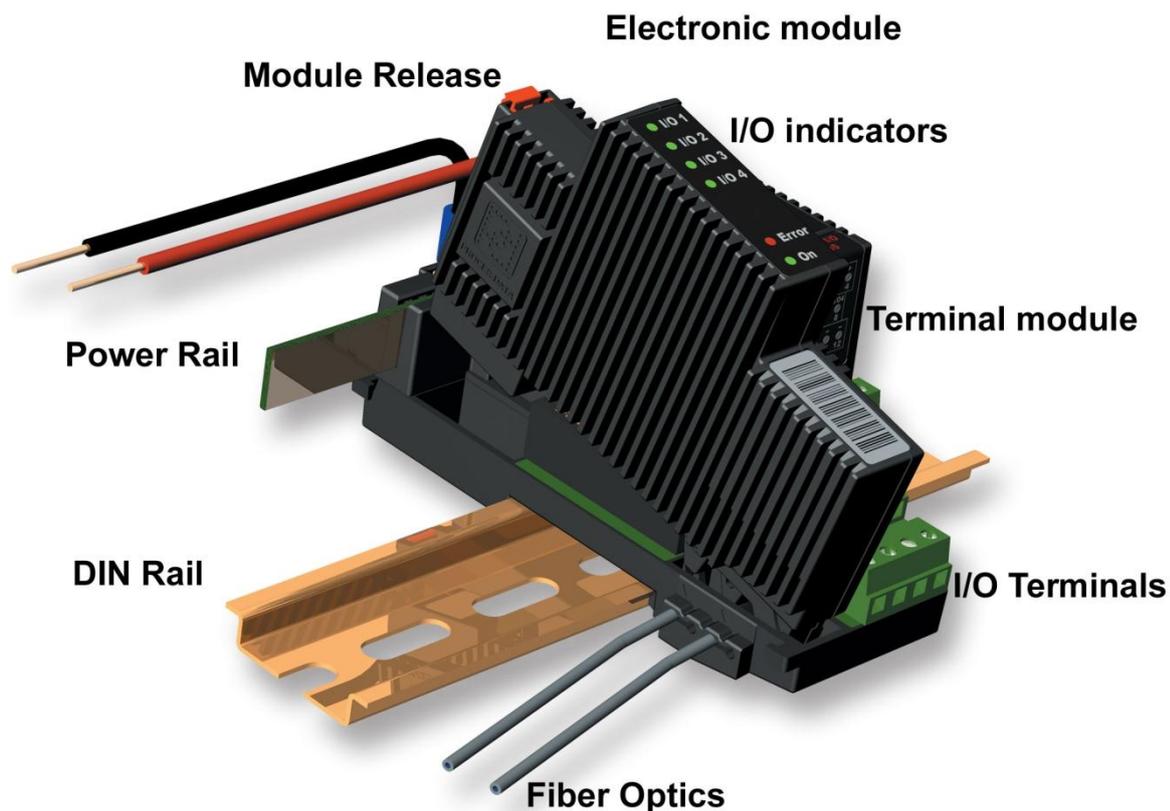
The philosophy behind this innovative range of modules is to provide the systems designer with a highly flexible means of constructing a local cluster of I/O devices, consisting of a single or multiple intelligent and programmable units. Each cluster would normally include one “Simple” P-NET interface module. This provides a connection between RS485 P-NET (the rest of the system) and P-NET *Light-Link*, which is the means of Fieldbus communication between the local modules. Thereafter, virtually any number of I/O modules of any desired type, can be clipped together to form the local requirement. Alternatively or additionally, further programmable modules may be included, each of which provides an interface with either P-NET, Ethernet, RS232, Modem, GSM/GPRS, or other IEC approved Fieldbus.

## Minimum Wiring

Due to their unique construction, individual modules are simply mounted side by side on the DIN rail. However, there is no need to perform any communication wiring between them, because this is achieved using fibre optics light pipes, built into the Base Module. Furthermore, once the number of modules required has been mounted, power to each is provided by clipping in a single bus bar strip, thus eliminating further wiring. Due to the design concept of one terminal for each wire, no additional junction wiring is required within the installation box or mounting panel. The module itself acts as an intelligent terminal block, which enables direct connection of external signals, without the requirement of the extra marshalling terminations typically found to be necessary within such installations. This significantly reduces the total cost, since no intermediate wiring is required for I/O signals.

## Construction

Modules are made up of two parts – the electronics module and the Base Module. The electronics module also holds the I/O, power and error LEDs, and can be removed from the Base Module even when power is applied (commonly referred to as hot swapping), and without interfering with the operation of the rest of the cluster. In addition, inappropriate replacement is prevented by means of special keying of the connector. Terminals are stacked on one side only, for easy access and minimum wiring area, and are designed for one wire per terminal. This means that there are no “common” terminals, and any transducer, sensor, or actuator can be added or removed without affecting the connection of any other. The upper surface of the Base Module provides a means to attach a customised label relevant to the operation of the module, thus aiding wiring, commissioning and maintenance.



## Versatility

It is envisaged that the range of modules will ultimately consist of a versatile mixture of both standard input/output and special devices. Couple this with the ability to add local programmability and gateways, ensures that the Multi-master, Multi-net facilities offered by the P-NET Fieldbus protocol, can be fully utilised. Due to the fact that each M36 module offers a limited number of channels, means that local clusters can be designed to reduce unused channels to the absolute minimum. This in turn leads to minimising the cost and size of each cluster.

## Environmental Factors

Physically, the modules are designed to operate within a wide range of industrial environments, with a standard power requirement of 24 volts DC  $\pm$  20%, an operating temperature range of  $-25^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$ , and can withstand vibration of up to 4G. The module casings are moulded using UL approved plastic. The module design is ideally suited for mounting within standard industrial or domestic contact breaker boxes having an integral DIN rail and transparent access window. These can be readily obtained in a variety of sizes for both indoor and outdoor use, and when mounted, provide ideal viewing of the state of all the modules, without the need to remove any covers.



PD 600 Series modules mounted in a control panel.

## P-NET Channels

The concept of standardised P-NET “channels” has been retained throughout the PD 600 family of modules, where all the common types of digital and analogue input and output are structured in the same form as is familiar from the PD 32xx range of multi-channel modules. However, the M36 range will add some new channel types to the library, as new modules are developed.

## Programmable Control

Although all channels exhibit a degree of built in intelligence and configurability, it is often required to include local programmable control and monitoring within a cluster of modules. To this end, a range of Distributed Process Intelligence (DPI) modules have been devised, which provide this local programmability.

In a similar way to programming existing master controllers, the M36 DPI's are programmed in Process-Pascal – a powerful process automation high level language, where software is developed, compiled, downloaded and debugged from a PC. Process-Pascal is used in conjunction with VIGO, which is a Windows based Fieldbus Management System. This complete suite of PC programs, which can be obtained free of charge, provides all the tools required to develop, monitor and maintain both simple and complex Fieldbus systems.



I/O wiring can be directly connected to terminals on the Base Module. No additional terminals are needed.

## Usage

The compact nature and exceptionally wide power supply and environmental characteristics of the M36 range, make them ideal candidates for both machine and wide area plant use, as well as for stand-alone Fieldbus transmitters.

## PD 600 Family Overview

|  |
|--|
| <b>MODULE TYPES</b>  |
| <b>DIGITAL INTERFACE MODULES</b>   |
| PD 620 Digital I/O, 4 Channels   |
| PD 621 Digital Output, 6 Channels  |
| PD 622 Digital Input, 6 Channels   |
| PD 626 Stepper motor Controller and Driver   |
| <b>ANALOGUE INTERFACE MODULES</b>  |
| PD 640 Analogue I/O, 4 Channels (0/4-20 mA)  |
| PD 641 Pt100/ Pt1000 Input, 3 Channels   |
| PD 642 Voltage/Thermocouple Input, 6 Channels  |
| PD 643 Pt100/Pt1000/Voltage/Thermocouple Input, 3 Channels                           |
| <b>DISTRIBUTED PROCESS INTELLIGENCE, DPI (Process Automation Controllers)</b>        |
| PD 600 DPI – P-NET Interface RS485 - available with 3 different memory sizes         |
| PD 601 DPI – RS232 Interface - available with 3 different memory sizes               |
| PD 602 DPI – Ethernet Interface (10 Mb/s) - available with 3 different memory sizes  |
| <b>COMMUNICATION MODULES</b>   |
| PD 661 Simple P-NET Interface, RS485   |
| PD 662 P-NET Redundancy Interface (dual cabling)                                     |
| PD 663 Simple P-NET Interface Triple Speed   |
| PD 664 P-NET GPRS Interface  |
| PD 667 Profibus DP Master Interface  |
| <b>OPERATOR INTERFACE</b>  |
| PD 681 Operator Interface (keyboard, graphics display, acoustic alarm, alarm output) |

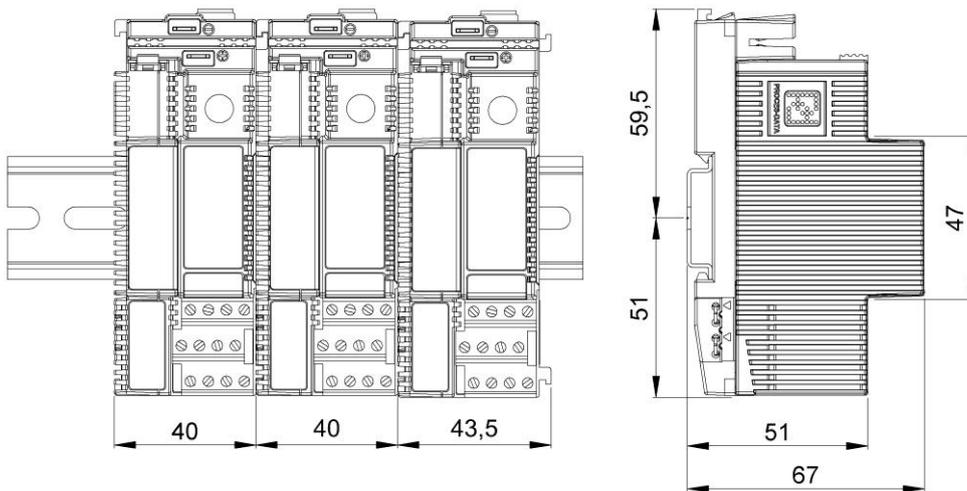
### General Specifications

**Power Supply:**  
24 VDC (min. 18 VDC, max. 32 VDC)  
See individual data sheets.

**Dimensions (in mm):**  
See drawing.

**Operational Ambient Temperature:**  
-25 °C to + 70 °C

**Weight:**  
140 grams



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