

# PROCES-DATA

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# PRODUCT CATALOGUE



**P-NET**

# Contents

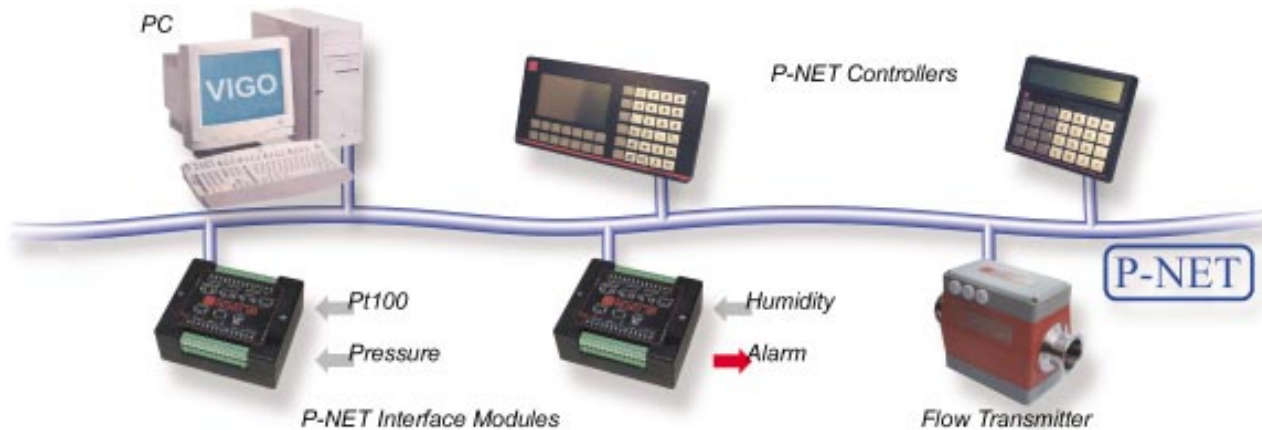
<b>Table of contents</b>	page
<b>P-NET</b>	
Overview .....	3
<b>Flow Transmitters</b>	
Flow Transmitter, Standard PD 340 .....	4
Flow Transmitter, Extended PD 340 .....	4
Display Unit PD 210 .....	5
Electronic Module .....	5
Terminal Box .....	5
Metering Head .....	5
Clamp Set .....	5
Flowmeter Display with printer option PD 4000/340-0 .....	13
Flowmeter Display, pattern approved PD 4000/340-1.....	13
<b>Controllers</b>	
P-NET Controller PD4000 .....	6
Handheld Terminal PD4500 .....	6
P-NET Controller PD5000 .....	6
P-NET Controller with LCD Display PD5010 .....	7
P-NET Controller with LCD Display PD5015 .....	7
P-NET Controller with VGA interface PD5020 .....	7
<b>Interface Modules</b>	
Digital 32 I/O DC Interface PD3100 .....	8
Digital 16 I/O DC Interface PD3120 .....	8
Digital 32 matrix I/O DC Interface PD3150 .....	8
Universal Process Interface, UPI PD3221 .....	9
Weight Transmitter PD3230 / PD3235 .....	9
Weight Transmitter PD3234 .....	9
Analogue (Current) Interface Module, AIM PD3240 .....	10
Analogue (Voltage/Termocouple) Interface Module, AIM PD3250 .....	10
Power Monitor, PMM PD3260 .....	10
P-NET Repeater PD3280 .....	11
P-NET Repeater PD3285, Optofibre .....	11
Junction Card PD810 .....	11
<b>Communication Modules</b>	
PC/P-NET Interface PD3920 .....	12
Parallel PC/P-NET Interface PD3930 .....	12
RS 232/P-NET Interface PD3940 .....	12
<b>Systems</b>	
Flowmeter Display with printer option PD 4000/340-0 .....	13
Flowmeter Display, pattern approved PD 4000/340-1 .....	13
Weighing Terminal (PD4000) .....	13
Weighing System, pattern approved PD4000/3230 .....	13
<b>Software</b>	
VIGO .....	14
PDFLOW Database program for Flowmeter Display .....	15
Printer Ticket Design for Flowmeter Display .....	15
Weighing Sequence Builder .....	15



## PROCES-DATA A/S

Navervej 8 - 8600 Silkeborg - Denmark  
Phone: +45 87 200 300 - Fax: +45 87 200 301  
e-mail: pd@post4.tele.dk www.proces-data.dk

# P-NET Fieldbus



## P-NET - The European Fieldbus Standard EN 50170 Vol. 1.

The P-NET Fieldbus is designed to connect together distributed process components, such as process computers, intelligent sensors, actuators, I/O modules, field and central controllers, PLC's etc., via a common two wire cable.

The electrical specification of P-NET is based on the RS485 standard, using a shielded twisted pair cable. This enables a cable length of up to 1200 m to be used without repeaters. Up to 125 devices can be connected to a single bus segment, and by using repeaters and multipoint gateways the network can be extended practically unlimited.

This is a vast improvement over traditional wiring, where a great many cables are likely to be involved. Process data (e.g. measurement values, valve signals), are transmitted digitally.

P-NET is also used for data collection, for configuration of nodes/sensors, and for down-loading programs. Apart from the usual measurement values and status data, the bus provides a bi-directional exchange of additional information associated with limit values, actuator positioning and feedback signals, fault signals and internal system data.

P-NET can be used to download parameters and programs to modules, which can then autonomously control the process. The use of intelligent P-NET sensors and actuators also offers much improved diagnostic features when compared with traditional systems.

## Approvals/Specification

All modules produced by PROCES-DATA comply with EN 50170 Vol. 1. EN 50170 is the European Standard for Fieldbus communication.

The modules are installed in many diverse environments. As a consequence, PROCES-DATA has ensured that all specifications and equipment conformance testing covers as wide an area of use as possible.

In general, the operational ambient temperature range for most of the modules is -25 to +70 °C, and the power supply requirement is 24 V DC  $\pm$  15%.

To comply with the EMC-directive No.: 89/336/EEC all modules are tested using the two categories: "Industrial environment" and "Commercial, residential and light industry environment".

PD modules are CE marked and fulfil the requirements for electromagnetic compatibility, as defined in the following generic standards: EN 50081-1, EN 50082-1, EN 50082-2 and EN 50081-2. The requirements defined in both the normative and in the informative annex are fulfilled.

## Application Areas

The P-NET Fieldbus has been in use for many years, and thousands of applications are now in operation world-wide. Applications range from simple installations with a few I/O points, to very large and complex installations using many thousands of I/O points. P-NET applications are found in the process industry environment and in discrete parts manufacturing plants.

The following typical examples indicate where P-NET is currently installed and running:

Dairies, breweries, environmental control in agriculture, animal feeding systems, asphalt and concrete production, textile industry, milk/oil/fertiliser distribution trucks, quality control systems, power plants, solar power plants, plastic moulding, ship engine control, tank management/alarm systems (approved by German Lloyd, Bureau Veritas, Norske Veritas, Lloyds Register of Shipping), data acquisition, water supply, building automation, fuel management systems, (approved as legal for trade by PTB, NMI, NWML, ...).

Further information about the P-NET fieldbus can be found in the P-NET booklet, which is available on request.

Vibration tests are performed in accordance with the requirements of the ship classification companies. The test criteria used here are at such a level, as to ensure that equipment meets the demands from most other environments.

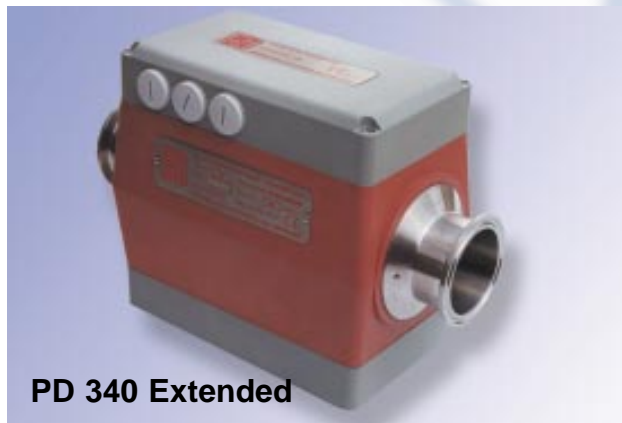
The PD modules fulfil the requirements of Sinusoidal vibration as described in IEC 68-2-6 Test Fc, and for Random vibration as described in IEC 68-2-36 Test Fdb.

Data sheets test reports and are available for all modules, which can be provided on request.





PD 340



PD 340 Extended



PD 210

## Flow Transmitter

### PD 340 Flow Transmitter, standard

(2 pulse outputs)

Complete with metering head, terminal box and standard electronics, excl. clamp set.

Part No.	Specification	Size:	Max flow
610100	PD 340 C 25 -0-000	C 25	8 m <sup>3</sup> /h
610300	PD 340 C 38 -0-000	C 38	20 m <sup>3</sup> /h
610500	PD 340 C 51 -0-000	C 51	40 m <sup>3</sup> /h
610700	PD 340 C 63 -0-000	C 63	80 m <sup>3</sup> /h
610800	PD 340 C 76 -0-000	C 76	120 m <sup>3</sup> /h

#### FEATURES

*Automatic zero point correction*

*Unidirectional or bi-directional flow*

*Volumetric measurement in m<sup>3</sup>, litres, U.S. gallons etc.*

*Temperature compensated flow measurement*

*Temperature measurement*

*Pulse output to electronic counter, 0-1000 pulses per second*

*Pulse output to electromechanical counter, 0-5 pulses per second*

*Stop signal from internal pre-set counter*

## Flow Transmitter, extended

### PD 340 Flow Transmitter, extended

(1 current output, 1/2 pulse output(s), P-NET interface).

Complete with metering head, terminal box and extended electronics, excl. clamp set.

Part No.	Specification	Size:	Max flow
611100	PD 340 C 25 -1-000	C 25	8 m <sup>3</sup> /h
611300	PD 340 C 38 -1-000	C 38	20 m <sup>3</sup> /h
611500	PD 340 C 51 -1-000	C 51	40 m <sup>3</sup> /h
611700	PD 340 C 63 -1-000	C 63	80 m <sup>3</sup> /h
611800	PD 340 C 76 -1-000	C 76	120 m <sup>3</sup> /h

#### FEATURES

*Automatic zero point correction*

*Unidirectional or bi-directional flow*

*Volumetric measurement in m<sup>3</sup>, litres, U.S. gallons etc.*

*Temperature compensated flow measurement*

*Temperature measurement*

*Pulse output to electronic counter, 0-1000 pulses per second*

*Pulse output to electromechanical counter, 0-5 pulses per sec.*

*Stop signal from internal pre-set counter*

*Current output, 4-20 mA*

*P-NET Fieldbus communication, EN 50170 vol. 1*

## Display Unit

### PD 210 Display Unit, Part No. 600087

The Display Unit is used for displaying data from the flow transmitter, e.g. flow or volume, setting of SET-point or flow register, and selection of functions e.g. size of metering head or function of outputs.

#### FEATURES

*Ease of operation*

*Simple installation*

*Waterproof*

*Display of data from the Flow Transmitter*

*Display and change of Flow Transmitter set up parameters*

*Flow Transmitter setup parameters*

*Read out and reset of Flow Transmitter error codes*

## Electronic Module

### Electronic Module, complete

Standard version, 2 pulse outputs

612100	C25	612700	C63
612300	C38	612800	C76
612500	C51		

### Extended version, 1 current output, 1 pulse output, P-NET

613100	C25	613700	C63
613300	C38	613800	C76
613500	C51		

### Extended version, 3-phase pulse output, P-NET

613167	C25	613767	C63
613367	C38	613867	C76
613567	C51		

Electronic Module, extension to standard version

**PD 366, current output, P-NET**, Part No. 601072

**PD 367, 3-phase pulse output, P-NET**, Part No. 601055

### Terminal Box, Part No. 600074

The Terminal Box contains clearly marked terminals for all inputs and outputs. The box is equipped with 3 cable glands, PG 11.

## Metering Head

### Metering Head without Electronic Module and Terminal Box

Part No. Size:

600075	C 25
600076	C 38
600077	C 51
600078	C 63
600079	C 76

Electronic /  
Terminal Module

Metering Head

## Clamp Set

### Clamp Set

The clamp set consists of:

- 2 clamp rings (AISI 304)
- 2 clamp liners (AISI 316)
- 2 gaskets for above.

Part No. Size:

600095	C 25
600096	C 38
600097	C 51
600098	C 63
600099	C 76

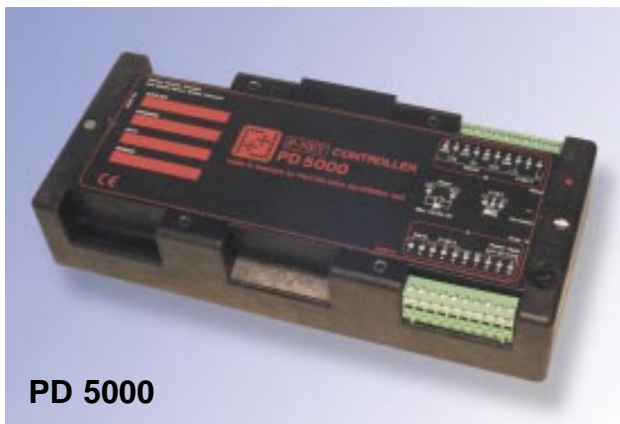
Clamp Set



PD 4000



PD 4500



PD 5000

## P-NET Controller

### PD 4000 P-NET Controller, Part No. 600092

The PD 4000 is a very compact and powerful computer, which includes both keyboard and display, and has been designed for use in process control systems. The Controller is completely sealed, and it is therefore suitable for use in any industrial environment. The compact design and the outstanding environmental attributes of the Controller, make it eminently suitable for machines and mobile applications. The display is a fast graphics LCD with a wide viewing angle. The display resolution is 150 by 20 pixels. The keyboard has 28 available keys with click-switches. The memory consists of 256 KB FLASH, 64 KB boot EPROM and 512 KB RAM with battery back-up. The controller is programmed using Process-Pascal.

#### FEATURES

- Programmed in High Level Multi Tasking Language*
- Completely Sealed Construction*
- Large Data Storage Capacity*
- Membrane click-switch Keyboard*
- Backlit Graphics LCD Display*
- User Definable Overlay*
- Battery Back-up*
- Real Time Clock*
- 16 Bit Microprocessor*
- P-NET Fieldbus communication, EN 50170 vol. 1*

## Handheld Terminal

### PD 4500 P-NET Handheld Terminal, Part No. 600123

The PD 4500 is a handheld controller with keyboard and display, designed for mobile data collection. The terminal has a rechargeable battery with an operation time of up to 8 hours. The terminal is constructed such that it is waterproof to IP67, and it is suitable for use in any industrial environment. Apart from the standard P-NET interface, the terminal also contains an RS232 interface port, which can be connected to an electronic tag reader, a printer, a bar code reader etc. The unit is fully customisable, in that the 35 sealed keys can be programmed to perform a specific function, while the 128 by 64 pixel display can be used for information or data input display. The on-board memory consists of 256 KB FLASH, 64 KB boot EPROM and 512 KB RAM with battery back-up.

#### FEATURES

- Operator interface with Graphics LCD Display*
- Sealed membrane switch keyboard (35 keys)*
- Multi-master P-NET Port*
- RS232 Port*
- Buzzer output*
- 5V/100 mA output*
- Large Memory capacity*
- Waterproof*
- P-NET Fieldbus communication, EN 50170 vol. 1*

## P-NET Controller

### PD 5000 P-NET Controller, Part No. 600080

The PD 5000 P-NET controller is a very powerful computer, designed for process control systems. It utilises a 32 bit microprocessor running at 25 MHz. The memory consists of 512 KB expandable FLASH and 512 KB expandable RAM with battery back-up. The controller is programmed in Process-Pascal and has two separate P-NET ports and one RS232 port. The unit includes the built in operating system, in 128 KB EPROM.

#### FEATURES

- Multi-Tasking Capabilities*
- Programmed in Process-Pascal*
- Large Expandable Data Memory*
- Battery Back-Up*
- Real Time Clock*
- 32 Bit Microprocessor (68020)*
- Two P-NET Ports and one RS232 Port*
- P-NET Fieldbus communication, EN 50170 vol. 1*

## P-NET Controller



PD 5010

**PD 5010 Display with PD 5000 P-NET Controller**, Part No. 600111  
PD 5010 is a PD 5000 P-NET Controller with integrated display/keyboard unit. The display is a fast graphic LCD with a resolution of 256 by 64 pixels, having adjustable brightness control and a backlight incorporated. The keyboard has 48 available keys with click-switches.

### FEATURES

- Operator interface*
- Multi-Tasking Capabilities*
- Programmed in Process-Pascal*
- Large Expandable Data Memory*
- Backlit Graphics LCD Display with a resolution of 256 by 64 pixels*
- Sealed Keyboard to IP65 (48 keys)*
- Battery Back-Up*
- Real Time Clock*
- 32 Bit Microprocessor (68020)*
- Two P-NET Ports and one RS232 Port*
- P-NET Fieldbus communication, EN 50170 vol. 1*

## P-NET Controller



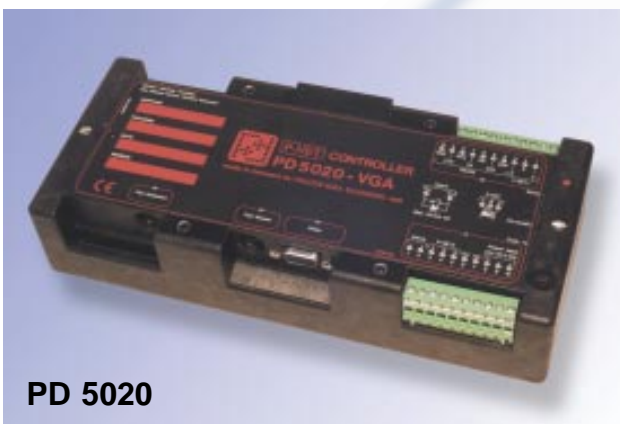
PD 5015

**PD 5015 Display with PD 5000 P-NET Controller**, Part No. 600112  
PD 5015 is a PD 5000 P-NET Controller with integrated display/keyboard unit. The display is a fast graphic LCD with a resolution of 240 by 128 pixels, having adjustable brightness control and a back light incorporated. The keyboard has 44 available keys with click-switches.

### FEATURES

- Operator interface*
- Multi-Tasking Capabilities*
- Programmed in Process-Pascal*
- Large Expandable Data Memory*
- Backlit Graphics LCD Display with a resolution of 240 by 128 pixels*
- Sealed Keyboard to IP65 (44 keys)*
- Battery Back-Up*
- Real Time Clock*
- 32 Bit Microprocessor (68020)*
- Two P-NET Ports and one RS232 Port*
- P-NET Fieldbus communication, EN 50170 vol. 1*

## VGA Controller

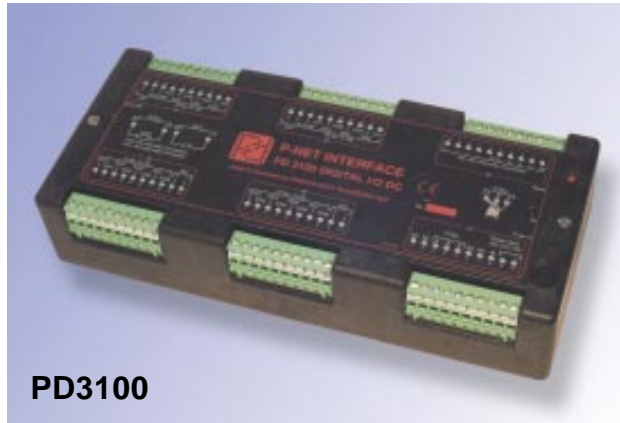


PD 5020

**PD 5020 VGA Video Controller**, Part No. 600081  
The PD 5020 VGA Video Controller is a PD 5000 P-NET Controller with an integrated VGA colour graphic card. The graphics card has an additional 512 KB RAM and 512 KB FLASH for use by the PD 5000 Controller. A VGA colour or monochrome monitor, a standard PC keyboard and PS2-mouse, may be connected directly to the unit, enabling the Video Controller be used as an operators graphical working station/HMI. It has a resolution of 640 x 480 pixels. Monitor, keyboard and mouse are not included.

### FEATURES

- Operator interface*
- Multi-Tasking Capabilities*
- Programmed in Process-Pascal*
- Large Expandable Data Memory*
- Graphics card for VGA colour monitor*
- Ports for PC keyboard and mouse (PS2)*
- Battery Back-Up*
- Real Time Clock*
- 32 Bit Microprocessor (68020)*
- Two P-NET Ports and one RS232 Port*
- P-NET Fieldbus communication, EN 50170 vol. 1*



PD3100

## Digital I/O DC Interface

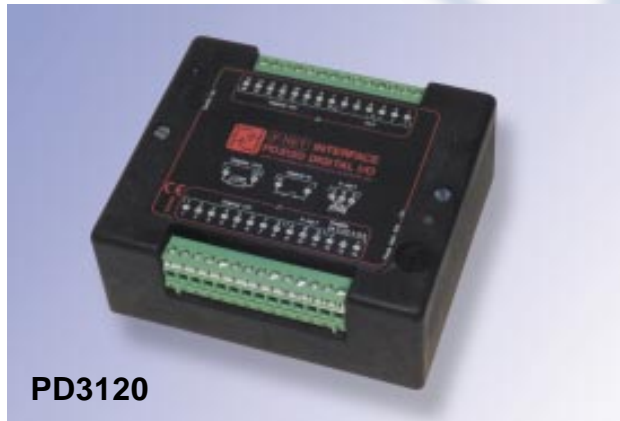
### PD 3100 Digital I/O DC Interface, Part No. 600049

The module contains 32 digital input/output channels, which can be directly connected to 24 V DC equipment. Each channel has configurable pulse and one-shot output functions, and current measurement and overload protection facilities.

Each input has a pulse counter (max 16 Hz). All Outputs can be set to test single or double feed-back signals.

#### FEATURES

- 32 Input/Output Channels (24 VDC)**
- Pulse or Contact Counting**
- Pulse and one-shot on all outputs**
- Output Feedback Facility**
- Selectable Automatic Functions**
- Opto-isolated Inputs and Outputs**
- Overload and overheat Protection**
- Current measurement on each channel**
- Continuous self test**
- Watchdog Timer**
- P-NET Fieldbus communication, EN 50170 vol. 1**
- Rail mounting module (DIN / EN)**



PD3120

## Digital I/O DC Interface

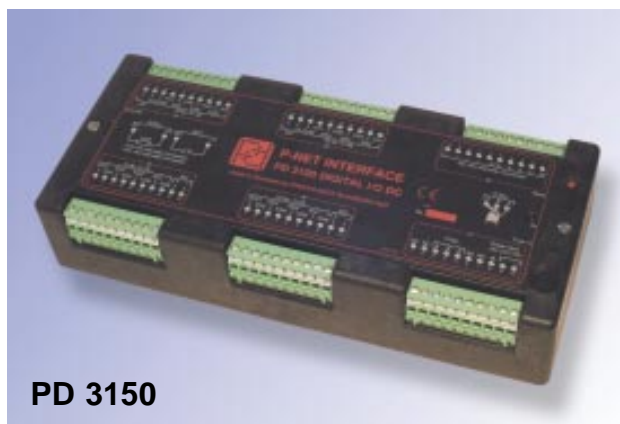
### PD 3120 Digital I/O DC Interface, Part No. 600068

The module is an intelligent module, having 16 input/output channels for 24 VDC and an internal user programmable Calculator channel for local control. Each channel has configurable pulse and one-shot output functions, and current measurement and overload protection facilities.

Each input has a pulse counter (max 50 Hz) and can measure the operating time. All Outputs can be set to test single or double feed-back signals.

#### FEATURES

- 16 Input/Output Channels (24 VDC)**
- Pulse or Contact Counting**
- Pulse and one-shot on all outputs**
- Output Feedback Facility**
- Automatic Output Functions**
- Overload Protection**
- Current measurement on each output**
- Programmable Calculator**
- Continuous self test**
- Watchdog Timer**
- P-NET Fieldbus communication, EN 50170 vol. 1**
- Rail mounting module (DIN / EN)**



PD 3150

## Digital I/O DC Interface

### PD 3150 Digital I/O DC, matrix, Part No. 600052

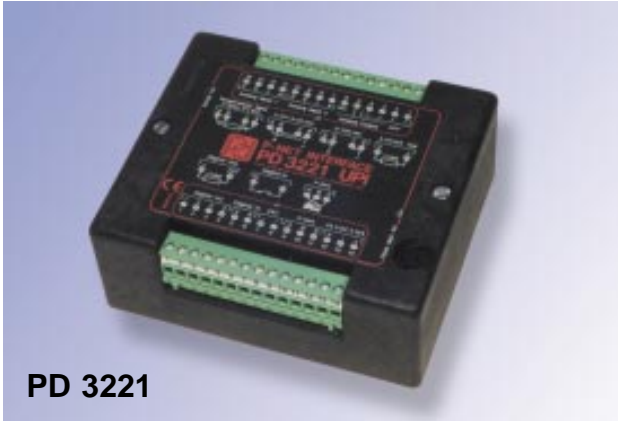
The module contains 32 digital input/output channels which can be connected directly to 24 V DC equipment. Of the 32 channels, 16 sink and 16 source load currents, which makes the module suitable for matrix connection. Each channel has pulse and one-shot output and overload protection. 16 channels provide load current measurement. All inputs have pulse counters (max. 16 Hz). All outputs can be set to test single or double feed-back signals.

#### FEATURES

- 32 Input/Output Channels 24VDC**
- Pulse or Contact Counting**
- Pulse and one-shot on all outputs**
- Output Feedback Facility**
- Selectable Automatic Functions**
- Opto-isolated Inputs and Outputs**
- Overload and overheat Protection**
- Current measurement on 16 channels**
- Continuous self test**
- Watchdog Timer**
- P-NET Fieldbus communication, EN 50170 vol. 1**
- Rail mounting module (DIN / EN)**



## Universal Process Interface



PD 3221

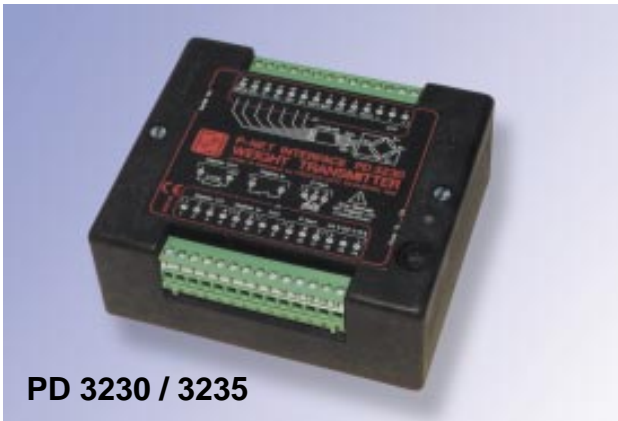
### PD 3221 Universal Process Interface, UPI, Part No. 600058

The module contains 6 digital input channels (4 of which can be configured as digital outputs), 2 analogue input channels (current/voltage/Pt-100) and 1 analogue output channel, all of which can be connected directly to 24 V DC equipment. Furthermore, the module contains a PID regulator, an internal user programmable Calculator channel for local control, and a pulse processor. The pulse processor can be used to detect and control fast digital signals (up to 200 kHz) from the modules digital channels, e.g. for controlling a stepper motor or a machine.

#### FEATURES

- 2 Analogue Input Channels
- 1 Analogue Output Channel
- 6 Digital Input/Output Channels
- PID Controller
- Programmable Calculator
- Programmable Pulse Processor
- Continuous self test
- Overload Protection
- Watchdog Timer
- P-NET Fieldbus Communication, EN 50170 vol. 1
- Rail mounting module (DIN / EN)

## Weight Transmitter



PD 3230 / 3235

### PD 3230 Weight Transmitter, Part No. 600059

### PD 3235 Weight Transmitter, Part No. 600117

The module contains one high resolution Weight input channel with a paralleling capacity of up to 10 x 600 Ohm load cells for PD3230 or 10 x 300 Ohm load cells for PD3235, 6 digital input channels, 4 of which can be configured as digital outputs and an internal user programmable Calculator channel for local control. The module can be configured to perform Belt Weight functions, with either an active signal (belt running) or a pulse frequency proportional to the belt velocity.

#### FEATURES

- 1 Weight/Belt Weight Channel, standard load cells 2mV/V
- High Resolution non sampling, fully integrating measurement principle
- High Accuracy factory calibration
- 6 Digital channels: 4 I/O and 2 Input only
- 1 Programmable Calculator Channel
- Advanced self testing facility
- Overload Protection
- Watchdog Timer
- P-NET Fieldbus communication, EN 50170 vol. 1
- Rail mounting module (DIN / EN)

## Weight Transmitter



PD 3234

### PD 3234 Weight Transmitter, Part No. 600157

The module contains one high resolution Weight input channel with a paralleling capacity of up to 10 x 600 Ohm semiconductor load cells, 6 digital input channels, 4 of which can be configured as digital outputs and an internal user programmable Calculator channel for local control. The module can be configured to perform Belt Weight functions, with either an active signal (belt running) or a pulse frequency proportional to the belt velocity.

#### FEATURES

- 1 Weight/Belt Weight Channel, semiconductor load cells 40mV/V
- High Resolution non sampling, fully integrating measurement principle
- High Accuracy factory calibration
- 6 Digital channels: 4 I/O and 2 Input only
- 1 Programmable Calculator Channel
- Advanced self testing facility
- Overload Protection
- Watchdog Timer
- P-NET Fieldbus communication, EN 50170 vol. 1
- Rail mounting module (DIN / EN)



PD 3240

## Analogue Interface Module

**PD 3240 Analogue Interface Module**, Part No. 600069

The module is an intelligent module, providing 16 analogue input channels for current measurement, 0-20 mA or 4-20 mA. The module allows internal conversion of a measurement into any engineering unit representing the analogue process being monitored and controlled. The input signals are filtered, and suppressed against 50 and 60 Hz interference.

### FEATURES

- 16 analogue input channels
- High resolution (14 bit)
- Current input (0-20 or 4-20 mA)
- Filtered input signals
- Suppression of 50 and 60Hz interference
- Limit switches for each channel
- Advanced self testing facility
- Overload protection
- Watchdog Timer
- P-NET Fieldbus communication, EN 50170 vol. 1
- Rail mounting module (DIN / EN)



PD 3250

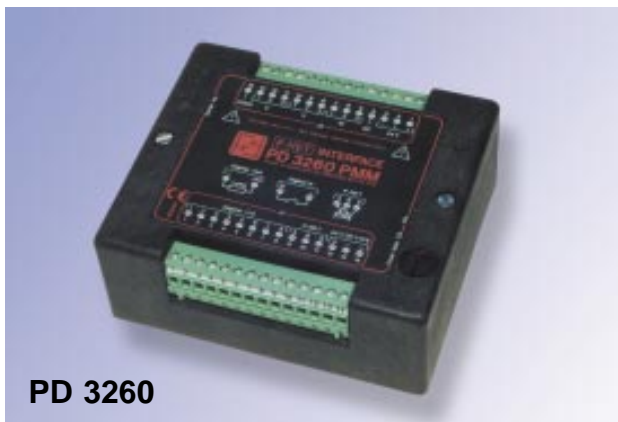
## Analogue Interface Module

**PD 3250 Analogue Interface Module**, Part No. 600070

The module contains 16 analogue input channels for voltage (0-100 mV) or thermocouple inputs (type R, S, B, J, T, E, K & N) and one Pt-100 input. The module provides internal conversion of voltage measurements into engineering units. When using thermocouples, ranging and linearisation are automatically applied. The input signals are filtered, and suppressed against 50 and 60 Hz interference.

### FEATURES

- 16 High resolution (15 bit) 0-100mV or Thermocouple inputs
- Linearisation for Thermocouple types: R,S,B,J,T,E,K & N
- 1 High resolution (15 bit) Pt-100 input
- Filtered input signals
- Suppression of 50 & 60 Hz noise
- High and Low level limit switch on each channel
- Advanced self test facility
- Overload protection
- Watchdog Timer
- P-NET Fieldbus communication, EN 50170 vol. 1
- Rail Mounting module (DIN / EN)



PD 3260

## Power Monitor

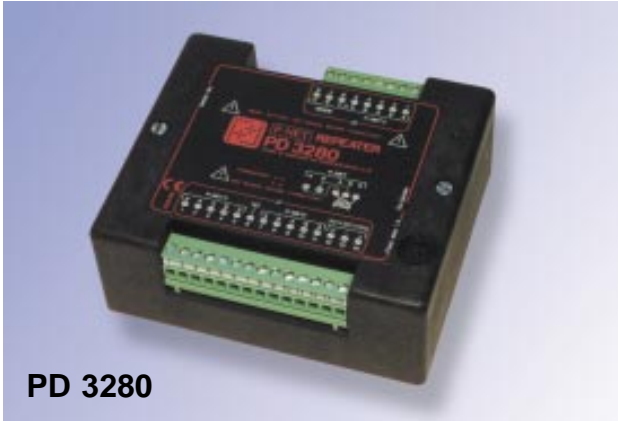
**PD 3260 Power Monitor**, Part No. 600082

The module measures single or three-phase voltage, current, power, power-factor and frequency. Energy is integrated over time. In addition, the module has 8 digital input/output channels and a programmable calculator channel for local control. The built in Generator Switch channel with thyristor controlled output channel, is intended for automatic connection of synchronous or asynchronous generators to a power line.

### FEATURES

- 1 Power Monitor channel
- 1 Generator Switch channel
- 1 Thyristor Switch channel
- 8 Digital I/O channels
- Programmable Calculator
- Overload protection. Continuous self test
- Watchdog Timer
- Automatic connection of synchronous or asynchronous generators to a power line.
- P-NET Fieldbus communication, EN 50170 vol. 1
- Rail mounting module (DIN / EN)

## P-NET Repeater



PD 3280

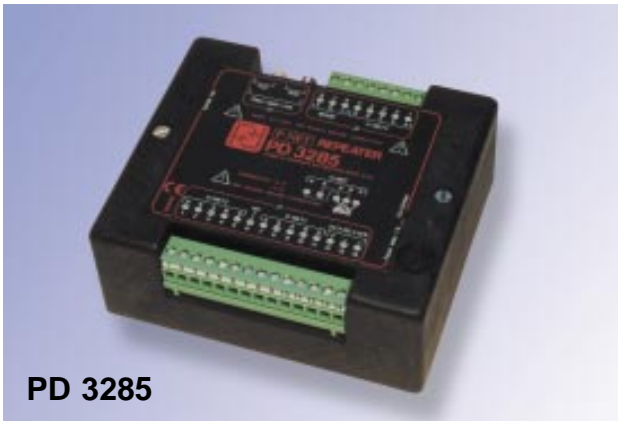
### PD 3280 P-NET Repeater, Part No. 600102

Repeater having three RS 485 P-NET interfaces, each of which is capable of communicating over a distance of up to 1.2 km., up to a total of 3.6 km. The module provides a galvanically isolated extension between P-NET Fieldbus sections. This means that addressing P-NET modules through a repeater is completely transparent.

#### FEATURES

- P-NET Fieldbus communication, EN 50170 vol. 1*
- Three P-NET interface, RS-485 (galv. isolated)*
- Termination circuit for each P-NET interface.*
- Rail mounting module (DIN / EN)*

## P-NET Repeater (Optofibre)



PD 3285

### PD 3285 P-NET Repeater, Part No. 600103

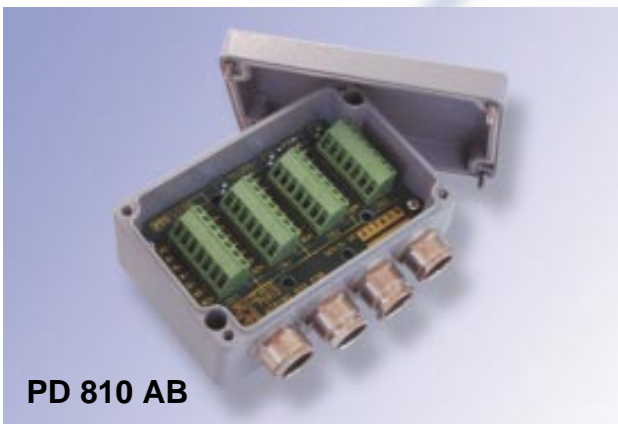
Repeater having three RS 485 P-NET interfaces, each of which is capable of communicating over a distance of up to 1.2 km., up to a total of 3.6 km. In addition, an interface for a duplex optical fibre with communication distance of up to 3.1 km. is also provided. The module provides a galvanically isolated extension between P-NET Fieldbus sections.

This means that addressing P-NET modules through a repeater is completely transparent.

#### FEATURES

- P-NET Fieldbus communication, EN 50170 vol. 1*
- Three P-NET interface, RS-485 (galv. isolated)*
- One P-NET interface on optical fibre*
- Termination circuit for each P-NET interface*
- Rail mounting module (DIN / EN)*

## Junction Card



PD 810 AB

### PD 810 Junction Card for Load Cells, Part No. 601064

This printed circuit board is used for connecting load cells in parallel. It contains a terminal strip for 3 load cells and an output for the weight transmitter.

### PD 810 A Junction Card for Load Cells, adjustable,

Part No. 601063

Similar to PD 810 but including an adjustment facility.

### PD 810 B Junction Card for Load Cells, in box,

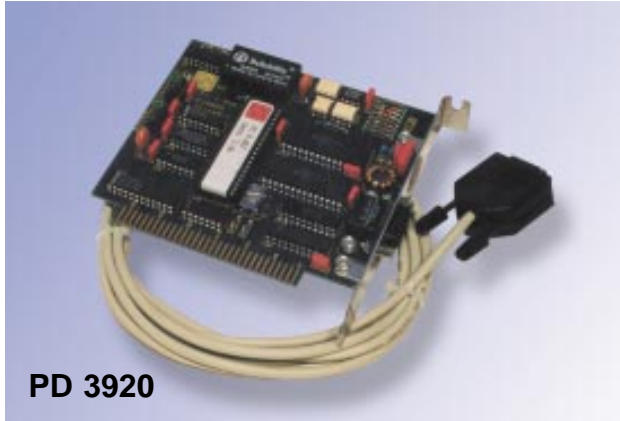
Part No. 600067

Similar to PD 810 but mounted in ROSE ALU-box with PG11 cable glands (IP65).

### PD 810 AB Junction Card for Load Cells, in box, adjustable,

Part No. 600066

Similar to PD 810 but mounted in ROSE ALU-box with PG11 cable glands (IP65) and including an adjustment facility.



PD 3920



PD 3930



PD 3940

## PC/P-NET Interface

### PD 3920 PC Interface, Part No. 601052

The PD 3920 PC Interface Board is an intelligent P-NET communication board designed as a half size expansion board for a PC with an ISA bus interface. Using this board, allows direct communication between a PC and the P-NET fieldbus, and provides the ability to collect data from various interface modules. The board is delivered with a driver for the PC, together with a plug and cable for connection to the P-NET. This board includes one software license for VIGO.

#### FEATURES

- Integrates PC's running VIGO, with P-NET*
- PC ISA bus interface*
- Galvanically isolated P-NET port*
- Multi-master P-NET interface*
- P-NET Fieldbus communication, EN 50 170 vol. 1*

## Parallel PC/P-NET Interface

### PD 3930 PC Parallel Interface, Part No. 600127

The PD 3930 PC Parallel interface module provides an interface between the P-NET Fieldbus and a standard PC running VIGO version 4.0 or higher. It is connected to P-NET via a shielded 4-wire twisted pair cable, and has a built in DSUB/25 male connector for connecting to a parallel port on the PC. Using the PD 3930, any standard desktop, laptop or single board PC with a parallel port, may be used as a node in a P-NET installation, in applications such as process and factory automation, machine control, data acquisition etc. The module includes one software licence for VIGO.

#### FEATURES

- Integrates PC's running VIGO 4.00 or higher, with P-NET*
- PC parallel port interface*
- Fully configurable via P-NET*
- Baud rates 1200, 9600 or 76800*
- Galvanically isolated P-NET port*
- P-NET Fieldbus communication, EN 50170 vol. 1*
- Multi-master P-NET interface*
- IP50 mounting box*

## RS 232/P-NET Interface

### PD 3940 P-NET to RS232 Interface, Part No. 600108

Communication module with P-NET interface and RS232 port. Used for communication with printers, barcode readers and other equipment not having a P-NET interface. The PD 3940 is a P-NET slave, and is thus controlled by a P-NET master. It is mounted in a IP 53 box.

#### FEATURES

- P-NET Fieldbus communication, EN 50170 vol. 1*
- RS232 port (9 pin male)*
- Integrates RS232 devices with P-NET*
- Fully configurable via P-NET*
- Baud rates from 300 to 76,800*
- Standard RS232 handshake signals*
- Galvanically isolated com. ports*
- Full duplex communication*
- Dynamic buffer size*
- IP53 mounting box*
- Panel mount facilities*

## Flowmeter-Display w. printer



Flowmeter-Display w. printer

PD 4000/340-0, Flowmeter-Display with Printer option,  
Part No. 600125 ( Also see *Software* section)

- FEATURES**
- Simultaneous supervision of up to three flow transmitters*
  - Automatic configuration of connected flow transmitters*
  - Option for connecting a printer through a P-NET/RS232 Interface*
  - Built in Batch Control, Calculation of Average Temperatures*
  - Comprehensive error detection and alarm functions*
  - Creation of a NodeList for all modules connected to the Fieldbus*
  - Battery back-up for displayed volume counter values.*
  - Completely sealed construction*
  - Real time clock*
  - P-NET Fieldbus communication, EN 50170 vol. 1*

## Flowmeter-Display, approved



Flowmeter-Display

PD 4000/340-1, Pattern approved Flowmeter-Display,  
Part No. 600090

- FEATURES**
- Simultaneous supervision of up to three flow transmitters*
  - Automatic configuration of connected flow transmitters*
  - Option for connecting a printer through a P-NET/RS232 Interface*
  - Built in Batch Control, Calculation of Average Temperatures*
  - Comprehensive error detection and alarm functions*
  - Creation of a NodeList for all modules connected to the Fieldbus*
  - Battery back-up for displayed volume counter values.*
  - Completely sealed construction*
  - Real time clock*
  - P-NET Fieldbus communication, EN 50170 vol. 1*

## Weighing Terminal



Weighing-Terminal

PD 4000/Weighing Terminal, with Data Acquisition, Part No. 600156

- FEATURES**
- Data acquisition - logs data and events for transfer to standard databases (MS Access, Paradox...)*
  - Guides the operator step by step using clear text messages*
  - Operator input from keyboard or barcode reader*
  - Optional ticket printer interface*
  - Logon passwords*
  - Context list (products, passwords)*
  - User configurable using Sequence Builder PC software*
  - Contains up to three different sequences*
  - Weighing data from standard PD Weight Transmitters*
  - Real time Clock*
  - P-NET Fieldbus communication, EN 50170 Vol. 1*

## Weighing System, approved



Weighing-System

PD 4000/3230 Pattern approved non-automatic weighing system,  
Part No. 600093

- FEATURES**
- Pattern approved weighing system, of class III/III*
  - Simultaneous supervision of up 99 weight transmitters*
  - Automatic calculation of full-scale & zeropoint for connected weight transmitters*
  - Up to ten - 2mV/V load cells per transmitter*
  - Tamper protection*
  - Consecutive or direct selection of weight transmitter readings*
  - Comprehensive error detection and alarm functions*
  - Gross, Net and Tare displays*
  - Completely sealed construction*
  - Real time clock*
  - P-NET Fieldbus communication, EN 50170 vol. 1*

# VIGO

VIGO Program, Part No.802020

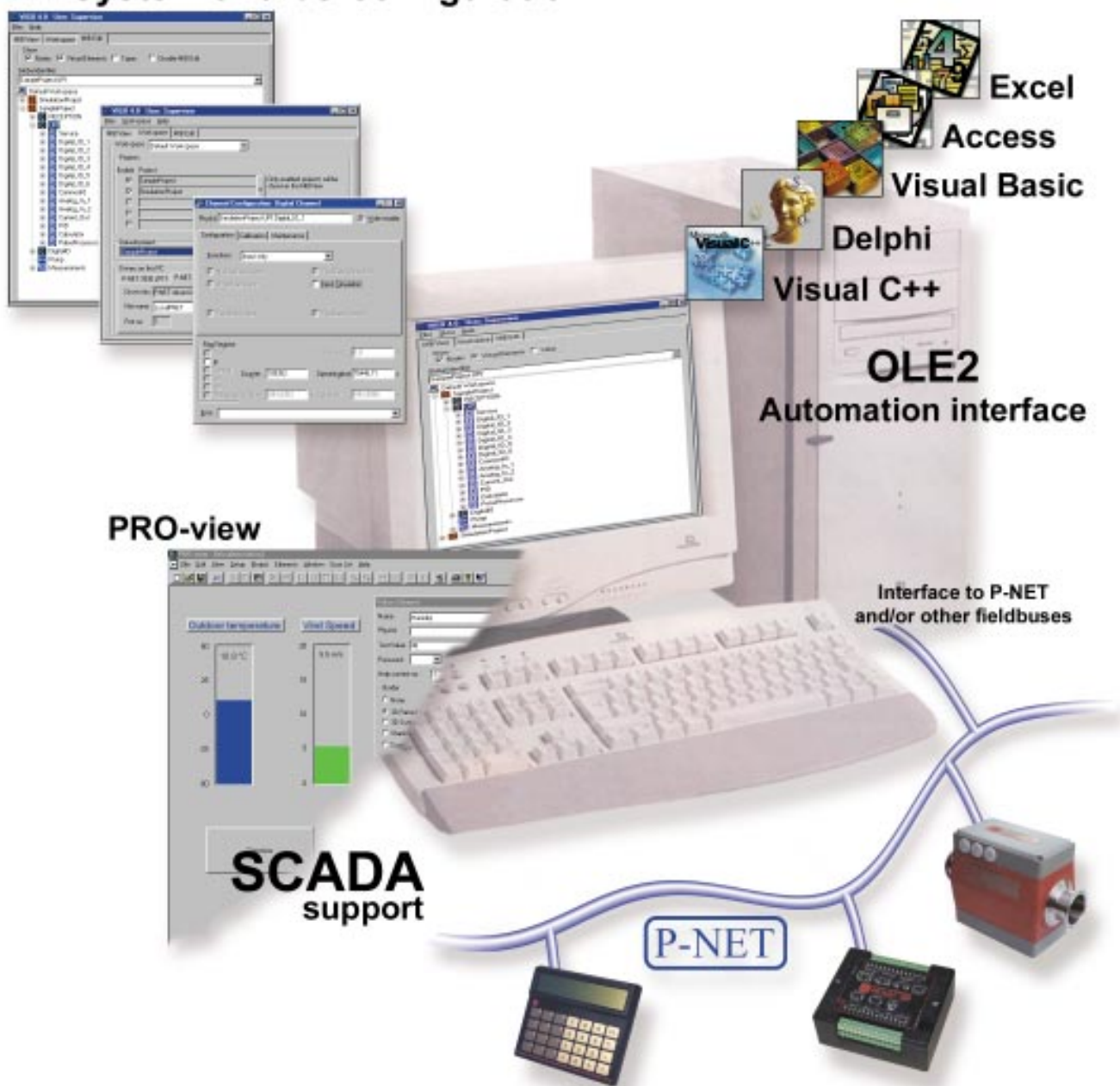
VIGO is a Fieldbus Management System, which operates within the Windows 95/98/NT environment, to enable real-time interchange of data, between EN 50170 European Fieldbus types such as P-NET, and Windows based applications.

Integration with OLE2 Automation compliant standard applications, such as Excel and Access, is made easy, because VIGO acts as an OLE server. Furthermore, custom designed applications written in object oriented languages such as Visual Basic, Delphi, Visual C++ etc., can utilise Fieldbus devices as objects, and individual external measurements can be regarded as if they were internal variables.

VIGO can also be switched into Simulation Mode, to allow applications and projects to be tested off-line, prior to installation or during the commissioning phase.

VIGO also provides the means for such object oriented data to be transmitted between workstations, PC's and servers via any network supported by Windows. This enables Fieldbus data to be displayed and controlled throughout a corporate management system or Intranet.

## Fieldbus Management System System and I/O configuration



## PDFLOW



### PDFLOW DATABASE PROGRAM, Part No. 802004

PDFLOW is a PC tool for generating a customer database for the PD 4000/340 Flowmeter-Display.

The PDFlow Database program is based on a standard database using the Access 2.0 file format.

Up to 500 customers can be extracted from the database, which can then be downloaded to the PD 4000/340. Requires PC/P-NET interface and VIGO software.

#### FEATURES

*Database in Access file format*

*No limitation on the number of customers in the database*

*Download of up to 500 customers into the PD4000/340 Display*

*Upload of measurement data from the individual collection/deliveries from the PD4000/340 Display*

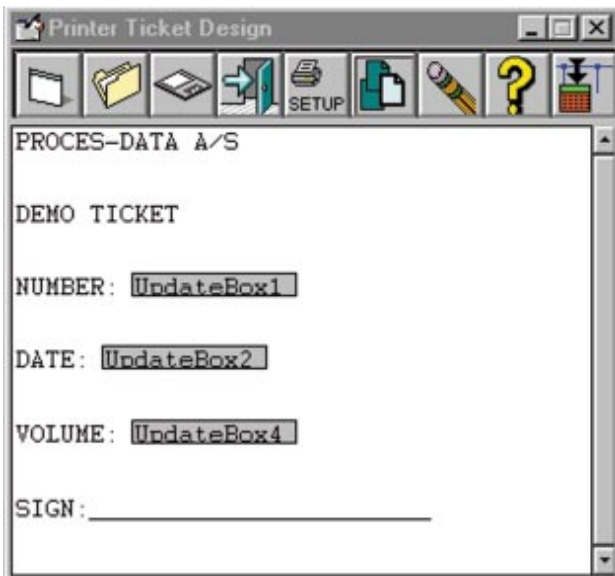
*Printing of measurement data and customer data on the default printer connected to the PC.*

*Sorting of data shown on the screen by Customer Number, Route Number, Date of delivery and Customer Name*

*Facilities for adding, deleting and updating customers*

*Easy installation on a standard PC running Windows 95*

## Printer Ticket Design



### PRINTER TICKET DESIGN PROGRAM, Part No. 802010

PC program for design of printer tickets for the PD 4000/340 Flowmeter-Display.

The program makes it possible to create a ticket layout on a PC screen.

This design is then downloaded to the PD 4000/340. A customised ticket layout may be saved on the PC hard disc for later use.

Requires PC/P-NET interface and VIGO software.

#### FEATURES

*Printer ticket design using a simple text editor*

*Update boxes are positioned easily, by dragging them with the PC mouse*

*Ticket layouts saved as text files on the PC hard disc*

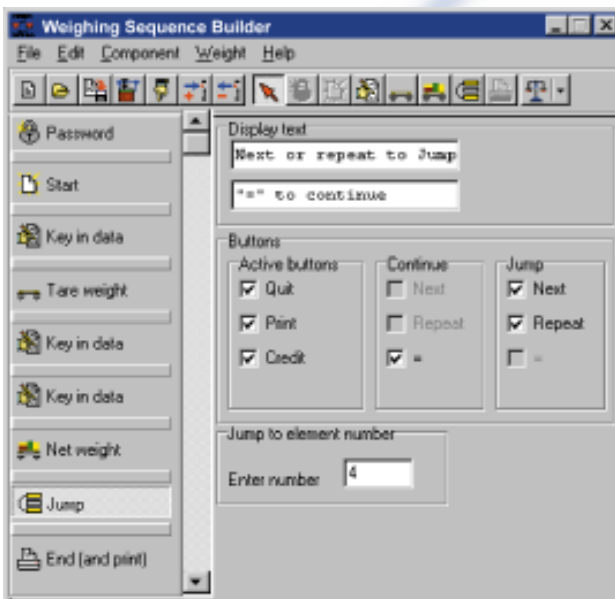
*Upload of previous ticket designs, from the PC hard disc into the design editor*

*Configuration of printer start and stop codes*

*Easy installation on a standard PC running Windows 95*

*Download of ticket layout to the PD4000/340 Flowmeter-Display system*

## Weighing Sequence Builder



### Weighing Sequence Builder, Part No. 802021

The Weighing Sequence Builder is a tool for generating sequences of events and downloading them to a PD 4000 Weighing Terminal.

Each sequence consists of a number of steps to be carried out by the operator of the weighing system.

Guided by messages on the display of the Weighing Terminal the operator responds with actions, such as placing items on the weigh scale, pressing keys on the keyboard, or providing inputs using a bar code reader

#### FEATURES

*Ease of operation*

*Graphical tool for building simple or complex weighing seq.*

*Sequence consists of a number of steps*

*Types of steps:*

*Password, Key in data, Tare weight, Net weight, Jump, etc.....*

*Each step may be selected for printout on ticket printer*

*Download of sequences to Weighing Terminal*

## Food Industry



## Concrete Industry



## Marine Automation



## Animal Feeding



## Building Automation



# PROCES-DATA A/S

*Development and production of quality components for process automation*



PROCES-DATA A/S, established in 1979, develops and manufactures process computers and interface modules. All hardware and system software is developed in-house by the Company. Project engineering and customer specified project implementation, is not part of the normal activity of PROCES-DATA, but is provided by a worldwide network of agents.



In 1983, PROCES-DATA A/S developed a standard for data communication, called P-NET, which is used for process control. Over the years, the P-NET standard has been applied by several other companies.

In July 1996, P-NET officially became part of a new European Fieldbus Standard - EN 50170 Vol. 1, - the result of many years of active participation in European Fieldbus Standardisation.



The primary product of PROCES-DATA A/S - a magnetic-inductive flow transmitter - is now used throughout the world. The Company has developed a programming language, for programming process computers, called Process-Pascal, of which P-NET is an integrated part.

To enable a link to be created between MS Windows based programs - such as databases, spreadsheets, Visual Basic, Delphi and C programmes - and the signals available on a fieldbus like P-NET, PROCES-DATA A/S has developed a Fieldbus Management System, called VIGO. VIGO enables a physical plant to be described in terms of data, data structures and data location.



PROCES-DATA A/S employs a staff of more than 50, about one third of whom are involved in the research and development department. The Company's first-class premises, designed specifically for development, production, sales and administration, are located in Silkeborg, Denmark. Of course, P-NET has been extensively used as an integrated part of the technical installation within this "intelligent" building.

P-NET

Fieldbus



**PROCES-DATA A/S**

Navervej 8 - 8600 Silkeborg - Denmark  
Phone: +45 87 200 300 - Fax: +45 87 200 301  
e-mail: pd@post4.tele.dk www.proces-data.dk