



NEWS

News letter for International P-NET User Organization ApS.

1/1992 July.

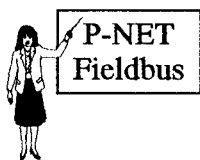


P-NET standard description.

A new edition of the P-NET standard has been in preparation. The P-NET standard draft was distributed at the 1st International P-NET Conference. The final version of the P-NET standard is available now.

An additional manual has been produced. This manual is called "Standardized general purpose channel types" and is a catalogue of approved channels to be used in interface modules. The manual can be used as a recommendation on how to organize and declare the variables related to a specific Input / Output in a P-NET interface module.

Each member of the P-NET User Organization will receive a copy of each of the above mentioned manuals, free of charge. Additional copies can be purchased at the Organization. The costs for one copy is DKK 100.-.



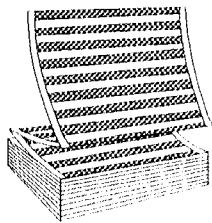
INTERKAMA 92.

The International P-NET User Organization ApS has now received the approval papers for a stand at the international Trade Fair, INTERKAMA, in Düsseldorf Germany 5.-10. October 1992. The stand is an "end of block stand" with 3 sides open. The total stand area is 112 sqm (8m*14m). The stand is located in Hall 10,

stand-no 10E49

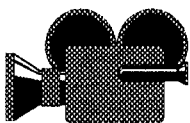
The stand area holds a common area and an individual area for each participating company. The common area holds meeting rooms, bar, 2 small areas for showing video tapes of P-NET applications, and other common facilities. Each participating company will get it's own individual area for showing product, applications, etc. The stand will be built in a common way of identical modules (white modules), and these modules are then decorated by each company with their company name, company colour, logo, etc.

It is possible for additional companies to participate at the fair, in "small scale", by displaying a small showcase with some of the P-NET products, and having brochures distributed on request from the bar on the stand.



Available P-NET products.

The International P-NET User Organization is preparing a complete list of available P-NET products. This list will hold hardware products as well as software products. For this purpose we need your assistance. The list must hold a short information on every product, i.e. specification and features, price and availability. The list will be available in August 1992, on the Bulletin Board System (BBS, phone +45 86 81 30 10).



P-NET Application video.

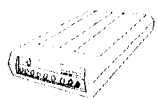
The International P-NET User Organization has recently produced a video, presenting 10 different installed P-NET applications. The video is with German speak, and runs for approximately 40 minutes. The video, VHS type, is distributed via the International P-NET User Organization for DKK 320,-.

The video demonstrates that P-NET is widely used, P-NET has been used for many years and P-NET is actually working. The video can be used for various demonstrations and to show people who are not familiar with P-NET, what P-NET really can be used for.

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An English version of the P-NET Application video is in preparation. A survey of the applications in the video is show below.

Application	Country	I/Opoints	Year
Dairy, cheese production	Denmark	2500	1989
Fuel monitoring system	England	90	1991
Building control system	Germany	2600	1991
Pig-feeding	Denmark	up to 1000	1990
Oil trucks	Germany	up to 30	1991
Ferry control system	Holland	1500	1990
Textile industry	Denmark	4000	1988
Quality control test	Germany	600	1990
Concrete plant	Sweden	up to 300	1987
Milk trucks	Germany	up to 20	1986



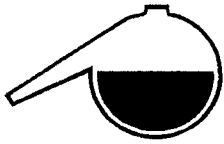
Bulletin Board System.

An additional Bulletin Board System (BBS) for the International P-NET User Organization is now in operation in Germany.

Each of the BBS's can be used as a "remote discussion club", mailbox for editorial material concerning the **P-NET NEWS**, questions for the Organization, reference for articles and so on.

To get access to the BBS you need a PC, a modem and a communication program in the PC, e.g. PROCOMM. You log-in on the BBS by dialling the number (Denmark: +45 86 81 30 10, Germany: +49 99 29 301 40) and when you get the connection simply follow the instructions in the log-in procedure.

The modem characteristics are listed at the last page.



VDMA-meeting

"fieldbusses in machines and chemical plants"

by Dr.-Ing. Jörg Böttcher, Ultrakust

At March 5th, 1992 the VDMA (Verband Deutscher Maschinen- und Anlagenbau e.V.) - the most important German organization of manufacturers of machines and plants - organized a meeting dealing with fieldbusses. The auditorium consisted of 96 specialists coming from companies which are working in the field of automation. Seven fieldbusses were presented by speakers of the corresponding user organizations. During the breaks the attenders had the possibility to visit a small exhibition of several products near the congress room.

For the International P-NET User Organization Dr Böttcher of Ultrakust electronic gmbh (Gotteszell, Germany) presented P-NET. In the lecture the basic ideas about P-NET including structure, protocol and application interface were given. Furthermore some typical applications (installed by Ultrakust or other members of the User Organization) were shown. The aims of the International P-NET User Organization were presented. In the exhibition the video tape "P-NET applications" - in the German version - was presented for the first time. Attracted by the only video presentation, many visitors found their way to the P-NET desk and discussed their application problems.

The meeting based on a questionnaire worked out by the VDMA. The investigation dealt with the fieldbus requirements of the VDMA members. A large number of questions were set up and sent to all members. In a report which was available several weeks before the meeting, the answers had been statistically evaluated. Each speaker had to compare "his" fieldbus to the results of the study. It could be shown that P-NET fulfils most of the requirements. Especially the completeness and the transparency of the P-NET standard was generally noticed compared to most of the other systems.

From the other fieldbusses especially Profibus (standardized in Germany, primarily designed for the communication between bigger field devices like PLC, NC and robotics) and Interbus-S (established by Phoenix Contact for

the fast cyclic communication with sensors and actuators by a PLC) could also attract a high number of listeners. Compared to Profibus, P-NET can be applied with less effort to many problems. On the other hand, P-NET does not appear to be so specialised to digital I/O application as Interbus-S.



Information from the members

P-NET training courses in Germany

Two 3-day training courses on P-NET have been held in March and in May 1992 at the Fachhochschule Landshut (Bavaria, Germany). The first day was a basic course dealing with some fundamentals of P-NET and available tools, whereas the following 2 days presented more detailed information (especially programming in Process Pascal).

Additionally training courses are planned. Both parts can be booked separately. The course language is German.

Booking: Fachhochschule Landshut, Präsidialamt
Am Lurzenhof 1
8300 Landshut (Germany)
phone +49 871 506-506
fax +49 871 506-205

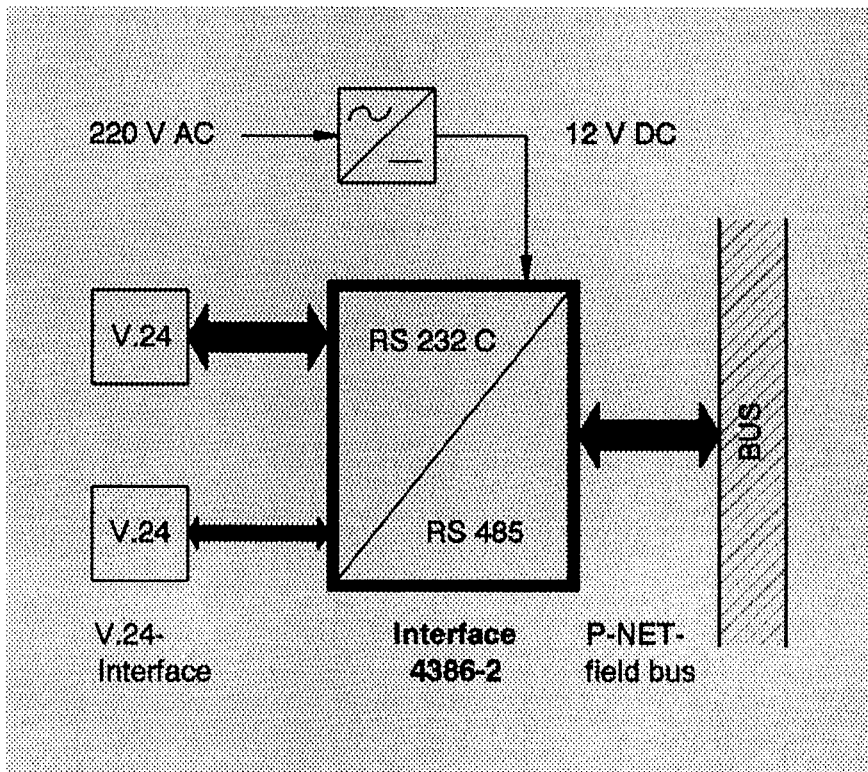
Prices: 1st day DM 450 .--
2nd and 3th day DM 900 .--

For further informations, please contact Prof. Dr. Schönberger under the phone numbers given above.

P-NET / V.24 - converter

Type 4386-2

The P-NET / V.24 - converter is a μ p-controlled interface, which adapts devices with V.24-interface to the P-NET field bus.



Technical data

V.24-Port:

1 serial interface RS 232 C (RxD, TxD, 4 handshake lines).
 1 serial interface RS 232 C (RxD, TxD).
 Baudrate (75 ... 19200 baud).
 Length of words, protocol and mode adjustable via P-NET.
 Level ± 12 V.
 Length of line max. 20 m.

P-NET-Port:

Serial, asynchronous RS 485, galvanically separated, 76800 baud, P-NET protocol, length of line max. 1200 m.

Connection:

9-pole socket (P-NET), 25-pole plug (V.24), jack bush (power supply).

Power supply:

Auxiliary voltage 9 - 12 V DC ± 10 %.
 Ripple ≤ 150 mV eff..
 Power consumption max. 170 mA.
 Auxiliary voltage 220 V AC only via plug mains device (in the schedule of delivery).

Ambient conditions:

Nominal condition 23 °C ± 2 °C.
 Adm. operating temp. 0 ... 50 °C.
 Adm. storage temp. -10 ... +70 °C.
 Climatic class KWF accord. to DIN 40040.

Housing:

Blue alu desk-top housing, protective system IP 30. Dimensions 128 x 105 x 37 mm.

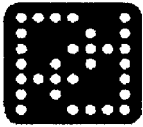
Weight:

ca. 4 N (= 0,4 kg)

P-NET / V.24 - converter for coupling a V.24 interface to the P-NET field bus.

- Two V.24 interfaces (RS 232 C).
- Data inquiry, control and adjustment of the transmission parameters via a galvanically separated P-NET field bus interface (RS 485).
- Safe communication by a self-test equipment.

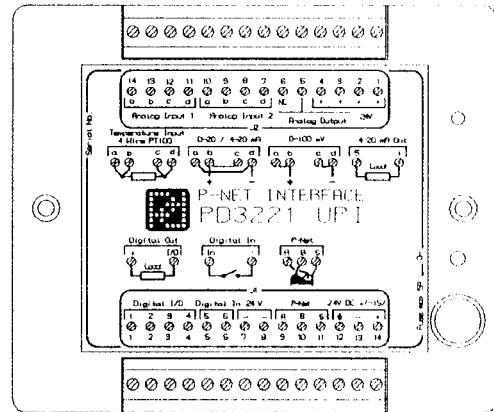
The module is manufactured by Ultrakust electronic gmbh, Germany. Any further information or data can be requested at Mr. Jörg Böttcher, phone +49 99 29 3010.



PD 3221 UNIVERSAL PROCESS INTERFACE, UPI

FEATURES

- * 2 Analogue Input Channels
- * 1 Analogue Output Channel
- * 6 Digital Input/Output Channels
- * PID Controller
- * Programmable Calculator
- * Programmable Pulse Processor
- * Continuous Selftest
- * Overload Protection
- * P-NET Fieldbus Communication
- * Watchdog Timer
- * DIN rail Mounting



APPLICATION

The PD 3221 UPI module is one of a collection of distributed process control units, intended for use within the P-NET fieldbus system. It provides a versatile interface between a variety of digital and analogue process elements, such as valves, switches, pulses, lamps, alarms, motors, flowmeters, level detectors, temperature, pressure and flow transducers, etc. and distributed master control computers. Its great advantage as part of a distributed network, is that of processing the ability to operate in a local environment involving both digital and analog functions.

The unit provides internal conversion of measurements into any engineering units, representing both the digital and analogue processes being monitored and controlled, for direct interrogation by central control and for display on one or more network controllers.

The module possesses programmable calculator and pulse processor channels, which can be purpose programmed to control the analogue as well as the digital outputs. The pulse processor channel utilizes fast pulse counting and pulse generation (up to 100 kHz) for e.g. stepper motor control or machine applications. With the utilization of the inbuilt PID controller, the unit can be set up within an independent control loop for use in a wide variety of autonomous process applications.

The compact design and the outstanding environmental specifications for the UPI module, makes it exceptionally for machine applications.

SYSTEM DESCRIPTION

The PD3221 is provided with 6 digital input/output channels, of which 2 channels can only be configured as input, 2 analogue input channels, a current output channel, an internal calculator channel and an internal pulse processor channel.

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Various automatic functions can be selected on both digital channels, such as automatic feedback control (single as well as double), one-shot output, pulse output, etc., as well as analogue channels, such as limit and PID control, to reduce the basic operations from the central control system or enable the unit to operate autonomously.

The unit offers comprehensive self-testing features, which enables reporting of disconnection, overload and process failure. All outputs are protected against overload. The digital output channels are configured to measure load current, which can be read as a value in Amps, and operation time. The selectable watchdog timer ensures the safe shut down of a process during a communications or power failure.

As a distributed module, the unit can be mounted close to the process. Data communications with Controllers are made with a single P-NET cable having a ring length of over 1 km. This reduces plant wiring costs to a minimum.

The module is plugged directly onto a mounting rail (EN 50 022 / DIN 46277). The module has 2 snap connectors, which provides the terminals for field connection, power and communication.

Modules may be rail mounted in a panel configuration or in a box designed for the plant environment, and may be removed for service without interference with operational activities on the rest of the network.

SPECIFICATIONS

2 Analogue Input Channels	Signal	Accuracy	Resolution
Voltage	0-100mV	±0.1% of actual voltage	5 µV
Current	0-20mA or 4-20mA	±0.1% of actual current	1 µA
Temperature	4 Wire Pt-100	±0.19 °C @ 20 °C	0.05 °C

Digital Input Channels:	
Switch Input	Volt free or nominal 24V DC
Pulse proc. operation:	100 kHz max
Channel operation:	50 Hz max

Digital Output Channels: 24V DC, max 1.0 A

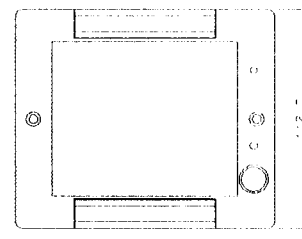
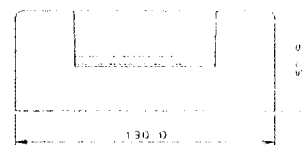
1 Analogue output Channel: 4-20 mA

Power Supply: 24V DC ±15 %

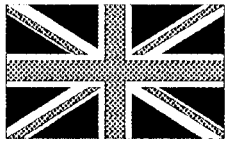
Operational Ambient Temp.: -25 °C to +70 °C

Storage temperature: -40 °C to +85 °C

Scale Drawing (in mm)



Produced by:



NEWS FROM THE UK SECTION

P-NET equipment was exhibited at "Control and Instrumentation 92", at the National Exhibition Centre, Birmingham on 28th - 30th April, 1992. This is the largest exhibition of its kind in Britain, with over 350 exhibitors, showing the products of over 1,000 international companies.

P-NET was being demonstrated on the F.M.A. stand, as part of the F.M.A. (MACS) Measurement and Control System. Its centre piece was the P-NET Graphics Control Station (GCS), which was showing a simulation of the MACS fuel monitoring system, designed for British Rail.

F.M.A. have recently won a second major order from British Rail for a fuel monitoring system, in Salisbury, Wiltshire.

Another P-NET project is under way, involving the F.M.A. "Smart" Injector which is a system for controlling the quantity of additive to be mixed with petroleum spirit, prior to its delivery to service stations. 10 mechanical injectors will be controlled using the new PD 3221 Universal Process Interface, and extensive use will be made of internal programmable calculator and pulse processor channels for flow meter linearisation and injector control. All UPI's will be connected to a global P-NET, which will also include a P-NET controller node. This controller will be configured using IPH modular software, to enable logging and monitoring of delivered motor spirit additive, and identify the user of the product. This project is being undertaken for Murco UK.

F.M.A. have now installed Windows 3.1 on their development machines, and are now able to use the powerful facilities offered by the latest PD Tools for Windows package from Proce-Data for system development. This is certainly a more pleasant user interface than previously available.

The P-NET User Organisation in the UK is keen to hear from OEM companies who are interested in the use and development of P-NET systems or require any further information or data.

Contact should initially be made with the local Chairman, Chris Jenkins, c/o F.M.A. Ltd, F.M.A. House, Hogwood Lane, Finchampstead, Wokingham, Berks RG11 4QW. Telephone 0734 730100, Fax 0734 328094.

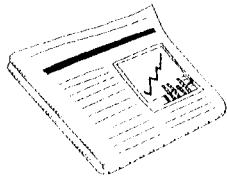
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Productinformation Infrared Transmitting System	VELOX Automation phone: +37 525 61 73
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Description
<p>The Infrared Transmitting System provides the transmission of data from a standard-interface to another standard-interface. This transmission is possible in both directions in an unsynchronized manner. The user can program the data report with the help of switches. Other sources of data with a serial unsynchronized data format may be connected by a transformer. The pulsed modulated principle transmission permits an automatic suppression of interference and a fault determination. The principle of transmission provides the operation of several transmitting without any difficulties by forming different areas of transmission. the transmission areas must be optical separated.</p> <p>The system is designed for indoor using. Between the RS 485-interface and the transmitting unit exist galvanic separation.</p> <p>It is also possible to use NC-accumulators for providing an independent operation. If necessary the whole transmission unit may be built into the frame of supporting device. In this case the IR-transformer is on the front panel of the device. For the adaptation of different transmission levels an adapter and a transformer may be used.</p>

Range of application		
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top; padding-right: 10px;"> <ul style="list-style-type: none"> * wireless connection (link up) of two or more RS 485-interface * wireless transmission of data in a distributed computer system * remote controlling * mobile data collection * transmission of measurement data </td> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> * securing of quality * construction of data within VELOMAT-controls * complete automation of industrial controlling systems * connection with the fieldbus system P-NET </td> </tr> </table>	<ul style="list-style-type: none"> * wireless connection (link up) of two or more RS 485-interface * wireless transmission of data in a distributed computer system * remote controlling * mobile data collection * transmission of measurement data 	<ul style="list-style-type: none"> * securing of quality * construction of data within VELOMAT-controls * complete automation of industrial controlling systems * connection with the fieldbus system P-NET
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Technical data	
dimensions (length, width, height)	80*57*175 mm
weight	900 g
supply voltage	24 V DC +/-25%
supply current	max. 0,5 A
range of operating temperature	0 ...70 °C
humidity category	IP65
data range	76,8 kBaud
data format (unsynchronized)	7...12 bit
range	0,5...30 m



Editorial.

P-NET NEWS is planned to be published 3-4 times a year and the next edition of P-NET NEWS will be published September 1992.

John Johansen, Proces-Data Silkeborg ApS, Denmark is the editorial administrator of the news letter.

The International P-NET User Organization would like to encourage the members to contribute with papers or articles for the **P-NET NEWS**. The papers can be any information on existing P-NET systems, P-NET projects coming up or any other interesting information concerning the P-NET fieldbus system. The materials can be mailed to the organization or to either of the BBS systems.

The success of the **P-NET NEWS** is very much relying on **YOUR** contribution to the editorial contents.

One of the intentions with this news letter is to create a correspondence column which can be used for P-NET problems, hints to applications or implementations, your wishes for new modules.

P-NET NEWS

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by:

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P.O.Box 192 . 8600 Silkeborg . Denmark

Editor: John Johansen

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Bulletin Board System: DK phone +45 86 81 30 10 (24 hour service)
Bulletin Board System: D phone +49 9929 30140 (24 hour service)
The modem characteristics: Baud rate:300 / 1200 / 2400 / 4800 / 9600
Databit: 8, Stopbit: 1, Parity: None.



New members

Since the last distribution of the members list, additionally 7 companies have joined the International P-NET User Organization:

KOLTEK OY, Finland
FRAKO, KOND.-U. APPARATEB.GMBH, Germany
A/S KAJ NECKELMANN, Denmark
WIKA ALEXANDER WIEGAND GMBH & CO., Germany
PONTIS AUTOMATISIERUNG GMBH, Germany
ROSENMEIER GMBH, Germany
REGELTECHNIK KORNWESTHEIM, Germany

We would like to welcome these companies.

The members list is found on the Bulletin Board System. The list is updated each month.



Have a nice
Holiday