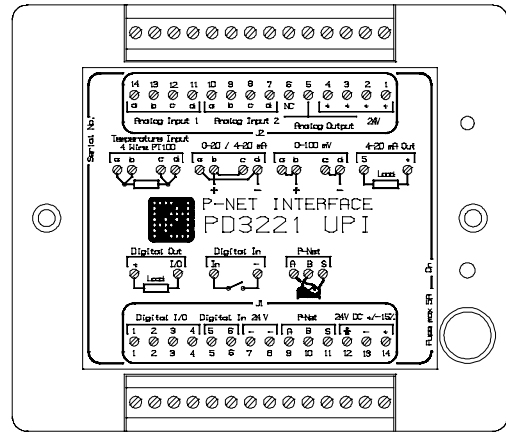


## PD 3221 UNIVERSAL PROCESS INTERFACE, UPI

### 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
- \* EMC approved (89/336/EEC)



### 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 PD 3221 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.

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**

<b>2 Analogue Input Channels</b>	<b>Measurement Error</b>	<b>Resolution</b>
Voltage (0-100 mV):	@ 0°C to 50°C max. ±0.1% of act. ±10 µV	5 µV
	@ -25°C to 70°C max. ±0.3% of act. ±10 µV	5 µV
Current (0-20/4-20 mA):	@ 0°C to 50°C max. ±0.1% of act. ±2µV	1 µA
	@ -25°C to 70°C max. ±0.3% of act. ±2µA	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:**

Nominal voltage: 24V DC  
 Load current at ON (sink): max. 1.0 A

**1 Analogue output Channel:**

Current Error: max. ±0.22% of act. ±19.2 µA  
 Resolution: 15.3 µA

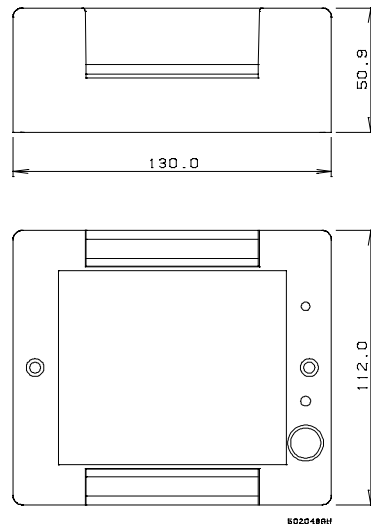
**Power Supply:**

Voltage: 24V DC ±15%  
 Consumption (all outp. ON) max. 3.0 W

**Ambient Temperature:**

Operation: -25°C to +70°C  
 Storage: -40°C to +85°C

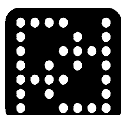
**Scale Drawing (in mm)**



PD 3221 is approved in compliance with the **EMC-directive no 89/336/EEC**. Test limits are determined by the generic standards **EN 50081-1** for emission and **PrEN 50082-2** for immunity. PD 3221 is approved in compliance with the **IEC 68-2-6 Test Fc** standard for vibration .

Produced by:

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