PROCES-DATA

PD 645 0-10 V Analogue I/O

- Analogue input/output for 0-10 V signals
- Programmable in COPP
- P-NET via Light-Link
- Overload/underload protection and alarming
- Advanced internal self-testing
- LED for power On and Error indication
- Wide power supply range
- Wide temperature range
- Low power consumption

APPLICATION

PD 645 Product description
PD 645 can be configured in several different configurations to accommodate various analog input- and output functions. In the following sections, a brief description is given for each of the possible functions.

Analog output
Each channel in the PD 645 can be configured as an analog output, which means that the PD 645 supports running 4 channels of analog output simultaneously.
In this configuration, the output voltage is between the (I/O) terminal and the (-) terminal.
The output is monitored and can read back the output voltage, as well as report if excessive current is being drawn from the output during operation.

Analog input
PD 645 can have all 4 channels configured as analog inputs.
In this configuration the PD645 measures the voltage between the (I/O) terminal and (In) terminal as a differential measurement.
Having this measurement being differential, allows precise voltage measurement even from devices that produce ground potential differences between the PD 645 and the device you wish to measure an output from.
If a single ended measurement is required, the (In) terminal must be connected to the (-) terminal and use the (I/O) terminal as input.
This will result in the voltage to be measured between the (I/O) and the (-) terminal.

Potentiometer interface
PD 645 can be configured to read up to 4 potentiometers, one per channel. In this configuration, the PD 645 supplies the voltage to the potentiometer with the (I/O) terminal, and is fully adjustable.
The (In) terminal reads the voltage on the wiper of the potentiometer, referenced to the (-) terminal.
This configuration has read back of the applied voltage to the potentiometer, and can report if excessive current is being drawn from the output during operation.

The PD 645 can combine up to 4 of the above-mentioned functions at the same time. For example, you could have 2 potentiometers connected, 1 analog output and 1 analog input, at the same time, in a single PD 645.

SPECIFICATIONS

Analog input
Input signal range.. -2 to 12 V
Calibration error @ Tamb. 20 °C ....Max +/- 0.1% of full scale
Temperature coefficient Tc ....Max +/- 50 ppm / K
Resolution ....1 mV
Accuracy ....5 mV
Input impedance ....Typ. 86 kΩ

Analog output
Output signal range..-1 to 11 V
Calibration error @ Tamb. 20 °C .....Max +/- 0.05% of full scale
Temperature coefficient Tc ....Max +/- 80 ppm / K
Resolution ....0.5 mV
Accuracy ....1 mV
Short circuit current @Tamb. 20 °C .... Typ. 18 mA
Continuous current per channel .... Min. 10 mA
Sink current per channel .... Min. 2.5 mA

Power specifications
Supply voltage nominal.. 24 VDC
Supply voltage range.. 12 to 32 VDC
Typ. Internal power consumption (@ 24 VDC)............... 0.8 W
Max power consumption (@ 24 VDC) ....1.6 W

Environmental conditions
Operational temperature .... -25 °C to +70 °C
Storage temperature..................................... -40 °C to +85 °C
Relative humidity ....< 95% RH (non-cond.)
Protection class..IP40

BASE MODULE BM 022

PD 600 series DPIs and I/O devices are made up of two parts: The Terminal Base Module and the Electronics Device.

The Terminal Base Module is snap-locked directly on a DIN-Rail and interlocks with neighbouring modules to ensure stability.

The Terminal Base Module has two terminals for all the channels for connection to the process signals, respecting the demand for only one wire in each terminal, ensuring a safe and straight forward design- and installation process.

One of the two terminals is with the negative supply and the other is the input / output terminal. Having only one wire in each terminal enables that the wiring to/from process signals can be done directly, without the need for any further intermediate terminals.

The Terminal Base provides also a power rail for connections to the power supply, as well as guides for the Light-Link interface.

Several I/O devices in the M36 series uses a BM 022 that provides terminals for all I/O connections and power supply, as well as guides for the Light-Link interface.

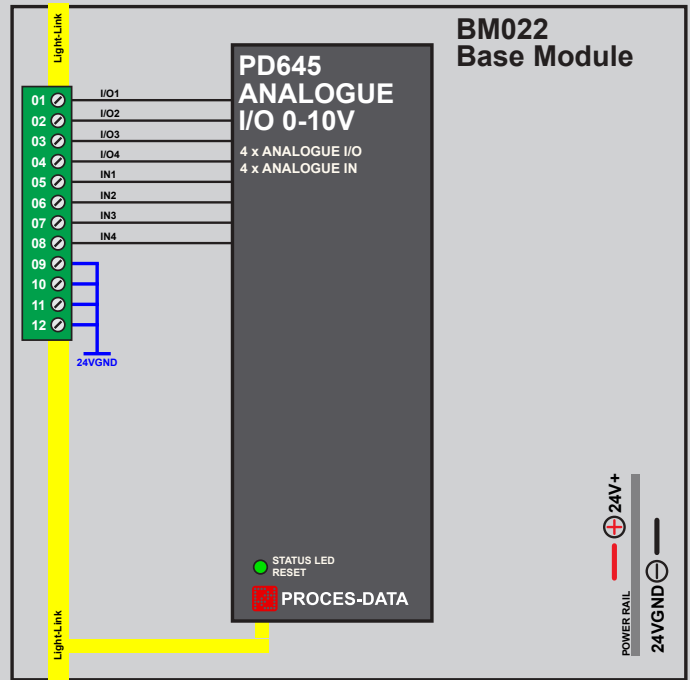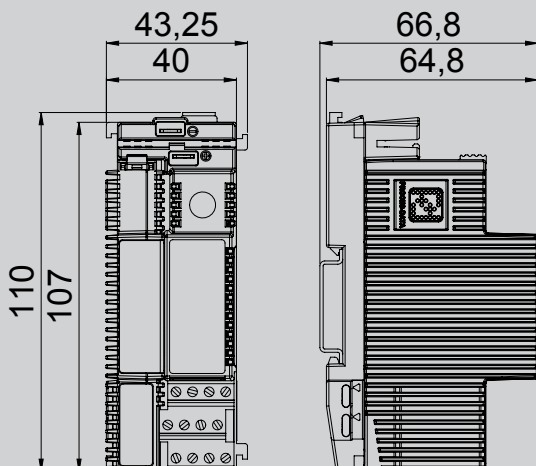The base module is available with screw terminals.

BM022 Base Module
PD645 ANALOGUE I/O 0-10V
4 x ANALOGUE I/O
4 x ANALOGUE IN

Power Specifications
Current supplied by power rail.................................... Max. 5 A
Current at spade connectors .... Max. 10 A

Rear View

Examples of connections

Analog Out

Potmeter Interface

Analog In

MECHANICAL (mm)

43,25
40
66,8
64,8
110
107
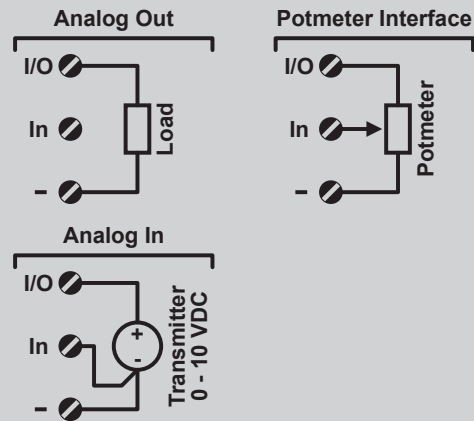
Mechanical Specifications
Dimensions (HxWxD).............................. 66.8 x 43.3 x 110 mm
Weight approx..125 g
Vibration ....IEC 60068-2-6 : 2007

PROCES-DATA
Navervej 8-10
DK-8600 Silkeborg
Tel. +45 87 200 300
salesdepartment@proces-data.com
www.proces-data.com