



PD 820 15 ch. Digital I/O

- Digital Source or Sink I/Os for nominal 24 volt
- Push-pull output
- Programmable in COPP
- P-NET via Light-Link
- Built-in input and output functions
- Load current measurement
- Overload/Underload protection and Alarming
- Line Check
- Advanced internal self testing
- LED for power On and Error indication
- Wide Power Supply range
- Wide Temperature range
- Low Power Consumption

APPLICATION

PD 820 is a device in the M100 series with digital I/O channels. The device offers 15 channels as interface for various types of process signals, valves, pumps, level detectors, actuators etc. and push-pull outputs for direct motor control.

The 15 channels consist of:

- 15 digital inputs/outputs, of which one channel can operate as fast digital input.

Digital inputs can be configured to perform Line Check. The Line Check function can be used in relation to two-wire proximity switches. In case of error the hardware will report either 'Line open' or 'Line short-circuited' respectively.

The device is programmable in COPP, which means that a part of, or complete automation application can be built and downloaded by the user. The program can make use of ready-made components to control and monitor any process or machine application, both locally in the device but also via the network interacting with other devices.

All output channels can source a positive voltage to external loads relative to the common negative supply voltage, or can sink current from the load to ground.

All channels are protected against overload and short-circuit and notification can be enabled on any disconnection or process failure. The supply current for the device must be limited (with a fuse). The total current for all outputs on the device is limited to 5 A.

The PD 820 can be used with the BM 104 base module.

PD 820 can alternatively be used with the BM 105 base module that also provides a separate terminal block for connections to relays. This will enable the PD 820 to use 9 digital inputs/outputs and 6 individual potential free relay outputs.

The device can be fixed to the base module by means of a screw.

SPECIFICATIONS

Digital Inputs (referenced to -24 Vin)

Frequency.....	Max. 1 kHz @ 50% duty cycle
Input.....	On: Vin < 4.5 V, Off: Vin > 6.5 V
Hysteresis.....	Typ. 1 V
Line check: (*)	
Line open voltage.....	> 0.75 * Vin
Line short circuit voltage.....	< 2 V
Input pull down resistance.....	6.8 kΩ
Input active pull up (configurable).....	3 mA

Fast Mode Digital Input (referenced to -24 Vin) (*)

Frequency.....	Max. 50 kHz @ 50 % duty cycle
Input voltage Off.....	2.5 V + Hys/2
Input voltage On.....	2.5 V – Hys/2
Hysteresis (Hys).....	Typ. 1.0 V

Digital Outputs (source)

Oneshot and Dutycycle time resolution.....	417 μs
Internal resistance.....	Typ. 0.5 Ω
Output start current (duration max 200 ms).....	Typ. 5 A
Load current at ON (Source only).....	Max. 1.0 A
Short circuit cutoff delay time (current > 5 A).....	104 μs
Leak current at OFF.....	Max. 500 μA

Load Current Measurements

Range.....	10 A
Accuracy.....	Min. 2.5 %, +/-25 mA
Resolution.....	5 mA
Repeatability.....	Min. 1 %, +/- 25 mA

Power Specifications

Supply voltage nominal.....	24 VDC
Supply voltage.....	12-32 VDC
Typ. internal power consumption (@ 24 VDC).....	0.5 W
Max. power consumption (@ 24 VDC).....	2.5 W

Environmental Conditions

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

(* Use shielded cable)

...continues

BASE MODULES FOR PD 820

PD 800 series DPis and I/O devices are made up of two parts: The Terminal Base Module and the Electronics Device.

The Terminal Base Modules are snap-locked directly on a DIN-Rail and interlocks with neighboring 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.

Power Specifications

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

BASE MODULE BM 104



Rear View

Several I/O devices in the M100 series uses a BM 104 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 either spring terminals or screw terminals.

BASE MODULE BM 105



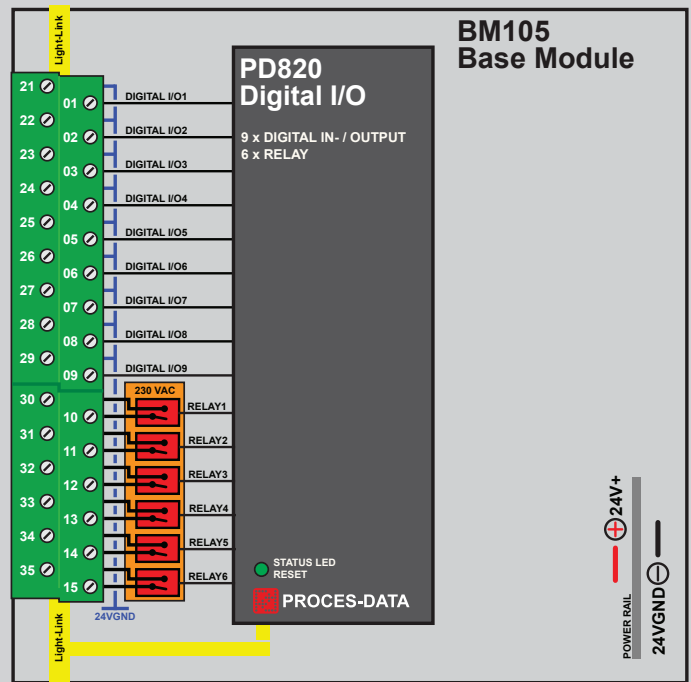
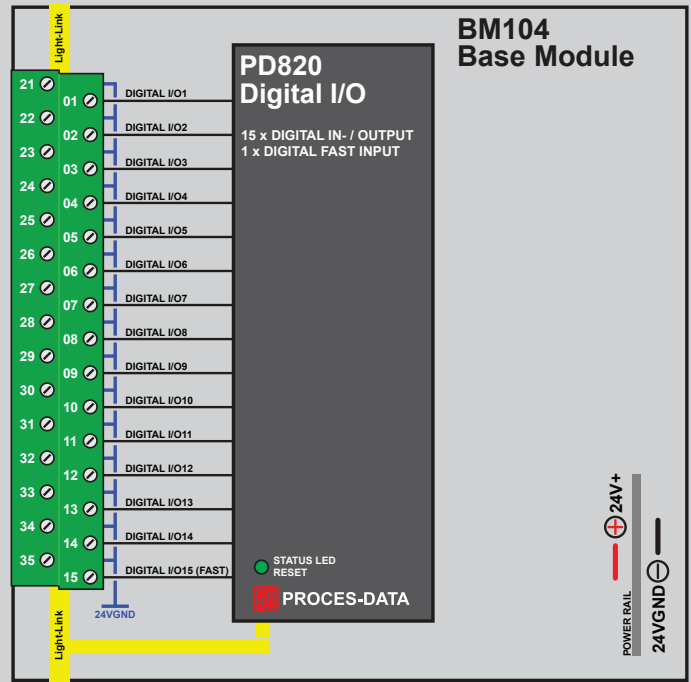
Rear View

BM 105 provides also a separate terminal block for all connections to the relays. The relays are SPST relays (normally open) with the contacts protected by Metal Oxide Varistors.

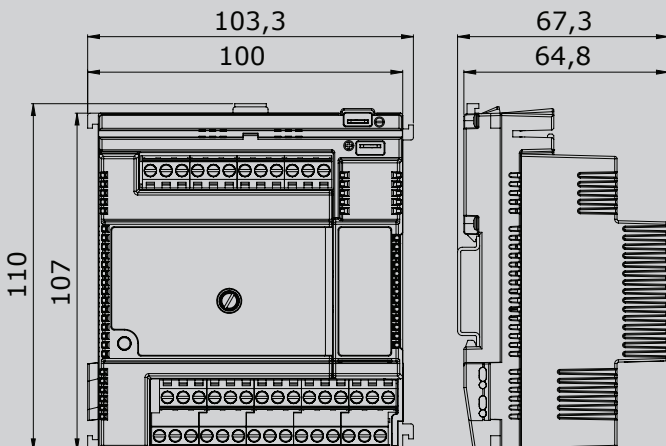
Power Specifications

Relay switching voltage.....Max. 230 VAC
 Relay current Max. 5 A

As the relays have silver contacts, they should not be used for small signals!



MECHANICAL (mm)



Mechanical Specifications

Dimensions (HxWxD)..... 66.8 x 103.3 x 110 mm
 Weight approx..... 325 g
 Vibration IEC 60068-2-6 : 2007