

Functional Description

Profibus DP

I/O Module

4 Digital 24VDC PNP Inputs

4 Digital 24VDC PNP Outputs

PDP-400

*HURON
NET
WORKS*

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Revision History

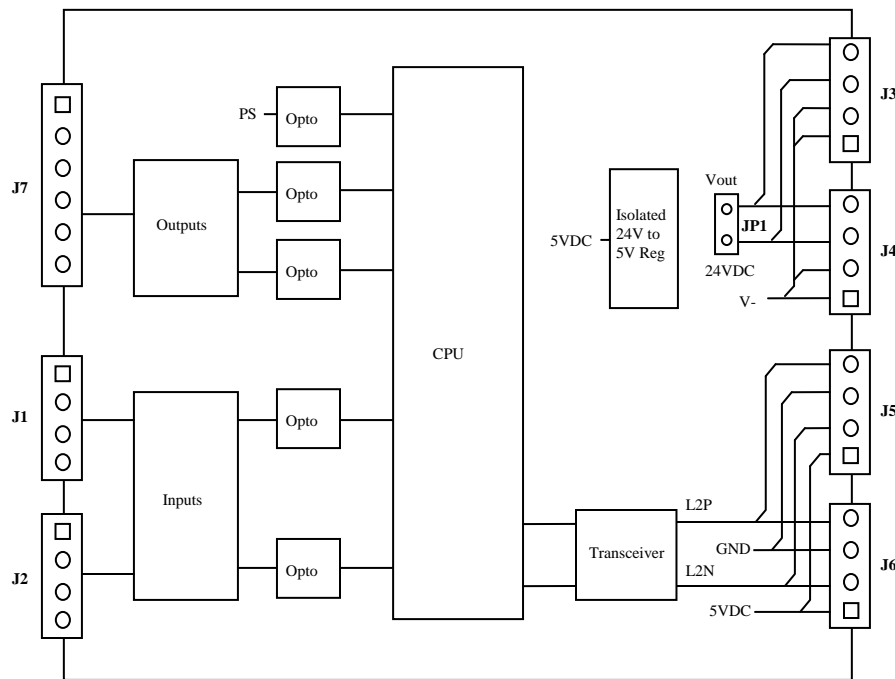
Rev	Date	Note(s)
1.0	3/16/2009	Initial release

1. INTRODUCTION

The PDP-400 is a PROFIBUS-DP I/O interface designed for applications requiring up to four general purpose PNP inputs and outputs. This module provides the interface to control and monitor I/O points, as well as two extra power sense inputs.

2. INTERFACE

2.1. Block Diagram



2.2. PROFIBUS-DP (J5 & J6)

- PROFIBUS-DP V0 slave protocol
- Asynchronous interface according to PROFIBUS-DP
- Automatic recognition of data transfer rate
- Maximum data transfer rate 12 Mbit/s
- PROFIBUS-DP ground isolated from power and I/O
- Two 4-pin 2.54mm side-entry, screw terminal connectors for optional loop-thru

2.3. Power (J3 & J4)

- Expects 24VDC source power
- Separate primary power (J3) and output power connectors (J4)
- Jumper JP1 normally open to separate primary and output power
- Two 4-pin 2.54mm side-entry, screw terminal connectors for optional loop-thru

2.4. Digital Inputs (J1 & J2)

- 4 inputs - digital, 24VDC supports inputs from contact closure or PNP high side proximity switches
- Power is routed to these connectors to provide up to 100 mA of 24V power for sensors
- Two 4-pin 2.54mm side-entry, screw terminal connectors
- Optional power sense line (PS1) for monitoring an external voltage to qualify $PS1 > 20.4V$. For instance, in conjunction with the on-board power sense input (PS2), this input could monitor interlock switch closure or fuse status. **Note: components for this feature normally unpopulated**

2.5. Digital Outputs (J7)

- 4 outputs – digital, 24 VDC PNP (sourcing) each to provide up to 1000 mA and combined current up to 2000mA
- Option to power output (24VDC) either from primary power (J3) or a separate output dedicated supply (J4) determined by the configuration of jumper JP1
- Circuits are protected from damage due to accidental reverse connection of 24VDC
- Output power sense (PS2) for monitoring the presence of power for outputs ($PS2 > 20.4V$)
- One 6-pin 2.54mm side-entry, screw terminal connectors

2.6. Indicators and Switches (D4 and S1 & S2)

2.6.1. Indicator (D4)

The PDP-400 offers a single red/green bi-color diagnostic LED.

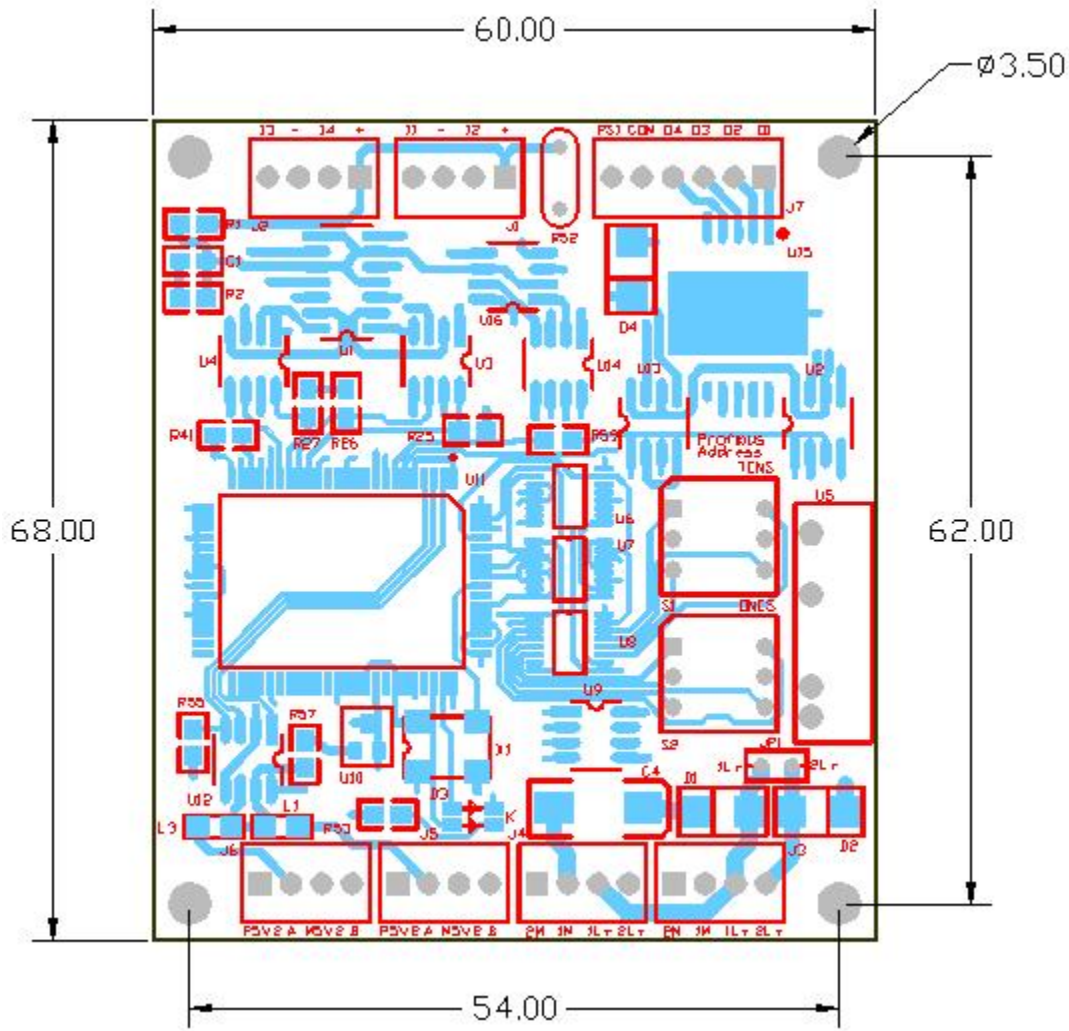
LED State	Green	Red
ON	Normal operation	No diagnosis error pending
OFF	After reset and after each timeout of the watchdog timer	Diagnosis error pending

2.6.2. Switches (S1 & S2)

The PDP-400 offers a pair of BCD rotary switches for the purpose of configuring the PROFIBUS Station Address. S1 is used to set the Tens value of the Station Address; S2 is used to set the Ones value of the Station Address. For example, if S1 is set to 6 and S2 is set to 3, the Station Address would be 63.

3. APPLICATION

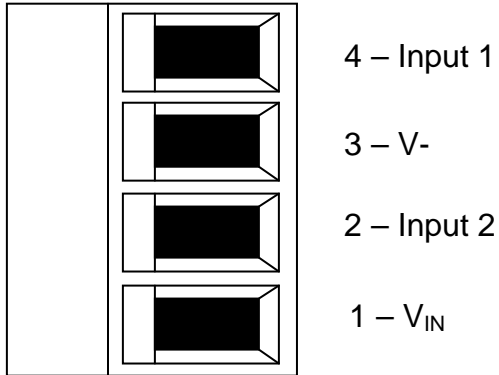
3.1. Mechanical and Mounting



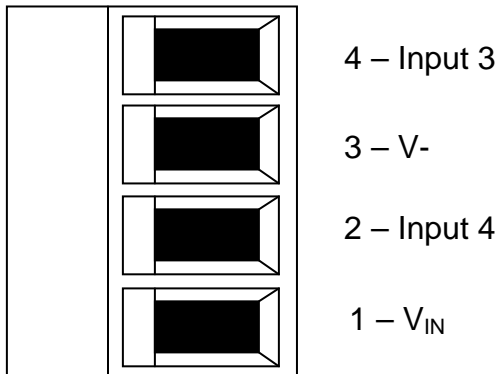
3.2. Wiring

Note: All connectors are screw terminals which can accept 16 to 30 AWG wire.

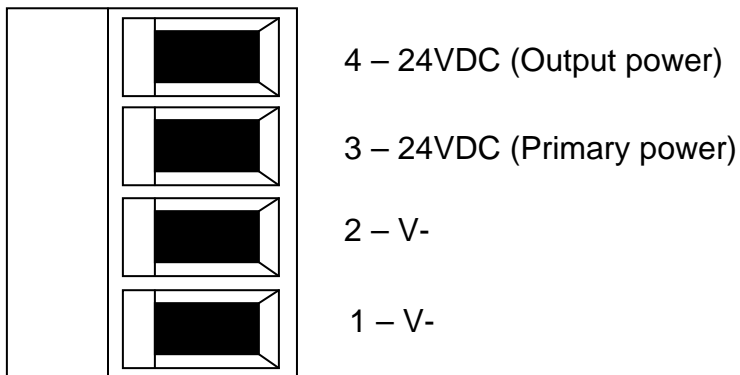
3.2.1. J1 – Inputs 1 & 2



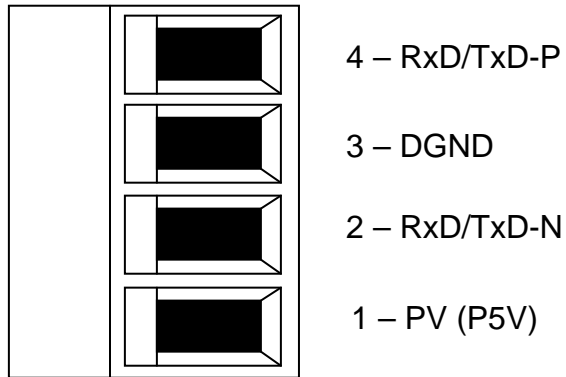
3.2.2. J2 – Inputs 3 & 4



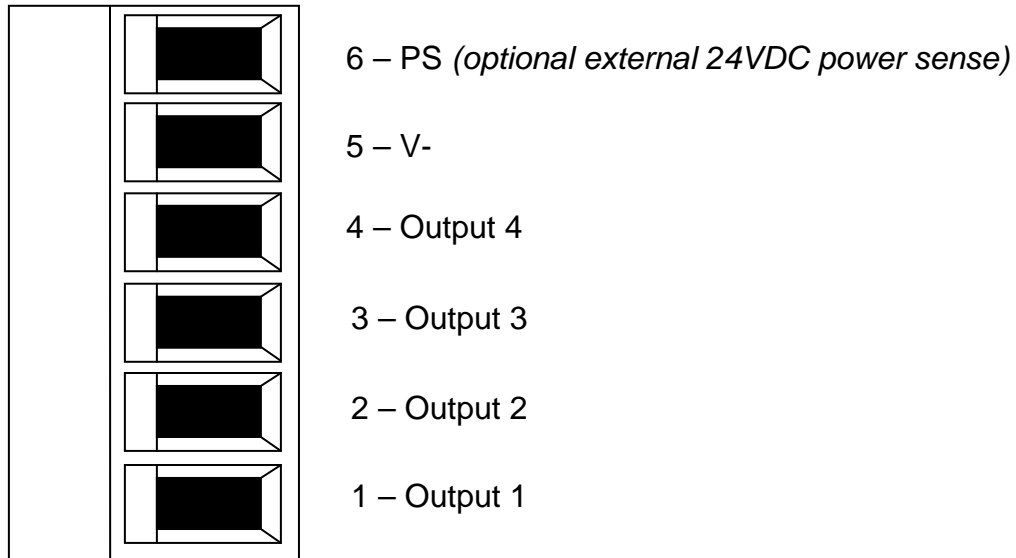
3.2.3. J3 & J4 – Power



3.2.4. J5 & J6 – PROFIBUS



3.2.5. J7 – Outputs



4. SPECIFICATIONS

Overall Dimensions

Length	68 mm
Width	62 mm
Height	12.5 mm
Weight	2 oz. (excluding wires)

Environmental

Operating temperature range	0 to 60° C
Storage temperature range	-20 to 85° C
Relative Humidity	5 to 95% noncondensing

PROFIBUS

PROFIBUS Version	DP-V0 Slave
RS485 Baudrate	9.6 kbit/s - 12 Mbit/s
Automatic Baudrate Detection	Yes
Sync Mode	Yes
Freeze Mode	Yes
I/O Length	1 byte of input, 1 byte of output
GSD File	HUNW0BE5.GSD

Digital I/O

Output Voltage	24 VDC PNP (sourcing)
Output Current	1000 mA max
Total Combined Output Current	2000 mA max
Input Voltage	24VDC
Input Load	10.0K to V-