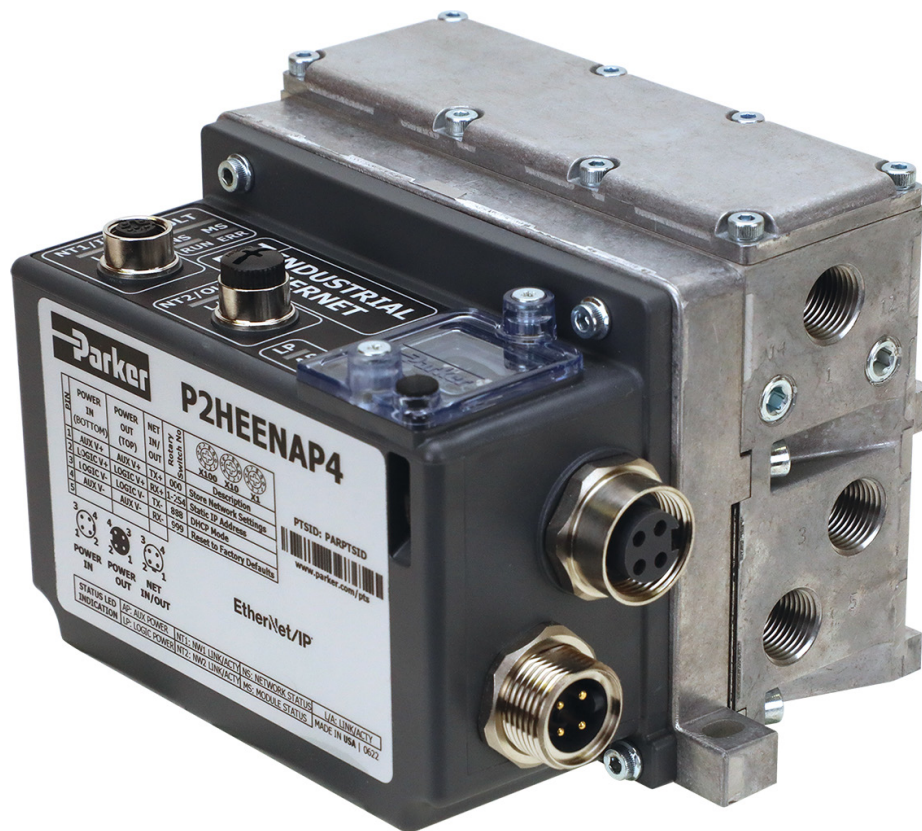




Pneumatic Division North America  
Richland, Michigan 49083

**VAL-SIF-160**  
Title: P2H Ethernet Node 32 DO  
PROFINET User Manual  
ISSUED: April, 2022

# P2H Ethernet Node 32 DO USER MANUAL



## Trademark Information

PROFINET® is a registered trademark of PROFIBUS and PROFINET International (PI).

## Intended Use

The P2H Node 32DO must be only used as follows:

- As intended for industrial environments and conditions as compliant with the regulatory agencies of the region.
- In the original status without unauthorized modifications to the unit. The only permissible configurations and/or modifications allowed are mentioned in the documentation supplied with the product.
- In perfect technical condition.

The limit values that are specified for pressure, temperature, electrical data, torques, etc. must be observed.

If standard accessories/components are connected (e.g., sensors, actuators, etc.) the specified limits of pressure, temperature, electrical data, torques, etc. must be complied with.

Even though care has been taken in the preparation and publication of the contents of this manual, we do not assume legal or other liability for any inaccuracy, mistake, misstatement, or any other error of whatsoever nature contained herein. The material in this manual is for information purposes only and is subject to change without notice.

## Service Information

Consult the local Parker Service Agent if you have any technical problems or queries.



### Important!

Before carrying out any service work, ensure that the valve and manifold have been vented. Remove the primary supply air hose to ensure total disconnection of the air supply before dismantling valves or blank connection blocks.



### NB!

All technical data in this catalogue is typical only.

The air quality is decisive for the valve life: see ISO 8573.



## WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice. © Copyright 2016, 2013 Parker Hannifin Corporation. All Rights Reserved

## SALE CONDITIONS

The items described in this document are available for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. Any sale contract entered into by Parker will be governed by the provisions stated in Parker's standard terms and conditions of sale (copy available upon request).

## Important User Information

Please read and follow all safety information for the P2H Node 32DO, including the warning and caution statements in this guide, before installing or operating the system.

This document and other information from Parker-Hannifin Corporation, its subsidiaries or authorized distributors provide product or system options for further investigation by users having technical expertise.

The user, through their own analysis and testing, are solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety, and warning requirements of the application are met. The user must analyse all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalogue and in any other materials provided from Parker, its subsidiaries, or authorized distributors.

To the extent that Parker, its subsidiaries, or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

## Safety Information

**WARNING:**

The P2H Node 32DO is used to control electrical and mechanical components of motion control systems in industrial environments. To avoid serious injury or damage to equipment, test the motion system for safety under all potential conditions.

**WARNING:**

The P2H Node 32DO are not intended for any use in systems, machines, or applications where failure or fault of any kind of the Products could reasonably be seen to lead to death or serious bodily injury of any person, or to severe physical or environmental damage ("High Risk Use"). You are not permitted to use, distribute, or sublicense the use of these Products in High-Risk Use. High Risk Use is STRICTLY PROHIBITED.

**WARNING:**

The P2H Node 32DO contains no user-serviceable parts. To avoid personal injury or damage to the product, do not attempt to open the case or to replace any internal component of the PCH Portal, Modules, or Accessories.

**WARNING:**

USER RESPONSIBILITY- Improper use of the products described herein or related items can cause death, personal injury and property damages.

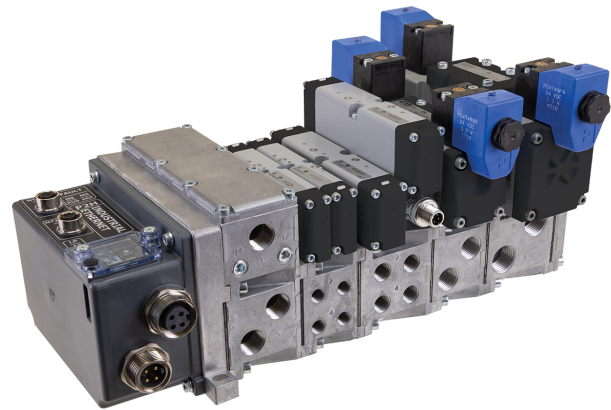
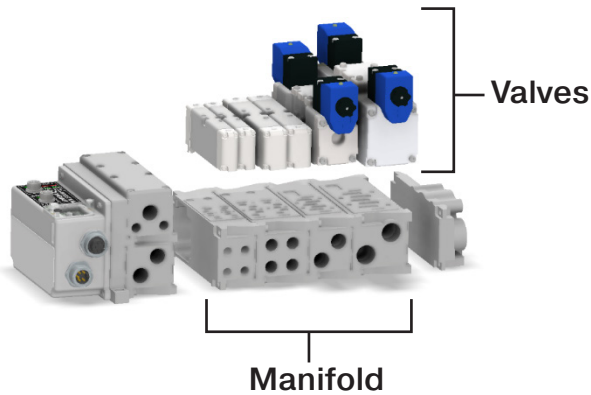
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## Product General Overview

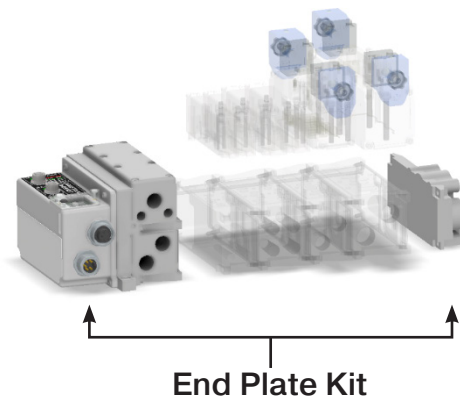
The P2H Node 32DO has been designed to be connected to an Profinet Network. It can be used with Parker's H Universal ISO 15407-2 (size 02 & 01) and 5599-2 (sizes 1, 2 & 3) valve series. It can control up to 32 pilot solenoid addresses with different power configuration options available and provides local visual and remote diagnostic through the Network. Designed for industrial environments, the P2H Node 32DO is constructed of PBT material, which is glass filled and offers weld splatter resistance, UV stability and has significant flame-retardant properties making it suitable for the durability required in industrial applications with high heat and welding applications.



**H ISO 15407-2 & 5599-2 Valves**

**With H Universal Manifold**

Up to 32 coils



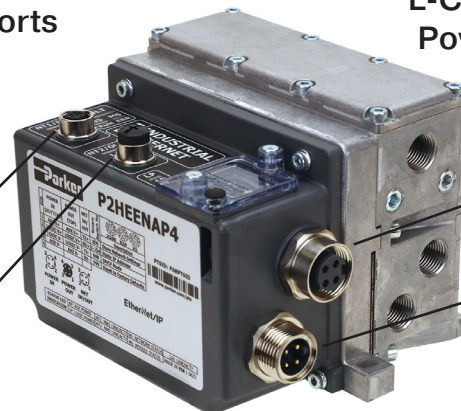
**M12 Communication  
Ports**

**7/8"  
or  
L-Coded M12  
Power Ports**

**Comm. In  
Comm. Out**

**Power Out**

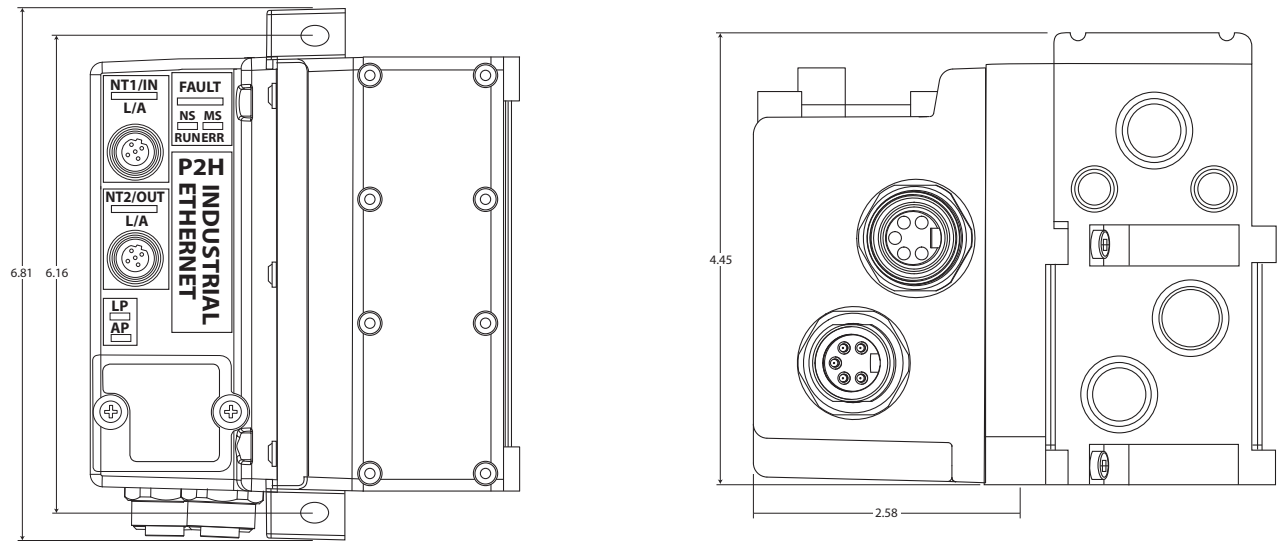
**Power In**



**P2H Node 32DO  
Communication Module**

P2H Node 32DO Technical Specifications

Mechanical Dimensions



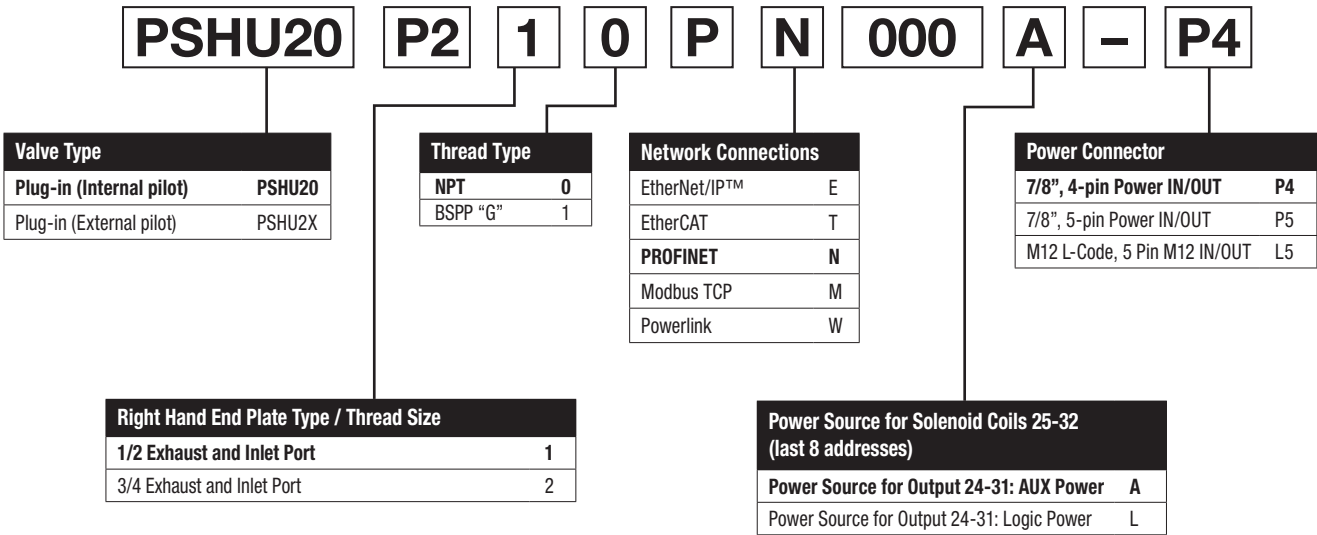
Parameters	Details
Housing material	Housing /Enclosure: PBT with 33% GF and UL94-V0 Base Cover (plate): Aluminium 380
Enclosure rating	IP65 (only when plugged-in and threaded-in)
Supply Voltage	7/8" 4 pin or 7/8" 5 pin or L-Coded M12 5-pin male and female pin connector
Input ports/ Output ports	N/A
Dimensions (L x B x H in mm)	226.6mm x 130.7mm x 55mm
Mounting type	Screw Mount
Ground strap attachment	M5
Weight	Approx. 1.3 kg

Description	Value
Network power supply	According to PROFINET standard
Speed communication	According to PROFINET standard
Auxiliary power supply Voltage	20.4 Vdc to 26.4 Vdc
Current limit per channel	150 mA
Max. current limit	5.2 A
Polarity inversion protection	YES
Short circuit protection	YES
Operating temperature	0°C to +55°C
Storage temperature	-25°C to +70°C
Shock	According to IEC 60068-2-27:2008
Vibration	According to IEC 60068-2-6:2007
EMC	According to EN 55011 & EN 61000-4-2 up to -4-6

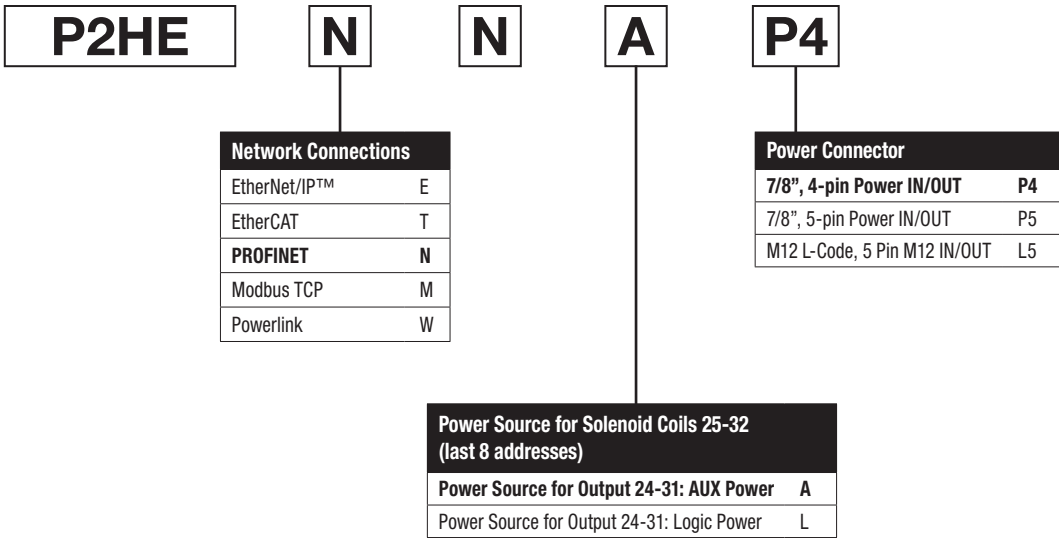


Part Numbering

The P2H Node 32DO is ordered as a full endplate part number detailed below:



NOTE: The part number on the label of unit cannot be ordered on its own; however, it can be used to determine the network module characteristics





Part Numbering continued

Note: Note: An optional intermediate air supply module must be installed to the manifold for expansion from, 25 – 32 solenoids, 24 to 31 addresses.

PSHU115A

E

1


P

Mounting Style / Port Size	
Intermediate Air Supply, NPT / Internal Pilot	PSHU115A
Intermediate Air Supply, BSPP / Internal Pilot	PSHU115B*
Intermediate Air Supply, NPT / External Pilot	PSHU115C
Intermediate Air Supply, BSPP / External Pilot	PSHU115D*

\* BSPP conforms to ISO 1179-1 w 228-1 threads.

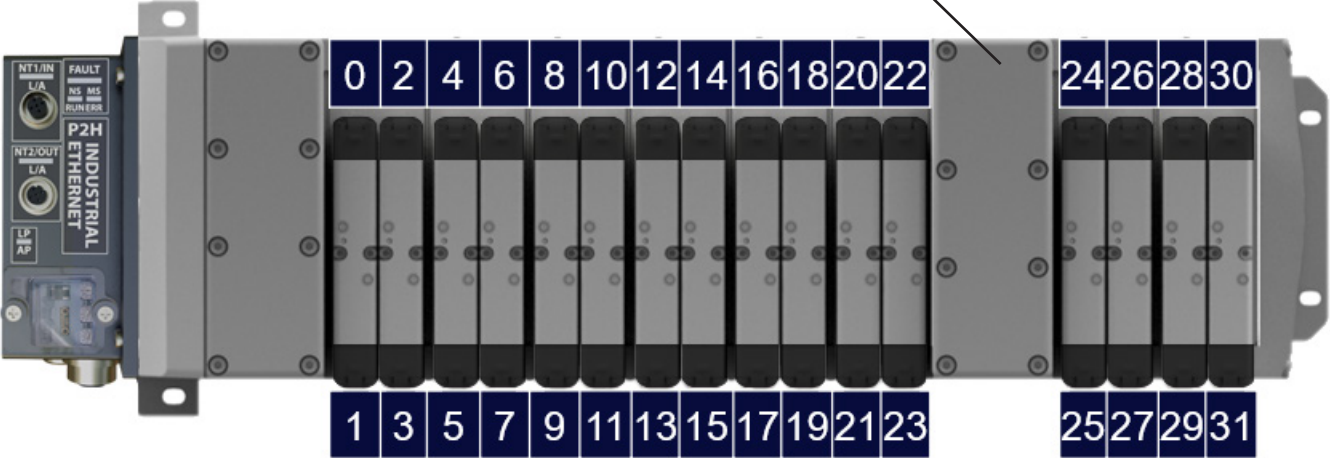
Gasket Options	
1	1,3,5 Ports Open And Pilots Open
2	1,3,5 Ports Closed And Pilots Open
3	1 Closed, 3,5 Ports Open And Pilots Open
4	1 Port Open, 3,5 Ports Closed And Pilots Open
5	1,3,5 Ports Open And Pilots Closed
6	1,3,5 Ports Closed And Pilots Closed
7	1 Closed, 3,5 Ports Open And Pilots Closed
8	1 Port Open, 3,5 Ports Closed And Pilots Closed

Circuit Board Address Configuration	
E	With Electrical Expansion To 25th Address



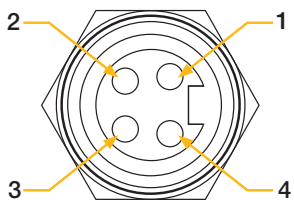
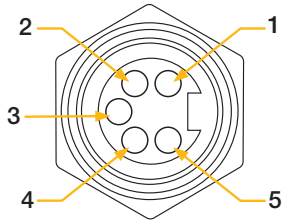
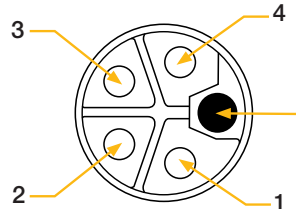
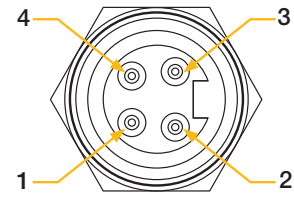
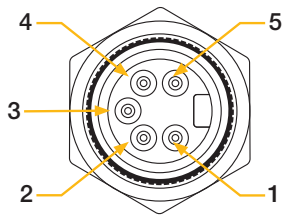
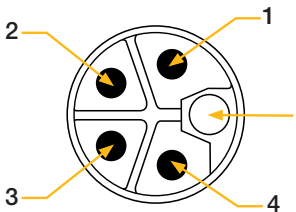
Intermediate air supply module shown

Address Numbers



## Power Supply

The following three types of power connectors are available based on the end user's requirement. Current considerations should be used in the power connection selection process. Each power connection type can support a maximum of 12 A of current on each channel (VAUX and VLOG). When power daisy chain is used, care must be taken in knowing the downstream current draw in order not to overload the maximum current rating of the pins.

TOP CONNECTOR	P4 - 7/8", 4-pin			P5 - 7/8", 5-pin			L5 - L-Coded, M12		
	Power OUT			Power OUT			Power OUT		
									
	Pin	Function	Description	Pin	Function	Description	Pin	Function	Description
	1	+ 24 V	V2 (VAUX)	1	0 V	GND V2 (VAUX)	1	+ 24 V	V1 (VLOG)
	2	+ 24 V	V1 (VLOG)	2	0 V	GND V1 (VLOG)	2	0 V	GND V2 (VAUX)
BOTTOM CONNECTOR	3	0 V	GND V1 (VLOG)	3	PE	Protective Earth	3	0 V	GND V1 (VLOG)
	4	0 V	GND V2 (VAUX)	4	+ 24 V	V1 (VLOG)	4	+ 24 V	V2 (VAUX)
				5	+ 24 V	V2 (VAUX)	5	PE	Protective Earth
	Power IN			Power IN			Power IN		
									
	Pin	Function	Description	Pin	Function	Description	Pin	Function	Description
	1	+ 24 V	V2 (VAUX)	1	0 V	GND V2 (VAUX)	1	+ 24 V	V1 (VLOG)
	2	+ 24 V	V1 (VLOG)	2	0 V	GND V1 (VLOG)	2	0 V	GND V2 (VAUX)
	3	0 V	GND V1 (VLOG)	3	PE	Protective Earth	3	0 V	GND V1 (VLOG)
	4	0 V	GND V2 (VAUX)	4	+ 24 V	V1 (VLOG)	4	+ 24 V	V2 (VAUX)
				5	+ 24 V	V2 (VAUX)	5	PE	Protective Earth

\*PE – Protective Earth

## Auxiliary Power Consumption Calculation

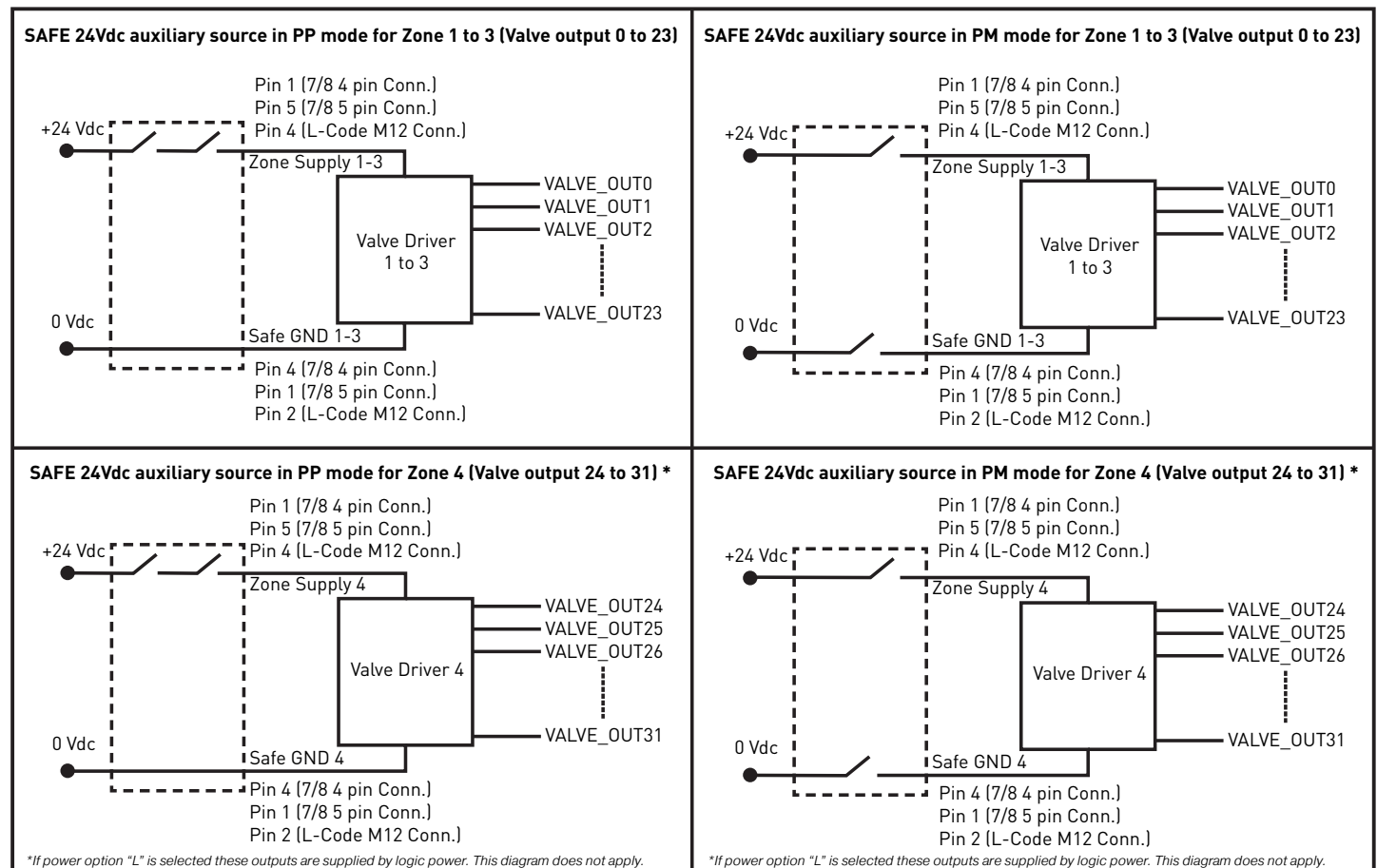
The P2H Node 32DO auxiliary power consumption calculation depends on the combination of the valves selected and the number of coils used. The table below can be used for power consumption calculation by valve type and the number of each type used. Take note that there are two types of coils for sizes 1,2,3. An energy efficient coil and standard coil.

Valve Range	Number of Pilots Simultaneously powered	Power	Total
H ISO - 15407-2 - Sizes 02 & 01	_____	x 40 mA	= _____ mA
H ISO - 5599 - Sizes 1, 2 & 3 (Energy Efficiency Coils)	_____	x 54 mA	= _____ mA
H ISO - 5599-2 - Sizes 1, 2 & 3 (Standard Coils)	_____	x 133 mA	= _____ mA
Total :			_____ mA

## Safe Power Supply

### P2H Node 32DO connected to SAFE power supply for Auxiliary Power

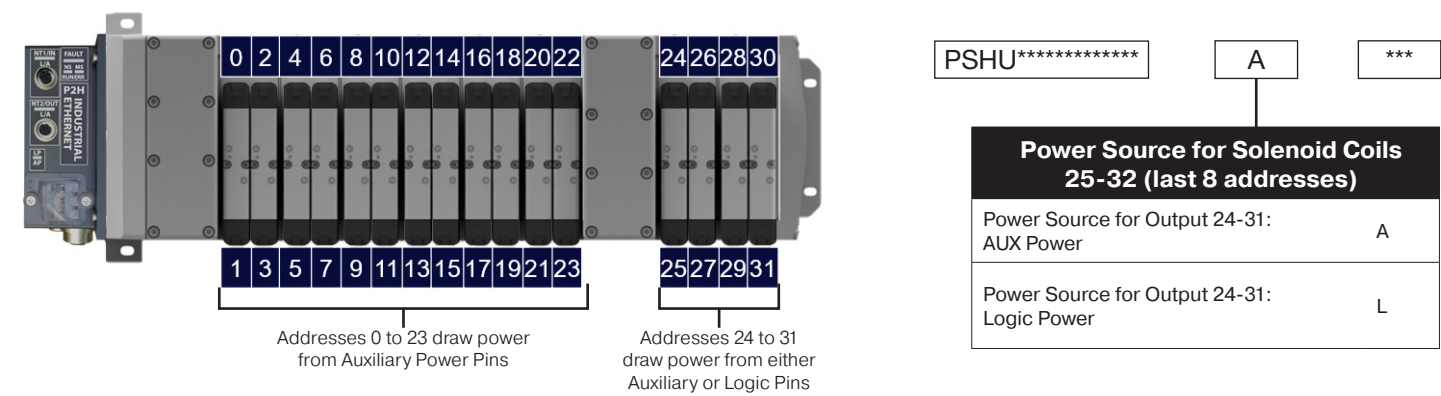
The P2H Node 32DO Auxiliary Power for valves can be supplied from a SAFE 24 VDC auxiliary source in PP (plus plus) or PM (plus minus) mode, as well as from Output Switching Signals Device Failsafe Digital Outputs (OSSD FDO). The connection diagram is below.



Note: Please check max. power available from the source. Refer to the [“Auxiliary power consumption calculation”](#) section.

Power Selection

The P2H Node 32DO has two available power sources for 25 to 32 solenoids, 24 to 31 addresses. They can draw their power from Auxiliary Power Pins (Model Code Option A) or Logic Power Pins (Model Code Option L)

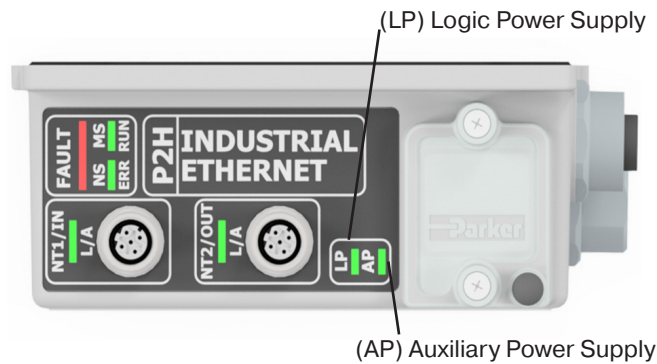


## Power Supply Diagnostics

### Power Supply Diagnostics through LED

The P2H Node 32DO monitors the logic and auxiliary power supply voltages and manages two levels of diagnostics: warning and error range. Status is indicated via LEDs located on the device. The range limits can be modified through parameter data.

To restore default value (factory setting), refer to “[Factory Reset](#)” section.



#### LED function details:

- “Logic power” error is active from 9.6 to 19.4 VDC or above 28.5 VDC
- When “Logic power error” is active, LED is solid red

LP and AP (Green / Yellow) LEDs		
LED Status	Description	Troubleshooting
OFF	Logic and/or Aux lines not powered	Check power supply ( <a href="#">see Power Supply section</a> for pin assignments)
ON (Green)	Voltage in normal range	N/A
ON (Red)	Voltage in error range (too low or too high)	Check power supply ( <a href="#">see Power Supply section</a> for pin assignments)
Blinking (Red)	Voltage in warning range (out of normal range, not in error range)	Check power supply ( <a href="#">see Power Supply section</a> for pin assignments)
Blinking (Red)	Invalid rotary switch setting	Check rotary switch setting
Blinking (Red / Yellow)	Firmware version error or Completed “Reset to Factory” procedure	If switches setting different from “999” and no “Reset to Factory” performed via webpage, then contact technical support

### Power Supply Diagnostics through Network and Process Data Mapping

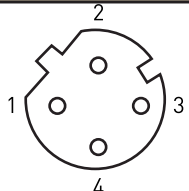
Diagnostics are available in Process Input data (byte 0) to indicate whether Logic and Auxiliary voltages are within range. There is both a warning range (module operates normally but indicates issue) and an error range (module enters Failsafe state).

The default warning range is set as 20.4 VDC < power supply < 26.4 VDC. These limits can be modified via acyclic data, objects #11 and #12. The error range is set as 19.4 VDC < power supply < 28.5 VDC. These limits cannot be modified.

The voltage measured by the module, both Logic and Auxiliary, can be accessed via acyclic data, in Object #4. The displayed value is in mV.

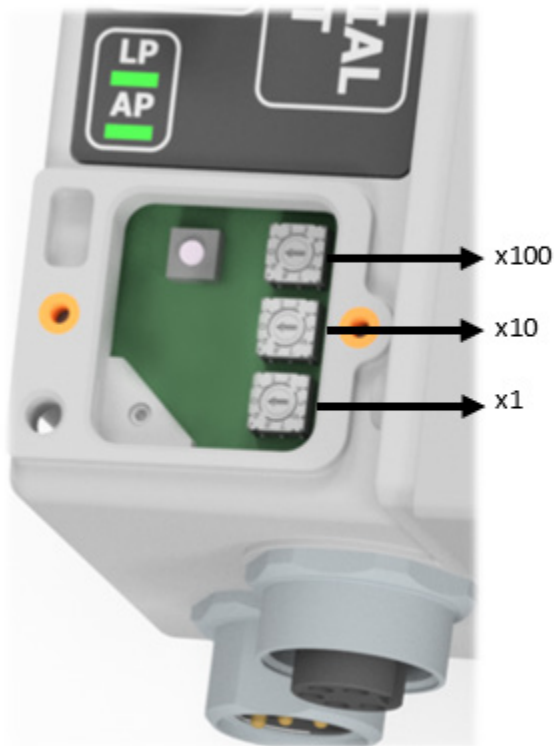
## Network Interface

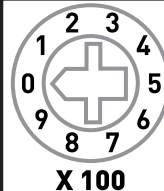
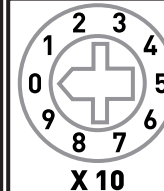
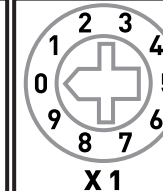
The P2H Node 32DO allows connection to the Profinet network via two M-12 D-Coded connector (NT1 and NT2). Using these connectors daisy chaining ethernet communications is possible. The connector pin assignment is as follows:

M12, D-coded, Female	Pin No.	Function
	1	Tx+
	2	Rx+
	3	Tx-
	4	Rx-

## IP-Address Setting

The IP-Address of the device can be assigned via: Rotary Switches, DHCP, BootP, Webpage, HMS IPConfig Tool or TCP/IP Interface Index. At power-up the P2H Node 32DO reads the values of the rotary switches and determines how the device obtains its IP-Address. Please refer to the table below for further details. The device comes from the factory with assigned 192.168.1.2.



ADDRESS	X 100	X 10	X 1
			

IP Switch Setting	Description
000	Used to store configured IP address suite to the P2H Node 32DO internal memory. If using DHCP/BOOTP, HMS Config Tool, or web interface to set IP Address then IP address should be stored to memory, or it will revert to default IP range below.
001 – 254	IP-Address setting is determined by the 3 rotary switches: <ul style="list-style-type: none"> <li>IP Address: 192.168.1.xxx</li> <li>Subnet Mask: 255.255.255.0</li> <li>Default Gateway for 001: 192.168.1.2</li> <li>Default Gateway for 002 - 254: 192.168.1.1</li> </ul>
888	The device obtains its address via DHCP or BootP
999	Reset to Factory Status. Resets the following: web-login, cycle counters, warning levels, output state behaviors
All others	Invalid. The Module will not start (see Local Visual Diagnostic section for details)

## Reset to Factory Default (Rotary Switch Position '999')

"Reset to Factory Default" mode restores all the parameters, counters, password and configurations to their default values. "Reset to Factory Default" mode can be accessed in one of two ways: either via a button on the "Parameter" tab of the embedded web page, or via rotary switch setting "999". Once the reset is completed and all the values are restored to default values, the module signals the completed operation by quickly flashing red/green the "Logic Status" LED. If the reset is performed via hardware, a valid IP-Address must be set using one of the methods stated in this manual, and a power cycle is required to resume normal operations.

Default Password (Case Sensitive)	
Username	PARKER
Password	PARKER

## P2H Node 32 DO Configuration Files

The configuration files and integration tools are available for download from the [Parker Network Connectivity Site \(click here\)](#).



Parker Network  
Connectivity Site



# Parker Valve Catalog



# Parker FRL Catalog

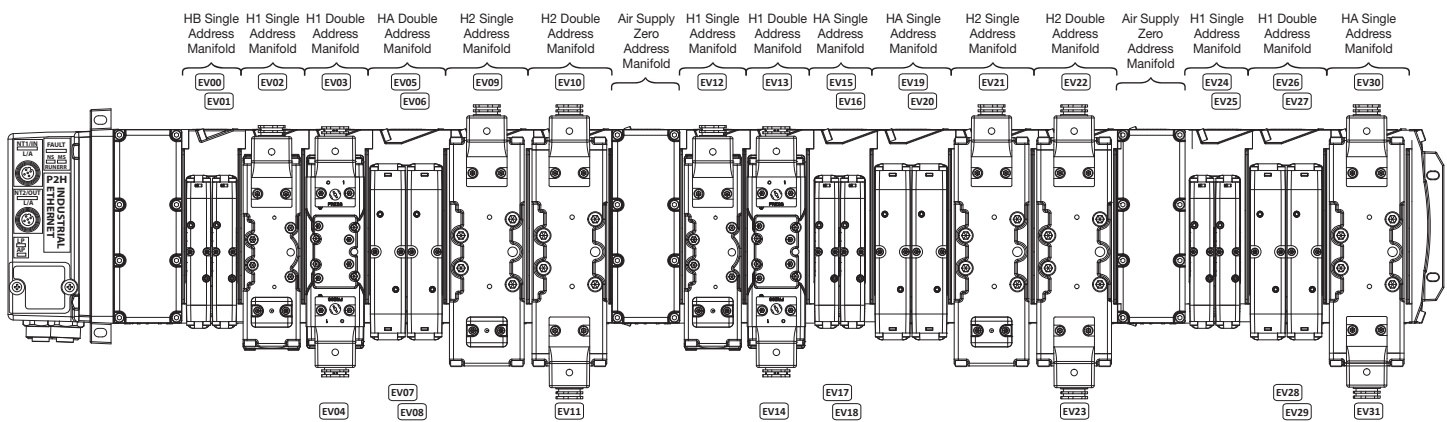


# Parker Actuator Catalog

## Solenoid Pilots Addressing

The P2H Node 32DO used with H ISO Series – 15407-2 – sizes 02 & 01 and 5599-2 – sizes 1, 2 & 3 – can handle up to 32 pilot solenoid valves. Addressing is as shown below (on H Universal manifold).

For PLC addressing see [Process Data Mapping](#) | [Output Data](#).





## Local Visual Diagnostic LEDs

The P2H Node 32DO module offers local diagnostics through 7 LED's status described in the table below:

NT1/IN & NT2/OUT (Green / Yellow)		
LED Status	Description	Troubleshooting
OFF	Not link, no activity	Check connection to the Network
ON (Green)	Link 100Mbit/s established	N/A
FLASHING (Green)	Ongoing activity 100Mbit/s	N/A
ON (Yellow)	Link 10Mbit/s established	N/A
FLASHING (Yellow)	Ongoing activity 10 Mbit/s	N/A

LP Logic Power (Green / Yellow)		
LED Status	Description	Troubleshooting
OFF	Logic lines not powered	Check power supply (pin's 2 & 3 on 7/8" 4 pin)
ON (Green)	LOGIC voltage in normal range	N/A
ON (Red)	LOGIC voltage in error range (way too high or way too low)	Check power supply (pin's 2 & 3 on pm 7/8" 4 pin)
BLINKING (Red)	Logic voltage in warning range (out of normal range, not in error range)	Check power supply (pin's 2 & 3 on pm 7/8" 4 pin)
BLINKING (Yellow)	Invalid rotary switch setting	Check rotary switch setting
BLINKING (Red & Yellow)	Firmware version error or Completed "Reset to Factory"	If switches setting different from "999" and no "Reset to Factory" performed via webpage, then contact technical support

AP Aux Power (Green / Yellow)		
LED Status	Description	Troubleshooting
OFF	Aux lines not powered	Check power supply (pin's 1 & 4 on 7/8" 4 pin)
ON (Green)	AUX Voltage in normal range	N/A
ON (Red)	Aux Voltage in error range (too low or too high)	Check power supply (pin's 1 & 4 on pm 7/8" 4 pin)
BLINKING (Red)	AUX voltage in warning range (out of normal range, not in error range)	Check power supply (pin's 1 & 4 on pm 7/8" 4 pin)
BLINKING (Yellow)	Invalid rotary switch setting	Check rotary switch setting
BLINKING (Red & Yellow)	Firmware version error or Completed "Reset to Factory"	If switches setting different from "999" and no "Reset to Factory" performed via webpage, then contact technical support



LED's Status "**OFF**" refers to a LED unilluminated

LED's Status "**ON**" refers to a LED illuminated uninterruptedly

The term "**Blinking**" means LED turning on/off every 500ms

The term "**Flashing**" means LED turning on/off irregularly or unpredictably

Fault (Red / Yellow)		
LED Status	Description	Troubleshooting
OFF	No Fault	
ON (Red)	Presence of any fault requiring acknowledgment	N/A
FLASHING (Red)	Recoverable error.	Remove fault condition. If problem persists, consult the factory.
BLINKING (Red)	Output Drivers error, typically a short-wired output channel.	Look at Index #06 – Channel Error
BLINKING (Yellow)	Invalid rotary switch setting	Check rotary switch setting
BLINKING (Red & Yellow)	Firmware version error or Completed "Reset to Factory"	If switches setting different from "999" and no "Reset to Factory" performed via webpage, then contact technical support
BLINKING (Red & Green)	Resetting to factory defaults	N/A

NS (Red / Green)		
LED Status	Description	Troubleshooting
OFF	Module offline (no IP address) or not powered	Check power supply and connection to the Network. Check IP address setting
ON (Green)	Module online (RUN), connection with controller established and in RUN mode	N/A
1-Flash (Green)	Module Online (STOP), connection with controller established and in STOP mode	N/A
BLINKING (Green)	Flashing. Used by engineering tool for identifying the module	N/A
ON (Red)	Fatal Event, major internal error. (Combined with red MS LED)	Change the module
1-Flash (Red)	Station Name Not Set	Set Station Name
2-Flash (Red)	IP-Address error or IP Address not set	Set IP-Address
3-Flash (Red)	Configuration Error. Expected identification differs from actual identification	Check Station settings

MS (Red / Green)		
LED Status	Description	Troubleshooting
OFF	No Power or Module in SETUP or NW_INIT state	Check power supply. If power OK, await few seconds. If problem persists, change the module
ON (Green)	Normal operations	N/A
1-Flash (Green)	Diagnostic Event Present	Check Diagnostic Buffer
ON (Red)	Exception or fatal Error	Power cycle module. Change module if error persists
BLINKING (Red & Green)	Firmware update in progress. DO NOT POWER DOWN THE MODULE	N/A

## Process Data Mapping

### Profinet Modules / Slots

Slot	Name
0	DAP (Device Access Point)
1	Solenoids (ADI #01 – Solenoids)
2	Channel Error (ADI #06 – Channel Error)
3	Module Info Flags (ADI #07 – Module Info Flags)
4	System Commands (ADI #08 – System Commands)
5	Module Error Input (ADI #09 – Module Error Input)

### Profinet Module “Solenoids” Slot 1 Data Map (OUTPUTS)

Up to 32 valves can be used along with P2H Node 32DO. This Profinet module has 4 bytes, and all bits are sequentially mapped to the 32 valves that can be connected to the device.

Solenoid Module									
Byte #	Output Bits								Description
	7	6	5	4	3	2	1	0	
1	EV07	EV06	EV05	EV04	EV03	EV02	EV01	EV00	Valve Output Data EVxx -> Output on Valve range is 0 to 31
2	EV15	EV14	EV13	EV12	EV11	EV10	EV9	EV08	
3	EV23	EV22	EV21	EV20	EV19	EV18	EV17	EV16	
4	EV31	EV30	EV29	EV28	EV27	EV26	EV25	EV24	

### Profinet Module “Channel Error” Slot 2 Data Map (INPUTS)

If an error occurs in one the valve channels of the P2H Node 32DO, (e.g.: short circuit or over-temperature), this mapping corresponds to which valve coil has the fault condition.

Channel Error Module									
Byte #	Input Bits								Description
	7	6	5	4	3	2	1	0	
1	EV07	EV06	EV05	EV04	EV03	EV02	EV01	EV00	Valve Error Data EVxx -> Output on Valve range is 0 to 31
2	EV15	EV14	EV13	EV12	EV11	EV10	EV9	EV08	
3	EV23	EV22	EV21	EV20	EV19	EV18	EV17	EV16	
4	EV31	EV30	EV29	EV28	EV27	EV26	EV25	EV24	

### Profinet Module “Module Info Flags” Slot 3 Data Map (INPUTS)

If an error occurs in the P2H Node 32DO this module contains flags about possible module states and faults / errors that might affect the module. If possible, the device will try to recover from these errors. If recovery is not possible, the device may need to be replaced. The message headers and flag definitions associated with each bit in the Index are detailed in the table below.

Module Info Flags			
Byte #	Output Bits	Error Name	Error Description
1	0	Heartbeat not toggling AUX 1	Heartbeat is currently not toggling
	1	Heartbeat not toggling AUX 2	
	2	SPI COM Error AUX 1	Error in SPI Communication between AUX and Logic. Outputs are switched off
	3	SPI COM Error AUX 2	
	4	SPI COM Lost AUX 1	Communication not possible. Outputs are switched off
	5	SPI COM Lost AUX 2	
	6	Output Interconnect Error	Short circuit between outputs detected. Affected outputs switched off.
	7	SPI NP40 Error	Error in communication between Logic and Comm
2	0	NP40 Version Error	Comm Module Version error. Outputs are switched off
	1-7	Reserved	These bits will be always set as 0

### Profinet Module “System Command” Slot 4 Data Map (OUTPUTS)

The System Command module contains the “System Command Byte”. This byte is used for specific functions; such as “Store switching cycles” and others detailed in the table below. In order to execute the desired function, the specific value associated with the command must be written into the byte.

System Command Module									
Byte #	Output Bits								Description
	7	6	5	4	3	2	1	0	
1	System Command Value								One Byte that accepts the system command value see table below for values

Command Value	Command Name	Description
0X02	Store Switching Cycle Counters	When this command is executed, the current values of the switching cycle counters are stored into EEPROM. This command is intended to be used before powering off the device.
0X03	Store Diagnostic Log	When this command is executed, the diagnostic log is stored to the EEPROM.
0X04	Delete Diagnostic Log	Removes all diagnostic log entries in EEPROM (required by webpage).

## Profinet Module “Module Error Input” Slot 5 Data Map (INPUTS)

If an error occurs in the P2H Node 32DO this module contains flags about possible module states and faults / errors that might affect the module. If possible, the device will try to recover from these errors. If recovery is not possible, the device may need to be replaced. The message headers and flag definitions associated with each bit in the Index are detailed in the table below.

Module Error Input			
Byte #	Output Bits	Error Name	Error Description
1	0	AUX Voltage Warning	Set if Auxiliary Voltage in warning range. Module keeps normal operation
	1	AUX Voltage Error	Auxiliary Voltage in Error range. Outputs are switched OFF
	2	Logic Voltage Warning	Set if Logic voltage is out of range for warning.
	3	Logic Voltage Error	Set if Logic voltage is out of range for error. Outputs are switched OFF
	4	Temperature Warning	Set if a temperature increase above warning levels is detected by the output drivers
	5	Output Driver Channel Error	Set if a major fault is detected at the output stage – solenoid short circuit. Outputs are switched OFF
	6	Module Error	Set if an internal communication error is active
	7	Auxiliary Power Not Available	Auxiliary Power is off
2	0 - 7	Reserved	These bits will be always set as 0

## Process Data Outputs (Acyclic Access Parameters)

**Note:** The data in this section is available through Acyclic access and is also readily available in the PLC in Process data map area. Care must be taken not to overwrite data being used in the PLC.

### Index 0x2001 - Solenoids

The Index #01 contains the process output data to the valves. A value of 1 assigned to a bit in the Index #01 indicates that the associated solenoid shall be energized, whereas zero indicates that the power at the solenoid shall be off.

Index	Data Type	N° of Elements	Access	Name	Min Value	Max Value	Default
#01	UINT8	4	Read / Write	OUT Data	0x00000000	0xFFFFFFFF	0x00000000

The 32 solenoids are represented by one bit each, where the LSB (Least Significant Bit) is associated with EV00 and the MSB (Most Significant Bit) is associated with EV31.

Byte	4				3	2	1			
Bit #	31 (MSB)	30	29	...	...	...	...	2	1	0 (LSB)
Example Output Data	1	0	1	...	...	...	...	0	1	0
Controlled Output	Out_31 HIGH	Out_30 LOW	Out_29 HIGH	...	...	...	...	Out_2 LOW	Out_1 HIGH	Out_0 LOW
Solenoid (EV) Energized	EV31 ON	EV31 OFF	EV30 ON	...	...	...	...	EV03 OFF	EV02 ON	EV00 OFF

### Index #08 – System Commands

The Index #08 contains the “System Command Byte”. This byte is used for specific functions; such as “Store switching cycles” and others detailed in the table below. In order to execute the desired function, the specific value associated with the command must be written to Index #08.

Index	Data Type	N° of Elements	Access	Name	Min Value	Max Value	Default
#08	UINT8	1	Read / Write	System Command	0	0xFF	0

The System Command Byte supports the commands as defined in the table below.

Command Value	Command Name	Description
0X02	Store Switching Cycle Counters	When this command is executed, the current values of the switching cycle counters are stored into EEPROM. This command is intended to be used before powering off the device.
0X03	Store Diagnostic Log	When this command is executed, the diagnostic log is stored to the EEPROM.
0X04	Delete Diagnostic Log	Removes all diagnostic log entries in EEPROM (required by webpage).

## Process Data Inputs (Acyclic Access Parameters)

**Note:** The data in this section is available through Acyclic access and is also readily available in the PLC in Process data map area.

### Index #06 – Channel Error

In case an error occurs in the outputs stage (e.g.: short circuit or over-temperature), object #06 provides information about which channel caused the error. The bits corresponding to the outputs that caused the fault are set to 1 in Index #6.

Index	Data Type	N° of Elements	Access	Name	Min Value	Max Value	Default
#06	UINT8	4	Read	Channel Error	0x000000	0xFFFFFFFF	0x000000

### Index #07 – Module Info Flags

The Index #07 contains information about possible module states and faults / errors that might affect the module. If possible, the device will try to recover from these errors. If recovery is not possible, the device may need to be replaced. The message headers and flag definitions associated with each bit in the Index are detailed in the table (see next page). For further details, consult factory.

Index	Data Type	N° of Elements	Access	Name	Min Value	Max Value	Default
#07	UINT16	1	Read	Module Info Flags	0	0xFFFF	0

Bit #	Error Name	Error Description
Diag 0	Heartbeat not toggling AUX 1	Heartbeat is currently not toggling
Diag 1	Heartbeat not toggling AUX 2	
Diag 2	SPI COM Error AUX 1	Error in SPI Communication between AUX and Logic. Outputs are switched off
Diag 3	SPI COM Error AUX 2	
Diag 4	SPI COM Lost AUX 1	Communication not possible. Outputs are switched off
Diag 5	SPI COM Lost AUX 2	
Diag 6	Output Interconnect Error	Short circuit between outputs detected. Affected outputs switched off.
Diag 7	Comm Module Error	Error in communication between Logic and Comm
Diag 8	Comm Module Version Error	Comm Module Version error. Outputs are switched off
Diag 9-15	Reserved	These bits will always be set as 0

## Index #09 – Module Error Input

The Index #09 contains user-friendly diagnostics (in case of errors or faults) provided as Process Data Input.

Index	Data Type	N° of Elements	Access	Name	Min Value	Max Value	Default
#09	UINT16	1	Read	Module Error Input	0	0xFFFF	0

Bit #	Error Name	Error Description
Diag 0	AUX Voltage Warning	Set if Auxiliary Voltage in warning range. Module keeps normal operation
Diag 1	AUX Voltage Error	Auxiliary Voltage in Error range. Outputs are switched OFF
Diag 2	Logic Voltage Warning	Set if Logic voltage is out of range for warning.
Diag 3	Logic Voltage Error	Set if Logic voltage is out of range for error. Outputs are switched OFF
Diag 4	Temperature Warning	Set if a temperature increase above warning levels is detected by the output drivers
Diag 5	Output Driver Channel Error	Set if a major fault is detected at the output stage – solenoid short circuit. Outputs are switched OFF
Diag 6	Module Error	Set if an internal communication error is active
Diag 7	Auxiliary Power Not Available	Auxiliary Power is off
Diag 8-15	Reserved	These bits will always be set as 0

## Status/Diagnostic Data and Parameter

**Note: Acyclic Access only (Not in Process Data)**

## Index #02 – Switching Cycle Counters

The Index #02 contains the 32 switching cycle counters for the valves. The counter values are automatically stored by the module every 5 minutes.

Index	Data Type	N° of Elements	Access	Name	Min Value	Max Value	Default
#02	Array of UINT32	32	Read	Switching Cycle Counters	0	*	0

\* Max value for Index #02 is circa 4.3 billion (UINT32 max representable value). Once that the max value is reached, this is held in memory and additional cycles are not counted.



### Index #03 – Clear Switching Cycles Counters

The Index #03 allows the switching cycle counter for the solenoids to be reset to zero. The counter for each solenoid can be reset individually by setting the associated bit on the Index #03 – i.e.: for each bit set to 1 in the Index #03, the associated counter is set to zero.

Index	Data Type	N° of Elements	Access	Name	Min Value	Max Value	Default
#03	Array of UINT8	4	Read */ Write	Clear Switching Cycle Counters	0	0xFF 0xFF 0xFF 0xFF	0

\* The Read service for this Index always returns all zeros.

### Index #04 – AUX and Logic Voltage Value

The Index #04 contains the measured value of the Auxiliary and Logic Voltage

Index	Data Type	N° of Elements	Access	Name	Array Item	Voltage	Min Value	Max Value	Default
#04	Array of UINT16	1	Read	AUX Voltage	0	AUX	0	36300	24000
					1	Logic			

### Index #11 – AUX and Logic Voltage Warning Low Limit

The Index #11 contains the value for the AUX and Logic Voltage Warning Low Limit – i.e.: the (low) AUX Voltage value (shown in mV) that will trigger the AUX Voltage Warning diagnostic

Index	Data Type	N° of Elements	Access	Name	Array Item	Voltage	Min Value	Max Value	Default
#11	Array of UINT16	2	Read/Write	AUX and Logic Voltage Warning Low Limit	0	AUX	19400	24000	20400
					1	Logic			

### Index #12 – AUX and Logic Voltage Warning High Limit

The Index #12 contains the value for the AUX and Logic Voltage Warning High Limit, in millivolts – i.e.: the (high) Logic Voltage value that will trigger the Logic Voltage Warning diagnostic

Index	Data Type	N° of Elements	Access	Name	Array Item	Voltage	Min Value	Max Value	Default
#12	Array of UINT16	2	Read/Write	AUX and Logic Voltage Warning High Limit	0	AUX	24000	28500	26400
					1	Logic			

### Index #13 – Output State Behaviour

The Index #13 applies in case of communication lost (between Controller and P2H Node 32DO) and determines the outputs behavior in case of loss of communication, as follows:

Index #13 = 0 → Outputs are set to “0”

Index #13 = 1 → Outputs are hold to last valid state

Index	Data Type	N° of Elements	Access	Name	Min Value	Max Value	Default
#13	UINT8	1	Read/Write	Output State Behavior	0	1	0

### Index #14 – Open Load Detection

The Index #14 applies in case an open load or missing coil is detected on an Output during startup, the specific bit is set. The module checks all outputs once during startup for missing coils. If no load is detected on an output, the specific bit in this bitmap is set. Open load is not considered as an error.

Index	Data Type	N° of Elements	Access	Name	Min Value	Max Value	Default
#14	Array of UINT8	4	Read	Open Load Detection	0x00	0xFF	0x00

### Index #15 – Firmware Versions

The Index #15 provides the major firmware versions of various microcontrollers on the module. For additional info consult the factory.

Index	Data Type	N° of Elements	Access	Name	Min Value	Max Value	Default
#15	Array of UINT32	4	Read	FW Versions	See table below		

Array Item	Bit 31..24 (MSbyte)	Bit 23..16	Bit 15..8	Bit 7..0 (LSbyte)
0	AUX1_FW Major	AUX1_FW Minor	(not used)	(not used)
1	AUX2_FW Major	AUX2_FW Minor		
2	Logic_FW Major	Logic_FW Minor		
3	Comm Module_FW Major	Comm Module_FW Minor	Comm Module_FW Build	

## Index #17 – LED State

The Index #17 contains status of the LEDs on the unit.

Index	Data Type	N° of Elements	Access	Name	Min Value	Max Value	Default
#17	Array of UINT8	7	Read	LED States	See below		

Array Item	LED
0	AP
1	LP
2	Fault
3	NS/RUN
4	MS/ERROR
5	Link1
6	Link2

For the webpage to show the current state of the P2H Node 32DO module's LEDs, information about the "Logic Power", "AUX Power" and "Fault" LED, as well as the comm-module LEDs are made accessible via this Index. This Index is an array with one entry for each LED. The table to the right shows the encoding of the LED colors and blinking patterns. The blinking frequency is 1 Hz.

Value	Meaning
0	State Unknown
1	OFF
2	Solid Green
3	Blinking Green
4	Solid Red
5	Blinking Red
6	Solid Yellow
7	Blinking Yellow
8	Blinking Red/Yellow

## Index #18 – Run/Idle Status

The Index #18 and the P2H Node 32DO webpage does not allow the user to write settings or parameters during an active PLC connection. This Index offers the required information for this task to the webpage.

- "Idle" signals there is currently no PLC connection. This also includes pre-operational or error states.
- "Running" signals that there is at least one ongoing PLC connection. User cannot make changes to process data or other parameters via webpage.

Index	Data Type	N° of Elements	Access	Name	Value(s)
#18	UINT8	1	Read	Run/Idle Status	0: Idle 1: Running

## Index #19 – System Time

The Index #19 contains the system time. System time format is compliant to the Unix Timestamp. The time is only used to timestamp the entries of the Diagnostic event log (see Index #30 to Index #69 – Diagnostic Log). The System Time can be set in the following manner:

- System Time can be explicitly written to Index #20 via the PLC. This value will then be automatically transferred to Index #19.
- In case time setting is unavailable in Index #20, System Time will be automatically transferred from Index #21.
- In the unlikely event that time settings aren't available in Index #20 or Index #21, the System Time will be set to a standard recovery value January 1st, 2020, 12:00 am

Index	Data Type	N° of Elements	Access	Name	Value(s)
#19	UINT32	1	Read	System Time	Unix Time in seconds since 1970-01-01, 12:00 am

**Index #20 – System Time PLC**

Index #20 allows system time to be set explicitly via the PLC. Value should be Unix Time in seconds since 1970-01-01, 12:00 am.

Index	Data Type	N° of Elements	Access	Name	Min Value	Max Value	Default
#20	UINT32	1	Read/Write	System Time PLC	0	4,294,967,295	-

**Index #21 – System Time Web**

The Index #21 can write the system time to the P2H Node 32DO to be in sync with web browser's time. Index #21 is updated automatically when device is accessed via embedded web page. This value will be transferred to Index #19 if no value is available in Index #20. Value should be Unix Time in seconds since 1970-01-01, 12:00 am.

Index	Data Type	N° of Elements	Access	Name	Min Value	Max Value	Default
#21	UINT32	1	Read/Write	System Time Web	0	4,294,967,295	-

**Index #22 – Inter-Output Short Circuits**

The Index #22 detects inter-output short circuits at the factory. Value should always be zero. If not, consult factory.

Index	Data Type	N° of Elements	Access	Name	Min Value	Max Value	Default
#22	UINT8	4	Read	Inter-Output Short Circuits	0	0xFF	-

## Index #30 to Index #69 – Diagnostic Log

The diagnostic log populates a set of 40 Indexes with a similar structure. This way, it is easier for the user to request and interpret specific logging entries. The entries are sorted in the order of occurrence, Index 30 being the most recent entry and Index 69 the oldest. The information contained in the Diagnostic Log includes errors as defined in the “Module Info Flags” and “Module Error Input” Indexes.

Index	Data Type	N° of Elements	Access	Name	Value(s)
#30 to 69	Structure	3 Structure items	Read	Diagnostic Log	(not applicable)

The webpage offers an export function for the user to save the log as a CSV file. As the log only has 40 entries, the oldest entries are overwritten with new ones if the log is full (First In, First Out). The Diagnostic Log is non-volatile and is stored in the host's EEPROM every 30 minutes or by user interaction (see Index #08 – System Commands). The following table lists all implemented Event IDs. The errors range from 0000h to 3FFFh. The warnings range from 4000h to 7FFFh. The notifications range from 8000h to FFFFh. Complementary events (appearing/disappearing) differ by offset 1000h.

## Index #30 to Index #69 – Diagnostic Log Event IDs

Event ID (hex)	Meaning	Additional Event Data
<b>Errors</b>		
0001	Driver channel error / Short-circuit state detected	Index #06 – Channel Error
1001	Driver channel error / Short-circuit state removed	Index #06 – Channel Error
0002	Inter-Output short-circuit detected	Index #22 – Inter-Output Short Circuits
1002	Inter-Output short-circuit removed	Index #22 – Inter-Output Short Circuits
0003	AUX voltage entered low error range	AUX Voltage in mV (Index #04)
1003	AUX voltage left low error range	AUX Voltage in mV (Index #04)
0004	AUX voltage entered high error range	AUX Voltage in mV (Index #04)
1004	AUX voltage left high error range	AUX Voltage in mV (Index #04)
0005	LOGIC voltage entered low error range	LOGIC Voltage in mV (Index #04)
1005	LOGIC voltage left low error range	LOGIC Voltage in mV (Index #04)
0006	LOGIC voltage entered high error range	LOGIC Voltage in mV (Index #04)
1006	LOGIC voltage left high error range	LOGIC Voltage in mV (Index #04)
0007	AUX power not available	-
1007	AUX power available again	-
0008	Module Error occurred or changed	Index #09 – Module Error Input
0009	Comm Module occurred	-
1008	All Module Errors resolved	Index #09 – Module Error Input
<b>Warnings</b>		
4000	AUX voltage entered low warning range	AUX Voltage in mV (Index #04)
5000	AUX voltage left low warning range	AUX Voltage in mV (Index #04)
4001	AUX voltage entered high warning range	AUX Voltage in mV (Index #04)
5001	AUX voltage entered high warning range	AUX Voltage in mV (Index #04)
4002	LOGIC voltage entered low warning range	LOGIC Voltage in mV (Index #04)
5002	LOGIC voltage left low warning range	LOGIC Voltage in mV (Index #04)
4003	LOGIC voltage entered high warning range	LOGIC Voltage in mV (Index #04)
5003	LOGIC voltage left high warning range	LOGIC Voltage in mV (Index #04)
4004	Temperature Warning on Output Drivers detected	0 = AUX1; 1 = AUX2
5004	Temperature Warning on Output Drivers removed	0 = AUX1; 1 = AUX2
4005	Open Load detected	Index #14 – Open Load Detection
<b>Notifications</b>		
8000	P2H Node 32DO startup in normal mode	-
8001	P2H Node 32DO startup in Self-Test Mode	-
8002	P2H Node 32DO restarted by watchdog	-
8003	System Time change by PLC	Index #20 – System Time PLC
8004	System Time change by Webpage	Index #21 – System Time Web
8005	Diagnostic Log deleted (via Index #08)	-
8006	Diagnostic Log stored manually (via Index #08)	-
8007	Switching Cycles counter(s) cleared (via Index #03)	Index #03 – Clear Switching Cycles
8008	Switching Cycles counters stored (via Index #08)	-
800A	Low Voltage warning level changed (via Index #11)	Index #11 – Voltage Warning Low Limits; bit16..31: Logic, bit0..15: AUX
800B	High Voltage warning level changed (via Index #12)	Index #12 – Voltage Warning High Limits; bit16..31: Logic, bit0..15: AUX
800C	Output State Behavior changed (via Index #13)	Index #13 – Output State Behavior
800E	P2H Node 32DO parameters reset to factory defaults. Or: EEPROM was corrupted. This event is executed at next startup.	-
8FFF	Corrupt Log entry (EEPROM load error)	-

## Web Server

### Overview Page

**IDENTIFICATION**

Module name	P2H Node 32DO EtherNet/IP
Serial number	A0456D3C
FW versions	AUX1: 0.04 AUX2: 0.04 Logic: 0.05 NP40: 1.41.02 Web: 0.05
Uptime	0 days, 1h:46m:56s
CPU Load	7 %
Module Time	01/01/2020 01:50:13

**CURRENT IP SETTINGS**

DHCP	Disabled
Host Name	
IP Address	192.168.1.123
Subnet Mask	255.255.255.0
Gateway Address	192.168.1.1
DNS Server #1	0.0.0.0
DNS Server #2	0.0.0.0
Domain Name	

**CURRENT ETHERNET STATUS**

MAC Address	00:30:11:00:00:10
Port 1	No Link
Port 2	100 FDX
PLC Connection State	Idle

**LED NAME MEANING**

LED	NAME	MEANING
<input type="radio"/>	FAULT	No Active Faults / Active Fault/s
<input checked="" type="radio"/>	NS (Network Status)	No Config / Connected / No Data Exchange / Time Out
<input checked="" type="radio"/>	MS (Module Status)	N/A / Status OK / Config Error / Fault
<input checked="" type="radio"/>	LP (Logical Power)	Missing LP / Nominal Range / Warning Range / Error Range
<input checked="" type="radio"/>	AP (Auxiliary Power)	Missing AP / Nominal Range / Warning Range / Error Range
<input checked="" type="radio"/>	NT L/A (Network Link Activity)	No L/A Link / Link, NO Traffic / Link Activity / N/A

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### Change Password

It is possible to modify the password via a dedicated button on the top right corner of all the tabs of the web server. The web server will require the user to enter the current password before entering the new value for the field. The password can be restored to default values (PARKER) with a "Reset to Factory". The default username is "PARKER".

**IDENTIFICATION**

Module name	P2H Node 32DO EtherNet/IP
Serial number	A0456D3C
FW versions	AUX1: 0.04 AUX2: 0.04 Logic: 0.05 NP40: 1.41.02 Web: 0.05
Uptime	0 days, 1h:46m:56s
CPU Load	7 %
Module Time	01/01/2020 01:50:13

**CHANGE PASSWORD**


Default Password (Case Sensitive)	
Username	PARKER
Password	PARKER

The Web-server has five tabs:

- **OVERVIEW:** Main product information is available via this page
- **STATUS/CONFIG:** Objects (Read and Write) are accessible via this page
- **NT STATUS:** Information about current network status is available via this page
- **LOG:** The module's errors, warnings, and events are displayed and capable of export here
- **HELP:** A short version of the user manual is available in PDF form at this tab





## Status/Config Page



English ▼ P2H IE - EtherNet/IP(TM)

[OVERVIEW](#)
[STATUS/CONFIG](#)
[NT STATUS](#)
[LOG](#)
[HELP](#)

CHANGE PASSWORD 



Address	Tags	Status	# Cycles	Fault	Address	Tags	Status	# Cycles	Fault
0	Valve 1	Off (0)	1373	N/A	16	Valve 17	Off (0)	2064	N/A
1	Valve 2	Off (0)	2088	N/A	17	Valve 18	Off (0)	2060	N/A
2	Valve 3	Off (0)	2086	N/A	18	Valve 19	Off (0)	2063	N/A
3	Valve 4	Off (0)	2077	N/A	19	Valve 20	Off (0)	2063	N/A
4	Valve 5	Off (0)	2076	N/A	20	Valve 21	Off (0)	2061	N/A
5	Valve 6	Off (0)	7903	N/A	21	Valve 22	Off (0)	2058	N/A
6	Valve 7	Off (0)	2071	N/A	22	Valve 23	Off (0)	2062	N/A
7	Valve 8	Off (0)	2068	N/A	23	Valve 24	Off (0)	2058	N/A
8	Valve 9	Off (0)	2067	N/A	24	Valve 25	Off (0)	2109	N/A
9	Valve 10	Off (0)	2058	N/A	25	Valve 26	Off (0)	2096	N/A
10	Valve 11	Off (0)	2059	N/A	26	Valve 27	Off (0)	2094	N/A
11	Valve 12	Off (0)	2056	N/A	27	Valve 28	Off (0)	2094	N/A
12	Valve 13	Off (0)	2058	N/A	28	Valve 29	Off (0)	2094	N/A
13	Valve 14	Off (0)	2060	N/A	29	Valve 30	Off (0)	2090	N/A
14	Valve 15	Off (0)	2056	N/A	30	Valve 31	Off (0)	2098	N/A
15	Valve 16	Off (0)	2060	N/A	31	Valve 32	Off (0)	1370	N/A

### POWER SUPPLY

Logic Domain	Auxiliary Domain
Voltage (V) 23.893	Voltage (V) 23.659
Voltage Warning Level (V)	Voltage Warning Level (V)
low: 20,4 SET	low: 20,4 SET
high: 26,402 SET	high: 26,401 SET

### DIAGNOSTIC - MODULE ERROR INPUT

#	Description	Value
0	AUX Voltage Warning	0
1	AUX Voltage Error	0
2	Logic Voltage Warning	0
3	Logic Voltage Error	0
4	Temperature Warning	0
5	Output Driver Channel Error	0
6	Module Error	0
7	AUX power not available	0

### COMMANDS

Solenoids Cycles Counters CLEAR ALL COUNTERS STORE COUNTERS

System Command RESET TO FACTORY DEFAULT

Output state at loss of communication Set outputs to 0 SET

### IP CONFIGURATION

DHCP	Disabled <span>▼</span>	Host Name	
IP Address	192.168.1.123	Domain name	
Subnet Mask	255.255.255.0	DNS Server #1	0.0.0.0
Gateway Address	192.168.1.1	DNS Server #2	0.0.0.0

SAVE SETTINGS

### ETHERNET CONFIGURATION


Port 1	Auto <span>▼</span>
Port 2	Auto <span>▼</span>


SAVE SETTINGS

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## NT Status Page



English
P2H IE - Ethernet Modbus-TCP


OVERVIEW STATUS/CONFIG **NT STATUS** LOG HELP
CHANGE PASSWORD

### CURRENT IP CONFIGURATION

DHCP:	Disabled
IP Address:	192.168.1.123
Subnet Mask:	255.255.255.0
Gateway Address:	0.0.0.0
Host Name:	
Domain Name:	
DNS Server #1:	0.0.0.0
DNS Server #2:	0.0.0.0

### CURRENT ETHERNET STATUS

MAC Address:	00:05:94:02:A6:F3
Port 1:	100 FDX
Port 2:	No Link

Interface Counter

	PORT 1	PORT 2	INTERNAL
In Octets:	87394	0	66518
In Ucast Packets:	241	0	239
In NUCast Packets:	185	0	108
In Discards:	0	0	0
In Errors:	0	0	0
In Unknown Protos:	0	0	4
Out Octets:	331680	0	330862
Out Ucast Packets:	339	0	335
Out NUCast Packets:	16	0	16
Out Discards:	0	0	0
Out Errors:	0	0	0

Media Counter

	PORT 1	PORT 2
Alignment Errors:	0	0
FCS Errors:	0	0
Single Collisions:	0	0
Multiple Collisions:	0	0
Late Collisions:	0	0
Excessive Collisions:	0	0
SQE Test Errors:	0	0
Deferred Transmissions:	0	0
MAC Receive Errors:	0	0
MAC Transmit Errors:	0	0
Carrier Sense Errors:	0	0
Frame Size Too Long:	0	0

Modbus Statistics

Modbus Connections:	0
Connection ACKs:	0
Connection NACKs:	0
Connection Timeouts:	0
Process Active Timeouts:	0
Processed messages:	0
Incorrect messages:	0

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**Log**

A rolling list of errors, warnings, and events is available. This list can be exported to CSV.

English

P2H IE - EtherNet/IP(TM)

OVERVIEWSTATUS/CONFIGNT STATUS**LOG**HELP

CHANGE PASSWORD

DIAGNOSTIC LOGS

Date	Time	Type	Description	Event	Extra Data	Remarks
01/01/2020	00:00:00	warning	Open Load detected (bitfield ADI14 in extra data, bit0 = Solenoid 1 etc..)	4005	ffffffff	none
01/01/2020	00:00:00	event	AUX2 event	8020	00070000	none
01/01/2020	00:00:00	event	AUX1 event	8010	00070000	none
01/01/2020	00:00:00	event	P2H startup in normal mode	8000	00000000	none
01/01/2020	00:28:53	event	Diagnostic Log deleted (via ADI8)	8005	00000000	none

REFRESHCLEAR LOGSEXPORT TO CSV

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**Help**

A short version of the user manual is available in PDF form at this tab

Pneumatic Division North America  
Richland, Michigan 49083

VAL-SIF-165  
Title: P2H Ethernet Node 32 DO  
Embedded User Manual  
ISSUED: April, 2022

P2H Ethernet Node 32 DO  
P2HU\*\*P2HE\*\*PE00N\*P\*  
USER MANUAL

Embedded  
Help Manual

OVERVIEWSTATUS/CONFIGNT STATUSLOG**HELP**

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