

# PCH Network Portal

Bulletin 0600-B100



ENGINEERING YOUR SUCCESS.

# PCH Network Portal

## What is PCH Network Portal?

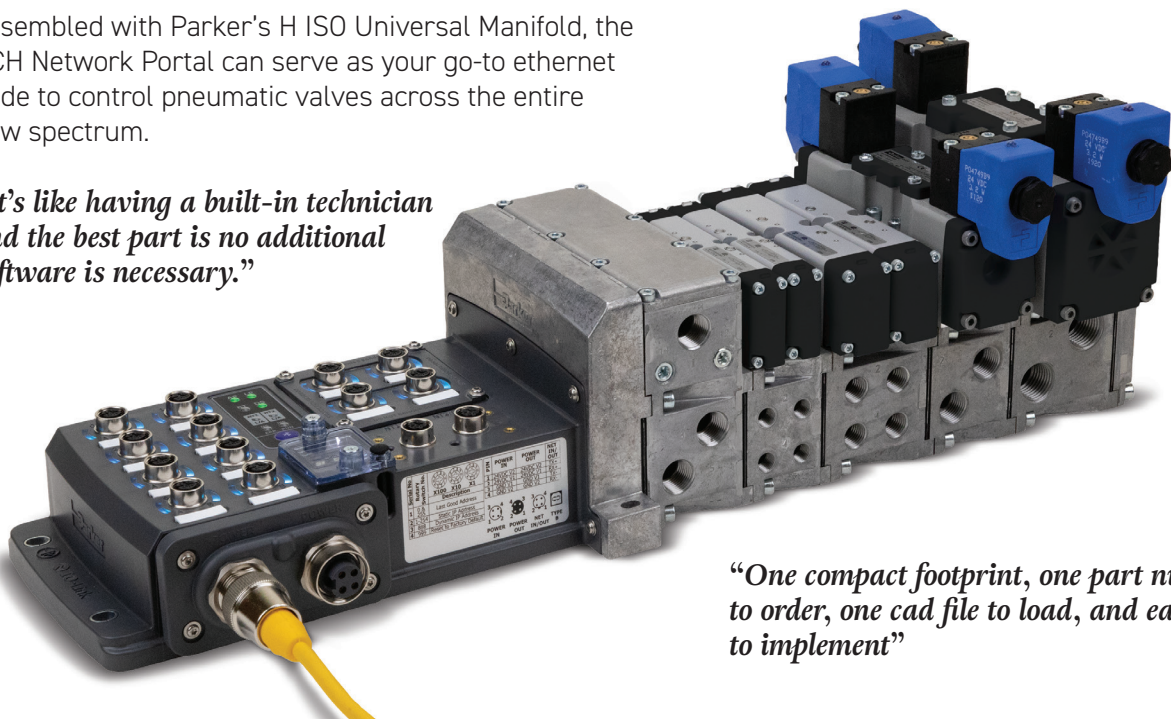
PCH Network Portal is a new approach to ethernet communication modules that **redefines and revolutionizes machine I/O architecture** (inputs and outputs). As an ethernet node with **IO-Link master capability** that supports multiple **Industrial Ethernet communication protocols** (EtherNet/IP, PROFINET, Modbus TCP and EtherCAT), the PCH Network Portal can communicate with many industrial controllers used in the automation industry. It is classified as a Cyber Physical System for its ability to communicate across machinery while offering maximum function integration, simplicity of use, and significant architecture cost reductions.

The PCH Network Portal was engineered for flexible manufacturing applications where machine changes are common, PLC's are not always accessible, and where obstacles on the plant floor make setup, configuration and troubleshooting time consuming. The PCH Network Portal was engineered with configurable I/O with true PNP / NPN circuitry switching and the open protocol, IO-Link, on each port for easy machine design changes. With built-in configurable IO-Link master ports all packed into an IP65, weld splatter resistant housing, the PCH Network Portal can future-proof your machine to changes in your network architecture. Built-in programming functions such as debounce timers and time stamped rolling 40 errors, warnings and events logs make troubleshooting and integration easy, even for an unseasoned programmer.

When commissioning or troubleshooting, multiple interfaces can be used in conjunction with a PLC, such as the embedded webpage and the PC based PCH Portal Configuration Tool. Configuration and troubleshooting can be done via a laptop, tablet, or phone via a secure and lockable Bluetooth connection, providing remote control of the PCH Network Portal which enhances safety by allowing commissioning and troubleshooting outside of the safety area of the machine; especially when dealing with robot controllers or end effector tooling. NOTE: When PCH is owned by a PLC or another master controller configuration and forcing of valves, inputs and outputs is limited.

Assembled with Parker's H ISO Universal Manifold, the PCH Network Portal can serve as your go-to ethernet node to control pneumatic valves across the entire flow spectrum.

*“It's like having a built-in technician and the best part is no additional software is necessary.”*



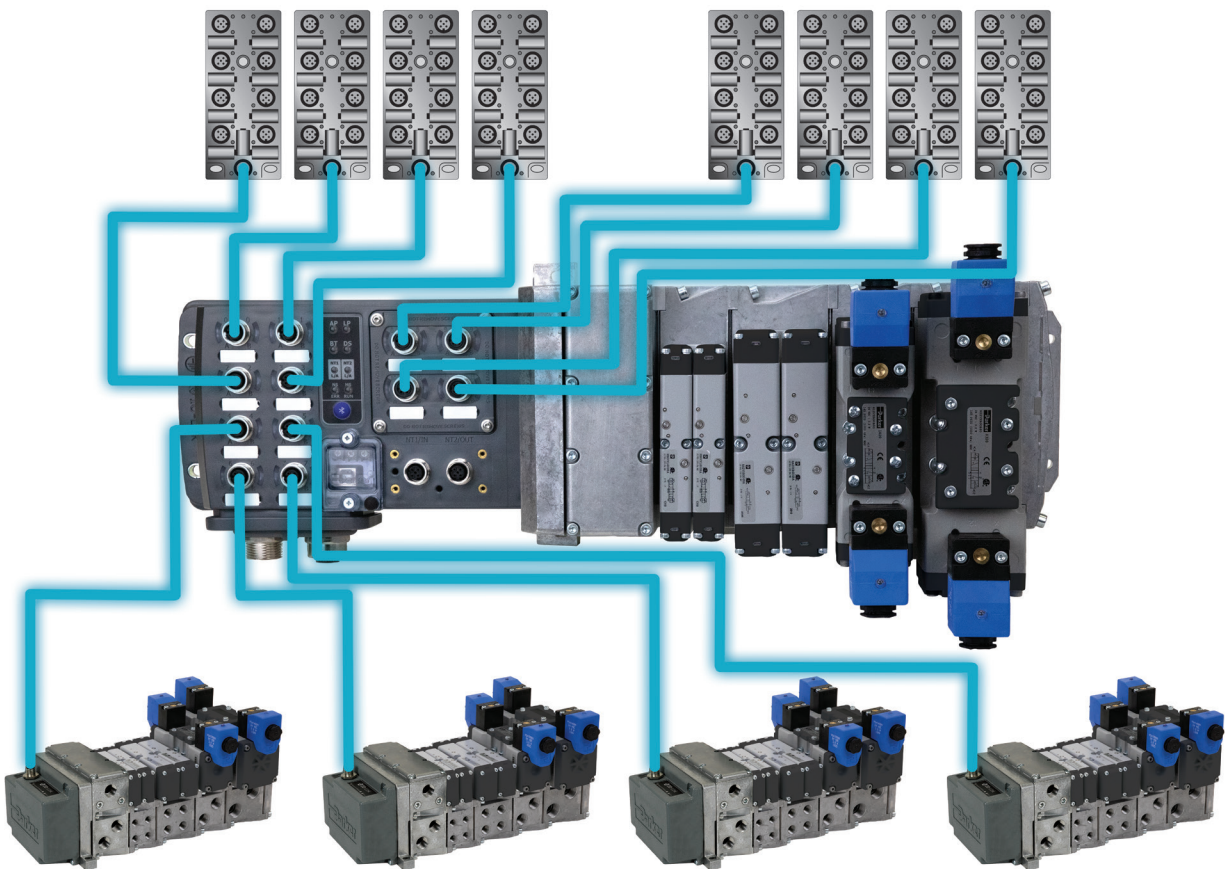
*“One compact footprint, one part number to order, one cad file to load, and easier to implement”*

# PCH Network Portal

## Architecture Savings, Dramatic versatility

The modularity of the PCH Network Portal can significantly optimize the layout and architecture of a machine offering significant cost reductions in machine design, during integration or simply through rapid troubleshooting and maintenance benefits. Reducing architecture complexity, increasing compatibility and interchangeability of connected devices, together with an ease of set-up and programming, allows the PCH Network Portal to achieve incredible savings in machinery design.

Utilizing the PCH Network Portal allows applications the flexibility of expanded I/O. Furthermore, taking advantage of the PCH Network Portal's IO-Link master capabilities can dramatically increase the available I/O on a machine. IO-Link opens the door to low cost integration of devices like RFID read head integration, smart lights, distribution blocks, and inductive couplers all in one fixed form factor. This integrated flexibility eliminates the need for expensive ethernet masters, and cabling. As your application grows, the PCH Network Portal can adapt to meet many needs in the automation world.

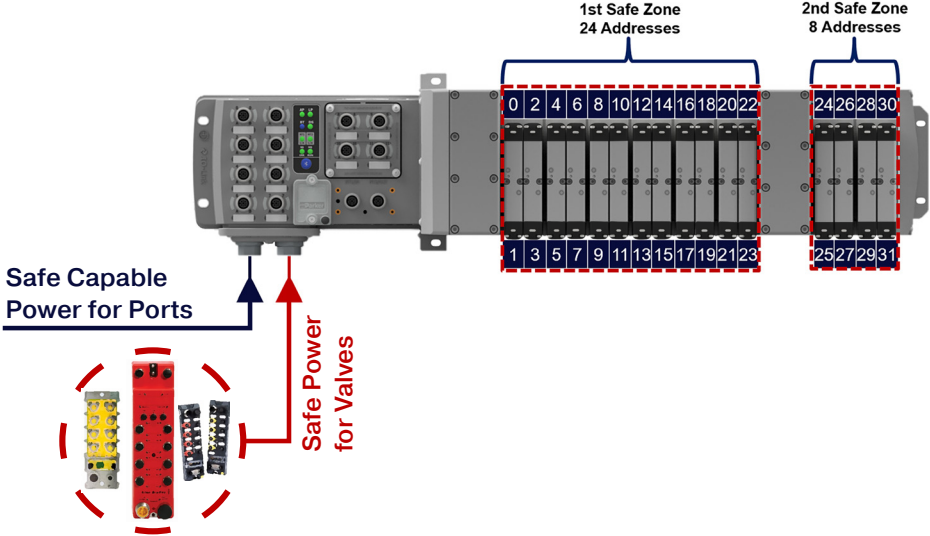


The example above shows the PCH Network Portal expanded to 128 inputs via 8 IO-Link discrete I/O blocks, 4 additional valve manifolds via IO-Link each expandable to 24 valves. These connections are made with the non-proprietary and open protocol IO-Link, which uses standard M12 cables. The PCH Network Portal provides the opportunity to control an entire cell or line by with just one ethernet connection.

# PCH Network Portal

## Flexible Design, Value Redefined

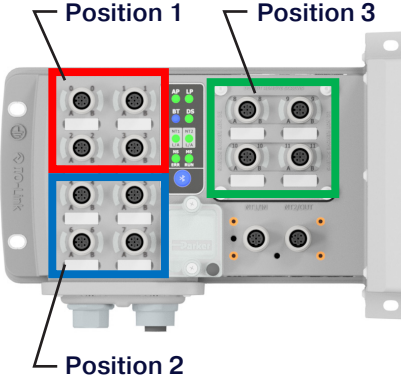
Safe power enhances the security of important connections such as light curtains that require OSSD test pulsing following machinery directives to achieve safety conformance. The illustration below shows the flexibility offered by the PCH Network Portal when separated into two isolated safe power zones using the S4 or S5 power options. The left power connector ('Safe Power Capable for Ports') provides safe capable power to the PCH Network Portal I/O auxiliary ports. The right power connector ('Safe Power for Valves') provides 2 **safe power zones** for attached pneumatic valves via isolated pins and safe grounds. The first safe power zone covers the first 24 valve solenoids of the pneumatic manifold. The second safe power zone covers the final 8 valve solenoids of the pneumatic manifold. NOTE: Intermediate air supply with expansion too 25th address is required. These safe power zones can be used to implement safe process lines and safe machines all in one compact and powerful solution.



## Designing Your System

The PCH Network Portal can accommodate up to three module variants (A, B, and C), each offering uniquely customizable ports. Once you select your module those ports become fully configurable as IO-Link A or IO-Link B master ports or configurable PNP or NPN digital I/O ports. This makes changes on the machine flexible without having to purchase new components.

Module Variant	Description	Each port can have any of the following behavior:
A	Class A IO-Link or Dual I/O	1 IO-Link Class A Master and (1 input or 1 output) OR 2 Inputs 24V DC (PNP or NPN) OR 2 Outputs 250 mA, @ 24V DC OR 1 Input 24V DC (PNP or NPN) and 1 Output 250 mA, @ 24V DC
B	Class B IO-Link or Single I/O	1 IO-Link Class B Master 1 Input 24V DC (PNP or NPN) 1 Output (Logic Power), 250 mA, @ 24V DC
C	Class B IO-Link or Dual I/O	2 M12 Ports with digital output (each port will have 2 outputs (aux power) 500 mA, @ 24V DC 2 M12 Ports, each port will be configured as one of the following: 1 IO-Link Class B Master OR 1 Input, 24VDC (PNP/NPN) OR 1 Output (Logic Power), 250mA @ 24V DC

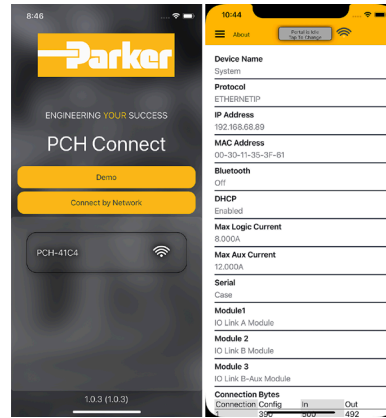


# PCH Network Portal

## Streamlined Diagnostics

Can't access the PLC? No Problem!

With the PCH Portal Bluetooth App installed on your phone or tablet, you can access usable prognostic/diagnostic data and time stamped event logs wirelessly to make accessing data and commissioning your machine simple. Testing and checking I/O, IO-Link devices and other mechanical functions of your machine becomes less of a hassle, by allowing someone to walk freely around the machine, while these checks are being done. The same functions that the PCH Web Interface and Configuration Tool have are also included with PCH Bluetooth App.



Secure  Lockable



Address	Valve Tag	Connect	State	Address	Valve Tag	Connect	State
0	VALVE_1	OFF	ON	16	VALVE_17	OFF	ON
1	VALVE_2	OFF	ON	17	VALVE_18	OFF	ON
2	VALVE_3	OFF	ON	18	VALVE_19	OFF	ON
3	VALVE_4	OFF	ON	19	VALVE_20	OFF	ON
4	VALVE_5	OFF	ON	20	VALVE_21	OFF	ON
5	VALVE_6	OFF	ON	21	VALVE_22	OFF	ON
6	VALVE_7	OFF	ON	22	VALVE_23	OFF	ON
7	VALVE_8	OFF	ON	23	VALVE_24	OFF	ON
8	VALVE_9	OFF	ON	24	VALVE_25	OFF	ON
9	VALVE_10	OFF	ON	25	VALVE_26	OFF	ON
10	VALVE_11	OFF	ON	26	VALVE_27	OFF	ON
11	VALVE_12	OFF	ON	27	VALVE_28	OFF	ON
12	VALVE_13	OFF	ON	28	VALVE_29	OFF	ON
13	VALVE_14	OFF	ON	29	VALVE_30	OFF	ON
14	VALVE_15	OFF	ON	30	VALVE_31	OFF	ON
15	VALVE_16	OFF	ON	31	VALVE_32	OFF	ON

LED	Status	Value	Description
Aux Power	ON	23.87 V	Connected and within Limit
Logic Power	ON	23.96 V	Connected and within Limit
Bluetooth	ON	7min	Remaining Time
Device Status	ON	-	Normal

LED	Status	Description
Port 1 LINK/Activity Status	OFF	No link, no activity
Port 2 LINK/Activity Status	OFF	No link, no activity
NS/ERR LED	OFF	---
MS/RUN LED	ON	---

● Output Configured   
 ● Input ON   
 ● IO-Link Configured, but no device connected   
 ● IO-Link Configured, device connected  
● Output Forced ON   
 ● Output Forced OFF   
 ● IO pin is short - circuited or faulted   
 ● Output ON

Device connected ●

When using the 'PCH Portal Configuration Tool' your built-in technician comes to life with easy to follow screens for readouts, adjustments, and settings. Configuring the PCH Network Portal to the network is easy. Fast and storable configurations combined with embedded smart diagnostic and prognostic tools like built-in debounce times and up/down counters translate to quick change-over and short downtime. Further problems are easy to spot with the rolling 40 error, warnings, and events log which are time stamped. No more guessing at what went wrong in plant. Commissioning and troubleshooting a tool can even be done remotely from outside the work cell via the device's secure and lockable Bluetooth connectivity.

# PCH Network Portal

## 2 easy ways to order

### 1 Online Configuration

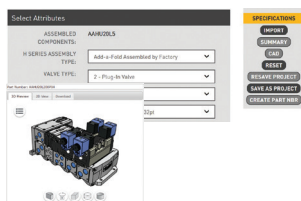
Navigate to the landing page

[www.parker.com/pdn/PCHPortal](http://www.parker.com/pdn/PCHPortal)

Customize your manifold assembly

Create and save a unique assembled part number

Generate a CAD model



### 2 Order Components

- A Select Endplate Kit**  
Includes Left and Right Hand Endplate
- B Select Valve Manifold Segments**  
Manifold (size HB, HA, H1 or H2)  
Air Supply Module
- C Select Valve Stations & Accessories**  
Valves (size HB, HA, H1 or H2)  
Blanking Plate



For more information on the PCH Network Portal visit our website [www.parker.com/pdn/PCHPortal](http://www.parker.com/pdn/PCHPortal) for additional whitepapers:



PDNWP-010 The Benefits of Integrating  
Cyber Physical Systems



PDNWP-015 Optimize Integration  
with Flexible Design



PDNWP-014 Streamlined Architecture  
Reduces Machinery Costs



PDNWP-016 Decrease Downtime  
by Streamlining Diagnostics



[www.parker.com/pdn/PCHPortal](http://www.parker.com/pdn/PCHPortal)



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