Electronic Control Systems
Vansco Display Products
Catalog HY33-5025/US
North American Product Offering

Parker

ENGINEERING YOUR SUCCESS.
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- This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.
- The user, through its own analysis and testing, is 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 analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.
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SAFETY

For safety information, see Safety Guide at www.parker.com/safety or call 1-800-CParker.
PHD Displays

PHD (Parker Hannifin Displays)

The PHD family of displays are general purpose displays suitable for a wide range of industry applications. There are 3 sizes: 2.8", 5.0" and 7.0". All models are color LCD displays with capacitive touchscreens for operator interface. The end user can customize any of the PHD displays with their own custom bezel and by creating custom application software.

PHD28
The PHD28 is a general purpose 2.8" display for vehicle instrumentation. The versatile PHD28 display has a pleasing, aesthetic design that blends into modern vehicle cabs. A capacitive touchscreen interface offers interactive, intuitive HMI. If desired, the general purpose I/O may be configured for a 3x4 matrix keypad or buttons.

The PHD28 supports J1939 and CANopen CAN communication interfaces. The PHD28 has 7 configurable inputs and 2 low-side outputs. Mounting is easy, with steel clips or screw tabs, for a flush mount in dash panels. The PHD28 may be mounted in landscape or portrait orientation.

The PHD28 has a 2.8", color LCD, 320 x 240 pixel screen with dimmable backlight. The enclosure is designed to be used in outdoor environments. The connector is a rugged, environmentally sealed, Molex MX150 type.

Description | Ordering PN
--- | ---
PHD28 | 1040002ECD

PHD50
The PHD50 is a general purpose 5.0" display for vehicle instrumentation. The versatile PHD50 display has a pleasing, aesthetic design. A capacitive touchscreen interface offers interactive, intuitive HMI. If desired, the general purpose I/O may be configured for a 3x4 matrix keypad or buttons.

The PHD50 supports J1939 and CANopen CAN communication interfaces. The PHD50 has 10 configurable inputs and 2 low-side outputs. 8 of the inputs have flexible usage as digital inputs or 0-5V analog inputs. 2 may be configured as frequency inputs. There is also a CCTV camera port. Mounting is easy, with steel clips or screw tabs, for a flush mount in dash panels. The PHD50 may be mounted in landscape or portrait orientation.

The PHD50 has a 5.0", color LCD, 800 x 480 pixel screen with dimmable backlight. The enclosure is designed to be used in outdoor environments. The connectors are a rugged, environmentally sealed, Molex MX150 type.

Description | Ordering PN
--- | ---
PHD50 std. | 1041003ECD

PHD70
The PHD70 is a general purpose 7.0" display for vehicle instrumentation. The versatile PHD70 display has a pleasing, aesthetic design. A capacitive touchscreen interface offers interactive, intuitive HMI. If desired, the general purpose I/O may be configured for a 3x4 matrix keypad or buttons.

The PHD70 supports J1939 and CANopen CAN communication interfaces. The PHD70 has 10 configurable digital inputs and 2 low-side outputs. All of the inputs can be active-high or active-low digital inputs. 2 may be configured as frequency inputs. There are 2 CCTV camera ports. Mounting is easy, with steel clips or screw tabs, for a flush mount in dash panels. The PHD70 may be mounted in landscape or portrait orientation.

The PHD70 has a 7.0", color LCD, 800 x 480 pixel screen with dimmable backlight. The enclosure is designed to be used in outdoor environments. The connectors are a rugged, environmentally sealed, Molex MX150 type.

Description | Ordering PN
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PHD70 std. | 1042003ECD
DPS (Display Panel Standard) Instrument Clusters

The DPS family of instrument clusters/displays is an innovative group of user interfaces that makes complete vehicle information accessible in a single centralized location. By incorporating one of the DPS clusters, a wide range of industrial vehicles can be operated more efficiently for greater productivity. DPS instrument clusters are highly customizable for various vehicle applications, with options for 4 or 5 backlit gauges, up to 26 positions for status LEDs and the possibility for customer specific overlays. The DPS clusters are programmed using C or Matlab simulink tools and the appropriate Parker Vansco SDK (Software Development Kit).

**DPS4 and DPS5**

The versatile Display Panel Standard 4 gauge (DPS4) and 5 gauge (DPS5) instrument clusters support two CAN communication channels, as well as USB. The DPS has 20 digital inputs: 4 active high with wake-up, 6 active high, and 10 active low. There are 5 analog inputs (3 voltage, and 2 resistive), and 2 frequency inputs (fixed voltage threshold open collector). For outputs the DPS has 1 high-side and 2 low-side. The outputs can provide a maximum current of 2.5 A with pulse width modulation capabilities, and analog feedback provides open circuit, short to battery, and ground detection.

The DPS4 and DPS5 have a 256x80 pixel transflective FSTN LCD screen. The robust enclosure is designed to be used in rugged environments with sealed Molex MX150 type connectors.

**DPS-C**

The Display Panel Standard, Construction (DPS-C) is an innovative user interface that makes complete vehicle information accessible in a single centralized location. The DPS Construction version has a more compact cluster design intended for the smaller cabs found in off-road construction equipment.

The DPS-C can monitor up to 24 inputs; 4 analog inputs, 2 frequency inputs and 18 digital inputs. There are up to 4 outputs, rated at 2.5 A maximum current.

The DPS-C has a large (320x240) color TFT LCD screen. The robust enclosure is designed to be used in rugged environments with sealed Molex MX150 type connectors.

<table>
<thead>
<tr>
<th>Description</th>
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<tbody>
<tr>
<td>DPS4</td>
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<td>DPS5</td>
<td>0928012ECD</td>
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<tr>
<td>DPS-C</td>
<td>0971001ECD</td>
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Parker Pro Display

Parker Pro Display is an apps-based HMI (Human Machine Interface) product for mobile machines and vehicles.

Pro Display provides the possibility of having one centralised HMI display in the vehicle cabin for machine functionality, diagnostics, efficiency tools, infotainment and entertainment, and much more.

The customer can incorporate an unlimited number of apps into one display product, and the display is not limited to one particular control system integration.

Pro Display 10

Pro Display 10 comes with a 10.1" touchscreen display and is intended for in-cab use.

Parker Pro Display 10 has a high-level display for demanding HMI needs. The processor, together with software toolkit, enables great graphical performance. High-speed RAM memory greatly improves the performance.

The IPS display offers clear images with great color reproduction from all viewing angles, allowing the display to be mounted in landscape or portrait orientation. A touchscreen interface enables an intuitive, rapid and accurate interaction with the display's applications.

Pro Display 10 offers a wide variety of communication interfaces including 1 Mbps CANbus. Software updates can be made easily by using a memory stick via a USB port.

There are internal antennas for wireless communication, and a connection point for an external antenna for the FM-RDS radio app. Pro Display 10 is capable of reproducing sound and showing videos with audio. Bluetooth can be used for remote display and diagnostics, mobile phone hands-free apps, as well as for music streaming services.

Besides two available camera interfaces, an unlimited number of IP-cameras can be virtually connected via Ethernet switch or WLAN access point.

Two mounting methods are available for Pro Display 10. The display can be easily integrated into the panel with steel clips or mounted with adjustable RAM® Mount components.

For production:

<table>
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<td>Pro Display 10-Advanced</td>
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For development:

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Parker UX Toolkit

Parker UX Platform (UXP) is an apps-based platform that can be used to develop human machine interface (HMI) products for mobile machines and vehicles.

The platform is designed to enable separation of system functionality into separate apps. The list of advantages for using separate apps is impressive; quick independent development, flexible installation, individual value-added interface into your machine and many more. It gives you the possibility of integrating your own designers’, partners’ and 3rd party capabilities into one product.

For development:

<table>
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<tr>
<th>Description</th>
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<td>UX Toolkit</td>
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## Accessories

### Cables and Connectors
Parker has development cables and connectors for all Displays and Instrument Clusters.

### I/O Cables and Overlays
Parker has cables to support connection of modules to the Controller I/O Board (CIOB), and module specific overlays that can be used on the CIOB to identify channels.

#### Development cables

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<td>PHD50/70 cables</td>
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<td>DPS4/5 cable</td>
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<td>DPS-C cable</td>
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<td>DPS4/5 USB cable</td>
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#### Connectors

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<td>PHD50/70 kit</td>
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<td>DPS4/5 kit</td>
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<td>Pro Display kit*</td>
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#### Controller I/O cables

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#### Controller I/O overlays

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<td>DPS4/5 overlay</td>
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* From IQAN Accessories catalog

### Development cables

- PHD28 cable
- PHD50/70 cables
- DPS4/5 cable
- DPS-C cable
- DPS4/5 USB cable

### Connectors

- PHD28 kit
- PHD50/70 kit
- DPS4/5 kit
- Pro Display kit*

### Controller I/O cables

- DPS4/5 I/O hrns
- DPS-C I/O hrns

### Controller I/O overlays

- DPS4/5 overlay

* From IQAN Accessories catalog
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Goods: means any tangible part, system or component to be supplied by the Seller.

Products: means the Goods, Services and/or Software as described in a Quote provided by the Seller.

Quote: means the offer or proposal made by Seller to Buyer for the supply of Products.

Seller: means Parker-Hannifin Corporation, including all divisions and businesses thereof.

Services: means any services to be supplied by the Seller.

Software: means any software related to the Products, whether embedded or separately downloaded.

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5. Warranty. The warranty related to the Products is as follows: (i) Goods are warranted against defects in material or workmanship for a period of twelve (12) months from the date of delivery or 2,000 hours of use, whichever occurs first; (ii) Services shall be performed in accordance with generally accepted practices and the degree of care and skill that is ordinarily exercised and customary in the field to which the Services pertain and are warranted for a period of six (6) months from the completion of the Services by Seller; and (iii) Software is only warranted to perform in accordance with applicable specifications provided by Seller to Buyer for ninety (90) days from the date of delivery or, when downloaded by a Buyer or end-user, from the date of the initial download. All prices are based upon the exclusive limited warranty stated above, and upon the following disclaimer:

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10. Security Interest. To secure payment of all sums due, Seller retains a security interest in all Products delivered to Buyer and, Buyer’s acceptance of these Terms is deemed to be a Security Agreement under the Uniform Commercial Code. Buyer authorizes Seller as its attorney to execute and file on Buyer’s behalf all documents Seller deems necessary to perfect its security interest.

11. User Responsibility. The Buyer through its own analysis and testing, is solely responsible for making the final selection of the Products and assuring that all performance, endurance, maintenance, safety and warning requirements of the application of the Products are met. The Buyer must analyze all aspects of the application and follow applicable industry standards, specifications, and other technical information provided with
the Product. If Seller provides Product options based upon data or specifications provided by the Buyer, the Buyer is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products. In the event the Buyer is not the end-user, Buyer will ensure such end-user complies with this paragraph.

12. Use of Products, Indemnity by Buyer. Buyer shall comply with all instructions, guides and specifications provided by Seller with the Products. Unauthorized Uses. If Buyer uses or resells the Products for any uses prohibited in Seller’s instructions, guides or specifications, or Buyer otherwise fails to comply with Seller’s instructions, guides and specifications, Buyer acknowledges that any such use, resale, or non-compliance is at Buyer’s sole risk. Buyer shall indemnify, defend, and hold Seller harmless from any losses, claims, liabilities, damages, lawsuits, judgments and costs (including attorney fees and defense costs), whether for personal injury, property damage, intellectual property infringement or any other claim, brought by or incurred by Buyer, Buyer’s employees, or any other person, arising out of: (a) improper selection, application, design, specification or other misuse of Products provided by Seller; (b) any act or omission, negligent or otherwise, of Buyer; (c) Seller’s use of patterns, tooling, equipment, plans, drawings, designs or specifications or other information or things furnished by Buyer; (d) damage to the Products from an external cause, repair or attempted repair by anyone other than Seller, failure to follow instructions, guides and specifications provided by Seller, use with goods not provided by Seller, or opening, modifying, deconstructing or tampering with the Products for any reason; or (e) Buyer’s failure to comply with these Terms. Seller shall not indemnify Buyer under any circumstance except as otherwise provided in these Terms.

13. Cancellations and Changes. Buyer may not cancel or modify any order for any reason, except with Seller’s written consent and upon terms that will indemnify, defend and hold Seller harmless against all direct, incidental and consequential loss or damage. Seller, at any time, may change Product features, specifications, designs and availability.

14. Limitation on Assignment. Buyer may not assign its rights or obligations without the prior written consent of Seller.

15. Force Majeure. Seller does not assume the risk and is not liable for delay or failure to perform any of Seller’s obligations by reason of events or circumstances beyond its reasonable control (“Events of Force Majeure”). Events of Force Majeure shall include without limitation: accidents, strikes or labor disputes, acts of any government or government agency, acts of nature, delays or failures in delivery from carriers or suppliers, shortages of materials, or any other cause beyond Seller’s reasonable control.

16. Waiver and Severability. Failure to enforce any provision of these Terms will not invalidate that provision; nor will any such failure prejudice Seller’s right to enforce that provision in the future. Invalidation of any provision of these Terms by legislation or other rule of law shall not invalidate any other provision herein and, the remaining provisions will remain in full force and effect.

17. Termination. Seller may terminate any agreement governed by or arising from these Terms for any reason and at any time by giving Buyer thirty (30) days prior written notice. Seller may immediately terminate, in writing, if Buyer: (a) breaches any provision of these Terms; (b) appoints a trustee, receiver or custodian for all or any part of Buyer’s property; (c) files a petition for relief in bankruptcy on its own behalf, or one if filed by a third party; (d) makes an assignment for the benefit of creditors; or (e) dissolves its business or liquidates all or a majority of its assets.

18. Ownership of Software. Seller retains ownership of all Software supplied to Buyer hereunder. In no event shall Buyer obtain any greater right in and to the Software than a right in the nature of a license limited to the use thereof and subject to compliance with any other terms provided with the Software.

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20. Governing Law. These Terms and the sale and delivery of all Products are deemed to have taken place in, and shall be governed and construed in accordance with, the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to conflicts of laws principles. Buyer irrevocably agrees and consents to the exclusive jurisdiction and venue of the courts of Cuyahoga County, Ohio with respect to any dispute, controversy or claim arising out of or relating to the sale and delivery of the Products.

21. Entire Agreement. These Terms, along with the terms set forth in the main body of any Quote, forms the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of sale. In the event of a conflict between any term set forth in the main body of a Quote and these Terms, the terms set forth in the main body of the Quote shall prevail. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter shall have no effect. These Terms may not be modified unless in writing and signed by an authorized representative of Seller.

22. Compliance with Laws. Buyer agrees to comply with all applicable laws, regulations, and industry and professional standards, including those of the United States of America, and the country or countries in which Buyer may operate, including without limitation the U.S. Foreign Corrupt Practices Act (“FCPA”), the U.S. Anti-Kickback Act (“Anti-Kickback Act”), U.S. and E.U. export control and sanctions laws (“Export Laws”), the U.S. Food Drug and Cosmetic Act (“FDCA”), and the rules and regulations promulgated by the U.S. Food and Drug Administration (“FDA”), each as currently amended. Buyer agrees to indemnify, defend, and hold harmless Seller from the consequences of any violation of such laws, regulations and standards by Buyer, its employees or agents. Buyer acknowledges that it is familiar with all applicable provisions of the FCPA, the Anti-Kickback Act, Export Laws, the FDCA and the FDA and certifies that Buyer will adhere to the requirements thereof and not take any action that would make Seller violate such requirements. Buyer represents and agrees that Buyer will not make any payment or give anything of value, directly or indirectly, to any governmental official, foreign political party or official thereof, candidate for foreign political office, or commercial entity or person, for any improper purpose, including the purpose of influencing such person to purchase Products or otherwise benefit the business of Seller. Buyer further represents and agrees that it will not receive, use, service, transfer or ship any Product from Seller in a manner or for a purpose that violates Export Laws or would cause Seller to be in violation of Export Laws.

05/17