



-shown with optional basic bezel

# PHD70 Parker Hannifin Display 7.0"

Catalog MSG33-5023/US



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## Application

The Parker PHD70 is one of a family of general purpose displays for vehicle instrumentation. The display can be supplied with an optional standard bezel. The end user can customize the PHD70 with their own custom bezel and by creating custom application software. By incorporating the display, a wide range of industrial vehicles can be operated more efficiently for greater productivity.

## Properties

### Features

The PHD70 display has a rugged mechanical design with no moving parts, and is sealed against dust and water ingress. The display is also designed to withstand extended temperatures, high vibration and EMC/EMI conditions found on today's mobile equipment.

The versatile PHD70 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 PHD70 supports J1939 and CANopen CAN communication interfaces. The display has 10 configurable digital inputs. All of the inputs have flexible usage as active-high or active-low digital inputs. There are 2 frequency inputs. For outputs, the PHD70 has 2 low-side outputs that are rated for a maximum current of 500 mA. Low-side outputs have analog feedback which provides open circuit, short to battery, and short to ground detection. Additionally, all 10 PHD70 inputs may be re-purposed as low voltage, high-side outputs.

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 for easy integration into your machine's HMI design.

### Reliability

The PHD70 is ideal for various industrial and off-road vehicle applications, with a 7.0", IPS (in-plane switching) color LCD, 800 x 480 pixel screen with dimmable backlight. The enclosure is designed to be used in outdoor environments, and has been tested to a suitable mix of standards based on the J1455, ISO, and EP455 environmental specifications. The 2 connectors are a rugged, environmentally sealed, Molex MX150 type.

## General

Weight	0.51 kg
Temperature range	
- Operating, ambient	-40°C <sup>1</sup> to +70°C
- Storage, ambient	-40°C to +85°C
Protection	IP65 (back), IP69K (front)
Voltage supply	9 - 32 VDC
Current (standby)	<10 mA (12 VDC)

## Performance

Processor	Freescale iMX6Solo/Dual/Quad
Memory	1 GB Flash, 512 MB DDR3
Operating system	Linux
Software tools	Crank Storyboard (graphics)

## Communication

CAN (J1939/CANopen)	2 (Wake on CAN)
USB	1 Host or Device (default)

## Outputs

Power out (sensor supply)	3
- Type	High-side switch
- Max load	500 mA
- Voltage	2x 5 VDC (1 intended for USB) 1x 12 VDC (derated < 13.3 V)
Digital out, low-side	2
- Max load	500 mA
Digital out, high-side	up to 10 <sup>2</sup>
- Max voltage	4.3 VDC
- Max load	5 mA

## Inputs

Configurable inputs	10 <sup>2,3</sup>
- digital, active-high	up to 10
signal high	4 - 32 VDC
signal low	0 - 1 VDC
-encoder/pulse	up to 2
Video inputs	
- NTSC/PAL	2 (simultaneous)

## Connector

Type	Molex MX150, key A & B
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<sup>1</sup> Some contrast degradation and slower response will be seen on the LCD at temperatures below -20°C.

<sup>2</sup> The inputs and high-side outputs share the same physical pins. By configuring the pins with software, the user defines the pins as digital inputs or high-side outputs.

<sup>3</sup> Selectable inputs are able to be defined as 'wake-up' inputs.

## Ordering part numbers

PHD70	1042003ECD
Basic bezel	1042503ECD
Connector kit	1041050ECD

**Environmental Protection**

**EMI**

J1455 Section 4.13.1, Over-voltage  
 J1455 Section 5.10.3, Reverse polarity  
 J1455 Section 5.10.4, Short circuit  
 ISO7637 Section 5.6.x, EP455 Section 5.11.x, Transients  
 ISO14982, EMC emissions  
 ISO14982, EMC susceptibility

**Mechanical Environment**

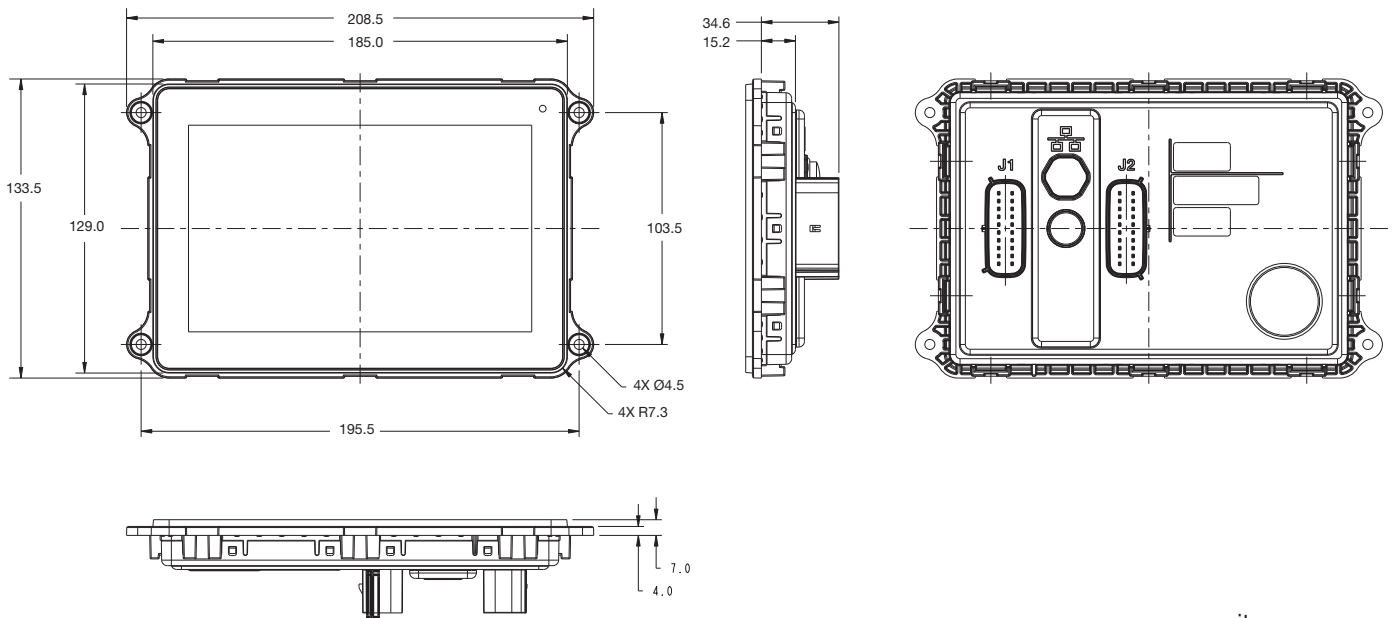
BS EN7691 Section 6.6.1, Random vibration  
 EP455 Section 4.11.3.1, Drop test

**ESD**

EN61000-4-2, Surface and connectors

**Climate Environment**

IEC 60529 Section 14.2.5, Water IP65  
 IEC 60068-2-5 UV Exposure  
 IEC 68-2-2 Section 4, High temperature  
 IEC 68-2-1 Section 2, Low temperature  
 EP455 Section 5.1.1, Temperature cycle  
 J1455 Section 4.1.3.2, Temperature shock  
 EP455 Section 5.13.2, Humidity soak  
 EP455 Section 4.3.2, Humidity cycle  
 MIL\_STD 202G M101E-A, Salt spray



units=mm



**WARNING - USER RESPONSIBILITY**

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This product can expose you to chemicals including 4,4'-(PROPANE-2,2-DIYL)DIPHENOL, BPA, P, P'-ISOPROPYLIDENEBISPHENOL, which is known to the State of California to cause birth defects or other reproductive harm.

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