Pro Display
Display Modules
Electronic Control Systems

Parker

ENGINEERING YOUR SUCCESS.
### Specifications

<table>
<thead>
<tr>
<th>General</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (Pro Display 10)</td>
<td>1.42 kg</td>
</tr>
<tr>
<td>Weight (Pro Display 12)</td>
<td>1.96 kg</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-30°C - +70°C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-40°C - +85°C</td>
</tr>
<tr>
<td>Protection</td>
<td>IP65</td>
</tr>
<tr>
<td>Voltage supply</td>
<td>12V and 24V (9 - 36 Vdc)</td>
</tr>
<tr>
<td>Camera supply</td>
<td>12 Vdc</td>
</tr>
<tr>
<td>Certifications met</td>
<td>CE, E-mark</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Performance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor (Pro Display 10)</td>
<td>i.MX 6Dual (800 MHz)</td>
</tr>
<tr>
<td>Processor (Pro Display 12)</td>
<td>i.MX 6Quad (800 MHz)</td>
</tr>
<tr>
<td>RAM size</td>
<td>1 GB</td>
</tr>
<tr>
<td>Flash size</td>
<td>2 GB</td>
</tr>
<tr>
<td>External memory</td>
<td>Micro SD card</td>
</tr>
<tr>
<td>Software tools</td>
<td>Parker UX Toolkit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Communication interface</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CAN</td>
<td>4</td>
</tr>
<tr>
<td>USB</td>
<td>2 (2.0 high speed host)</td>
</tr>
<tr>
<td>RS232</td>
<td>1 (TX, RX, GND)</td>
</tr>
<tr>
<td>Ethernet</td>
<td>1 (10 / 100 Mbps)</td>
</tr>
<tr>
<td>Wireless</td>
<td>Bluetooth⁴, WLAN, 802.11 b/g/n</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Infotainment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio</td>
<td>Line IN/OUT, Microphone IN, FM-RDS radio tuner</td>
</tr>
<tr>
<td>Video inputs</td>
<td>2/4 x analog composite</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Display</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Touch interface</td>
<td>PCAP</td>
</tr>
<tr>
<td>Display</td>
<td>10.1/12.1” IPS LCD, 16:10²³</td>
</tr>
<tr>
<td>Resolution</td>
<td>1280x800 pixels</td>
</tr>
<tr>
<td>Brightness</td>
<td>400/900 cd/m² (typical)</td>
</tr>
<tr>
<td>Backlight</td>
<td>White LED</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Connection</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical connection</td>
<td>2 x Deutsch DTM04 12-pin</td>
</tr>
<tr>
<td>Ethernet</td>
<td>1 x M12 4/5-pin</td>
</tr>
<tr>
<td>USB</td>
<td>2 x M12 4/5-pin</td>
</tr>
<tr>
<td>Video input</td>
<td>1 x M12 5/6-pin</td>
</tr>
<tr>
<td>Radio antenna</td>
<td>1 x SMA for FM-RDS radio</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inputs/Outputs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital inputs</td>
<td>1 x keylock, 1 x wakeup</td>
</tr>
<tr>
<td>Supply outputs (PD 10)</td>
<td>1 x +12V / 1.3A⁵</td>
</tr>
<tr>
<td>Digital outputs (PD 10)</td>
<td>1 x highside 200 mA⁵</td>
</tr>
<tr>
<td>Digital outputs (PD 12)</td>
<td>1 x highside 1500 mA⁵</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Internal features</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3-axis acceleration sensor</td>
<td></td>
</tr>
<tr>
<td>Voltage measurement / supply supervision</td>
<td></td>
</tr>
<tr>
<td>Real time clock with backup</td>
<td></td>
</tr>
</tbody>
</table>

1) Hands-free, serial port protocol, A2DP sink  
2) Hardened glass  
3) With anti-glare coating (Pro Display 10)  
4) E.g. for camera supply  
5) E.g. for audio amplifier wakeup
Comparison of Product Variants

<table>
<thead>
<tr>
<th>Available Products:</th>
<th>Pro Display 10</th>
<th>Pro Display 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>Dual core</td>
<td>Quad core</td>
</tr>
<tr>
<td>Display</td>
<td>10,1”</td>
<td>12,1”</td>
</tr>
<tr>
<td>Brightness</td>
<td>400 cd/m²</td>
<td>900 cd/m²</td>
</tr>
<tr>
<td>Camera inputs</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>CAN interfaces</td>
<td>4 (2 limited)</td>
<td>4</td>
</tr>
</tbody>
</table>

Dimensions

Pro Display 10

Pro Display 12

Ordering Part Numbers

<table>
<thead>
<tr>
<th>Pro Display 10</th>
<th>Pro Display 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>88PROD10AD10</td>
<td>88PROD12AS10 + SW update¹</td>
</tr>
</tbody>
</table>

Accessories

<table>
<thead>
<tr>
<th>M12 USB cable</th>
<th>Pro Display all variants</th>
</tr>
</thead>
<tbody>
<tr>
<td>88CABPRODUSB</td>
<td>88CABPRODDHK</td>
</tr>
</tbody>
</table>

1) Development unit software licence for Pro Display 12: please send a request with device serial number to support.forssa@parker.com
Develop Unique HMI with Parker UX Toolkit

Parker UX Toolkit includes the software tools to develop applications for Pro Display according to customer’s own needs. Apps-based platform (UXP) enables separation of system functionality into own apps and independent app development, as well as integration of 3rd party software.

Parker UX Toolkit provides the tools to simplify application development by integrating all essential functions in order to optimise the development flow. All included app examples and ready-made UI components can be utilised and modified freely.

Due to platform flexibility, different apps can easily split the screen.

Create Reliable Communication

Intelligent data management includes ready-made device and protocol suites, as well as efficient inbuilt diagnostics and alarm features to define communication interfaces very quickly. Reliable communication between machine and app can be created easily using drag-and-drop protocol layers.

Parker provides Device Suite, which implements an interface into many hardware devices, and J1939 Suite for standard communication with CAN bus. Our Communication Suite includes generic protocols for extracting, generating and manipulating data. With this special ‘block library’, you can define and manage different communication interfaces in your machine, such as CAN, Ethernet, Bluetooth and USB. System functionality can be expanded by creating new devices and protocols to manipulate the real world data.

Parker’s data management includes efficient inbuilt diagnostics and alarm features for the data signals. Each signal path provides information about its health, which can be utilized with UI components.

Design Applications

Parker Application Designer is the perfect tool for creating professional and user-friendly apps for Pro Display. Advanced scripting language (QML) and the WYSIWYG editor with ready-made components and style sheet are the key elements for the quick and easy programming of apps. Parker’s Menu and Menu System apps provide a great framework for customized design.

The WYSIWYG editor (what-you-see-is-what-you-get) offers a simple and fast way of implementing your application. Application Designer enables the ease design of a custom graphical user interface, or the user can simply drag and drop the ready-made components. The components can be modified to fully reflect your own look and feel. The visualised content of an application can be evaluated instantly.

Application Designer provides a feature called “System project”, which standardises common system-specific data and rules to be used in the development of apps. The system project is a special project in Application Designer and can be imported into each app project. With system project, the app developer can rapidly begin building value-added functions instead of wasting time having to redefine the infrastructure of each app.

The platform supports multilingual applications. The new languages can be imported very easily by using a separate translation file.

Parker Apps

Pro Display unit comes with Maintenance App, which can be used for managing software installs and versions in the device.

Parker offers commercial apps for different mobile machine industry needs, such as ISOBUS Suite Apps for agricultural machines.
Environmental Protection

ESD
ISO 10605 (Electrostatic discharge operation & handling)

IP
IEC 60529 (Ingress protection IP65)

Atmosphere, corrosion
EN 60068-2-52 Test Kb (Salt mist)
ISO 15003 (Chemical brush exposure)
EN 60068-2-5 (Solar radiation)

Electrical
ISO 16750-2 (Operation voltage, overvoltage, superimposed alternating voltage, reversed voltage, slow decrease and increase of supply voltage, momentary drop on supply voltage, reset behavior at voltage drop, line interruption, short circuit protection)
Parker (Power supply with and without battery, immunity to micro power cuts)

Mechanical environment
IEC 60068-2-6 (Sinusoidal vibration)
IEC 60068-2-64 Test Fh (Random vibration)
IEC 60068-2-27 (Mechanical shock)
EN 60068-2-29 (Bump)
IEC 60068-2-6 (Resonance search)
Parker (Impact)
ISO 16750-3, 4.3 / IEC 60068-2-32 (Free fall)

Climate environment ISO 16750-4
IEC 60068-2-14 test Na (Temperature shock)
IEC 60068-2-2 (High temperature, storage)
IEC 60068-2-1 (Low temperature, storage)
IEC 60068-2-78 (Damp heat)
IEC 60068-2-30 (Damp heat cyclic)
IEC 60068-2-14 test Nb (Temperature cycling)
IEC 60068-2-2 test B (High temperature, operational)
IEC 60068-2-1 (Low temperature, operational)

EMI
ISO 7637-2 (Conducted transient emission, pulses 1, 2 & 3)
CISPR 25 ed3.0 (Radiated RF emission)
ISO 11452-1, ISO 11452-2 (Radiated RF susceptibility)
ISO 11452-8 (Immunity to low-frequency magnetic fields)
CISPR 25 ed3.0 (Conducted RF emission)
ISO 11452-1, ISO 11452-4 (Conducted susceptibility)
ISO 7637-2 (Transient - inductive load switching, inductance, coupling, cranking, load dump)
ISO 7637-3 (Transient, signal lines, fast)

Miscellaneous
EP 455 (Readability)

WARNING

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