



# **IQAN-MD4** **Display Modules**

Electronic Control Systems



ENGINEERING YOUR SUCCESS.

## Application

The IQAN-MD4 is a family of master display units, fully compliant with the IQANdesign platform system. The IQAN-MD4 is fully programmable for use in any machine application as a master controller. The units have full graphical, diagnostic and CAN gateway capability and are used together with the easy IQAN programming tools. Together with the multimaster functionality in IQANdesign, it will be possible to use multiple master displays in a machine application.

The IQAN-MD4-10 comes with a 10.1" (26 cm) display with touch screen, the IQAN-MD4-7 has a 7" (18 cm) display with touch screen, and the IQAN-MD4-5 has a 5.7" (14 cm) display with optional touch screen depending on configuration. The IQAN-MD4 family is manufactured to be weatherproof for outdoor use.

## Mechanical

The IQAN-MD4 master displays have a rugged mechanical design with no moving parts, and are completely sealed. The use of optical bonded display glass improves the readability, avoids light refraction and also eliminates possible condensation, since there is no air between the glass and LCD.

The display units have a pleasing, aesthetic design that blends with modern cabins. A touchscreen interface is offered for interactive, intuitive HMI. The IQAN-MD4 is available with IP-camera support. There is no need for separate camera monitors. Virtually an unlimited number of cameras can be connected if connected via IP switch.

Mounting is easy, with steel clips for a well integrated, flush mount in cabin panels, or the back of the unit has a stand-alone mount compatible with RAM™ mount components. The MD4 may be mounted in landscape or portrait orientation for easy integration of HMI or mechanics.

## Develop HMI with IQANdesign

The IQAN-MD4 family lets you use the full benefits from IQANdesign tools and simplifies the HMI design by using predefined building blocks and 'Guided' development by templates and libraries. Easy to use 'drag-and-drop' allows all users, beginners as well as experts, to design a stylish and smart HMI in a fast and efficient way.

The simplified design process, with auto-generated diagnostic measurements and adjustments, saves valuable time. IQAN gives you a high level tool chain for machine control and HMI.

## Specifications

### General

Weight (MD4-7)	0.93 kg
Weight (MD4-5)	0.67 kg
Weight (MD4-10)	1.5 kg
Operating temperature	-30 °C to 70 °C
Storage temperature	-40 °C to 85 °C
Protection	IP65
Voltage supply	9-32 Vdc
Current supply (idle)	300 mA (28Vdc) 600 mA(14Vdc)
Current supply RTC	3.7 mA (28Vdc) 1.7 mA(14Vdc)
CE marking	2004/108/EC

### Performance

Processor	ARM Cortex-A8, (800 MHz)
Memory	2Gbyte Flash, 256 Mbyte SDRAM
Logging	64 Mb
Cycle time	10 to 100 ms
Software tools	IQANdesign platform

### Communication interface

CAN (ISO 11898) Protocols	4 (2) <sup>2</sup> ICP, SAE J1939, CANopen, etc
Ethernet 100Base-Tx	2 (1) <sup>1,2</sup>

### Display

Touch Interface	PCAP <sup>2</sup>
7" (18 cm) display	16:9, 800x480 pixels
5.7" (14 cm) display	4:3, 640x480 pixels
10.1" (26 cm) display	4:3, 800x600 pixels
Backlight	LED

### Connection

Electrical connection	2 x Deutsch DTM, 12 pos
Ethernet	2 x M12, D-code, 4 pos

### Outputs

Digital outputs	4 <sup>3</sup>
Type	Low side
Max load, 1 output	300 mA
Max load, all outputs	850 mA

### Inputs

Voltage inputs	2 <sup>3</sup>
Signal range	0 - 5 Vdc, 12 bit
Digital inputs	10 <sup>3</sup>
Encoder input	1 <sup>3</sup>
Signal range	0 - 500 Hz, 50/50 signal

1) Ethernet port A dedicated for PC diagnostics.

2) Depending on configuration.

3) The outputs and inputs share the same physical pins. The user defines the channels/pins with IQANdesign.

**Model code**

➤ **IQAN - MD4 - 5 - T1 E2**

**IQAN - MD4 - 7 - T1 E2**

Code	Description
7	display, 7.0" (18 cm)
<b>5</b>	<b>display, 5.7" (14 cm)</b>
10	display, 10.1" (26 cm)

Code	Description
E1	1 x Ethernet port, no camera support
<b>E2</b>	<b>2 x Ethernet port, IP camera support</b>

Code	Description
T0	no touchscreen, 2 CAN buses
<b>T1</b>	<b>with touchscreen, 4 CAN buses</b>

**Ordering part numbers**

IQAN-MD4-7 <sup>1</sup>	20077771
IQAN-MD4-5-T0E1	20077772
<b>IQAN-MD4-5-T1E2</b>	<b>20077773</b>
IQAN-MD4-10 <sup>1</sup>	20077774

1) Only available in T1E2 version.

**Graphics design**

It has never been easier to design the graphical user interface for your machine. With IQANdesign and the IQAN-MD4 family you have a what-you-see-is-what-you-get experience, by using built-in display controls such as gauges, touch screen buttons, indicator lamps and much more. Simply drag and drop the controls where you want them and change their properties to get your desired look and feel. You can even test drive your user interface directly on your PC to see how your design behaves.



*IQANdesign display page design screen shot*

A large graphics library with different gauge dials, all the common ISO standard symbols and much more is included in IQANdesign. Layers, groups, snap and align are helpful tools when designing complex graphical user interfaces. Space saving controls, such as containers for lamp indicators that automatically only shows the most critical errors or alarms, or for buttons that can be expanded when needed, are available, right out of the box.

**Display pages**

Display pages are used to display necessary information in different situations to the machine operator. The difference between this display and a “traditional” operator or driver environment is that all of the information does not necessarily need to always be shown. By using several dedicated display pages it is possible to show enough of the correct information in different situations. A page can be configured to be shown by a trigger, for example the press of a button or when the driver seat is turned backwards.



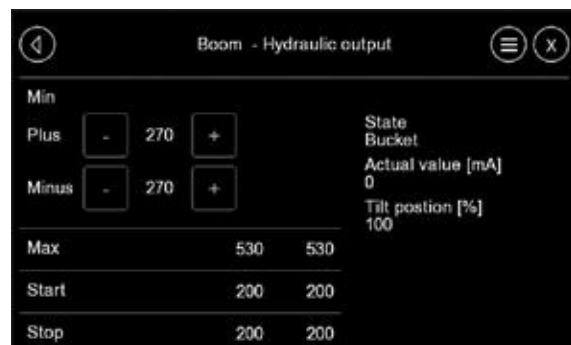
*MD4 display page image*

The display pages are well integrated with your application logic. Controls, such as gauges, lamp indicators or texts, are easily connected to any input or output signal in your control system, with just a mouse click. No programming needed.

IQANdesign and the MD4 family have support for multiple languages. Every text displayed on the MD4 can easily be translated to any language you like. Non-western languages, such as Chinese, Japanese, Korean or Russian, can of course be used.

**System menu**

The IQAN-MD4 family comes with a pre-defined system menu with all the operations and settings you need. It is of course configurable by IQANdesign. You can define exactly what the machine operators will be able to measure and adjust and which logs they will be able to view. Measurements can be performed on groups of items and even graphically to let you see trends and correlations. Adjusting is done with user friendly controls, such as sliders or up/down buttons.



*MD4 system menu image*

The system menu is easy to navigate using the touch screen or an external encoder. It has a modern and neutral look that you can customize by yourself to fit your graphical profile. Both icons and text are used to make it clear where to click and where you are in the menu hierarchy.

Sensitive items can be protected by either PIN codes or login with user name and password. The built-in on-screen keyboard is used when entering PIN codes or logging in.

**Environmental Protection**

**EMI**

- ISO 13766:2010 (radiated emission)
- ISO 14982:2009 (radiated emission)
- EN 55025:2008 (conducted emission)
- ISO 11452-2:2004 (immunity vs EM field)
- ISO 11452-4:2005 (immunity vs injected RF)
- ISO 7637-2:2004 (immunity vs supply transients)
- ISO 7637-3:2007 (immunity vs supply transients)

**Mechanical environment**

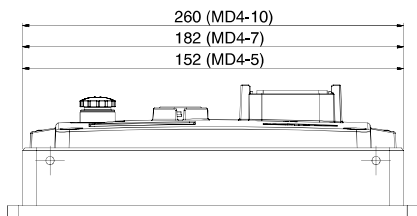
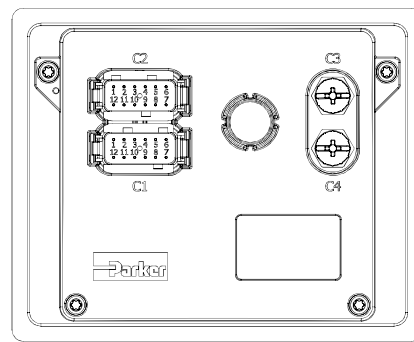
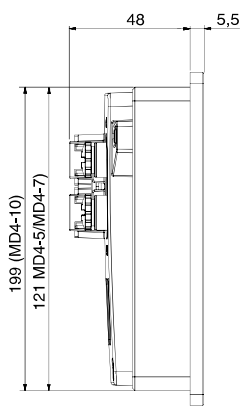
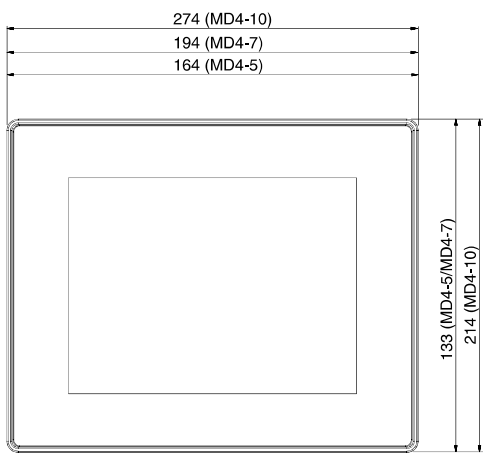
- IEC 60068-2-64:2008 Fh (random)
- IEC 60068-2-27:2008 Ea (bump)

**ESD**

- ISO 10605:2008 (operation and handling)

**Climate environment**

- IEC 60529:2001 IP65 (water)
- IEC 60068-2-30:2005 Db (var1, damp, cyclic)
- IEC 60068-2-78:2001 (damp heat, steady state)
- IEC 60068-2-2:2007 Bb (heat)
- IEC 60068-2-1:1993 Ab (cold)
- IEC 60068-2-14:1984 Nb (change of temperature)
- IEC 60068-2-52:1996 Kb (salt mist, cyclic)



unit = mm

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