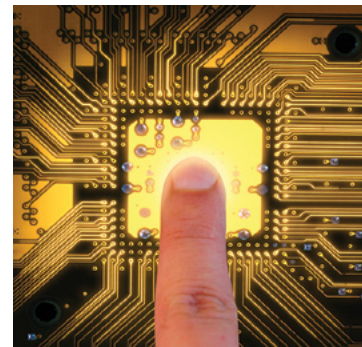




# **IQAN-MD4** **Display Modules**

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 <sup>1</sup>
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 2011/65/EU (RoHS II)

### Performance

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

### Communication interface

CAN (ISO 11898) Protocols	4 (2) <sup>3</sup> ICP, SAE J1939, CANopen, etc
Ethernet 100Base-Tx	2 (1) <sup>2,3</sup>

### Display

Touch Interface	PCAP <sup>3</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 x Low side <sup>4</sup>
Max load, 1 output	300 mA
Max load, all outputs	850 mA

### Inputs

Voltage inputs	2 <sup>4</sup>
Signal range	0 - 5 Vdc, 12 bit
Digital inputs	10 <sup>4</sup>
Encoder input	1 <sup>4</sup>
Signal range	0 - 500 Hz, 50/50 signal

1) Limited temperature -20 °C to 70 °C for IQAN-MD4-5-T1E2-M19

2) Ethernet port A dedicated for PC diagnostics.

3) Depending on configuration.

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



### ⚠ WARNING

This product can expose you to chemicals including **DIISONONYL PHTHALATE (DINP)** which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

**Model code**

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

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

Code	Description
E1	1 x Ethernet port, no camera support
E2	2 x Ethernet port, IP camera support

Code	Description
T0	no touchscreen, 2 CAN buses
T1	with touchscreen, 4 CAN buses

**Ordering part numbers**

IQAN-MD4-7 <sup>1</sup>	20077771
IQAN-MD4-5-T0E1	20077772
IQAN-MD4-5-T1E2	20077773
IQAN-MD4-5-T1E2-M19 <sup>2</sup>	20085164
IQAN-MD4-10 <sup>1</sup>	20077774

1) Only available in T1E2 version.

2) This part requires software version 5.05 or higher.



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**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.



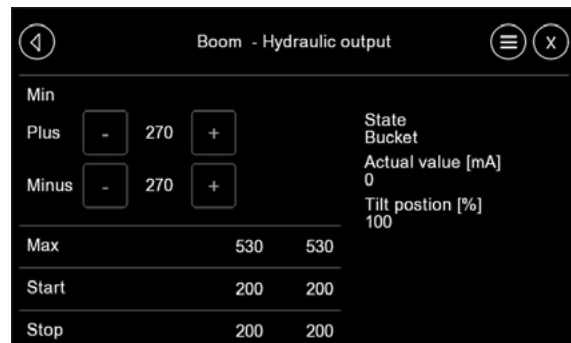
*MD4 display page image*

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.



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**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**

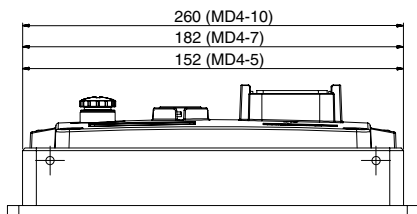
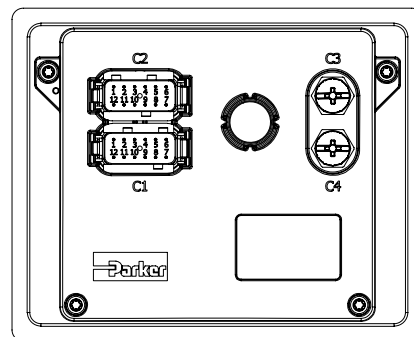
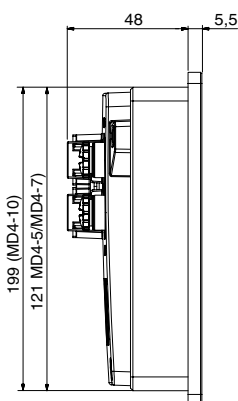
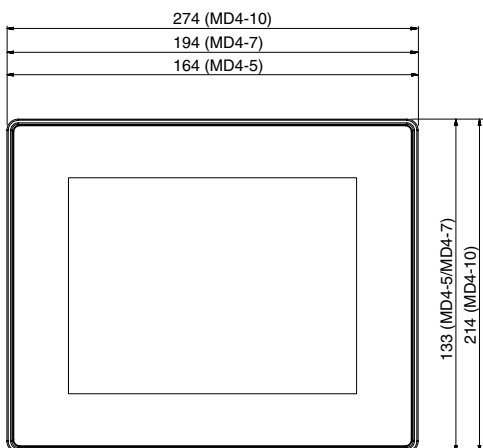
- IEC 60068-2-64:2008 Fh (random)
- IEC 60068-2-27:2008 Ea (bump)

**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

**! WARNING**

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# Parker Worldwide

## Europe, Middle East, Africa

**AE – United Arab Emirates,**  
Dubai

Tel: +971 4 8127100  
parker.me@parker.com

**AT – Austria,** St. Florian

Tel: +43 (0)7224 66201  
parker.austria@parker.com

**AZ – Azerbaijan,** Baku

Tel: +994 50 2233 458  
parker.azerbaijan@parker.com

**BE/NL/LU – Benelux,**

Hendrik Ido Ambacht  
Tel: +31 (0)541 585 000  
parker.nl@parker.com

**BG – Bulgaria,** Sofia

Tel: +359 2 980 1344  
parker.bulgaria@parker.com

**BY – Belarus,** Minsk

Tel: +48 (0)22 573 24 00  
parker.poland@parker.com

**CH – Switzerland,** Etoy

Tel: +41 (0)21 821 87 00  
parker.switzerland@parker.com

**CZ – Czech Republic,** Klecany

Tel: +420 284 083 111  
parker.czechrepublic@parker.com

**DE – Germany,** Kaarst

Tel: +49 (0)2131 4016 0  
parker.germany@parker.com

**DK – Denmark,** Ballerup

Tel: +45 43 56 04 00  
parker.denmark@parker.com

**ES – Spain,** Madrid

Tel: +34 902 330 001  
parker.spain@parker.com

**FI – Finland,** Vantaa

Tel: +358 (0)20 753 2500  
parker.finland@parker.com

**FR – France,** Contamine s/Arve

Tel: +33 (0)4 50 25 80 25  
parker.france@parker.com

**GR – Greece,** Piraeus

Tel: +30 210 933 6450  
parker.greece@parker.com

**HU – Hungary,** Budaörs

Tel: +36 23 885 470  
parker.hungary@parker.com

**IE – Ireland,** Dublin

Tel: +353 (0)1 466 6370  
parker.ireland@parker.com

**IL – Israel**

Tel: +39 02 45 19 21  
parker.israel@parker.com

**IT – Italy,** Corsico (MI)

Tel: +39 02 45 19 21  
parker.italy@parker.com

**KZ – Kazakhstan,** Almaty

Tel: +7 7273 561 000  
parker.easteurope@parker.com

**NO – Norway,** Asker

Tel: +47 66 75 34 00  
parker.norway@parker.com

**PL – Poland,** Warsaw

Tel: +48 (0)22 573 24 00  
parker.poland@parker.com

**PT – Portugal**

Tel: +351 22 999 7360  
parker.portugal@parker.com

**RO – Romania,** Bucharest

Tel: +40 21 252 1382  
parker.romania@parker.com

**RU – Russia,** Moscow

Tel: +7 495 645-2156  
parker.russia@parker.com

**SE – Sweden,** Borås

Tel: +46 (0)8 59 79 50 00  
parker.sweden@parker.com

**SK – Slovakia,** Banská Bystrica

Tel: +421 484 162 252  
parker.slovakia@parker.com

**SL – Slovenia,** Novo Mesto

Tel: +386 7 337 6650  
parker.slovenia@parker.com

**TR – Turkey,** Istanbul

Tel: +90 216 4997081  
parker.turkey@parker.com

**UA – Ukraine,** Kiev

Tel: +48 (0)22 573 24 00  
parker.poland@parker.com

**UK – United Kingdom,** Warwick

Tel: +44 (0)1926 317 878  
parker.uk@parker.com

**ZA – South Africa,** Kempton Park

Tel: +27 (0)11 961 0700  
parker.southafrica@parker.com

## North America

**CA – Canada,** Milton, Ontario

Tel: +1 905 693 3000

**US – USA,** Cleveland

Tel: +1 216 896 3000

## Asia Pacific

**AU – Australia,** Castle Hill

Tel: +61 (0)2-9634 7777

**CN – China,** Shanghai

Tel: +86 21 2899 5000

**HK – Hong Kong**

Tel: +852 2428 8008

**IN – India,** Mumbai

Tel: +91 22 6513 7081-85

**JP – Japan,** Tokyo

Tel: +81 (0)3 6408 3901

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Tel: +82 2 559 0400

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**TW – Taiwan,** Taipei

Tel: +886 2 2298 8987

## South America

**AR – Argentina,** Buenos Aires

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**BR – Brazil,** Sao Jose dos Campos

Tel: +55 800 727 5374

**CL – Chile,** Santiago

Tel: +56 2 623 1216

**MX – Mexico,** Toluca

Tel: +52 72 2275 4200

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