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# IQAN-XT2 I/O Modules

Electronic Control Systems



ENGINEERING YOUR SUCCESS.

## Application

IQAN-XT2 is one of the “rugged generation” IQAN expansion modules. Key improvements for this generation of modules are flexibility, weather resistance and safety.

All IQAN expansion modules communicate with a master over a CAN-BUS serial link. The IQAN-XT2 has an additional CAN hub designed to interface with J1939 diesel engines on mobile machinery and has a dedicated output for electronic throttle control.

## Properties

### Flexibility

The IQAN-XT2 module has a flexible I/O interface which gives system designers increased options. The same physical pin can be used for different types of inputs or outputs. New types of I/O such as E-gas and PWM outputs increase the flexibility of the module. Digital outputs now have features such as softstart and peak & hold. The J1939 CAN hub allows the IQAN-XT2 to communicate directly with an electronic engine control bus.

### Weather resistance

The enclosure is aluminum to make the module rugged but light. The module has a membrane to prevent condensation from forming inside the enclosure. The IQAN-XT2 is designed for a wide temperature range in an outdoor environment.

### Safety

The IQAN-XT2 executes a self-test during start up and cyclic operation. Detected errors are sent to the master. An internal watch dog checks for software errors and will interrupt outputs if errors are detected. All inputs are protected against EMI and voltage transients. Automotive connectors are used that fulfil mechanical and electrical demands.

System diagnostics: If an error is detected a LED on the rear of the module flashes in sequence to indicate the nature of the error.

## General

Weight	0.7 Kg
Operating temperature	-40 - +70 °C
Protection	outdoor use
Voltage supply	9 - 34 Vdc
Current consumption (idle)	180 mA (28 Vdc) 170 mA (14 Vdc)
Data interface	Parker ICP (IQAN CAN Protocol)
Additional CAN hub	J1939 or other byte-aligned CAN protocol

## Outputs

### Proportional current outputs

Number	2 double
Signal range	60 - 1800 mA
Dither frequency	25 - 150 Hz
Dither amplitude	0 - 500 mA
Resolution	0.7 mA

### Digital/ PWM (no current feedback) outputs <sup>1)</sup>

Number	6 / 3 double
Type	high side switch
Max load	3 A
PWM frequency	25 - 2000 Hz

### E-gas/Servo motor output (PWM H-bridge)

Number	1
Signal Range	0-100% rated power
Max load	2,5A

## Inputs

### Voltage/Frequency <sup>2)</sup>

Number	10/3
Signal range	0 - 5 Vdc
Resolution	5 mV
Frequency range	1-10 000 Hz

1) The Digital and PWM outputs share the same physical pin. Pin configuration for either Digital or PWM output is carried out with IQANdevelop.

2) The voltage and frequency inputs share the same physical pins. Pin configuration for either Voltage or Frequency input is carried out with IQANdevelop.

### Ordering part number

IQAN-XT2	5010018
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## Environmental protection

### EMI

ISO 14982:1998, Radiated emission  
EN 55025:2003, Conducted emission  
ISO 11452-2:1995, Radiated susceptibility  
ISO 11452-4:2001, Conducted susceptibility  
ISO 7637-2:2004, Conducted transient on power  
ISO 7637-3:1995, Conducted transient on signal  
EN 61000-4-8:1993, Magnetic field

### ESD

ISO 10605:2001, ESD

### Mechanical environment

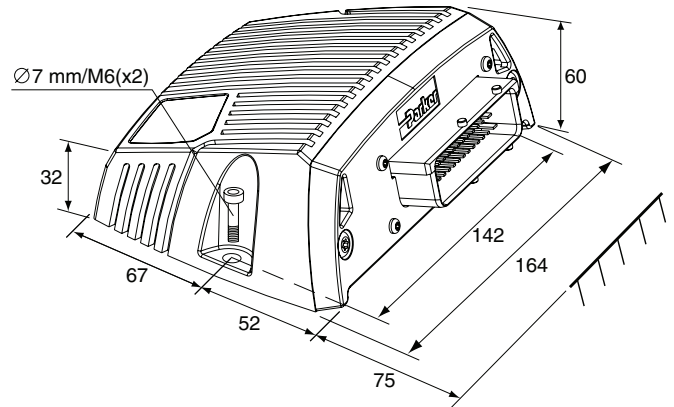
IEC 60068-2-64:1993 Fh, Random vibration  
IEC 60068-2-29:1987 Eb, Bump

### Climate environment

IEC 60529:2001, Enclosure protection  
DIN 40050 Part 9:1993, Enclosure protection  
IEC 60068-2-30:1985 Db, Damp heat cyclic  
IEC 60068-2-78:2001, Damp heat, steady state  
IEC 60068-2-14:1984 Nb, Change of temperature

### Chemical environment

IEC 60068-2-52:1996 Kb, Salt mist



unit=mm

## **WARNING**

**FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.**

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