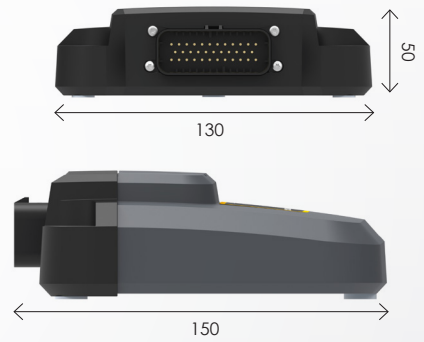


(mm)



# CrossFire IX COMPACT I/O DEVICE FOR DISTRIBUTED, RELIABLE HYDRAULICS CONTROL

**CrossFire IX** is a 32-bit I/O device for use in On- and Off-road industrial vehicles and equipment. It has 22 I/O channels and fieldbus network currently includes CANopen support.

It also features optional data storage capabilities and a WiFi interface that can be used for extracting data from the control system via e.g. a Smartphone.

CrossFire IX is built for coping with harsh environmental conditions, enabling installation close to the hydraulic block it is serving. AMP connectors enable inexpensive and reliable wire harnesses and saves installation cost.

**Turn for technical specifications »**

## Standard models

PART NUMBER	PRODUCT VARIANT	COMMENT
C000 141-50	CrossFire IX, CANopen Slave	CANopen slave according to CiA 401
C000 141-70	CrossFire IX, Data logger edition	CANopen slave including data logging option (WiFi, Flash memory and RTC)

# CrossFire IX PRODUCT SPECIFICATIONS

KERNEL	
PROCESSOR	32-bit ARM Cortex M4, 72 Mhz
PARAMETER STORAGE	32 kb EEPROM, 8 kb FRAM

HMI	
STATUS LED	Red/Green LED

COMMUNICATION INTERFACES	
CAN	ISO 11898 2.0B
PROTOCOLS	CANopen

CANOPEN SLAVE SPECIFICS	
TYPE	CANopen slave, CiA 401 profile
BIT RATE	Configurable, 20–1000 kbps
NODE ID	ID keying in 127 positions through SW. Position 1-16 can also be set by 4 pins in the connector.
SDO	All settings configurable by SDO's
PDO	Supports all transmission types, event timer and inhibit time.
NMT	Heartbeat producer and consumer
NODE	Node guarding also supported

8 X ANALOG INPUT	
CURRENT INPUT	4-20 mA
VOLTAGE INPUT	0..10 V
VOLTAGE INPUT	0..32 V
MISCELLANEOUS	Protection from short circuit and overload (0..U <sub>b</sub> ). SW configurable pull up (U <sub>b</sub> ) and down.

6 X DIGITAL INPUTS WITH FREQUENCY	
FREQUENCY	0-20 kHz
THRESHOLD	Trigger level 1.9 V - 2.9 V
FREQUENCY INPUT	Two of the six inputs can handle frequency. These two inputs can be combined into one encoder input.
MISCELLANEOUS	Protection from short circuit and overload (0..U <sub>b</sub> ).

4 X HIGH-SIDE PWM	
OPERATING VOLTAGE RANGE	8..32 V DC
CURRENT PER OUTPUT	0...2000 mA*
OUTPUT FREQUENCY	50...400 Hz
DUTY CYCLE	0...100%, resolution 0.1%
LOADS	Inductive, resistive, capacitive
CURRENT SENSE*	±1.6% at 0.4A ±1.2% at 1.0A ±10% at 2.0A
MISCELLANEOUS	Protection from short circuit and overload (0..U <sub>b</sub> ). Support inductive and resistive loads.

4 X HIGH-SIDE PWM WITH CURRENT FEEDBACK	
OPERATING VOLTAGE RANGE	8..32 V DC
CURRENT PER OUTPUT	0...2000 mA**
OPERATIONAL MODES	PWMI, PWM and ON/OFF

CURRENT CONTROLLED OUTPUT (PWMI)	
OUTPUT FREQUENCY	Fixed high frequency, 5kHz
DITHER FREQUENCY RANGE	25...400 Hz, adjustable in fixed steps
DITHER CURRENT	Adjustable up to 400 mA
OUTPUT RESOLUTION	0,6 mA
LOADS	Inductive, resistive
ACCURACY	ca ± 1% ± 10 mA
PWM OUTPUT	
FREQUENCY	50...400 Hz
DUTY CYCLE	0...100%, resolution 0.1%
LOADS	Inductive, resistive
CURRENT SENSE	±(1% ± 5 mA)

DATA LOGGER OPTION	
WIFI	Serial communication over 802.11 b/g/n
FLASH	4 MB
RTC	Real time clock with battery – e.g. for time stamps

POWER	
OPERATING VOLTAGE RANGE	8..32 V DC
PROTECTION	Load dump and reverse polarity protected
POWER CONSUMPTION	≤ 5 mA when not operational
SENSOR SUPPLY	12 V, 160 mA

ENVIRONMENT & CERTIFICATIONS	
IP CLASS	IP65, IP66 and IP67
TEMPERATURE TANGE (°C)	Operating: -40 to +80
EMC EMISSIONS	ISO 13766: 2006, EN 55011: 2010, CISPR 25
EMC IMMUNITY	ISO 13766: 2006, ISO 11452-2: 2004, ISO 11452-4: 2011, EN 61000-4-3:2006, EN 61000-4-6:2014
EMC TRANSIENT	ISO 13766:2006, ISO 7637-2: 2011 (Pulse5: +123V 40hm), EN 61000-4-4: 2012, EN 61000-4-5: 2014
VIBRATION	IEC 60068-2-64: 2008, IEC 60068-2-6: 2007
SHOCK	IEC 60068-2-27: 2008
CERTIFICATIONS	E-marking, CE Marking, FCC compliance

ENCLOSURE	
HOUSING	Glass fibre reinforced nylon. Silicone filled.
CONNECTORS	1 x AMP 35-pin

SIZE AND WEIGHT	
W x H x D (MM)	50 x 130 x 150
WEIGHT (KG)	< 1.0

\* The regular PWM's reads the current feedback at 100 Hz. They are not suitable for PWMI but can be very powerful for e.g. diagnostics and controlling work lights.

\*\* The total output from the unit may not exceed 12 A.

## crosscontrol

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