



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) |

The content herein is preliminary and may be subject to change without further notice.

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 _b). SW configurable pull up (U _b) 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 _b). |

| 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 _b). 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

AN ACTUANT COMPANY

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