

Multi-IO

Digital and analog remote IO-Module





Multi-IO

The CANopen module Multi-IO is a powerful device for handling digital and analog signals. It incorporates 56 channels of different communication channels. The device possesses the shortest conversion times and a high process reliability. That makes it the best choice for continuous operation in complex machine networks.

Key Features



Safety features for high running safety



Galv. isolated CAN interface acc. to ISO 11898



Easy access to all interfaces



Own intelligence for complex CAN networks



All clamps pluggable and lockable



Signal delay of less than 200 µs



Galv. isolated inputs



Compact aluminium housing with IP20 and integrated top hat rail mounting

Overview of interfaces

- 16 digital inputs
- 16 digital outputs
- 8 analog inputs
- 8 analog outputs
- four 24-bit encoder interfaces
- one CAN interface

Housing

The compact housing is made of aluminum. It contains a top hat rail mount and a front cover with all interfaces for better overview in the control cabinet. The technician will note the convenience while working at the bus cabling.

Clamps and cabling

Using the 3-wire connection technology, all sensors and actuators can be connected directly to the module. The danger of incorrect wiring is greatly reduced by the color coding of the potentials, even for less experienced users. Various terminal strips are available, which are optionally equipped with LEDs. However, these should only be used for digital inputs and outputs.

LEDs and switches

All inputs and outputs can be monitored with the help of LEDs at the clamps. In addition to that, you can configure the baud rate and module address with HEX switches at the front cover – easy and comfortable.

Signal processing

Besides its inputs and outputs the Multi-IO offers a powerful microcontroller that handles data acquisition of sensors, control of actors and the processing of any CAN data. An important safety function is the Multi-IOs guarding capability which is fully integrated into the IO for network surveillance. Furthermore, there is a relay contact (changeover) as an additional safety measure. If there is an absence of guarding by the master registered, the module immediately goes into STOP-mode.

CAN interface

The integrated CAN interface is designed in accordance to DS 301 and 401 for a flexible use in different places and tasks in the CAN bus network. All Sontheim CAN interfaces comply to ISO 11898.

Power supply

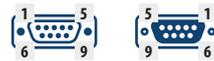
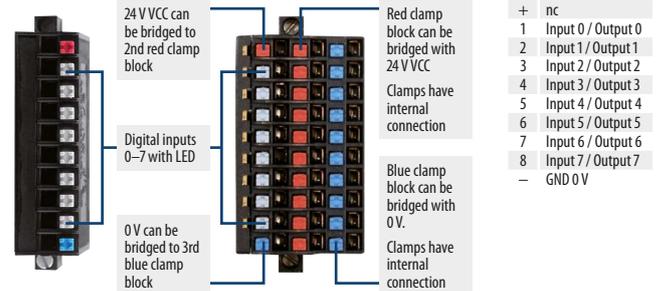
The Multi-IO is supplied with 24 V. The integrated reverse polarity protection prevents possible destruction of the IO mode if the supply voltage is incorrectly applied. The control section is additionally protected against short overvoltage peaks by an EMC circuit on the supply voltage.

Highside and Lowside switch

All digital outputs can be fitted with a Highside or Lowside switch. Being Highside, the outputs toggle the supply voltage to load.

Pin assignment

Clamp block



CAN D-Sub9

1	–
2	CAN low
3	CAN GND
4	–
5	–
6	–
7	CAN high
8	–
9	–



HEX switches module address

Minimum 01 HEX	1
Maximum 7F HEX	127



HEX switch baud rate

0	50
1	125
2	250
3	500
4	1000

Technical Data

Hardware	
CPU	Motorola MC9S12DP256B
CAN interface	1x CAN acc. to ISO 11898, galv. isolated
CAN protocol	DS 301 and 401
Terminal block	Connection wire Ø 0.25 mm ² up to 1.5 mm ²
Operating system display	1x LED green for supply voltage (5 V) 1x LED green for operating mode (Run) 1x LED red for error status (Err)
Dimension (l×w×h)	241 mm × 120 mm × 48 mm
Weight	approx. 800 g
Protection class	IP20
Storage temperature	-10 °C up to +70 °C
Operating temperature	0 °C up to +60 °C
Humidity	90 % non-condensing
Power supply	24 V DC ±20 %
Power consumption	approx. 500 mA

Digital inputs	
Number of inputs	16
Circuit type	positive switching inputs
Potential isolation	Optocoupler
Display (directly at the clamp)	LED (green) for set inputs
Switching level "1"	+15.0 V up to +28.8 V
Switching level "0"	0.0 V up to +8.0 V
Input current/input	8 mA
Signal delay	< 200 µs

Digital outputs	
Number of outputs	16
Circuit type	FET-Highside switch
Potential isolation	Optocoupler
Output voltage	Supply voltage – approx. 0.3 V
Display (directly at the clamp)	LED (green) for activated output
I _{out} Max	1 A
Sampling frequency	1 kHz
Short circuit resistance	Yes
Freewheel diodes	Yes, each activated coil must be provided with a freewheel diode
Signal delay	< 100 µs

Analog inputs	
Number of inputs	8, together galv. isolated
Resolution	12 bit
Potential isolation	Optocoupler
Input voltage	-10 V up to +10 V DC
Sampling frequency	Up to max. 12 analog inputs in operation: 1 kHz more than 12 analog inputs in operation: 500 Hz

Analog outputs	
Number of outputs	8, together galv. isolated
Resolution	12 bit
Potential isolation	Optocoupler
Output voltage	-10 V up to +10 V DC
I _{out} Max	20 mA
Filter circuitry	integrated

Encoder-inputs	
Number of inputs	4
Level	RS485 (A and B)
Max. input frequency	300 kHz
Input voltage	5 V (to supply the encoder)
I _{out} Max	80 mA (to supply the encoder)
Galvanic isolation	Optocoupler

Order information

966105000	Multi-IO_RM35 24 V IO High-Side
966105300	Multi-IO_RM35 12 V IO High-Side
966105400	Multi-IO_RM35 12 V IO Low-Side
980109000	Weidmüller BL IO-30-pole with LED (not included in delivery)
980109100	Weidmüller BL IO-30-pole without LED (not included in delivery)
980109200	Weidmüller BL IO-10-pole with LED (not included in delivery)
980109300	Weidmüller BL IO-10-pole without LED (not included in delivery)



Mobile Automation



Industrial Automation



Diagnostics



Connectivity

We are looking forward to your enquiry!

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