Digital Remote IO-Modules

Small, compact and powerfull

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DIO32 is a digital 24V (opt. 12V) input and output module with 16 channels each. It is optimally suited for the use in CAN networks. 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 400 µs

Galv. isolated inputs

Compact aluminium housing with IP20 and integrated top hat rail mounting

Overview of interfaces

- 16 digital inputs
- 16 digital outputs

Housing

The compact housing is made of aluminium. 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

The Remote-IO series uses 3-wire cabling for direct connection to sensors and actors, supplying them with power. In order to reduce the danger of false-wire harnessing the 3-wire clamps are colored. If you wish to see the status of each channel, we can deliver the modules with LED-clamps.

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 DIO32 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 DIO32's 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 DS301 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 DIO32 needs a power supply with 24 V. Due to the polarity reversal protection the user is in no danger of damaging the module by reversed power connection. Short surge peaks are also eliminated by an EMI wiring for the control section.

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. Being Lowside, they toggle to ground.

DI32

DO32

DIO32

DI40

DIO40

DIO72

Technical Data

Hardware	DI32	DO32	DIO32	DI40	DIO40	DIO72
CPU	16-bit microcontroller					
CAN	Galvanically isolated acc. to ISO 11898, D-Sub9 plug male and female, bridged; Assignment acc. to DIN 41652					
CAN protocol	DS 301 and 401					
Number of modules/bus	127					
Setting	of module address via two HEX switches / of baud rate via HEX switch					
Connection system	Spring connection / clamping range 0.25 – 1.5 mm², solid wire „e", Fine wire „f" 0.25 – 1.5 mm², „f" with wire end ferrule, without plastic collar 0.25 – 1.5 mm²					
Connection technology	Two-wire and three-wire connection, stripping length 10 mm					
Operating status	1× LED green for power supply (5V); 1× LED green for operation mode (Run); 1× LED red for error status (Err); 32× LED green for set inputs	1× LED green for power supply (5V); 1× LED green for operation mode (Run); 1× LED red for error status (Err); 32× LED green for set outputs (at the clamp)	1× LED green for power supply (5V); 1× LED green for operation mode (Run); 1× LED red for error status (Err); 16× LED green for set inputs; 16× LED green for set outputs (at the clamp)	1× LED green for power supply (5V); 1× LED green for operation mode (Run); 1× LED red for error status (Err); 40× LED green for set inputs	1× LED green for power supply (5V); 1× LED green for operation mode (Run); 1× LED red for error status (Err); 32× LED green for set inputs; 8× LED green for set outputs (at the clamp)	1× LED green for power supply (5V); 1× LED green for operation mode (Run); 1× LED red for error status (Err); 32× LED green for set inputs; 40× LED green for set outputs (at the clamp)
Dimensions (l×w×h)	121 mm × 120 mm × 48 mm					241 mm × 120 mm × 48 mm
Weight	600 g					800 g
Protection class	IP 20, EMC requirements acc. to CE					
Storage temperature	−30 °C up to +70 °C					
Operating temperature	0 °C up to +60 °C					
Humidity	90 % non-condensing					
Power supply	24 V DC ±20 %					
All inputs/outputs active, incl. LEDs	540 mA	440 mA	500 mA	540 mA	500 mA	830 mA

Digital inputs	DI32	DO32	DIO32	DI40	DIO40	DIO72
Number of inputs	32	–	16	40	32	
Switching level "1"	+15.0 V up to +28.8 V DC	–	+15.0 V up to +28.8 V DC			
Switching level "0"	0.0 V up to +8.0 V DC	–	0.0 V up to +8.0 V DC			
Potential isolation	Optocoupler	–	Optocoupler			
Input current/input	11 mA	–	11 mA			
Sampling frequency (Fg)	2.5 kHz	–	2.5 kHz			
Signal delay	< 400 µs	–	< 400 µs			

Digital outputs	DI32	DO32	DIO32	DI40	DIO40	DIO72
Number of outputs	–	32	16	–	8	40
Power	–	24 V DC ±20 %		–	24 V DC ±20 %	
Circuit type	–	FET-Highside-Switch		–	FET-Highside-Switch	
Potential isolation	–	Optocoupler		–	Optocoupler	
Output current/output	–	1 A (short circuit proof)		–	1 A (short circuit proof)	
Total current of the Module	–	8 A		–	8 A	
Total current of the Module with blockwise supply	–	32 A	16 A	–	8 A	40 A
Switching frequency	–	1 kHz		–	1 kHz	
Freewheel diode	–	Yes, controlled inductors require external freewheel diodes		–	Yes, controlled inductors require external freewheel diodes	
Signal delay	–	< 100 µs		–	< 100 µs	
Relay contact (if module is active)	–	1× UM / 1 A		–	1× UM / 1 A	

Pin assignment

Clamp block

24 V VCC can be bridged to 2nd red clamp block	Red clamp block can be bridged with 24 V VCC
	Clamps have internal connection
Digital inputs 0–7 with LED	Blue clamp block can be bridged with 0 V.
0 V can be bridged to 3rd blue clamp block	Clamps have internal connection
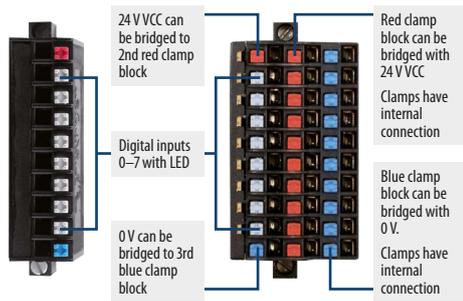
+	nc
1	Input 0 / Output 0
2	Input 1 / Output 1
3	Input 2 / Output 2
4	Input 3 / Output 3
5	Input 4 / Output 4
6	Input 5 / Output 5
7	Input 6 / Output 6
8	Input 7 / Output 7
—	GND 0 V
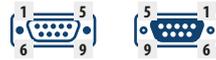
CAN D-Sub9

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

HEX switches module adress

Minimum 01 HEX	1
Maximum 7F HEX	127

HEX switch baud rate

0	10
1	20
2	50
3	125
4	250
5	500
6	800
7	1000

Order information

V966117000	DI32 RM35 24 V IO
V966117400	DI32_RM35 12 V IO
V966127000	DO 32_RM35 24 V IO High-Side
V966127300	DO 32_RM35 12 V IO High-Side
V966127400	DO 32_RM35 12 V IO Low-Side
V966160000	DIO 32_RM35 24 V IO High-Side
V966160300	DIO 32_RM35 12 V IO High-Side
V966160400	DIO 32_RM35 12 V IO Low-Side
V966181000	DI40_RM35
V966180000	DIO40_RM35, 32× dig.In. & 8× dig. Out 24 V IO
V966170000	DIO 72_RM35 24 V IO High-Side
V966170300	DIO 72_RM35 12 V IO High-Side
V966170400	DIO 72_RM35 12 V IO Low-Side
V980109000	Weidmüller BL IO-30-pole with LED (not included in delivery)
V980109100	Weidmüller BL IO-30-pole without LED (not included in delivery)
V980109200	Weidmüller BL IO-10-pole with LED (not included in delivery)
V980109300	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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