S-DIAS Interface SDCI Master Module

IIO 041

with 4 SDCI ports
4 digital inputs

The S-DIAS Single-Drop Digital Communication Interface (SDCI) master module enables the connection of up to 4 intelligent SDCI sensors or SDCI actuators in compliance with the SDCI specification V1.1 according to IEC61131-9. All SDCI ports can also be configured as +24 V digital inputs or +24 V digital outputs. The module has a 24 V supply connection for powering the SDCI ports and connected SDCI devices. Additionally, the module has 4 standard +24 V/3.7 mA/0.5 ms digital inputs.

SDCI Interface Specifications

Number of interfaces	4
Specification version	SDCI V1.1
Data transfer rate	4.8 kbit/s, 38.4 kbit/s, 230.4 kbit/s
SDCI supply	24 V (via power switch, short-circuit proof)
SDCI supply current	maximum 500 mA per connection
SDCI switching signal	+24 V and GND switching
SDCI switching current	maximum 500 mA
Connection technology	3-wire (unshielded)
Cable length	maximum 20 m
wire resistance	maximum 6 Ω
wire capacity	maximum 3 nF
Status LEDs	yes

SDCI Interface as a Digital Output

Output signal	+24 V-switching
Short-circuit proof	yes
Maximum continuous current load/ channel allowed	0.25 A
Maximum total current (all channels)	1 A (100 % of on-time)
Maximum braking energy of outputs (inductive load)	1 Joule/channel
Residual current output (off)	≤ 10 µA
Turn-on delay	< 10 µs
Turn-off delay	< 10 µs

SDCI Interface as a Digital Input

Input voltage	typically +24 V	maximum +30 V
Signal level	low: < +8 V	high: > +14 V
Switching threshold	typically +11 V	
Input current	6.8 mA at +24 V	
Input delay	typically 0.5 µs	

Digital Input Specifications

Number	4	
Input voltage	typically +24 V	maximum +30 V
Signal level	low: < +8 V	high: > +14 V
Switching threshold	typically +11 V	
Input current	3.7 mA at +24 V	
Input delay	typically 0.5 ms	

Electrical Requirements

External +24 V supply	+18-30 V DC	
Current consumption external +24 V supply without actuators or sensors	typically 20 mA at +18 V typically 23 mA at +24 V typically 26 mA at +30 V	maximum 25 mA (at +18 V) maximum 29 mA (at +24 V) maximum 33 mA (at +30 V)
Current consumption external +24 V supply with actuators or sensors	Intrinsic current consumption of the external +24 V supply + current consumption of the connected SDCI actuators or sensors + switching current of the SDCI actuators or sensors (max. 3.0 A)	
Voltage supply from S-DIAS bus	+24 V	
Current consumption on the S-DIAS bus (+24 V power supply)	typically 33 mA at +18 V typically 27 mA at +24 V typically 23 mA at +30 V	maximum 41 mA at +18 V maximum 34 mA at +24 V maximum 29 mA at +30 V

Voltage Monitor

	Supply voltage +24 V SDCI	supply voltage > 18 V (corresponding DC OK-LED lights green)

Article Number and Miscellaneous

	Article number	20-104-041
	Dimensions	12.5 x 104.2 x 72 mm (W x H x D)
	Standard	UL in preparation
	Approvals	UL, cUL, CE in preparation

Environmental Conditions

	Storage temperature	-20 ... +85 °C	
	Environmental temperature	0 ... +55 °C	
	Humidity	0-95 %, non-condensing	
	Operating conditions	pollution degree 2 altitude up to 2000 m	
	EMC resistance	in accordance with EN 61000-6-2 (industrial area)	
	EMC noise generation	in accordance with EN 61000-6-4 (industrial area)	
	Vibration resistance	EN 60068-2-6	3.5 mm from 5-8.4 Hz 1 g from 8.4-150 Hz
	Shock resistance	EN 60068-2-27	15 g
	Protection type	EN 60529	IP20

Notes