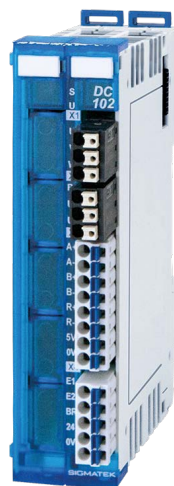


S-DIAS Servo Motor Output Stage

DC 102



- with 1 motor output stage 10 A
- 1 incremental encoder input
- 1 holding brake
- 2-channel enable input for STO (Safe Torque Off)

The S-DIAS DC 102 drive module is used to control a synchronous servo motor with a 48-Volt supply voltage and phase current of up to 10 A. An incremental encoder is available for position feedback. A 24 V output for connecting a holding brake is provided. External Regen brake can also be connected.

Motor Driver Specifications

Type	Synchronous servo motor
Operating voltage	+18-55 V
Maximum continuous current	10 A
Maximum peak current (10 s)	20 A
Output current over the environmental temperature	maximum 10 A continuous current at 45 °C maximum 7.5 A continuous current at 50 °C maximum 5 A continuous current at 55 °C
Controller frequency	16 kHz
PWM frequency	16 kHz
Overload protection	Short circuit cutoff Temperature monitor I²T monitor Over and under voltage monitor

Incremental Encoder Specifications

Number of channels	1
Input signals	Incremental encoder signals RS422 (A, /A, B, /B, R, /R) RS422 signal (120 Ω termination, integrated in the module)
Input frequency	maximum 125 kHz
Counter frequency	maximum 500 kHz
Signal evaluation	4x
Counter resolution	32 bits
Encoder power supply	+5 V/0.2 A short circuit protected

Enable Inputs Specifications

Number	2
Input voltage	+24 V
Input voltage range	+18-30 V
Signal level	low: < 5 V high: > 15 V
Switching threshold	typically 11 V
Input current	3 mA at 24 V
Input delay	typically 0.5 ms

Holding Brake Specifications

Output voltage	24 V
Maximum continuous current	500 mA
Short-circuit protection	yes
Maximum switch-off energy (inductive load)	50 mJ

Regen Brake Specifications

Type	external power resistor
Output	GND switching
Maximum current	10 A
Lowest possible resistance	6 Ω
Short-circuit protection	yes
Threshold regen braking on/off	60 V/55 V

Electrical Requirements

	Power supply +24 V	+18-30 V, Class 2	
	Current consumption of the +24 V supply	load-dependent (holding brake)	
	Supply voltage motor	+18-55 V	
	Switching threshold for motor voltage monitor	minimum 18 V	maximum 65 V
	Current consumption of motor supply	load-dependent (motor)	
	Voltage supply from S-DIAS bus	+24 V	
	Current consumption on the S-DIAS bus (+24 V supply)	typically 95 mA	maximum 110 mA

Article Number and Miscellaneous

	Article number	20-014-102 20-014-102-X (Printed circuit board with protective lacquer)
	Dimensions	25 x 104.2 x 72 mm (W x H x D)
	Standard	CE, TÜV EG type testing

Environmental Conditions

Storage temperature	-20 ... +85 °C	
Environmental temperature	0 ... +55 °C	
Humidity	0-95 %, non-condensing	
Installation altitude above sea level	0-2000 m without derating > 2000 m with derating of the maximum environmental temperature by 0.5 °C per 100 m	
Operating conditions	pollution degree 2	
EMC resistance	in accordance with EN 61000-6-7 (Generic standards – immunity requirements for equipment designed to perform functions in safety-based systems (functional safety) at industrial facilities) according to EN 61000-6-2:2005/AC:2005 (industrial area) (increased requirements in accordance with IEC 62061) additionally tested according to EN 61800-5-2:2017 (Generic Standard – Electrical Power Drive Systems with Adjustable Speed Section 5-2: Safety Requirements – Functional Safety)	
EMC noise generation	EN 61000-6-4/A1:2011 (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