S-DIAS Current Controller Module

SR 022

with 1 DC motor output stage
1 incremental encoder input
1 digital input +5 V
2 digital inputs +24 V

The S-DIAS SR 022 current controller module is used to operate a DC motor with a 12-30 V supply voltage and a maximum motor current of 3.5 A. Higher starting currents are possible for a short period.

Additionally, the motor contains an incremental encoder input (optional TTL or RS422 signal), as well as three digital inputs (1x +5 V, 2x +24 V).

Motor Output Specifications

Number	1
Supply voltage	12-30 V DC
Controller frequency	30 kHz
Current	0-2.0 A in S1 mode 0-3.5 A in S3 mode
Output current over the environmental temperature	2.0 A (S1)/3.5 A (S3) up to 45 °C 1.0 A (S1)/1.4 A (S3) up to 55 °C
Operating modes	S1/100 % duty cycle S3/50 % duty cycle with a maximum on-time of 1.5 min
Intermediate circuit capacity	140 µF
Voltage monitoring	Overvoltage and under voltage monitoring
Motor current measurement	0-3.5 A
Protective function	Short circuit switch-off I^2t switch-off Over temperature switch-off

Incremental Encoder Input Specifications

Number	1	
Input signals	Incremental encoder signals RS422 (A, /A, B, /B, R, /R) RS422 signal (120 Ω termination, integrated in the module)	
	Incremental encoder signals TTL (A, B, R) TTL level (1200 Ω Pull-Up, integrated in the module)	
Input frequency	maximum 125 kHz	
Counter frequency	maximum 500 kHz	
Signal analysis	4x	
Counter resolution	16-bit	
Encoder power supply	+5 V/0.2 A short-circuit proof	

+5 V Digital Input Specifications

Number	1	
Input voltage	typically +5 V	maximum +5.5 V
Signal level	low: < +0.8 V	high: > +2.0 V
Switching threshold	typically +1.4 V	
Input current	1.5 mA at +5 V	
Input delay	typically 5 ms	

+24 V Digital Input Specifications

Number	2	
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 5 ms	

Electrical Requirements

Power supply +24 V	18-30 V	
Current consumption of the +24 V external supply	maximum 70 mA (at +24 V)	
Motor supply	12-30 V	
Current consumption of motor supply	depends on the motor	
Voltage supply from S-DIAS bus	+5 V	
Current consumption on the S-DIAS bus (+5 V supply)	typically 85 mA	maximum 95 mA
Voltage supply from S-DIAS bus	+24 V	
Current consumption on the S-DIAS bus (+24 V supply)	typically 20 mA	maximum 25 mA