

DC 061

S-DIAS Axis Module

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S-DIAS Axis Module**DC 061**

with 1 motor output stage (3-phase, 6 A)

1 resolver input

1 holding brake (0.5 A)

The S-DIAS DC 061 axis module is used to control a brushless DC motor with a 48-Volt supply voltage and phase current of up to 6 A. A Resolver input is available for position feedback. A 24 V output for connecting a holding brake is provided. External Regen brake can also be connected.



Contents

1	Technical Data.....	3
1.1	Motor Driver Specifications.....	3
1.2	Resolver Specifications.....	3
1.3	Enable Inputs Specifications.....	3
1.4	Holding Brake Specifications.....	4
1.5	Regen Brake Specifications.....	4
1.6	Electrical Requirements.....	4
1.7	Miscellaneous.....	5
1.8	Environmental Conditions.....	5
2	Mechanical Dimensions.....	6
3	Connector Layout.....	7
3.1	Status LEDs.....	8
3.2	Applicable Connectors.....	8
4	Wiring.....	9
4.1	Wiring Example.....	9
5	Mounting.....	10

1 Technical Data

1.1 Motor Driver Specifications

Type	brushless, 4-quadrant regulator with position setting
Operating voltage	24 – 55 V
Maximum continuous current	6 A
Maximum peak current (10 sec)	15 A
Overload protection	Short circuit cutoff Temperature monitor I ² T monitor Over and under voltage monitor

1.2 Resolver Specifications

Type	Resolver
Resolution	12-bit
Output voltage (EXC)	typically 7 V _{rms}
Maximum output current (EXC)	200 mA
Output frequency	4 kHz
Input voltage	typically 3.5 V _{rms}
Resolver transfer ratio	0.5

1.3 Enable Inputs Specifications

Number	2	
Input voltage	24 V	
Input voltage range	18 – 24 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	

1.4 Holding Brake Specifications

Output voltage	24 V
Maximum continuous current	500 mA
Short-circuit protection	yes

1.5 Regen Brake Specifications

Type	external power resistor
Output	GND switching
Maximum current	10 A *
Short-circuit protection	yes

* Regen braking must be dimensioned according to the application. For most applications, a 10 Ω / 50 W resistor is sufficient. If multiple DC 061's are driven with one intermediate circuit supply, it is possible to equip only one module with regen braking.

1.6 Electrical Requirements

Power supply +24 V	18 – 30 V	
Current consumption of the +24 V supply	load-dependent (holding brake)	
Supply voltage Motor	24 – 55 V **	
Current consumption of motor supply	load-dependent (motor)	
Voltage supply from S-DIAS bus	+24 V	
Current consumption on S-DIAS bus (+24 V supply)	typically 70 mA	maximum 80 mA

**** The motor supply must be connected with an intermediate circuit capacitance appropriate for the application (at least 2000 μ / 100 V).**

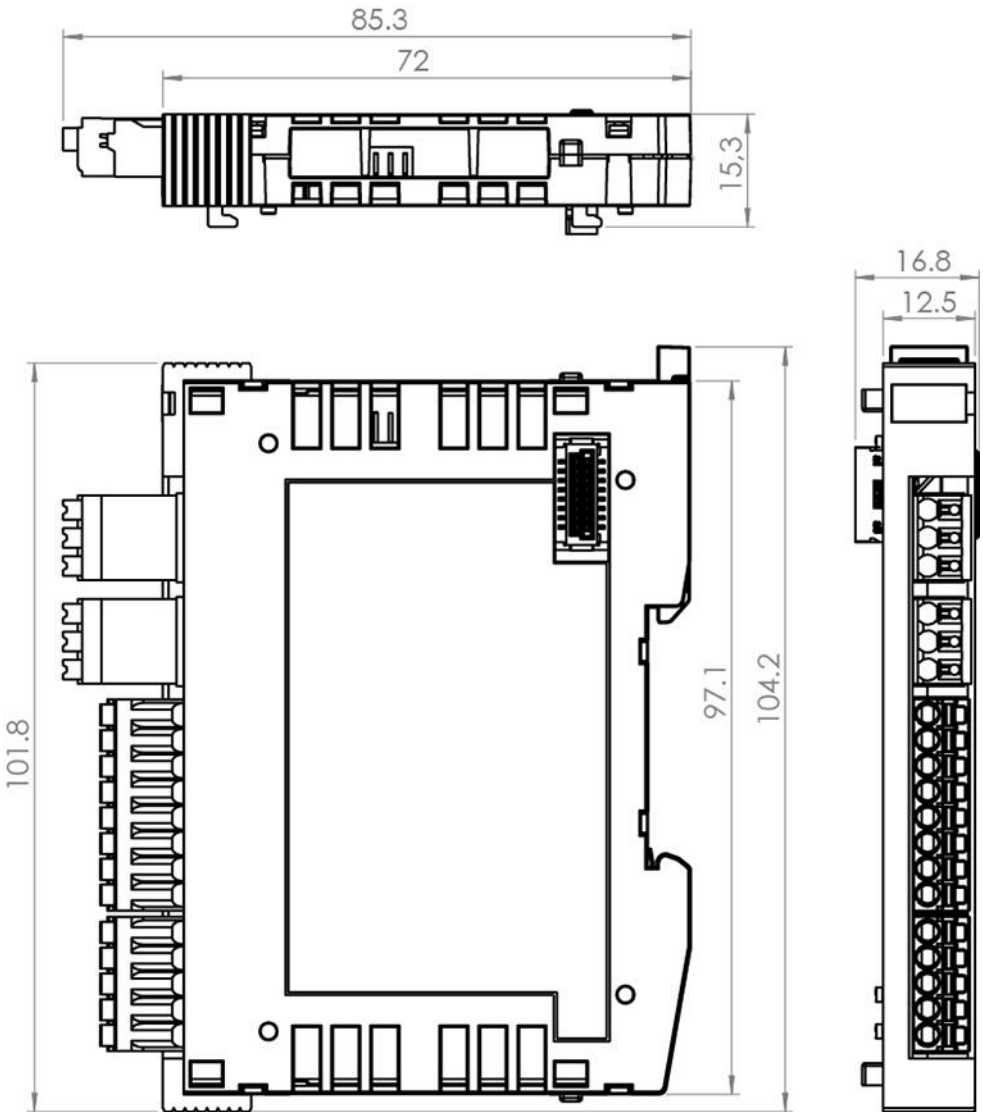
1.7 Miscellaneous

Article number	20-014-061
Hardware version	1.x
Standard	UL 508 (E247993)

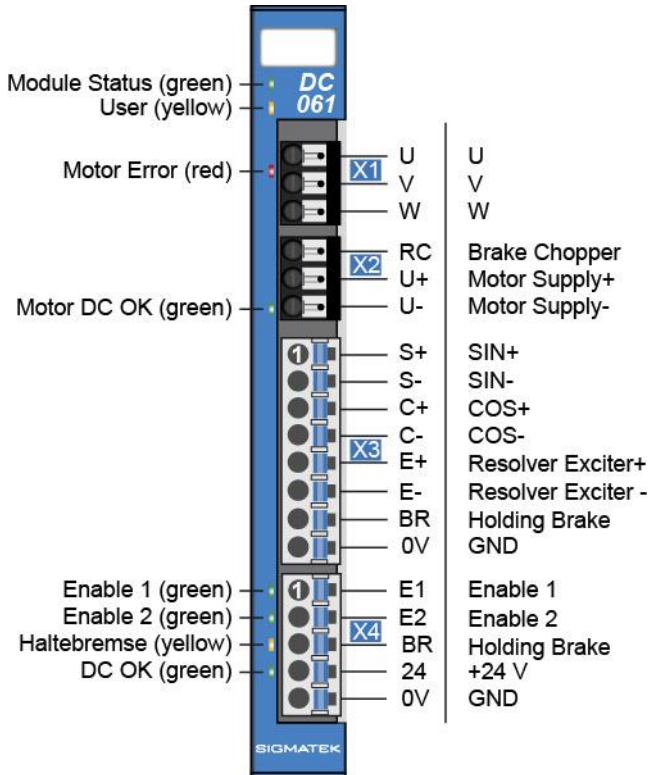
1.8 Environmental Conditions

Storage temperature	-20 ... +85 °C	
Operating temperature	0 ... +50 °C	
Humidity	0 - 95 %, non-condensing	
EMV 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 Hz – 8.4 Hz 1 g from 8.4 Hz – 150 Hz
Shock resistance	EN 60068-2-27	15 g
Protection type	EN 60529	IP20

2 Mechanical Dimensions



3 Connector Layout



* Both holding brake outputs (BR) are internally connected in parallel. Therewith, the holding brake can be wired optionally to X3 (pin 7 – pin 8) or X4 (pin 3 – GND).

3.1 Status LEDs

Module Status	green	ON	module active
		OFF	no supply available
		BLINKING (5 Hz)	no communication
User	yellow	ON	can be set from the application (e.g. the module LED can be set to blinking through the visualization so that the module is easily found in the control cabinet)
		OFF	
		BLINKING (2 Hz)	
		BLINKING (4 Hz)	
Motor Error	red	BLINKING	motor output stage error
		OFF	normal operation
Motor DC OK	green	OFF	no motor supply voltage
		BLINKING	power applied, but motor inactive
		ON	power applied and motor active
Enable 1	green	ON	Enable 1 high
		OFF	Enable 1 low
Enable 2	green	ON	Enable 2 high
		OFF	Enable 2 low
Holding brake	yellow	ON	output active
		OFF	output inactive
DC OK	green	ON	24 V supply ok
		OFF	24 V missing or voltage too low
		BLINKING	24 V voltage supply too high

3.2 Applicable Connectors

Connectors:

X1 – X2: Weidmüller BCF3.81/03/180 SN socket connector with spring terminal (Not included in delivery!)

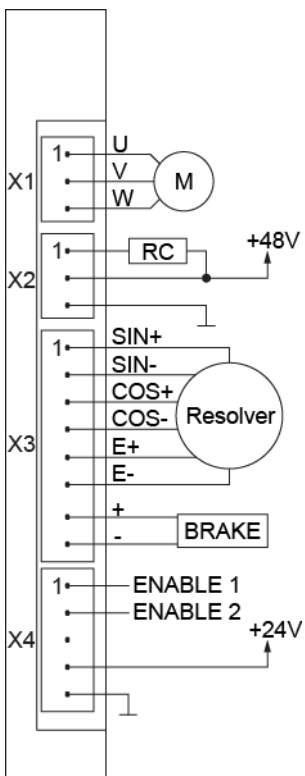
X3, X4: Connectors with spring terminals (included in delivery)

Connections:

Ferrule with / without plastic sleeve: 0.2 – 1.5 / 0.2 – 0.75 mm²
 Insulation length 10 mm

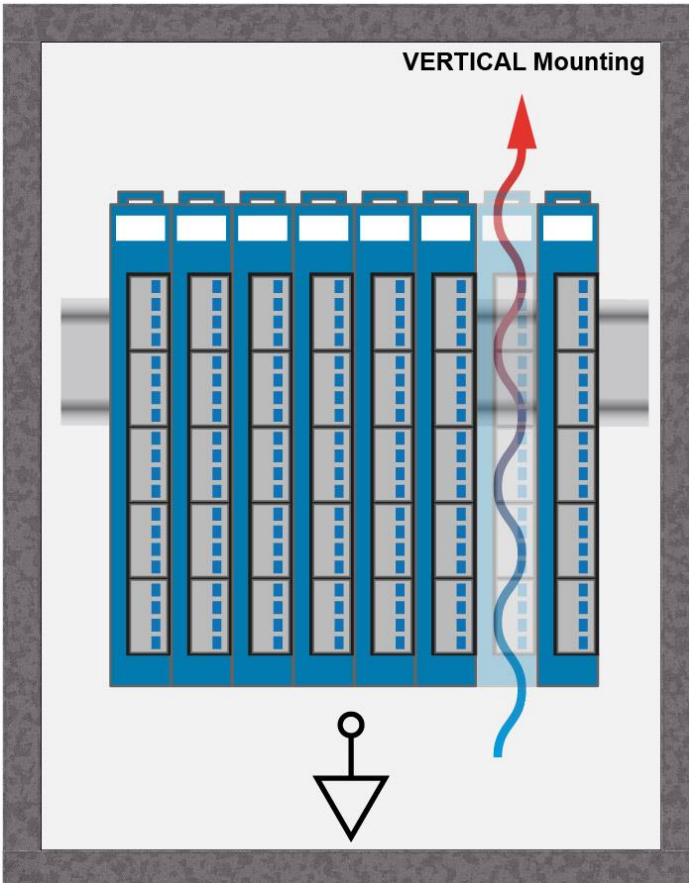
4 Wiring

4.1 Wiring Example



5 Mounting

The S-DIAS modules are designed for installation into the control cabinet. To mount the modules a DIN-rail is required. The DIN rail must establish a conductive connection with the back wall of the control cabinet. The individual S-DIAS modules are mounted on the DIN rail as a block and secured with latches. The modules must be mounted vertically with sufficient clearance between the ventilation slots of the S-DIAS module blocks and nearby components and/or the control cabinet wall. This is necessary for optimal cooling and air circulation, so that proper function up to the maximum operating temperature is ensured.



Documentation Changes

Change date	Affected page(s)	Chapter	Note

