Technical characteristics

The servo amplifier MBD has been designed to drive brushless sinusoidal servomotors. The DSP digital architecture allows handling a fieldbus and controlling the motor in its main variables: power, speed, position. The device can also be driven by a differential analog input.

Servo amplifier MBD

The hardware interface, in the standard version, includes the following devices:
• 5 opto-isolated digital inputs.
• 2 inputs for disabling security STO A, STO B (under approval)
• 3 opto-isolated digital outputs.
• 1 Drive OK relay
• CANopen interfacing
• RS232 interface, protocol Modbus RTU, gateway RS232/CAN (including in the CANopen)
• Motor feedback input
• Electromechanical motor brake control
• Management of braking circuit with internal or external braking resistor.
The device is supplied with two slots for expansion cards.

Power supply

The MBD Servo amplifier must be powered by: a 24V auxiliary voltage for operation of control circuits, of electromechanical brakes and of ventilation (if present) and by 3-phase grounded current at 230/400 VAC, 50/60 Hz
All shielding connections are made directly to the amplifier. Output Stage: IGBT module with insulated current measurement on the motor
phases. Protection against overcurrent.

Operation and parameter setting

TKSED software allows you to communicate with the amplifier through ModBus RTU RS-232. Through the interface you can configure the product completely, save and load a configuration of parameters and update the firmware of the amplifier.

TKSED Software download:
https://www.nilab.at/download/tksed-software-pc-tool/?wpdmdl=2126&refresh=637351b08fa4b1668501936

Control

The control is full-digital, internally, the three control loops (power, speed and position) can be managed. The insertion of one or more control loops is determined by the used operating mode.

Technical data

TECHNICAL DATA				
RATED SUPPLY VOLTAGE	V	3x230-10% . . 3x400+10%		
SIZES		3	6	12
OUTPUT RATED CURRENT	A	3	6	12
PEAK OUTPUT CURRENT@5s	A	6	12	24
RATED INPUT POWER	kVA	1,8	3,7	7,4
RATED OUTPUT CURRENT	kW	1,30	2,59	5,75
THERMAL DISSIPATION AT RATED CURRENT	W	30	70	120
THERMAL DISSIPATION, OUTPUT STAGE DISABLED	W	10		
SWITCHING FREQUENCY OF OUTPUT STAGE (DEFAULT VALUE)	KHz	10		

TECHNICAL DATA			
RATED SUPPLY VOLTAGE	V	3x230-10% . . 3x400+10%	
SIZES		30/60	42/84
OUTPUT RATED CURRENT	A	30	42
PEAK OUTPUT CURRENT@5s	A	60	84
RATED INPUT POWER	kVA	18	26,1
RATED OUTPUT CURRENT	kW	14,3	20,1
THERMAL DISSIPATION AT RATED CURRENT	W	350	450
THERMAL DISSIPATION, OUTPUT STAGE DISABLED	W	15	
SWITCHING FREQUENCY OF OUTPUT STAGE (DEFAULT VALUE)	KHz	5	

Environmental data

ENVIRONMENTAL DATA						
SIZES		3/6	6/12	12/24	30/60	42/84
STORAGE TEMPERATURE	°C	-20°C +75°C				
AMBIENT CONDITIONS		Pollution level 2 Max ambient temperature in operation: 40°C under rated conditions, 45°C with power derating2,5%/°C Min ambient temperature in operation: 0°C Storage temperature: -20°C to 75°C Site altitude without restriction: 1000 m with power derating 2% / 100m > 1000m Rel. humidity: 10% to 85% - without condensation Vibrations: 2g, 10 Hz a 2000 H				
ENCLOSURE PROTECTION		IP20				
POLLUTION LEVEL		2 as per IEC 60664-1, 2.5.1				

Brake Circuit

BRAKE CIRCUIT					
SIZES		3A,6A	12A	30A	42A
DC-LINK CAPACITANCE	µF	280	500	2460	N.A.
SUPPLY VOLTAGE	V	3x230±10%			
SWITCH-ON THRESHOLD OF BRAKE CIRCUIT	V	390			
OVERVOLTAGE	V	420			
SUPPLY VOLTAGE	V	3x400±10%			
SWITCH-ON THRESHOLD OF BRAKE CIRCUIT	V	720			
OVERVOLTAGE	V	800			
INTERNAL BRAKE RESISTOR	Ω	100	50	-	N.A.
CONTINUOS POWER INTERNAL BRAKE RESISTOR	W	25	50	-	N.A.
PULSE BRAKE POWER(0,5s)	KW	5	10	-	N.A.
MAX PULSE BRAKE POWER	KW	6	15,7	20	N.A.
EXTERNAL BRAKE RESISTOR(*)	Ω	≥66	≥33	≥12,5	N.A.
CONTINUOS POWER EXTERNAL BRAKE RESISTOR	W	1000	1500	5000	N.A.

* optional

Fusing

Input Circuit	Internal fuse
24V / Brake resistor, fan	4AM
STO A/B enable	2AM

Fuses:

Circuit	Fuses				
SIZES	3/6	6/12	12/24	30/60	42/84
AC supply feed	6AT	10AT	16AT	40A	50A
24V	4AT			6AT	

Type: gS. >The gS class is defined by standard IEC 60269-4 Ed. 4.0, 2006.
T= time-delay fuse.

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