SINUS M AC Drive

Standard Features

- Power ranges:
  0.4 - 22kW, 380-480Vac, 3 phase
- IP 20 enclosure
- Built-in braking unit
- 2 Control modes: V/F and Sensorless Vector Control
- Serial port RS 485 with protocol MODBUS RTU
- Remotable smart keyboard
- Overload 150% of Inom for 60 sec
- Overload 200% for short time span
- Maximum torque 180% Cn
- Maximum output frequency 400Hz
- Anti-stalling and antitrip algorithm
- 8 speed sets
- 3 frequency jumps (skip)
- 8 NPN PNP programmable digital inputs
- 2 analog input 0-10Vdc and 4-20mA
- 1 programmable open collector output
- 1 programmable relay output
- 1 analog output 0-10Vdc
- Adjustable carrier 1-15 kHz
- Automatic and manual torque boost
- Speed search
- PID function
- "S" ramps
- Fire Mode function
- EMC compliant with EN 61800-3, industrial power utility, SECOND ENVIRONMENT
- Motor auto tuning function for optimum performance
- Full compatibility wth tele service software "Remote Drive" on internet
- Full compatibility with easy harmonic, tool for the calculation of harmonic currents

New

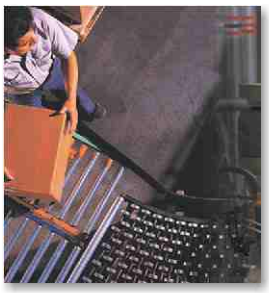
- **Draw function**
- **UP-DOWN function**
- **KEB (Kinetic Energy Buffering)**
- **External Brake control**

Options

- Kit remote keyboard operation (3 meters)
- EMC foot print filters EN 55011 Cl. A1 and B, public utility, FIRST ENVIRONMENT
- Braking resistors
- Analog converter V/I (0-10/4-20mA)
- Relay for open collector output
- "Remote Drive" software
- Converter for MODBUS/Profi bus DP-CanBus-Device Net etc.
- RS 485/232 converter
- 1-3 Phase 200-230Vac, 0.4-22kW

Applications

- Fan
- Pumps
- Food processing machines
- Dryers
- Industrial washing machines
- Grinders
- Textile machines
- Machines for handling materials
- Centrifuges
- Doors for elevators
- Tooling machinery
- Hoist



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Environment

Protection degree	IP 20
Ambient temp	-10º C ~ 50º C
Storage temp	-20º C ~ 65º C
Humidity	Below 90% RH (no condensation)
Altitude/Vibration	Below 1,000m. 5.9m/sec^2 (0.6G)
Atmospheric pressure	70 ~ 106 kPa
Location	Protected from corrosive gas, combustible gas, oil mist or dust

Control

Control method		V/F, Sensorless vector control
Frequency setting resolution		Digital command: 0.01Hz Analog command: 0.06Hz (Max freq.: 60Hz)
Frequency accuracy		Digital command: 0.01% of Max output frequency Analog command: 0.1% of Max output frequency
V/F pattern		Linear, Squared, User V/F
Overload capacity		150% for 60 sec.
Torque boost		Manual/Auto torque boost
Dynamic Braking	Max bracking torque	20% WITH DEACCLERATING RAMP without resistor
	Time%ED	150% BY USING EXTERIAL RESISTOR

Operation

Operation mode			Keypad / Ternimal / Communication option / Remote keypad selectable
Frequency setting			Analog : 0 - 10 [V], 10 - 10 [V], 0 - 20 [mA] Digital: Keypad
Operation features			PID, Up-down, 3-wire
Input			NPN / PNP selectable
	Multi-function terminal P1 ~ P8		FWD/REV RUN, Emergency stop, Fault reset, Jog operation, Multi-step Frequency-High, Mid, Low, Multi-step Accel/Decel-High, Mid, Low, DC braking at stop, 2nd motor select, Frequency UP/Down, 3-wire operation, External trip A, B, PID-inverter (v/f), operation bypass, Analog Hold, Accel/Decel stop, Up/Down Save Freq.
Output	Open collector terminal	Fault output and inverter status output	Less than DC 24V 50mA
	Multi-function relay		(N.O., N.C.) Less than AC 250V 1A, Less than DC 30V 1A,
	Analog output		0 ~ 10 Vdc (less than 10mA): Output Freq. Output Current, Output Voltage, DC link selectable

Power Ratings

SINUS M 4T ▪▪▪▪ BA2K2			0001	0002	0003	0005	0007	0011	0014	0017	0020	0025	0030
Max capacity Motor power 380 - 415Vac		[HP]	0.5	1 - 1.25	2	3	5.5 - 6	7.5	10	15	20	25	30
		[kW]	0.4	0.75 - 0.9	1.5	2.2	4 - 4.5	5.5	7.5	11	15	18.5	22
Output ratings	Capacity [kVA]		0.95	1.9	3.0	4.5	6.9	9.1	12.2	18.3	22.9	29.7	34.3
	FLA [A]		1.25	2.5	4	6	9	12	16	24	30	39	45
	Max Frequency		400 [Hz]										
	Max Voltage		3ø 380 ~ 480V										
Input ratings	Rated Voltage		3ø 380 ~ 480 VAC (+10%, -15%)										
	Rated Frequency		50 ~ 60 [Hz] (±5%)										
Cooling method			N/C	Forced cooling									
Weight [kg]			0.76	0.77	1.12	1.84	1.89	3.66	3.66	9.0	9.0	13.3	13.3
Dimension [mm]	W		70	70	100	140	140	180	180	235	235	260	260
	H		128	128	128	128	128	220	220	320	320	410	410
	D		130	130	130	155	155	170	170	189,5	189,5	208,5	208,5

Protective function

Trip	Over Voltage, Under Voltage, Over Current, Ground Fault current detection, Inverter Overheat, Motor Overheat, Output Phase Open, Overload Protection, Communication Error, Loss of Speed Command, Hardware Fault, Fan trip
Alarm	Stall prevention, overload
Momentary Power Loss	Below 15 msec: Continuous operation (should be within rated input voltage, rated output power.) Above 15 msec: Auto restart enable

BCH ELECTRIC LIMITED

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AUT/SINUS M/3000/JAN. '06 RP/AUT/SINUS M/5000/JAN '08