

ActionMaster



AC DRIVES VARIABLE FREQUENCY

SERIES S5 
1 to 30 HP
230v/460v

Performance Benefits

Cleveland Motion Controls ActionMaster Series S5 AC Drives are designed to meet worldwide drive performance requirements and conform to global standards.

ActionMaster Series S5 Drives are variable frequency AC drives utilizing sensorless vector PWM (pulse-width-modulation) technology, keeping applications stable, durable and precise. Each drive includes a built-in PI Controller for better process control.

Series S5 Drives offer a diversity of communications interfaces. "Trip free" functionality provides optimum acceleration and deceleration. With extended I/O boards, system engineers can design cost-effective performance-matched systems to fit exact company needs.

Standard Design Features

CMC® ActionMaster Series S5 AC Drives are readily available with numerous standard features:

- kW / Voltage Ratings (VAC):
 - 0.75-5.5(1-30HP)/200-230, 3 phase
 - 0.75-5.5(1-30HP)/380-460, 3 phase
- Enclosure: IP00 ~ IP20
- Inverter Type: PWM with IGBT
- Control Method: Sensorless Vector
- 1 ~ 15kHz Carrier Frequency
- 0 – 400Hz Output Frequency
- Removable keypad (Able to read & write parameters)
- Intelligent Accel / Decel for Trip-Free Operation

- 3 Multi-functional inputs
- 2 Multi-functional outputs
- Built-In PID Control
- Pre-Set speeds
- 2, 3 wire operation
- Multi-step programmable run patterns
- Auto torque boost
- DC injection braking
- Stall prevention
- Built-in braking circuit for 0.75 ~ 7.5kW units

Options

- Communications Board:
 - RS-485, DeviceNet, F-Net, ModBus-RTU, and Profibus DP
- Extended I/O Module:
 - Sub-A-Board with 3 multi-function inputs (isolated), 3 multi-function outputs (isolated), aux. analog input, and load meter (0-10V)
 - Sub-B Board with encoder pulse input and encoder pulse output
 - Sub-C Board with with 3 multi-function inputs, 3 multi-function outputs and aux. analog reference frequency (isolated)
- Cables for remote keypad operation
- Dynamic braking units for 11-22kW Drives
- Dynamic braking resistors

Applications

- Traverse
- Draw
- Converting
- Conveyors
- Material Handling
- Web Processing
- MMC (Multi-Motor Control)
- Fan / Pump Controls
- Industrial washing machinery, etc.

- Sensorless Vector technology keeps applications in more stable, durable and precise condition.
- Accommodates numerous industrial applications.
- Built-In PI Controller provides valuable process control– flow, temperature, pressure, etc.
- Flexible Windows-based monitoring software with choice of a wide diversity of communication interfaces.
- "Trip Free" functionality provides maximum torque with optimum acceleration and deceleration.
- Auto tuning sets motor factors automatically.
- Extended I/O boards enable system engineers to custom design cost-effective systems to their company's exact needs.
- Conformance to Global Standards:
 - UL and cUL listed for North America
 - CE for Europe
 - ISO9001 and ISO14000 Quality Process Controlled

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COMMON SPECIFICATIONS

Control	Control Method	V/F Control, sensorless vector control (selectable)	
	Frequency Setting Method	Digital reference: 0.01 Hz (below 100 Hz), 0.1 Hz (over 100 Hz) Analog reference: 0.03 Hz / 50 Hz	
	Frequency Accuracy	Digital: 0.01% of max. output frequency Analog: 0.1% of max. output frequency	
	V/F Ratio	Linear, Square pattern, User V/F	
	Overload Capacity	150% of rated current for 1 minute, 200% of rated current for 0.5 second (characteristic is inversely proportional to time)	
	Torque Boost	Manual torque boost (0 ~ 15%), Auto torque boost	
Operation	Input Signal	Operation Method	Keypad / terminal / communication operation
		Frequency Setting	Analog: 0 ~ 10V / 4 ~ 20mA Digital: Keypad
		Start Signal	Forward / Reverse
		Multi-step	Up to 8 speeds can be set (use multi-function terminal)
		Multi-step accel / decel time	0 ~ 6,000 sec, up to 8 types can be set and selected for each setting (use the multi-function terminal) Accel / Decel pattern: linear pattern, U pattern, S pattern, Optimum, Minimum
	Output Signal	Emergency stop	Interrupts the output of the drive
		Jog	Jog Operation
		Auto Operation	Operates from internal sequence by setting the multi-function terminal (5 way X 8 step)
		Fault Reset	Trip status is removed when protective function is active
		Operation Status	Frequency level detection, Overload alarm, stalling, over voltage, under voltage, drive overheating, running, stop, constant speed, exchange inverter to commercial line, speed searching, auto operation step, auto operation sequence
	Fault Output Indicator	Contact output (30 A, 30 C, 30 B) - AC 250V 1A, DC 30V 1A Choose 1 from output frequency, output current, output voltage, DC voltage (Output pulse: 500 Hz, Output voltage: 0 ~ 10V)	
Operation Function		DC braking, frequency limit, frequency jump, second function, slip compensation, reverse rotation prevention, auto restart, exchange inverter to commercial line, auto-tuning, PID control	
Protective Function	Drive Trip	Over voltage, under voltage, overcurrent, drive overheating, motor overheating, input / output phase loss, input / output mis-wiring, overload protection, communication error, loss of speed command, hardware fault	
	Inverter Alarm	Stall prevention, overload alarm	
	Momentary Power Loss	Less than 15 msec: continuous operation, more than 15 msec: auto restart possible	
Display Keypad	Operation Information	Output frequency, output current, output voltage, frequency value setting, operating speed, DC voltage	
	Trip Information	Indicates the fault when the protection function activates, memorizes up to 5 faults	
Environment	Ambient Temperature	-10°C ~ 40°C	
	Storage Temperature	-20°C ~ 65°C	
	Ambient Humidity	90% RH max. (Non-condensing)	
	Altitude - Vibration	Below 1,000 m- below 5.9 m/sec ² (=0.6g)	
	Application site	No corrosive gas, combustible gas, oil mist, or dust	

DRIVE RATING SELECTION GUIDE

Application Motor		200 ~ 230V	380 ~ 460V	Application Motor		200 ~ 230V	380 ~ 460V
kW	HP	3 Phase	3 Phase	kW	HP	3 Phase	3 Phase
0.75	1	ACM-00.8S5-2	ACM-00.8S5-4	7.50	10	ACM-0.75S5-2	ACM-0.75S5-4
1.50	2	ACM-01.5S5-2	ACM-01.5S5-4	11	15	ACM-011S5-2	ACM-011S5-4
2.20	3	ACM-02.2S5-2	ACM-02.2S5-4	15	20	ACM-015S5-2	ACM-015S5-4
3.70	5	ACM-03.7S5-2	ACM-03.7S5-4	18.5	25	ACM-019S5-2	ACM-019S5-4
5.50	7.5	ACM-05.5S5-2	ACM-05.5S5-4	22	30	ACM-022S5-2	ACM-022S5-4

INDUSTRIAL PRODUCTS & SYSTEMS

7550 Hub Parkway
Cleveland, Oh 44125-5794
Tel: 216-524-8800 or (800) 321-8072
Fax: 216-642-2100
Visit Us: www.CMCcontrols.com

