



**ALSPA® MV500 Drive  
Control Simplicity**

**ALSTOM**

**Power Conversion**

## Easy to use – Simple to install

**The new ALSPA MV500 drive from ALSTOM Power Conversion brings reductions not only in drive costs but, equally as important nowadays, reductions in complexity. No drives knowledge is required to install and use MV500 in most applications, ideal for today's busy process engineer.**

In addition to straightforward installation, ALSPA MV500 provides ease of operation with just 10 parameter settings covering most drive applications. For more complex applications, additional menus are available if required.

Complex features such as PID control and multi motor control, usually only found on larger drives, are built into MV500 waiting for configuration via the serial link.

- Simple installation and start up
- Models available for 230V and 400V operation, single and three phase input
- Most drive applications covered by just 10 parameters
- Advanced menus for applications not available from other small drives
- Fast installation and convenient cable management
- Non shaft rotating autotune assists fast set up
- RS485 serial communications as standard
- Intelligent thermal management ensures minimum motor noise with maximum drive protection
- Large power terminals for ease of cabling
- Pluggable terminals for fast access
- Model sizes 2-4 have built-in braking transistor for fast dynamic braking

- Easy options:
  - Cloning module for rapid, accurate parameter transfer
  - Full EMC compliance with space saving filters
  - Future proof fieldbus compliance
  - PC Windows® based set up software for advanced configuration
  - IP65 multi-language remote keypad



## Small in Size – Big on Features

The ALSPA MV500 drive combines the flexibility of much larger drives in a physically compact size.

ALSPA MV500 is designed for most applications and, therefore, size is recognised as important. Equally important, however, is the need to ensure that heat dissipation and dependability are not compromised by size reduction. With the ALSPA MV500 this has been achieved.

- Plug-in communication packages including Profibus-DP, DeviceNet and Interbus-S ensure that ALSPA MV500 provides exceptional communication facilities for this size of drive
- Intelligent thermal management technology reduces nuisance tripping and ensures minimum motor noise to give the user maximum drive performance
- Mains dip ride-through gives protection against expensive process stoppages, minimising product wastage, breakages and downtime.
- Optional higher level parameters give additional flexibility via serial communications
- Open loop vector control provides maximum shaft torque
- Units up to 4kW rating fit space saving 200mm deep cubicles
- PID controller, PTC input, skip frequencies & 50:1 minimum speed range standard on all units



## Dependable Drives – Reliable Support

Drive dependability is affected by many factors including environment, build up of heat, over voltages and vibration. The potential for such problems in small drives is high due to the size constraints. With ALSPA MV500 drives, high dependability has been achieved through carefully considered design aspects, coupled with excellence in manufacture and assembly.

- 50°C ambient rating – for tough applications where operating conditions are hot
- Single, two processor design pcb uses 50% less connections between control and power devices giving less potential problems, greater dependability and a more robust drive
- Industrialised mounting brackets cast as part of heatsink
- IP21/NEMA 1 rating

The renowned back up for which ALSTOM has industry-wide recognition supports all ALSPA MV500 drives globally.



## Ratings

	Frame Size	Number of phases	Supply Voltage $\pm 10\%$	kW rating	Motor HP rating	Output current	150% output current
MV501S2B1	1	1	200-240	0.25		1.5	2.3
MV502S2B1	1	1	200-240	0.37	0.5	2.3	3.5
MV503S2B1	1	1	200-240	0.55		3.1	4.7
MV504S2B1	1	1	200-240	0.75	1	4.3	6.5
MV504A2D1	2	1 or 3	200-240	0.75	1	4.3	6.5
MV506A2D1	2	1 or 3	200-240	1.1		5.8	8.7
MV507A2D1	2	1 or 3	200-240	1.5	2	7.5	11.3
MV510A2D1	2	1 or 3	200-240	2.2	3	10.6	15.9
MV517A2C1	2	3	200-240	4	5	17	25.5
MV525A2C1	3	3	200-240	5.5	7.5	25	37.5
MV528A2C1	3	3	200-240	7.5	10	28.5	42.8
MV502A4C1	2	3	380-480	0.75	1	2.1	3.2
MV503A4C1	2	3	380-480	1.1		3	4.5
MV504A4C1	2	3	380-480	1.5	2	4.2	6.3
MV506A4C1	2	3	380-480	2.2	3	5.8	8.7
MV508A4C1	2	3	380-480	3		7.6	11.4
MV510A4C1	2	3	380-480	4	5	9.5	14.3
MV513A4C1	3	3	380-480	5.5	7.5	13	19.5
MV516A4C1	3	3	380-480	7.5	10	16.5	24.8
MV524A4C1	4	3	380-480	11	15	24.5	36.8
MV530A4C1	4	3	380-480	15	20	30.5	45.8

## Dimensions

Frame size	kW rating	Height mm	Width mm	Depth mm	Weight kg
1	0.25 - 0.75	191	102	130	1.25
2	0.75 - 4.0	230	147	130	2.75
3	5.5 - 7.5	336	190	155	6.0
4	11.0 - 15.0	412	250	185	11.0

## Technical Features

### Motor Connections

Voltage 3 phase:	from zero to $U_{\text{MAINS}}$
Nominal motor voltage:	200 to 240V (single or three phase for 220V drive input) 380 to 480V (three phase for 380/400V drive input)
Nominal motor frequency:	0 to 1000 Hz
Continuous load capacity (constant torque) rated current $I_m$ Overload capacity:	
• Constant torque:	1.5 x $I_m$ for 1 minute every 10 minutes
• Variable torque:	1.5 x $I_m$ for 1 minute every 10 minutes
Switching frequency:	Standard 3kHz, 6kHz, 12kHz
Acceleration time:	0.1 to 3200 seconds/100 Hz
Deceleration time:	0.1 to 3200 seconds/100 Hz

### Protection functions

Overcurrent trip	Overvoltage trip
Undervoltage trip	Current $I^2t$ protection
Overtemperature limit (heatsink)	Earth fault protection on output
Output short circuit protection	Power loss ride through
Serial communications failure	Loss of analogue signal
ITM	

### Control Connections

Analogue Inputs:	voltage signal: 0 to 10V/100k $\Omega$ current signal: 0(4) to 20mA/200 $\Omega$
Analogue outputs:	0 to 10V, $I_{\text{max}}$ 5mA
Auxiliary voltage:	24V/100mA
Digital Inputs:	12V DC PNP and NPN logic 24V DC PNP and NPN logic Input impedance 7.5k $\Omega$ Sample time 1.5ms
Digital Output:	24V max. 50mA
Relay Output:	Switching voltage 30V DC/6A or 240V AC/2A resistive
Serial Communications:	RS232, RS485 Options; Profibus, MODBUS Plus, Interbus S, DeviceNet, others

### General

Fundamental power factor:	0.98
Ambient operating temperature:	0 to 40°C @ 6kHz 0 to 50°C @ 3kHz with derating
Approvals:	UL, CSA, CE Marking
Applied Standards:	IEC, EN
Compliance with EU regulations:	97/37/EC; Safety of Machinery 89/336/EEC; Electromagnetic Compatibility 73/23/EWG Low Voltage Directive



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