

Motion Control



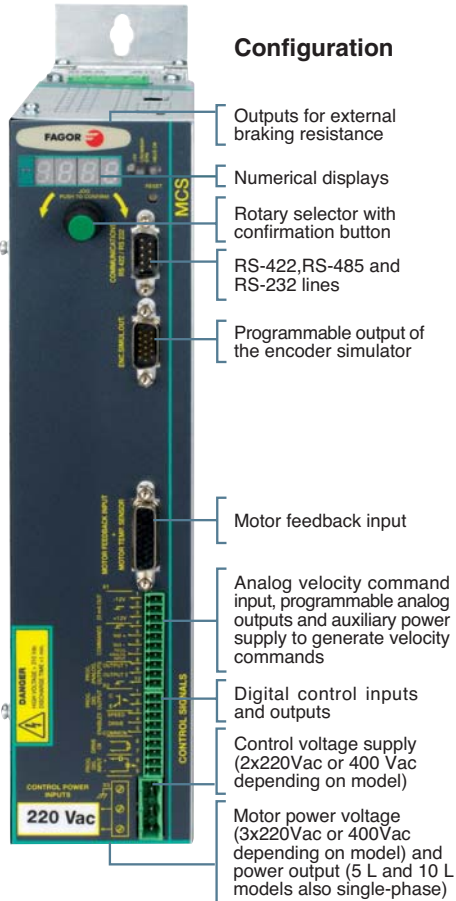
# FAGOR MCS / MCP Series Servo Drive System



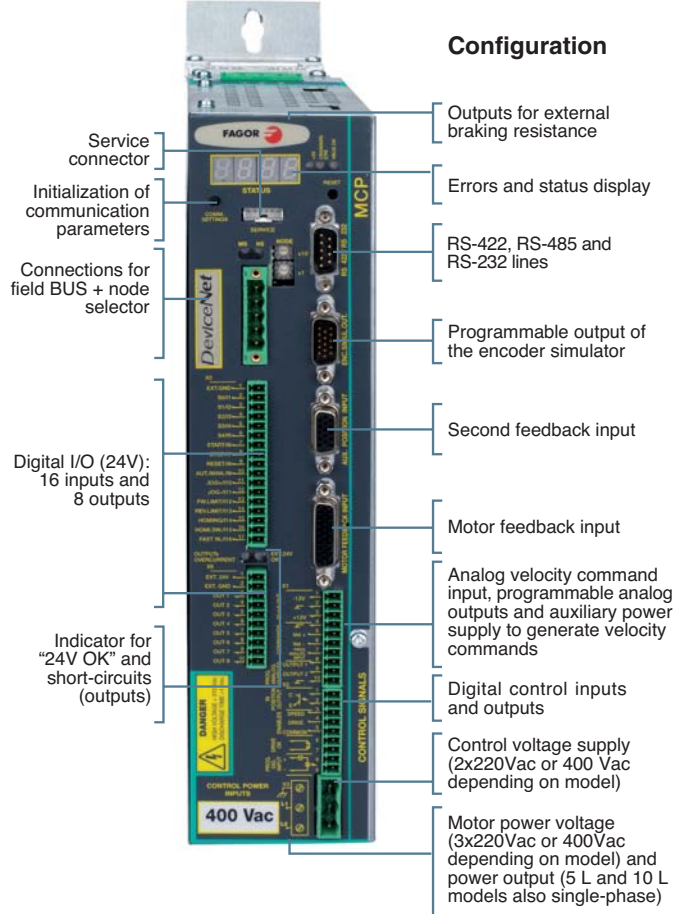
FAGOR AUTOMATION

# FAGOR Servo Drive System MCS / MCP series

## MCS Speed drive



## MCP Positioning drive



### Features of MCS / MCP Servo drives

- Standard
- Optional

	MCS	MCP
Tools for easier configuration and friendly programming of the drives	●	●
Integrated programming module	●	---
Feedback input for the motor incremental encoder (2500 TTL or 1 Vpp sinusoidal)	●	●
Single-phase or three-phase supply (for 5L and 10L models)	●	●
Independent power supply for power and control	●	●
Protections against power outage, overtemperature, etc.	●	●
Programmable logic output	●	●
Two analog outputs for monitoring speed and current	●	●
8 outputs and 16 inputs, all digital (24V), optocoupled, protected against short-circuits.	---	●
Two programmable analog outputs and one programmable analog input	●	●
Communication interfaces: RS-232, RS-422 and RS-485	●	●
Communications protocols: MODBUS (RTU and ASCII)	●	●
Optional field bus CANopen, DEVICENET and PROFIBUS DP-VO	---	○
ON-LINE parameter editing	●	●
Encoder simulation output (programmable number of pulses)	●	●
Second feedback input	---	●

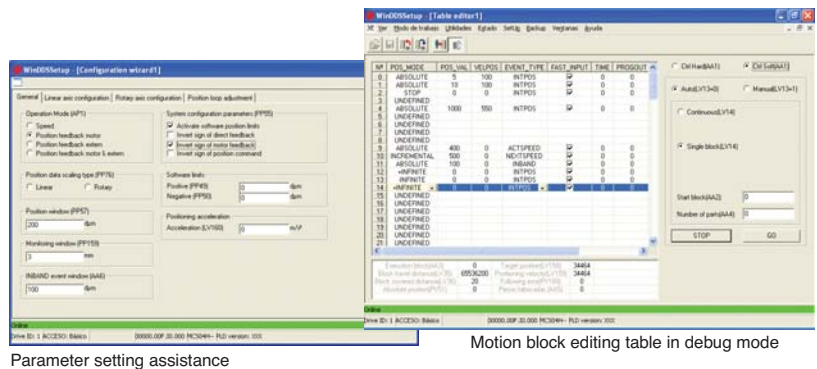
FAGOR MCS/MCP Servo Drives	220 V (L)				400 V (H)		
	MCS / MCP						
OUTPUT RATED CURRENT (Amp)	05	10	20	30	04	08	16
PEAK CURRENT-0.5 SEC (Amp)	2.5	5	10	15	2	4	8
POWER SUPPLY	Three-phase 50/60 Hz mains with a voltage range between 220Vac-15% and 240Vac+10%				Three-phase 50/60 Hz mains with a voltage range between 400Vac-15% and 460Vac+10%		
CONSUMPTION (Amp-rms)	5.6 (9.5)*	11.1(18.5)*	22.2	33.3	4.4	8.9	16.7
OVERVOLTAGE PROTECTION	430 Vdc				780 Vdc		
INTERNAL BALLAST (OHMS)	112	56	28	18	132	132	66
POWER OF INTERNAL BALLAST	150 W						
BALLAST TRIGGER	416 Vdc				780 Vdc		
HEAT-SINK THERMAL PROTECTION	90°C (194° F)						
OPERATING TEMPERATURE	5°C / 45°C (41°F / 113°F)						
STORAGE TEMPERATURE	(-)20°C / 60°C (-4°F / 140°F)						
DEGREE OF PROTECTION	IP20						
MODULE DIMENSIONS	67 x 280 x 245 mm (2.48 x 11.8 x 9.05 inches)						
MODULE WEIGHT	3.85 Kg (8.5 lbs)						

\* Consumption for models with single-phase power voltage.



Using a PC-compatible Windows® based software makes it easier to program and configure the drives. The user can modify the parameters and act upon the drive on line.

## With friendly programming and configuring tools



Parameter setting assistance

Motion block editing table in debug mode

## Field buses

Fagor Automation integrates in its MCS/MCP families and in its Innova MCSi/MCPI series the most popular field buses on the market making it possible to interconnect systems that support these field buses for bidirectional data exchange between the master and the slave elements.

This reduces cabling costs, simplifies the installation and operation of industrial machines and equipment used in manufacturing processes as well as their diagnostics, control and maintenance. Plus, our velocity drives may be connected to our Motion Controllers via Sercos offering as a result a perfect Fagor package.

The possible communication protocols are:

- Can open DS 301
- DeviceNet
- Profibus DP-VO
- Sercos II
- Modbus (RTU and ASCII)

## Operator panels



The option for RS-232/422/485 and field bus communication and the field bus, provide the best way for the panel to communicate with another one or with several MCP servo drives offering numerous functions such as:

- PLC I/O control
- Modify variables and constants
- Show messages for alarm and dynamic display process, etc.

Types of Operator Panels available: Text, graphics/keyboard and graphics with a touch membrane. A programming KIT is available for customizing it.

# Brushless AC motors - FXM series

## for 220V

	Stall torque (Nm)	Peak torque (Nm)	Stall current			Inertia (Kg.cm <sup>2</sup> )	Weight (Kg)
			1200 (rpm)	2000 (rpm)	4000 (rpm)		
			Io (A/rpm)				
FXM 11	1.2	6			2	1.2	3.3
FXM 12	2.3	11			3.9	1.9	4.3
FXM 13	3.3	16			5.6	2.6	6.4
FXM 14	4.1	20		3.5	6.9	3.3	7.6
FXM 31	2.6	13		2.2	4.4	3.5	5.5
FXM 32	5.1	25		4.3	8.4	6	7.5
FXM 33	7.3	36		6.3	12	8.5	9.6
FXM 34	9.3	46		7.6	15	11	11.5
FXM 53	11.9	59		9.9		22	15.8
FXM 54	14.8	74		12.7		29	17.8
FXM 55	17.3	86	9.1	15		36	20
FXM 73	20.8	104	10.7			61	29
FXM 74	27.3	135	13.5			79	31.6
FXM 75	29.5	165	15			97	36

## for 400V

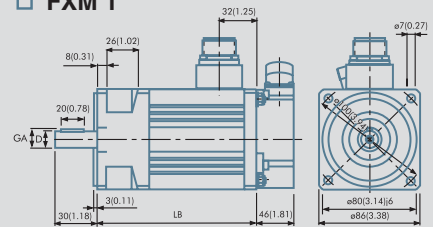
	Stall torque (Nm)	Peak torque (Nm)	Stall current				Inertia (Kg.cm <sup>2</sup> )	Weight (Kg)	
			1200 (rpm)	2000 (rpm)	3000 (rpm)	4000 (rpm)			
			Io (A/rpm)						
FXM 11	1.2	6			0.45	0.67	0.9	1.2	3.3
FXM 12	2.3	11			0.86	1.29	1.72	1.9	4.3
FXM 13	3.3	16			1.23	1.85	2.5	2.6	6.4
FXM 14	4.1	20		1.51	2.3	2.1	3.3	3.3	7.6
FXM 31	2.6	13		0.97	1.45	1.92	3.5	5.5	
FXM 32	5.1	25		1.89	2.8	3.8	6	7.5	
FXM 33	7.3	36		2.7	4.1	5.5	8.5	9.6	
FXM 34	9.3	46		3.4	5.1	6.9	11	11.5	
FXM 53	11.9	59	2.8	4.7	7.1		22	15.8	
FXM 54	14.8	74	3.5	5.9			29	17.8	
FXM 55	17.3	86	4.1	6.7			36	20	
FXM 73	20.8	104	4.9	8			61	29	
FXM 74	27.3	135	6.6				79	31.6	
FXM 75	33.6	165	8				97	36	

## General characteristics

Balancing (full key)	<ul style="list-style-type: none"> <li>Standard: Class N</li> <li>Optional: Class R</li> </ul>
Mounting	<ul style="list-style-type: none"> <li>Shaft with key (keyless shaft optional)</li> <li>Front flange</li> <li>B5 - V1 - V3</li> </ul>
Electrical isolation	<ul style="list-style-type: none"> <li>Class F (150°C-302°F)</li> </ul>
General degree of protection	<ul style="list-style-type: none"> <li>Standard: IP64</li> <li>Optional: IP65 with fan</li> </ul>
Shaft protection degree	<ul style="list-style-type: none"> <li>Standard: IP64</li> <li>Optional: IP65 with seal</li> </ul>
Fan	<ul style="list-style-type: none"> <li>Optional on FXM5 and FXM7 models</li> </ul>
Brake	<ul style="list-style-type: none"> <li>Optional on all models</li> </ul>
Feedback	<ul style="list-style-type: none"> <li>TTL, sinusoidal or absolute encoder (optional)</li> </ul>

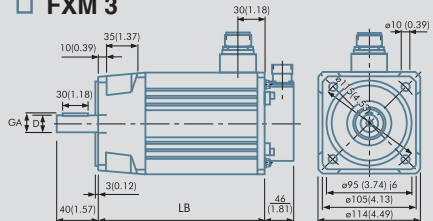
## Dimensions in mm (inches)

### FXM 1



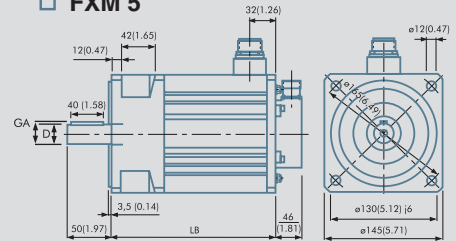
FXM 1	LB	D	GA
FXM 11	136 (5.35)	14(0.55) j6	16 (0.62)
FXM 12	171 (6.7)	14(0.55) j6	16 (0.62)
FXM 13	206 (8.11)	14(0.55) j6	16 (0.62)
FXM 14	241 (9.48)	14(0.55) j6	16 (0.62)

### FXM 3



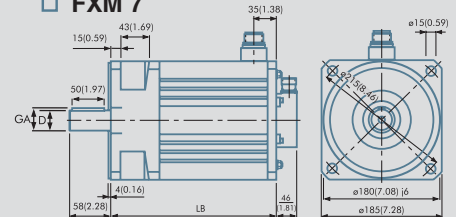
FXM 3	LB	D	GA
FXM 31	152 (5.98)	19(0.75) j6	21.5 (0.85)
FXM 32	187 (7.36)	19(0.75) j6	21.5 (0.85)
FXM 33	222 (8.74)	19(0.75) j6	21.5 (0.85)
FXM 34	257 (10.12)	19(0.75) j6	21.5 (0.85)

### FXM 5



FXM 5	LB	D	GA
FXM 53	237 (9.33)	24(0.94) j6	27(1.07)
FXM 54	272 (10.74)	24(0.94) j6	27(1.07)
FXM 55	307 (12.09)	24(0.94) j6	27(1.07)

### FXM 7

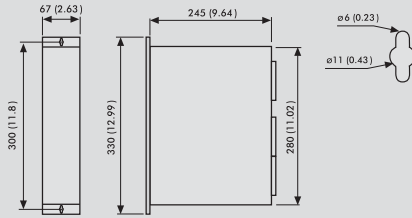


FXM 7	LB	D	GA
FXM 73	256 (10.08)	32(1.26) k6	35(1.38)
FXM 74	291 (11.46)	32(1.26) k6	35(1.38)
FXM 75	326 (12.83)	32(1.26) k6	35(1.38)



## Dimensions in mm (inches)

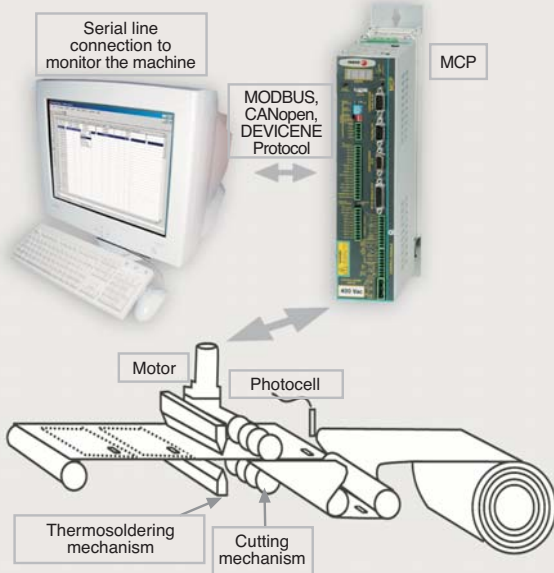
### □ MCS / MCP



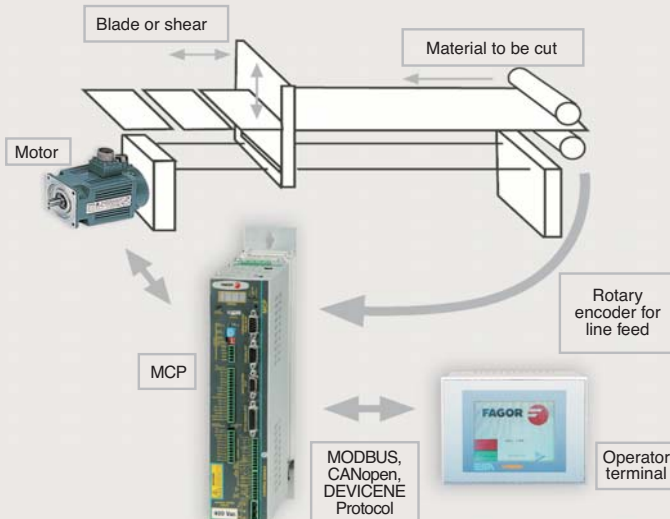
## APPLICATION EXAMPLES

MCS-MCP drives are ideal for applications in a great variety of market segments such as handling, packaging, special machinery, graphic arts, paper industry, woodworking industry, food industry, textile industry, glass, marble, automotive, machinery for plastics, rubber, etc.

### Machine to make plastic bags



### Fly cutting



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