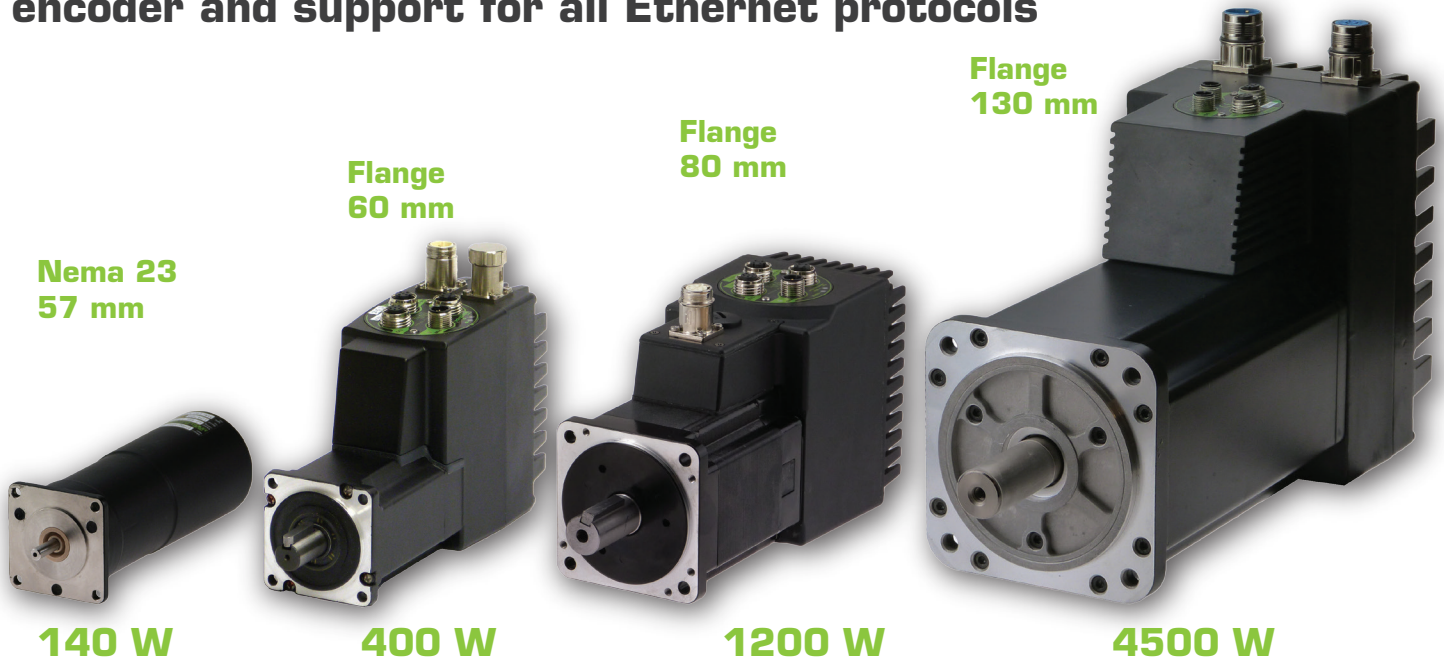




# MAC motor®

**All-in-one integrated servo motors with ePLC™, brake, multiturn encoder and support for all Ethernet protocols**



EtherNet/IP™

PROFINET  
INDUSTRIAL ETHERNET

ETHERNET  
POWERLINK

EtherCAT®

Modbus

Sercos  
the automation bus

### Benefits of integrated motors

The benefits of integrated motors are that they do not take up space in the control cabinet, and are all-in-one units. All electronics are combined in the same metal housing for high EMC safety.

### ePLC™ embedded PLC

All JVL motors have ePLC™ built-in with up to 13 IO points. It enables <1 ms reactions times and can work together with a master PLC running Ethernet. Graphical point-n-click programming.

### Ethernet with protocol change

This unique feature gives you the flexibility to change protocol between Profinet, EtherNet/IP, Sercos, EtherCAT, Powerlink and Modbus TCP/UDP on any JVL motor. It is easy with JVL's MacTalk® software.

CANopen®

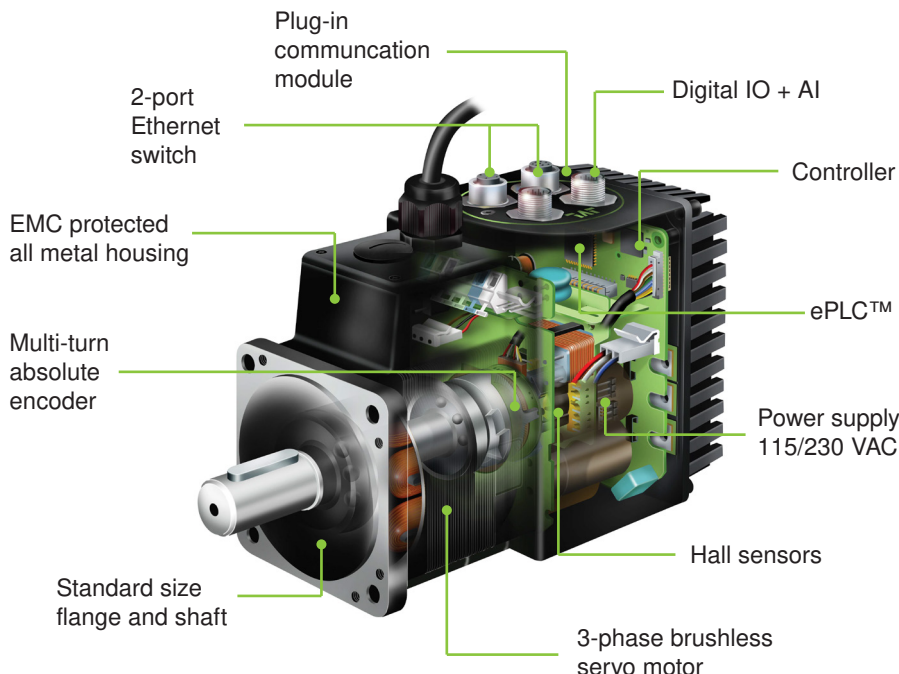
IO-Link  
Universal · Smart · Easy



ePLC  
RS232



Technology Partner  
A ROCKWELL AUTOMATION PARTNER



JVL A/S is a Danish manufacturer founded in 1986 and is the inventor of the integrated servo motor concept. Our focus is on developing state-of-the-art products for motion control. We are proud to be a certified supplier to the aerospace and automotive industries. We offer two all-in-one ranges: Servo motors from 50 to 4500 W and ServoStep™ motors from 0.36 to 25 Nm. All motors are designed for IIot and are Industry 4.0 ready.



# JVL - your global partner



JVL A/S is a Danish company with subsidiaries in Germany, UK, USA and Turkey. We have distributors and partner companies in more than 30 countries world-wide – sales and support are always nearby.

MAC motor® Integrated Servo Motor	DC					New		AC			Unit
	MAC050-A	MAC095-A	MAC140-A	MAC140-F	MAC141-A	MAC402-D	MAC400-D	MAC800-D	MAC1200-D		
Technical specifications	12-48 VDC					115/230 VAC			115/230 VAC		
Supply voltage	12-48 VDC					115/230 VAC			115/230 VAC		
Speed range (nominal)	0-4000	0-4000	0-4000	0-4000	0-2700	0-3000	0-3000	0-3000	0-3000	RPM	
Rated power	46	92	134	134	134	400	400	746	1182	Watt	
Continuous torque	0.11 (15.6)	0.22 (31.2)	0.32 (45.3)	0.32 (45.3)	0.48 (68)	1.28 (184.1)	1.28 (184.1)	2.38 (337.1)	3.82 (538.1)	Nm (oz-in)	
Peak torque	0.32 (45.3)	0.62 (88)	0.9 (127.5)	0.9 (127.5)	1.59 (225.2)	3.8 (538)	3.8 (538)	6.8 (963)	11.46 (1614)	Nm (oz-in)	
Rotor inertia	0.075 (0.0010)	0.119 (0.0017)	0.173 (0.0025)	0.173 (0.0025)	0.227 (0.0032)	0.34 (0.0048)	0.34 (0.0048)	0.91 (0.0129)	1.6 (0.0225)	kgcm <sup>2</sup> (oz-in-s <sup>2</sup> )	
Encoder resolution (std.)	4096	4096	4096	8192	4096	8192	8192	8000/8192	8000/8192	CPR	
Abs. encoder (Single/Turns)	-	-	-	8192 ±262143 rev	-	8192 ±8178 rev	8192 ±8178 rev	8192 ±8178 rev	8192 ±8178 rev	CPR ±rev.	
Dimensions WxHxL [mm]	57.7x57.7x111	57.7x57.7x131.5	57.7x57.7x150.5	57.7x57.7x150.5	57.7x57.7x172	63x115x191	63x115x191	84x120x174	84x120x203	mm	
Dimensions WxHxL [inch]	2.27x2.27x4.37	2.27x2.27x5.18	2.27x2.27x5.93	2.27x2.27x5.93	2.27x2.27x6.77	2.48x4.53x7.52	2.48x4.53x7.52	3.31x4.72x6.85	3.31x4.72x7.99	inch	
Length with brake	-	-	-	-	-	224 (8.82)	224 (8.82)	209 (8.23)	239 (9.41)	mm (inch)	
Flange	57.7x57.7 (2.27x2.27) NEMA23					60x60 (2.36x2.36)		80x80 (3.15x3.15)		mm (inch)	
Shaft	Ø6.35 (0.25)	Ø6.35 (0.25)	Ø6.35 (0.25)	Ø6.35 (0.25)	Ø6.35 (0.25)	Ø14 (Ø0.55)	Ø14 (Ø0.55)	Ø19 (Ø0.75)	Ø19 (Ø0.75)	mm (inch)	
Weight w/o module	0.55 (1.21)	0.83 (1.83)	1.1 (2.43)	1.1 (2.43)	1.32 (2.91)	2.05 (4.52)	2.3 (5.07)	2.9 (6.39)	4.0 (8.82)	kg (lb)	
Weight with brake	-	-	-	-	-	2.5 (5.51)	2.8 (6.17)	3.7 (8.16)	5.0 (11.02)	kg (lb)	
Protection class	IP42 (IP67 Optional)					IP55 (IP66 Optional)					

MAC motor® Integrated Servo Motor	AC			Unit
	MAC1500-D	MAC3000-G	MAC4500-G	
Technical specifications	3x400			VAC
Supply voltage	3x400			VAC
Speed range (nominal)	0-3000	0-3000	0-3000	RPM
Rated power	1500	3000	4500	Watt
Continuous torque	4.78 (677)	9.55 (1352.4)	14.3 (2025)	Nm (oz-in)
Peak torque	15 (2025)	28.6 (4050)	52.3 (7406)	Nm (oz-in)
Rotor inertia	13.96 (0.0886)	27.83 (0.1719)	27.83 (0.394)	kgcm <sup>2</sup> (oz-in-s <sup>2</sup> )
Encoder resolution (std.)	8192	8192	8192	CPR
Abs. encoder (Single/Turns)	8192 ±8178 rev	8192 ±8178 rev	8192 ±8178 rev	CPR ±Rev
Dimensions WxHxL [mm]	134x205x250	134x205x330	134x205x330	mm
Dimensions WxHxL [inch]	5.28x8.07x9.84	5.28x8.07x12.99	5.28x8.07x12.99	inch
Length with brake	306 (12.05)	391 (15.39)	391 (15.39)	mm (inch)
Flange	130x130 (5.12x5.12)			mm (inch)
Shaft	Ø24/0.94	Ø24 (Ø0.94)	Ø24 (Ø0.94)	mm (inch)
Weight w/o module	10.2 (22.49)	17.0 (37.48)	18.63 (41.07)	kg (lb)
Weight with brake	13.2 (29.1)	20 (44.09)	21.63 (47.63)	kg (lb)
Protection class	IP55 (IP66 optional)			

## Software integration on all major platforms

**SIEMENS**  
TIA Portal

**Rexroth**  
Bosch Group

**Rockwell Automation**  
Rockwell Software  
Studio 5000

**BECKHOFF**



LabVIEW

TwinCAT®

**OMRON**



Plug-in module



MAC motor® Plugin modules	MAC00-EI4	MAC00-EP4	MAC00-EC4	MAC00-EM4	MAC00-ES4	MAC00-EL4	MAC00-FC41	MAC00-B41	MAC00-B42	MAC00-EW4
Protocol	EtherNet/IP	Profinet	EtherCAT	Modbus TCP/UDP	Sercos	Powerlink	CANopen	Serial	Serial	WiFi
Part number	MAC00-EI4	MAC00-EP4	MAC00-EC4	MAC00-EM4	MAC00-ES4	MAC00-EL4	MAC00-FC41	MAC00-B41	MAC00-B42	MAC00-EW4
Ethernet switch ports	2 ports						-	-	-	-
IO	1DI + 1DO + 1AI						4IO	6IO 2AI Enc. I/O	8DI 4DO 1AI	4DI 4DO 1AI
Specs	CIP / DLR	Profinet IO	CANopen	TCP/IP or UDP/IP	Line, Ring	CANopen	DSP402	RS485/RS232	RS485/RS232	802.11b/g
Extended IO Part number	MAC00-E41	MAC00-EP41	MAC00-EC41	MAC00-EM41	MAC00-ES41	MAC00-EL41				
Extended IO	4DI + 2DO + 2AI									