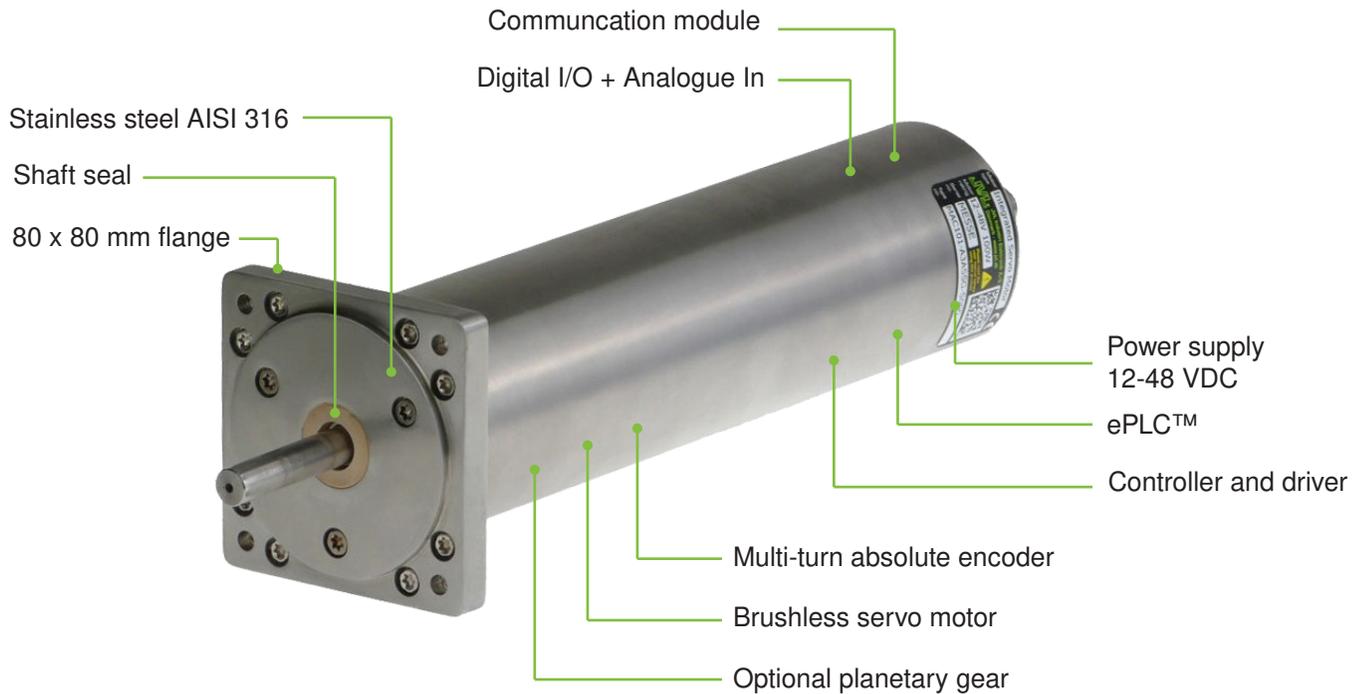




Stainless Steel MAC motor®

All-in-one IP69K stainless steel integrated servo motor with ePLC™ multiturn encoder and support for all Ethernet protocols



MAC101: 100 W RMS/370W Peak. IP67/IP69K
MAC231: 320 W S3 25%/750W Peak. IP67/IP69K



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 reaction 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 0.18 to 25 Nm. All motors are designed for IIot and are Industry 4.0 ready.

- 2 Analog
- Ethernet
- RS232
- Pulse I/O
- Dual Supp.
- 6 I/O
- ePLC



Cable glands available for IP67 or IP69K.
Optional pressure valve.



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 | Gear Ratios: 5, 6, 9, 36, 48, 80, 120, 216:1 | | Efficiency | Torque RMS | Torque peak | Max speed 24 VDC | Max speed 48 VDC | Weight |
|--------------------------------------|---|--------------|------------|---------------|-------------|------------------|------------------|--------|
| MAC101 100/370W | stages | ratio | (%) | (Nm) | (Nm) | (rpm) | (rpm) | (kg) |
| MAC101-F3GSSG-S000 | w/o | 1:1 | 100 | 0.48 | 1.59 | 1350 | 2700 | 2.7 |
| MAC101-F3GSSG-S00x | 1-stage | 5:1...6:1 | 96 | 2.3 - 2.8 | 7.6 - 9.2 | 225 - 270 | 450 - 540 | 3.6 |
| MAC101-F3GSSG-S0xx | 2-stage | 9:1...36:1 | 94 | 4.1 - 16.6 | 13.5 - 35 | 38 - 150 | 75 - 300 | 3.8 |
| MAC101-F3GSSG-Sxxx | 3-stage | 48:1...216:1 | 90 | 20 - 37 | 20 - 37 | 6.3 - 28.1 | 12.5 - 56.3 | 4.0 |

| MAC231 320/750W | | | S3 25% duty | | | | | |
|--------------------|---------|--------------|-------------|------------|-----------|-----------|-----------|-----|
| MAC231-F3GSSG-S000 | w/o | 1:1 | 100 | 0.80 | 2.4 | 2000 | 4000 | 3.0 |
| MAC231-F3GSSG-S00x | 1-stage | 5:1...6:1 | 96 | 4 - 4.8 | 12 - 14.4 | 400 - 333 | 450 - 540 | 3.9 |
| MAC231-F3GSSG-S0xx | 2-stage | 9:1...36:1 | 94 | 7.2 - 28.8 | 21.6 - 38 | 222 - 55 | 444 - 111 | 4.1 |
| MAC231-F3GSSG-Sxxx | 3-stage | 48:1...216:1 | 90 | 25 - 36 | 50 - 50 | 41 - 9 | 83 - 18.5 | 4.3 |

MAC101/231 ordering guide: Motor + plug-in module + cables.

BOM example:

1. Motor: MAC101-F3GSSG-Sxxx (Chosen from table above or PPNB)
 2. Module: MAC00-EI4 (EtherNet/IP chosen from table at bottom)
 3. Cables: Default length is 5 meters. 10 and 20 meters optional
- Power cable WI1000-M12F5T05N 05 10 20 = meters
 Ethernet cable WI1046-M12M4T05R 05 10 20 = meters
 IO / setup WI10xx-M12M17T05 05 10 20 = meters

MAC101 Continuous power limits: 100W

Continuous (RMS) power of 100W can be obtained by either: (A) Maximum RMS Torque or (B) maximum speed.

Output Torque:

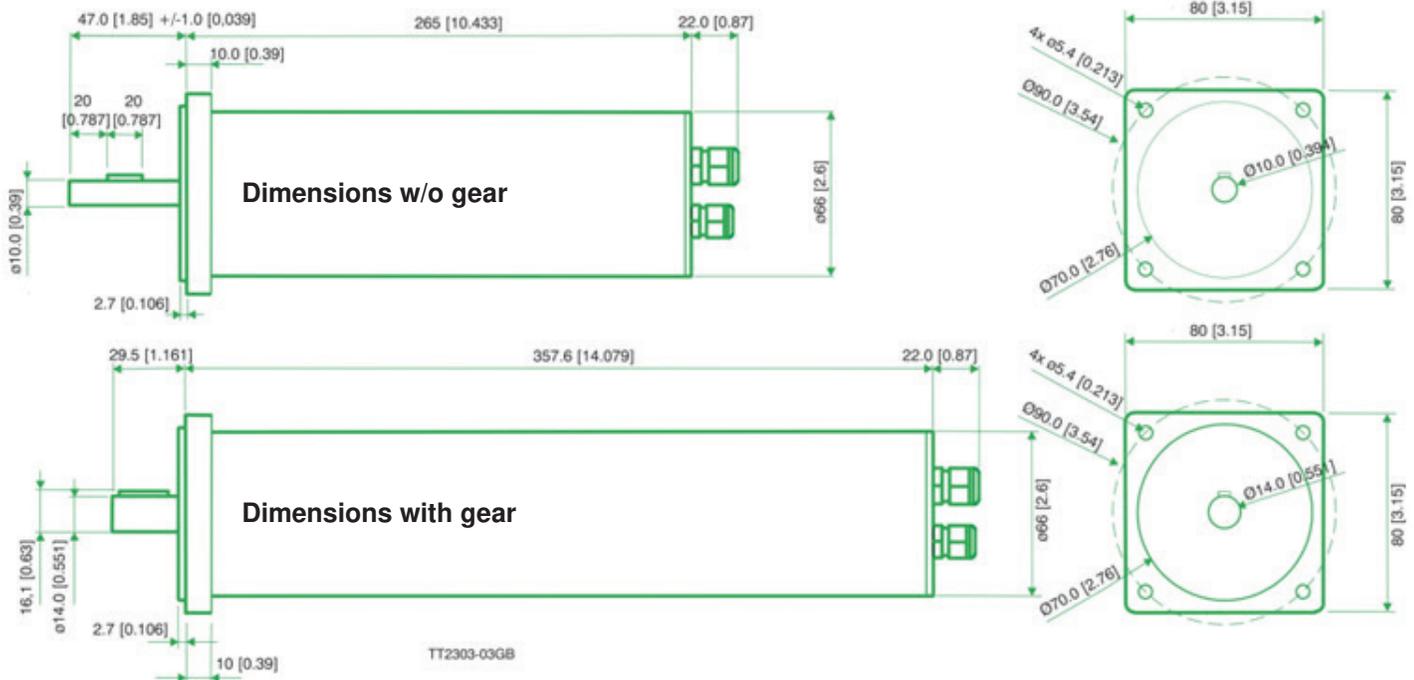
Max RMS - Continuous Output Torque

Max Speed - Continuous Output Torque at maximum speed 48 VDC

Output Speed:

RMS - Output speed at maximum RMS torque (equal to 100W)

Max - Maximum speed at reduced torque (equal to 100W)



MAC motor® Plugin modules



| Protocol | EtherNet/IP | Profinet | EtherCAT | Modbus TCP/UDP | Sercos | Powerlink | CANopen | Serial | Serial |
|-----------------------|-----------------|-------------|-----------|------------------|------------|-----------|------------|------------------|-------------|
| Part number | MAC00-EI4 | MAC00-EP4 | MAC00-EC4 | MAC00-EM4 | MAC00-ES4 | MAC00-EL4 | MAC00-FC41 | MAC00-B41 | MAC00-B42 |
| Ethernet switch ports | 2 ports | | | | | | - | - | - |
| IO | 1DI + 1DO + 1AI | | | | | | 4IO | 6IO 2AI Enc. I/O | 8DI 4DO 1AI |
| Specs | CIP / DLR | Profinet IO | CANopen | TCP/IP or UDP/IP | Line, Ring | CANopen | DSP402 | RS485/RS232 | RS485/RS232 |