



MAC320-L1HAAC

Int.ServoAC 320WS3 0.8Nm IP42 Abs

MAC motorĚ is a series of integrated (all-in-one) servo motors with shaft power from 46 W to 4500 W. +400 W and new F-series (50..140 W) are programmable through ePLC (embedded-PLC). Choose between a large number of control modules.

Options include:

- Absolute Multiturn Encoder (incremental encoder is standard)
- Built-in Brake or Brake module (MABxx)
- Ethernet module w/built-in Switch for easy daisy-chaining and all protocols (Profinet, EtherNet/IP, EtherCAT, SERCOS, ModbusTCP/UDP, Powerlink)
- Wireless modules are also available: WLAN or BlueTooth
- CANopen, Devicenet or Profibus or ePLC modules
- Serial communication modules, RS232 and/or RS485
- High IP versions are also available (IP 65..66..67)
- Food or Medico types in Stainless Steel IP69K

Unique Ethernet functionality: use MacTalkĚ (PC software) to change freely between all the different Ethernet protocols, you dont need several different types on stock Ě ONE is enough.



General information

| | | | |
|------------------------------|--|-------------------------------------|-----------------------------|
| Description | Int.ServoAC 320WS3 0.8Nm IP42 Abs , WxHxL: 57x57x175 mm. 4000 RPM @ 48VDC - 2000 RPM @ 24VDC. 0.8 Nm/2.4 Nm, IP42, Incremental magnetic 8192 CPR + Absolute multiturn encoder 19bit, Low cost, Ethernet Ready, Color: Black, Ø8x20.5 mm with key 3x12 mm | | |
| Manufacture | JVL | Motor type | Integr. AC-servo - Rotating |
| Color | Black | | |
| Motor power [W] | 320 | Power Peak [W] | 900 |
| Duty Cycle | S3 | Max Duty Cycle [%] | 50 |
| Continues Torque [Nm] | 0.8 | Peak torque [Nm] | 2.4 |
| Main supply [V] | 12-48 | Voltage type - Main | DC |
| Speed [Rpm] | 4000 | Connectivity: Without module | RS232 - 5VDC, Modbus RTU |
| Encoder type | Abs. Multiturn Encoder | Encoder [Counts/rev] | 8192 |
| Integrated PLC | Yes | Brake | No |
| STO connector | No | Fan mounted | No |
| Integrated gear | No | Gear ratio | - |
| Approval - UL | Pending | Approval TÜV - STO | No |



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General information

| | | | |
|---------------------------------------|-----------------------|---|------|
| PLC no. of AIN | 2 | PLC no. of DI | - |
| PLC no. of DIO | - | PLC no. of DO | 2 |
| Multifunction IOs | 2 | | |
| Flange size | NEMA 23 - 56.6x56.6mm | Protection house | IP42 |
| Shaft size - Front [mm] | 8mm | Protection shaft | IP42 |
| Weight net [kg] | 0.00 | Weight gross [kg] | 0.00 |
| Tariff no | 85015100 | Country Of Origin | DK |
| Ambient Temperature range: | | Max. Amb. Temperature range - Torque derating: | |
| Maximum Installation Altitude: | | Max. Installation Altitude - Power Derating every 1000m: | |



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Mechanical information

| | | | |
|--|-----------------------------|---|----------|
| Motor type | Integr. AC-servo - Rotating | Color | Black |
| Rotor inertia [kgcm²] | 0.227 | Max inertia factor | 20 |
| Duty Cycle | S3 | Max Duty Cycle [%] | 50 |
| Encoder type | Abs. Multiturn Encoder | Encoder [Counts/rev] | 8192 |
| Precision Motor - Absolute [Deg] | 0.37 | Precision Motor - Max Load [Deg] | |
| Precision Motor - Repeatability [Deg] | 0.2 | | |
| Brake | No | Brake - Go ON time [ms] | - |
| Brake Holding torque [Nm] | - | Brake - Go OFF time [ms] | - |
| Radial load [N] | 75 | Radial load distance [mm] | 20 |
| Axial load [N] | 15 | | |
| Axial play [mm] | +/-0.05 | Axial play force [N] | |
| Front bearing type | 608ZZ | Rear bearing type | 607ZZ |
| Integrated gear | No | Gear ratio | - |
| Gear efficiency [%] | - | Gear backlash [ArcMin] | - |
| Motor length [mm] | 174.5 | Motor width [mm] | 56.6 |
| Motor height [mm] | 56.6 | Protection house | IP42 |
| Customer Sealing | Standard | | |
| Flange size | NEMA 23 - 56.6x56.6mm | Mounting holes front [mm] | 5.2 |
| Motor diameter center front [mm] | 38.1 | Bolt circle diameter front [mm] | 66.6 |
| Flange material | Aluminium painted Black | Flange Thickness [mm] | 5 |
| Shaft Key included | Not part of delivery | Shaft Key Dimension | 3x3x12 |
| Shaft size - Front [mm] | 8mm | Protection shaft | IP42 |
| Shaft length Front [mm] | 20.5 | Shaft material | Steel |
| Approval - ROHS-3 | Yes | Approval - UL | Pending |
| Approval TÜV - STO | No | Approval - ATEX | No |
| CAD 2D [PDF] | | CAD 3D [STEP] | Download |
| CAD 2D [DWG] | No | CAD 3D [DWG] | No |



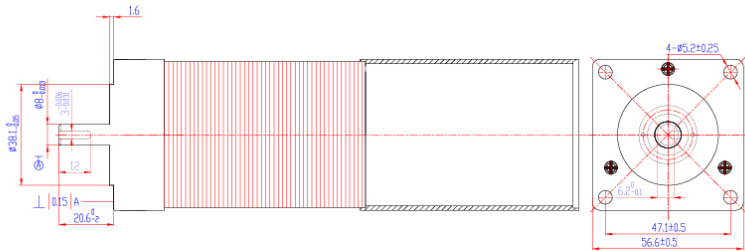
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Mechanical information

| | | | |
|----------------------------|----------|------------------------------|-------------------------------|
| CAD 3D [EASM] | No | CAD 3D [IGES] | Download |
| Datasheet - pdf | No | User Manual | Download |
| REACH SVHC document | Download | Low voltage Directive | EU Declarations of Conformity |
| No Dual Use | - | | |

| Date | Description | Revision |
|------|-------------|----------|
| | | |



Shaft Seal

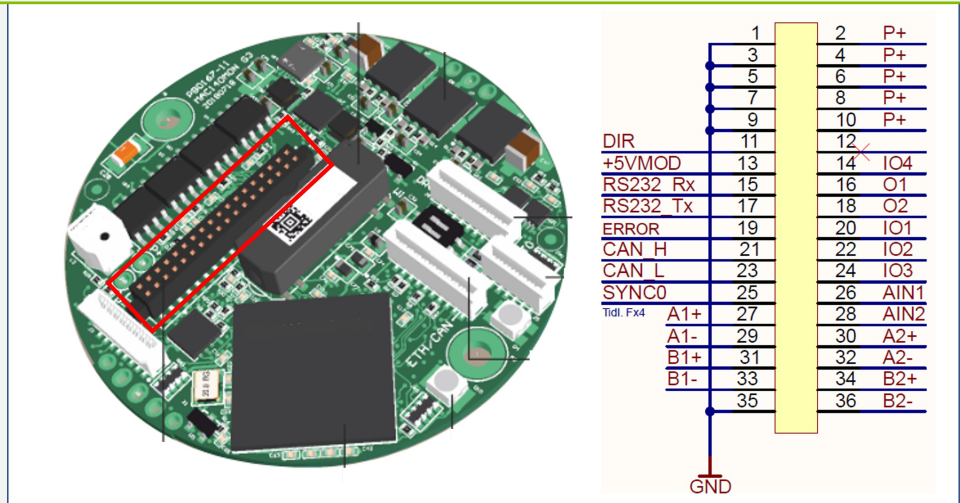


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Connector information

Motor connectors



| | | | |
|----------------------------------|---|---------------------------------|---|
| Expansion connector | Generation 2 | | |
| PLC no. of DI | - | PLC no. of DO | 2 |
| PLC no. of DIO | - | PLC no. of AIN | 2 |
| Multifunction IOs | 2 | | |
| Connector Power | - | Connector Power Supplier | |
| Connector Power direction | - | | |
| Connector PDO | No | Connector PDO Supplier | |
| Connector STO | No | | |
| Module connections | Here - Click for module cable connections | | |

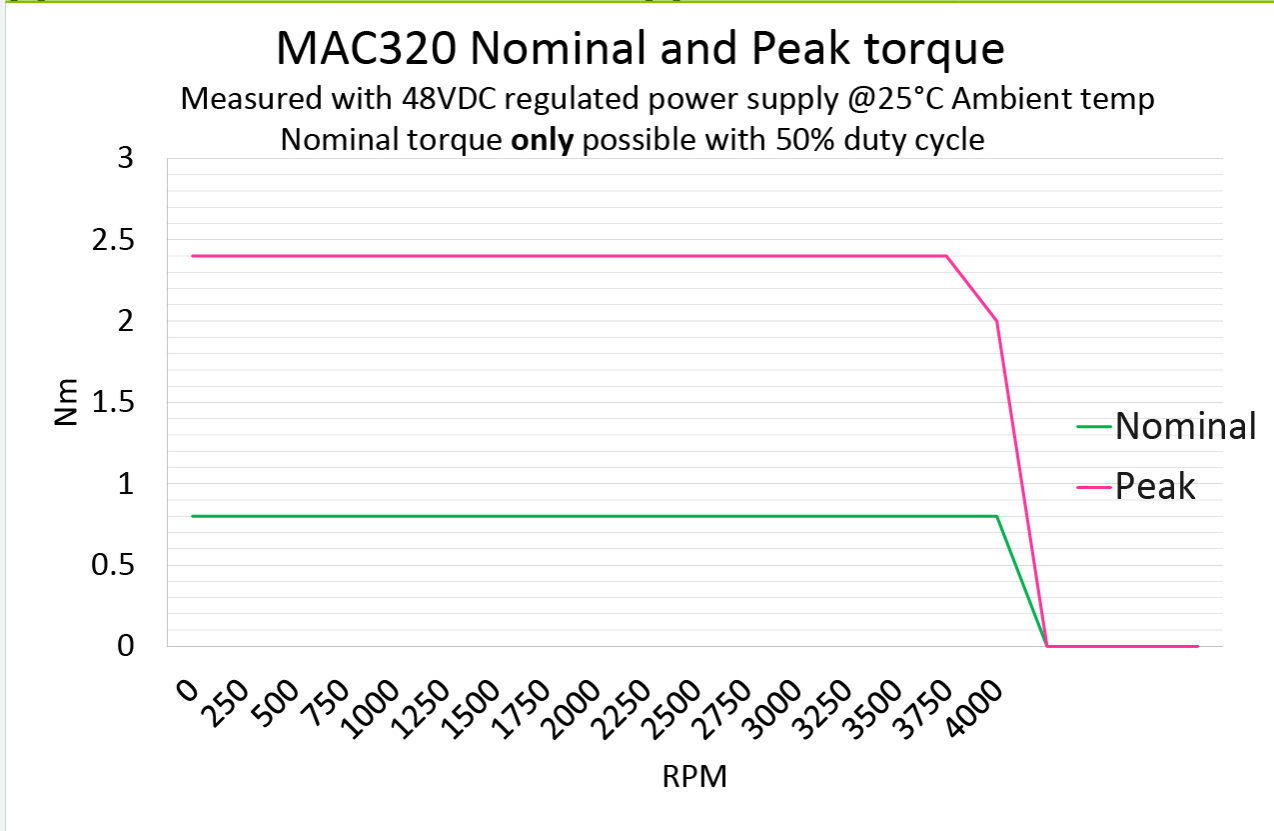


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Torque, force and Power information

| | | | |
|--------------------------|-----|--------------------------|-----|
| RMS torque [Nm] | 0.8 | Peak torque [Nm] | 2.4 |
| Supply Volt 1 [V] | 12 | Supply Volt 2 [V] | 24 |
| Supply Volt 3 [V] | 48 | Supply Volt 4 [V] | - |





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Electrical information

| | | | |
|---|-------|--|--------------------|
| Control voltage (CVI/O+) [VDC] | 12-28 | Control Voltage (CVI) Min-Max [VDC] | 12-30 |
| Main supply [V] | 12-48 | Main supply Min-Max [V] | 10-50 |
| Voltage type - Main | DC | Main Voltage possible | 8-52 |
| PLC no. of DI | - | PLC no. of DO | 2 |
| PLC no. of DIO | - | | |
| PLC no. of AIN | 2 | Analogue voltage | -/+10VDC, -/+11bit |
| Multifunction IOs | 2 | | |
| MTBF 30% [Year] | - | MTBF 100% [Year] | - |
| Internal Power-Dump Resistance [Ohm] | - | Internal Power-Dump Power [W] | - |
| PD connection - Int/Ext | None | | |
| External Power-Dump Resistance Minimum value [Ohm] | - | External Power-Dump Max Current [A] | - |
| Inrush current -Main max [A] | | Inrush special | No |
| Recommended fuse | T20A | P- isolated from Earth | No |
| Resistance [Ohm] | | Induction [mH] | |



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Communication information

Software MacTalk

Connectivity: RS232 - 5VDC, Modbus RTU **e-PLC Files**

Without module

Connectivity: Gen. Yes

2 modules



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Cable information

| Item number | Mount on | Cable con 1 +Con 1 angle | Cable application | Wires no totally | Cable length [m] |
|--|-----------------|--|-------------------|------------------|------------------|
| Item description | | Cable con 2 +Con 2 angle | Cable flexibility | Wire [mm2] | Connector 1 LED |
| WI1010-M08M2T05P | Connector Power | M08 3-pin male A-coded - 0° Straight | STO | | 5 |
| M8 STO shl cable 3pin 2wire male 5m | | Open Ended - n/a | | | No |
| WI1010-M08M3T05P | Connector Power | M08 3-pin male A-coded - 0° Straight | STO | 3 | 5 |
| M8 STO 3p Male 0° Con. Shl. 5m, 1xCon, MAC | | Open Ended - n/a | | | No |
| WI1010-M08M3T10P | Connector Power | M08 3-pin male A-coded - 0° Straight | STO | 3 | 10 |
| M8 STO 3p Male 0° Con. Shl. 10m, 1xCon, MAC | | Open Ended - n/a | | | No |
| WI1010-M08M3T15P | Connector Power | M08 3-pin male A-coded - 0° Straight | STO | 3 | 15 |
| M8 STO 3p Male 0° Con. Shl. 15m, 1xCon, MAC | | Open Ended - n/a | | | No |
| WI1010-M08M3T20P | Connector Power | M08 3-pin male A-coded - 0° Straight | STO | 4 | 20 |
| M8 STO 3P Male 0°/3P Male 0° shl Yel20m, 1xCon MAC | | Open Ended - n/a | | 0.2 | No |
| WI1010-M08M4STO | Connector Power | M08 4-pin male A-coded - 0° Straight | STO | 4 | Connector |
| M8 STO Disable plug for MIS17/23/34/43 | | - n/a | n/a | 0.2 | No |
| WI1010-M08M4T03P | Connector Power | M08 4-pin male A-coded - 0° Straight | STO | 4 | 3 |
| M8 STO 4Pin Male 0° Con Shl Yel 3m 1xcon, MIS | | Open Ended - n/a | | 0.2 | No |
| WI1010-M08M4T05P | Connector Power | M08 4-pin male A-coded - 0° Straight | STO | 4 | 10 |
| M8 STO 4Pin Male 0° Con Shl Yel 5m 1xcon, MIS | | Open Ended - n/a | | 0.2 | No |
| WI1010-M08M4T15P | Connector Power | M08 4-pin male A-coded - 0° Straight | STO | 4 | 15 |
| M8 STO 4Pin Male 0° Con. shl. Yel 15m 1xCon, MIS | | Open Ended - n/a | | 0.2 | No |
| WI1010-M08M4T20P | Connector Power | M08 4-pin male A-coded - 0° Straight | STO | 4 | 20 |
| M8 STO 4P Male 0° Con. shl. Yel 20m | | Open Ended - n/a | | 0.2 | No |
| WI1010-M08M4TM4T10P | Connector Power | M08 4-pin male A-coded - 0° Straight | STO | 4 | 10 |
| M8 STO 4P Male 0°/4P Male 0° shl. Yel10m 2xCon MIS | | M08 4-pin male A-coded - 0° Straight | | 0.2 | No |
| WI1010-M08M4TM4T20P | Connector Power | M08 4-pin male A-coded - 0° Straight | STO | 4 | 20 |
| M8 STO 4P Male 0°/4P Male 0° shl. Yel20m 2xCon MIS | | M08 4-pin male A-coded - 0° Straight | | 0.2 | No |
| WI1010-M08M4V05P | Connector Power | M08 4-pin male A-coded - 90° Angled | STO | 4 | 5 |
| M8 STO 4Pin Male 90° Con. shl. Yel 5m 1xCon MIS | | Open Ended - n/a | | 0.2 | No |
| WI1010-M08M4V10P | Connector Power | M08 4-pin male A-coded - 90° Angled | STO | 4 | 10 |
| M8 STO 4Pin Male 90° Con. shl. Yel 10m 1xCon MIS | | Open Ended - n/a | | 0.2 | No |
| WI1010-M08M4VF4T01P | Connector Power | M08 4-pin male A-coded - 90° Angled | STO | 4 | 1 |
| M8 STO 4P Male 90°/4P Fem 0° shl. yel 1m 2xCon | | M08 4-pin female A-coded - 0° Straight | Standard | 0.2 | No |
| WI1010-M08M4VF4T02P | Connector Power | M08 4-pin male A-coded - 90° Angled | STO | 4 | 2 |
| M8 STO 4P Male 90°/4P Fem 0° shl. yel 2m 2xCon | | M08 4-pin female A-coded - 0° Straight | Standard | 0.2 | No |
| WI1010-M08M4VF4T03P | Connector Power | M08 4-pin male A-coded - 90° Angled | STO | 4 | 3 |
| M8 STO 4P Male 90°/4P Fem 0° shl. yel 3m 2xCon | | M08 4-pin female A-coded - 0° Straight | Standard | 0.2 | No |
| WI1010-M08M4VM4V10P | Connector Power | M08 4-pin male A-coded - 90° Angled | STO | 4 | 10 |
| M8 STO 4P Male 90°/4P Male 90° shl. Yel 10m 2xCon | | M08 4-pin male A-coded - 90° Angled | | 0.2 | No |
| WI1010-M08M4VM4V20P | Connector Power | M08 4-pin male A-coded - 90° Angled | STO | 4 | 20 |
| M8 STO 4P Male 90°/4P Male 90° shl. Yel 20m 2xCon | | M08 4-pin male A-coded - 90° Angled | | 0.2 | No |