

Servo drive CMMT-AS-C2-3A-MP-S1

Part number: 8143163

FESTO



 [General operating condition](#)

Data sheet

| Feature | Value |
|--|--|
| Type of mounting | Mounting plate, attached with screws |
| Mounting position | Free convection Vertical |
| Product weight | 1300 g |
| Display | Green/yellow/red LED |
| Operator controls | Optional: CDSB operator unit |
| Conforms to standard | EN 61800-3 EN 61800-5-1 EN 61800-5-2 EN ISO 13849-1 |
| Based on standard | EN 50581 EN 60204-1 EN 61508-1 EN 61508-2 EN 61508-3 EN 61508-4 EN 61508-5 EN 61508-6 EN 61508-7 EN 61800-2 EN 62061 |
| Approval | RCM trademark German Technical Control Board (TÜV) c UL us listed (OL) |
| KC mark | KC-EMV |
| CE mark (see declaration of conformity) | To EU EMC Directive To EC Machinery Directive In accordance with EU RoHS Directive |
| CE marking (see declaration of conformity) | To UK instructions for EMC To UK regulations for machines To UK RoHS instructions |
| Certificate issuing authority | German Technical Control Board (TÜV) Rheinland UK Ltd. 01/205U/5640.01/23 German Technical Control Board (TÜV) Rheinland 01/205/5640.01/23 UL E331130 |
| Storage temperature | -25 °C ... 55 °C |
| Ambient temperature | 0 °C ... 50 °C |
| Note on ambient temperature | Power must be reduced by 3% per °C at ambient temperatures above 40°C. |
| UL ambient temperature | 0 °C ... 40 °C |
| Relative air humidity | 5 - 90% Non-condensing |
| Max. installation height | 2000 m |

| Feature | Value |
|--|---|
| Note on max. installation height | From 1000 m: power reduction by 1% per 100 m. |
| Degree of protection | IP20 |
| Protection class | I |
| Overvoltage category | III |
| Pollution degree | 2 |
| Immunity to surge | 6 kV |
| Note on materials | RoHS-compliant |
| LABS (PWIS) conformity | VDMA24364 zone III |
| Phases of nominal operating voltage | Single-phase |
| Nominal operating voltage AC | 230 V |
| Permissible voltage fluctuations | -20 % / +15 % |
| Input voltage range AC | 100 V ... 230 V |
| Mains frequency | 48 Hz ... 62 Hz |
| Nominal current, load supply | 2.8 A |
| Peak current load power supply | 8.4 A |
| Active PFC | no |
| Mains filter | Integrated |
| System voltage to EN 61800-5-1 | 300 V |
| Max. short circuit current rating of the mains | 100 kA |
| Mains types | TT TN IT |
| Nominal voltage load voltage DC | 320 V |
| Permissible range for load power supply | -20%/+15% |
| Max. intermediate circuit voltage DC | 395 V |
| Brake resistor, integrated | 100 Ohm |
| Pulse power, brake resistance | 1.6 kVA |
| Pulse energy for braking resistor | 230 Ws |
| Nominal power braking resistor (IEC) | 23 W |
| Brake resistor, external | 100 Ohm ... 160 Ohm |
| Max. continuous output of the external braking resistor (IEC) | 180 W |
| Nominal voltage for logic power supply DC | 24 V |
| Permissible range for logic voltage | ± 20 % |
| Current consumption of logic power supply without clamping brake | 0.5 A |
| Current consumption for logic supply with parking brake | 1.5 A |
| Max. current consumption, logic power supply with clamping brake and I/O | 2.3 A |
| Output voltage class AC | 3x (0 – input) V |
| Nominal current per phase, effective | 2 A |
| Peak current per phase, effective | 6 A |
| Max. peak current duration | 2 s |
| Controller nominal output | 350 VA |
| Maximum output | 1000 VA |
| Output frequency | 0 Hz ... 599 Hz |
| Max. length of motor cable without external mains filter | 25 m |
| Max. output current of holding brake | 1 A |
| Max. voltage drop from logic supply to brake output | 0.8 V |
| Number of inputs for motor temperature sensor | 1 |

| Feature | Value |
|--|---|
| Controller operating mode | Cascade controller P position controller PI speed controller PI current regulator for F or M Profile operation with record and direct mode Interpolated mode via fieldbus Synchronised operating modes Homing Setting-up Autotuning |
| Operating mode of drive unit | Field-oriented closed-loop control Position resolution 24 bit/rev Sampling rate 16 kHz PWM at 8 or 16 KHz Vector modulation with 3rd harmonic Real-time data acquisition 2x input capture (x, v, F) 2x output trigger (x, v, F) 2x position encoder input 1x SYNC interface for encoder emulation or encoder input |
| Ethernet interface, function | Parameterisation and commissioning |
| Ethernet interface, protocol | TCP/IP |
| Field bus, protocol | EtherCAT® EtherNet/IP Modbus/TCP PROFINET IRT PROFINET RT |
| Fieldbus interface, function | Bus connection incoming/outgoing EtherCAT® slave PROFINET slave EtherNet/IP slave |
| Fieldbus link | EtherCAT EtherNet/IP Modbus/TCP PROFINET |
| Communication profile | CiA402 CoE (CANopen over EtherCAT®) EoE (Ethernet over EtherCAT®) FoE (File over EtherCAT®) PROFIdrive DriveProfile |
| Process interfacing | AC1: Adjustable-speed drives AC3: Drives with positioning function AC4: Synchronous servo application Adjustable-speed drives Drives with positioning function I/O mode for 256 positioning records Interpolated mode CSP Interpolated mode CST Interpolated mode CSV |
| Field bus interface, transmission rate | 100 Mbit/s |
| Field bus, connection type | 2x socket |
| Field bus, connection system | RJ45 |
| Encoder interface, function | BiSS-C ENDAT® 2.1 encoder EnDat® 2.2 encoder Hiperface-Geber Incremental encoder Nikon SIN/COS encoder |
| Encoder interface 2, function | Incremental encoder SIN/COS encoder |
| Synchronisation interface, function | Encoder emulation A/B/Z Encoder input A/B/Z |
| Encoder interface output, features | 1 MHz maximum output frequency Max. 16384 ppr |

| Feature | Value |
|---|---|
| Encoder interface input, features | 1 MHz maximum output frequency Max. 16384 ppr |
| Number of digital logic inputs | 12 |
| Switching logic for inputs | PNP (positive switching) |
| Features of logic input | Freely configurable in some cases Safety inputs in some cases Not galvanically isolated |
| Specification logic input | Based on IEC 61131-2, type 3 |
| Working range of logic input | -3 V ... 30 V |
| Number of high-speed logic inputs | 2 |
| Time resolution of high-speed logic inputs | 1 µs |
| Number of digital logic outputs 24 V DC | 6 |
| Switching logic for outputs | PNP (positive switching) |
| Features of digital logic outputs | Freely configurable in some cases Not galvanically isolated Diagnostics outputs in some cases |
| Max. current digital logic outputs | 20 mA |
| Number of high-speed switching outputs | 2 |
| Time resolution of high-speed switching outputs | 1 µs |
| Number of floating switching outputs | 1 |
| Max. current of the floating switching outputs | 50 mA |
| Number of analogue setpoint inputs | 1 |
| Features of setpoint inputs | Differential inputs Configurable for speed Configurable for current/force |
| Working range setpoint input | ± 10 V |
| Working range of analogue inputs | ± 10 V |
| Impedance of setpoint input | 70 kOhm |
| Safety function | Safe brake control (SBC) Safe torque off (STO) Safe Stop 1 (SS1) |
| Safety Integrity Level (SIL) | Safe brake control (SBC)/SIL 3/SILCL 3 Safe torque off (STO)/SIL 3/SILCL 3 |
| Performance Level (PL) | Safe brake control (SBC)/category 3, performance level e Safe Torque Off (STO)/category 4, performance level e |
| Diagnostic coverage | 97 % |
| SFF Safe Failure Fraction | 99 % |
| Hardware fault tolerance | 1 |
| Number of safe 2-pin inputs | 2 |
| Number of diagnostic outputs | 2 |