

Servo drive CMMT-AS-C12-11A-P3-MP-S1

Part number: 8143169

FESTO



 [General operating condition](#)

Data sheet

| Feature | Value |
|--|--|
| Type of mounting | Mounting plate, screwed on |
| Mounting position | Free convection Vertical |
| Product weight | 4100 g |
| Display | LED green/yellow/red |
| Control elements | Optional: CDSB operating unit |
| Conforms to standard | EN 61800-3 EN 61800-5-1 EN 61800-5-2 EN ISO 13849-1 |
| Based on norm | 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 |
| Certification | RCM compliance mark German Technical Control Board (TÜV) c UL us - Listed (OL) |
| KC characters | KC EMC |
| CE marking (see declaration of conformity) | As per EU EMC directive as per EU machinery directive As per EU RoHS directive |
| UKCA marking (see declaration of conformity) | To UK instructions for EMC To UK instructions 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 | Above an ambient temperature of 40 °C, the power must be reduced by 3%/°C. |
| UL-ambient temperature | 0 °C ... 40 °C |
| Relative air humidity | 5 - 90 % Non-condensing |
| Max. installation height | 2000 m |

| Feature | Value |
|---|---|
| Information on max. installation height | 1% power reduction/100 m above 1000 m. |
| Degree of protection | IP20 |
| Protection class | I |
| Overvoltage category | III |
| Contamination level | 2 |
| Surge resistance | 6 kV |
| Note on materials | RoHS-compliant |
| LABS (PWIS) conformity | VDMA24364 zone III |
| Nominal operating voltage phases | 3-phase |
| Nominal operating voltage AC | 400 V |
| Permissible voltage fluctuations | +/- 10 % |
| Input voltage range AC | 200 V ... 480 V |
| Mains frequency | 48 Hz ... 62 Hz |
| Nominal current load supply | 15 A |
| Peak current, load supply | 45 A |
| Active PFC | no |
| Line filter | Integrated |
| System voltage to EN 61800-5-1 | 300 V |
| Max. short circuit protection of mains | 10 kA |
| Mains types | TN IT |
| Nominal voltage, load supply DC | 560 V |
| Load supply permissible range | ± 10 % |
| Max. DC link voltage | 800 V |
| Braking resistor, integrated | 47 Ohm |
| Pulse power of braking resistor | 13.6 kVA |
| Pulse energy for braking resistor | 1200 Ws |
| Braking resistor nominal power (IEC) | 100 W |
| Braking resistor, external | 40 Ohm ... 60 Ohm |
| Max. continuous output of the external braking resistor (IEC) | 3000 W |
| Nominal voltage, logic supply DC | 24 V |
| Permissible range of logic voltage | ± 20 % |
| Max. current consumption for logic supply without clamping brake | 0.5 A |
| Max. current consumption for logic supply with parking brake | 2 A |
| Max. current consumption for logic supply with clamping brake and I/O | 2.5 A |
| Output voltage range AC | 3x (0 – input) V |
| Nominal current per phase, effective | 12 A |
| Peak current per phase, effective | 36 A |
| Max. peak current duration | 2 s |
| Controller nominal power | 6000 VA |
| Peak power | 18000 VA |
| Output frequency | 0 Hz ... 599 Hz |
| Max. length of motor cable without ext. mains filter | 25 m |
| Max. output current of holding brake | 1.5 A |
| Max. voltage drop from logic supply to brake output | 1 V |
| Number of inputs for motor temperature sensor | 1 |
| Controller operating mode | Cascade control P position controller PI speed controller PI current regulator for F or M Profile operation with block mode and direct mode Interpolating mode via fieldbus Synchronous operating modes Reference travel Setup mode Autotuning |

| Feature | Value |
|---|--|
| Mode of operation | Field-oriented regulation Position resolution 24 bit/rev. Sampling rate 16 kHz PWM with 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 sensor input 1x SYNC interface for encoder emulation or encoder input |
| Ethernet interface, function | Parameterization and commissioning |
| Ethernet interface, protocol | TCP/IP |
| Fieldbus interface, protocol | EtherCAT EtherNet/IP Modbus®/TCP PROFINET IRT PROFINET RT |
| Fieldbus interface, function | Bus connection, incoming/forwarding EtherCAT® slave PROFINET slave EtherNet/IP slave |
| Fieldbus coupling | 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 blocks Interpolated mode CSP Interpolated mode CST Interpolated mode CSV |
| Fieldbus interface, transmission rate | 100 Mbit/s |
| Fieldbus interface, connection type | 2x socket |
| Fieldbus interface, connection technology | RJ45 |
| Encoder interface, function | BiSS-C EnDat® 2.1 encoder EnDat® 2.2 encoder Hiperface encoder Incremental encoder Nikon SIN/COS encoder |
| Encoder interface 2, function | Incremental encoder SIN/COS encoder |
| Synchronization interface, function | Encoder emulation A/B/Z Encoder input A/B/Z |
| Encoder interface output, characteristics | 1 MHz maximum output frequency max. 16384 ppr |
| Encoder interface input, characteristics | 1 MHz maximum output frequency max. 16384 ppr |
| Number of digital logic inputs | 12 |
| Input switching logic | PNP (positive switching) |
| Characteristics of logic input | Freely configurable in some cases Safety inputs in some cases Not galvanically isolated |
| Logic input specification | Based on IEC 61131-2, type 3 |
| Work range of logic input | -3 V ... 30 V |

| Feature | Value |
|---|---|
| Number of high-speed logic inputs | 2 |
| Time resolution of high-speed logic inputs | 1 μ s |
| Number of digital logic outputs 24 V DC | 6 |
| Switching logic at outputs | PNP (positive switching) |
| Characteristics of digital logic outputs | Freely configurable in some cases Not galvanically isolated Diagnostic outputs in some cases |
| Max. current of digital logic outputs | 20 mA |
| Number of high-speed switching outputs | 2 |
| Time resolution of high-speed switching outputs | 1 μ s |
| Number of floating switching outputs | 1 |
| Max. current of the floating switching outputs | 50 mA |
| Number of analog setpoint inputs | 1 |
| Characteristics of setpoint inputs | Differential inputs Configurable for rotational speed Configurable for current/force |
| Work range of setpoint input | \pm 10 V |
| Operating range of analog inputs | \pm 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 |