

# Servo drive CMMT-AS-C7-11A-P3-PN-S1

Part number: 8133352

FESTO



## Data sheet

| Feature   | Value  |
|---|--|
| Type code   | CMMT-AS  |
| Fieldbus interface, function                                  | Bus connection, incoming/forwarding<br>PROFINET slave  |
| Fieldbus interface, transmission rate                         | 100 Mbit/s   |
| KC characters   | KC EMC   |
| Mounting position   | Free convection<br>Vertical  |
| Information on max. installation height                       | 1% power reduction/100 m above 1000 m.   |
| Ethernet interface, protocol                                  | TCP/IP   |
| Ethernet interface, function                                  | Parameterization and commissioning   |
| Encoder interface, function                                   | EnDat® 2.1 encoder<br>EnDat® 2.2 encoder<br>HiPerface encoder<br>Incremental encoder<br>Nikon<br>SIN/COS encoder |
| Fieldbus interface, connection technology                     | RJ45   |
| Mains types   | TN<br>IT   |
| Protection class  | I  |
| Encoder interface 2, function                                 | Incremental encoder<br>SIN/COS encoder   |
| Fieldbus interface, protocol                                  | PROFINET IRT<br>PROFINET RT  |
| Overvoltage category  | III  |
| Synchronization interface, function                           | Encoder emulation A/B/Z<br>Encoder input A/B/Z<br>Pulse/direction signals CLK/DIR<br>CW/CCW counting signals     |
| Fieldbus interface, connection type                           | 2x socket  |
| Number of high-speed switching outputs                        | 2  |
| Number of floating switching outputs                          | 1  |
| Number of inputs for motor temperature sensor                 | 1  |
| Number of diagnostic outputs                                  | 2  |
| Max. current of the floating switching outputs                | 50 mA  |
| Max. continuous output of the external braking resistor (IEC) | 1500 W   |
| Pulse energy for braking resistor                             | 1200 Ws  |
| Max. output current of holding brake                          | 1.5 A  |
| Number of high-speed logic inputs                             | 2  |

| Feature  | Value  |
|--|--|
| System voltage to EN 61800-5-1                               | 300 V  |
| Max. short circuit protection of mains                       | 10 kA  |
| Braking resistor nominal power (IEC)                         | 100 W  |
| Max. voltage drop from logic supply to brake output          | 1 V  |
| Number of safe 2-pin inputs                                  | 2  |
| Time resolution of high-speed logic inputs                   | 1 µs   |
| Max. current consumption for logic supply with parking brake | 2 A  |
| Time resolution of high-speed switching outputs              | 1 µs   |
| Max. installation height                                     | 2000 m   |
| Conforms to standard   | EN 61800-3<br>EN 61800-5-1<br>EN 61800-5-2<br>EN ISO 13849-1   |
| Based on norm  | EN 50581<br>EN 60204-1<br>EN 61508-1<br>EN 61508-2<br>EN 61508-3<br>EN 61508-4<br>EN 61508-5<br>EN 61508-6<br>EN 61508-7<br>EN 61800-2<br>EN 62061   |
| Active PFC   | no   |
| Controller operating mode                                    | Cascade control<br>P position controller<br>PI speed controller<br>PI current regulator for F or M<br>Profile operation with block mode and direct mode<br>Interpolating mode via fieldbus<br>Synchronous operating modes<br>Reference travel<br>Setup mode<br>Autotuning  |
| Mode of operation  | Field-oriented regulation<br>Position resolution 24 bit/rev.<br>Sampling rate 16 kHz<br>PWM with 8 or 16 KHz<br>Vector modulation with 3rd harmonic<br>Real-time data acquisition<br>2x input capture (x, v, F)<br>2x output trigger (x, v, F)<br>2x position sensor input<br>1x SYNC interface for encoder emulation or encoder input |
| Line filter  | Integrated   |
| Safety function  | Safe brake control (SBC)<br>Safe torque off (STO)<br>Safe stop 1 (SS1)   |
| Safety integrity level (SIL)                                 | Safe brake control (SBC)/SIL 3/SILCL 3<br>Safe torque off (STO)/SIL 3/SILCL 3  |
| Performance Level (PL)                                       | Safe brake control (SBC)/category 3, performance level e<br>Safe torque off (STO)/category 4, performance level e  |
| Display  | LED green/yellow/red   |
| Control elements   | Optional: CDSB operating unit  |
| Output frequency   | 0 Hz ... 599 Hz  |
| Output voltage range AC                                      | 3x (0 – input) V   |
| Braking resistor, external                                   | 60 Ohm ... 85 Ohm  |
| Braking resistor, integrated                                 | 47 Ohm   |
| Diagnostic coverage  | 97 %   |
| Characteristics of digital logic outputs                     | Freely configurable in some cases<br>Not galvanically isolated<br>Diagnostic outputs in some cases   |

| Feature   | Value   |
|---|---|
| Hardware fault tolerance  | 1   |
| Impedance of setpoint input   | 70 kOhm   |
| Pulse power of braking resistor                                       | 13.6 kVA  |
| Max. current of digital logic outputs                                 | 20 mA   |
| Max. length of motor cable without ext. mains filter                  | 25 m  |
| Max. peak current duration  | 2 s   |
| Max. DC link voltage  | 800 V   |
| Nominal operating voltage AC  | 400 V   |
| Input voltage range AC  | 200 V ... 480 V   |
| Controller nominal power  | 4000 VA   |
| Nominal voltage, logic supply DC                                      | 24 V  |
| Nominal voltage, load supply DC                                       | 560 V   |
| Nominal current load supply   | 9 A   |
| Nominal current per phase, effective                                  | 7 A   |
| Mains frequency   | 48 Hz ... 62 Hz   |
| Nominal operating voltage phases                                      | 3-phase   |
| SFF safe failure fraction   | 99 %  |
| Peak power  | 12000 VA  |
| Peak current, load supply   | 27 A  |
| Peak current per phase, effective                                     | 21 A  |
| Surge resistance  | 6 kV  |
| Max. current consumption for logic supply without clamping brake      | 0.5 A   |
| Max. current consumption for logic supply with clamping brake and I/O | 2.5 A   |
| Contamination level   | 2   |
| Load supply permissible range   | ± 10 %  |
| Permissible range of logic voltage                                    | ± 20 %  |
| Permissible voltage fluctuations                                      | +/- 10 %  |
| Certificate issuing authority   | German Technical Control Board (TÜV) Rheinland 01/205/5640.00/18<br>UL E331130  |
| CE marking (see declaration of conformity)                            | As per EU EMC directive<br>as per EU machinery directive<br>As per EU low voltage directive<br>As per EU RoHS directive |
| Storage temperature   | -25 °C ... 55 °C  |
| Relative air humidity   | 5 - 90 %<br>Non-condensing  |
| Degree of protection  | IP20  |
| 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  |
| Certification   | RCM compliance mark<br>German Technical Control Board (TÜV)<br>c UL us - Listed (OL)                                    |
| Product weight  | 4100 g  |
| Number of analog setpoint inputs                                      | 1   |
| Number of digital logic outputs 24 V DC                               | 6   |
| Number of digital logic inputs  | 12  |
| Communication profile   | PROFIdrive<br>PROFIenergy   |
| Process interfacing   | AC1: Adjustable-Speed Drives<br>AC3: drives with positioning function<br>AC4: Synchronous Servo Application             |
| Logic input specification   | Based on IEC 61131-2, type 3  |
| Work range of logic input   | -3 V ... 30 V   |
| Work range of setpoint input  | ± 10 V  |

| <b>Feature</b>                            | <b>Value</b>  |
|---|---|
| Operating range of analog inputs          | ± 10 V  |
| Encoder interface output, characteristics | 1 MHz maximum output frequency<br>max. 16384 ppr  |
| Encoder interface input, characteristics  | 1 MHz maximum output frequency<br>max. 16384 ppr  |
| Characteristics of setpoint inputs        | Differential inputs<br>Configurable for rotational speed<br>Configurable for current/force    |
| Characteristics of logic input            | Freely configurable in some cases<br>Safety inputs in some cases<br>Not galvanically isolated |
| Input switching logic                     | PNP (positive switching)  |
| Switching logic at outputs                | PNP (positive switching)  |
| Fieldbus coupling                         | PROFINET  |
| Type of mounting                          | Mounting plate, screwed on  |
| Note on materials                         | Contains paint-wetting impairment substances<br>RoHS-compliant                                |