Servo drive
CMMT-AS-C4-3A-MP-S1

Part number: 8143164

General operating condition

Data sheet

Feature	Value
Type of mounting	Mounting plate, attached with screws
Mounting position	Free convection Vertical
Product weight	1400 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 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
UKCA marking (see declaration of conformity)	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 ... 50 °C
Relative air humidity	5 - 90% Non-condensing
Max. installation height	2000 m
Note on max. installation height	From 1000 m: power reduction by 1% per 100 m.

Feature	Value
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	5.6 A
Peak current load power supply	16.8 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	67 Ohm ... 100 Ohm
Max. continuous output of the external braking resistor (IEC)	350 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	4 A
Peak current per phase, effective	12 A
Max. peak current duration	2 s
Controller nominal output	700 VA
Maximum output	2000 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	Field-oriented closed-loop control 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 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
Safety sub-functions up to SIL3	Safe torque off Safe brake control
Performance Level (PL)	Safe brake control (SBC)/category 3, performance level e Safe Torque Off (STO)/category 4, performance level e
Safety sub-function up to PL e, Cat. 3	Safe brake control
Safety sub-function up to PL e, Cat. 4	Safe torque off
Diagnostic coverage	97 %
SFF Safe Failure Fraction	99 %
Hardware fault tolerance	1
Number of safe 2-pin inputs	2
Number of diagnostic outputs	2