Eaton 199009

Eaton Moeller® series Rapid Link - Speed controllers, 5.6 A, 2.2 kW, Sensor input 4, Actuator output 2, 180/207 V DC, PROFINET, HAN Q4/2, with braking resistance, STO (Safe Torque Off)

PRODUCT NAME	Eaton Rapid Link Speed controller
CATALOG NUMBER	199009
PRODUCT LENGTH/DEPTH	157 mm
PRODUCT HEIGHT	270 mm
PRODUCT WIDTH	220 mm
PRODUCT WEIGHT	3.46 kg
CERTIFICATIONS	UL approval RoHS CE UL 61800-5-1 IEC/EN 61800-5-1
CATALOG NOTES	• 3 fixed speeds and 1 potentiometer speed • can be switched over from U/f to (vector) speed control • Connection of supply voltage via adapter cable on round or flexible busbar junction • Diagnostics and reset on the device and via PROFINET • integrated PTC thermistor monitoring and Thermoclick with safe isolation • optional: 4 sensor inputs with M12-Y adapter for switchover to creep

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	speed • optional: Faster stop if external 24 V fails • Two sensor inputs through M12 sockets (max. 150 mA) for quick stop and interlocked manual operation • with AUTO - OFF/RESET - HAND key switches • with selector switch REV - OFF - FWD

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FEATURES	Parameterization: Keypad Parameterization: drivesConnect mobile (App) Parameterization: drivesConnect Parameterization: Fieldbus
10.10 TEMPERATURE RISE	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 SHORT-CIRCUIT RATING	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 ELECTROMAGNETIC COMPATIBILITY	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 MECHANICAL FUNCTION	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.
10.2.2 CORROSION RESISTANCE	Meets the product standard's requirements.
10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES	Meets the product standard's requirements.
10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT	Meets the product standard's requirements.
10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS	Meets the product standard's requirements.
10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION	Meets the product standard's requirements.
10.2.5 LIFTING	Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 MECHANICAL IMPACT	Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 INSCRIPTIONS	Meets the product standard's requirements.

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DECLARATIONS OF CONFORMITY	eaton-speed-controller-declaration-of-conformity-uk251323en.pdf
ECAD MODEL	ETN.RASP5-5421PNT-4120110S1.edz
MCAD MODEL	rasp5_v39.stp ramo5_v39.dwg
□□□□□	eaton-powerxl-speed-control-unit-ethernet-profinet-rasp5-il034093zu.pdf
□□□□	eaton-rapid-link-5-brochure-br040014en-en-us.pdf
□□□□	eaton-rapid-link-5-mn034004en-us.pdf
□□	eaton-bus-adapter-rapidlink-speed-controller-dimensions-002.eps eaton-bus-adapter-rapidlink-speed-controller-dimensions-004.eps eaton-bus-adapter-rapidlink-speed-controller-dimensions.eps eaton-bus-adapter-rapidlink-speed-controller-dimensions-003.eps

10.3 DEGREE OF PROTECTION OF ASSEMBLIES	Does not apply, since the entire switchgear needs to be evaluated.
10.4 CLEARANCES AND CREEPAGE DISTANCES	Meets the product standard's requirements.
10.5 PROTECTION AGAINST ELECTRIC SHOCK	Does not apply, since the entire switchgear needs to be evaluated.
10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS	Does not apply, since the entire switchgear needs to be evaluated.
10.7 INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS	Is the panel builder's responsibility.
10.8 CONNECTIONS FOR EXTERNAL CONDUCTORS	Is the panel builder's responsibility.
10.9.2 POWER-FREQUENCY ELECTRIC STRENGTH	Is the panel builder's responsibility.
10.9.3 IMPULSE WITHSTAND VOLTAGE	Is the panel builder's responsibility.
10.9.4 TESTING OF ENCLOSURES MADE OF INSULATING MATERIAL	Is the panel builder's responsibility.
FITTED WITH:	Key switch position OFF/RESET Two sensor inputs through M12 sockets (max. 150 mA) for quick stop and interlocked manual operation Key switch position AUTO Key switch position HAND Braking resistance PTC thermistor monitoring 2 Actuator outputs Control unit Internal DC link Selector switch (Positions: REV - OFF - FWD) Thermo-click with safe isolation Breaking resistance PC connection IGBT inverter
CLIMATIC PROOFING	< 95 %, no condensation In accordance with IEC/EN 50178
OPERATING MODE	Sensorless vector control (SLV) U/f control BLDC motors PM and LSPM motors Synchronous reluctance

	motors
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	2000 V
ALTITUDE	Above 1000 m with 1 % performance reduction per 100 m Max. 2000 m
APPLICATION IN DOMESTIC AND COMMERCIAL AREA PERMITTED	Yes
MAINS SWITCH-ON FREQUENCY	Maximum of one time every 60 seconds
AMBIENT OPERATING TEMPERATURE - MAX	40 °C
AMBIENT OPERATING TEMPERATURE - MIN	-10 °C
MAINS VOLTAGE - MAX	480 V
OUTPUT VOLTAGE - MAX	500 V
RATED OPERATIONAL POWER AT 220/230 V, 50 HZ, 3-PHASE	0.37 kW
RELATIVE SYMMETRIC NET FREQUENCY TOLERANCE	10 %
RELATIVE SYMMETRIC NET VOLTAGE TOLERANCE	10 %
AMBIENT STORAGE TEMPERATURE - MAX	70 °C
AMBIENT STORAGE TEMPERATURE - MIN	-40 °C
APPLICATION IN INDUSTRIAL AREA PERMITTED	Yes
MAINS VOLTAGE TOLERANCE	380 - 480 V (-10 %/+10 %, at 50/60 Hz)
PRODUCT CATEGORY	Speed controller
PROTECTION	Finger and back-of-hand proof, Protection against direct contact (BGV A3, VBG4)
RESOLUTION	0.1 Hz (Frequency resolution, setpoint value)
SWITCH-ON THRESHOLD FOR THE BRAKING TRANSISTOR	765 VDC
MOUNTING POSITION	Vertical
RATED CONDITIONAL SHORT-CIRCUIT CURRENT	10 kA

(IQ)	
OVERVOLTAGE CATEGORY	III
COMMUNICATION INTERFACE	PROFINET, optional
CONNECTION	Plug type: HAN Q4/2
CONVERTER TYPE	U converter
DEGREE OF PROTECTION	IP65 NEMA 12
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE	3 HP
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0 W
INPUT CURRENT ILN AT 150% OVERLOAD	5.3 A
MAINS CURRENT DISTORTION	120 %
PROTOCOL	PROFINET IO
OVERLOAD CURRENT	For 60 s every 600 s At 40 °C
OVERLOAD CURRENT IL AT 150% OVERLOAD	8.4 A
RATED FREQUENCY - MAX	66 Hz
RATED FREQUENCY - MIN	45 Hz
ASSIGNED MOTOR CURRENT IM AT 400 V, 50 HZ, 150% OVERLOAD	5.6 A
ASSIGNED MOTOR CURRENT IM AT 440 - 480 V, 60 HZ, 150% OVERLOAD	5.6 A
SYSTEM CONFIGURATION TYPE	Center-point earthed star network (TN-S network) Phase-earthed AC supply systems are not permitted. AC voltage
BRAKING CURRENT	≤ 0.6 A (max. 6 A for 120 ms), Actuator for external motor brake
ELECTROMAGNETIC COMPATIBILITY	1st and 2nd environments (according to EN 61800-3)
CURRENT LIMITATION	Adjustable, motor, main circuit 0.5 - 5.6 A, motor, main circuit

BRAKING TORQUE	Adjustable to 100 % (I/Ie), DC - Main circuit ≤ 30 % (I/Ie)
BRAKING VOLTAGE	280/207 V DC -15 % / +10 %, Actuator for external motor brake
CABLE LENGTH	C1 ≤ 1 m, maximum motor cable length C3 ≤ 25 m, maximum motor cable length C2 ≤ 5 m, maximum motor cable length
FUNCTIONS	For actuation of motors with mechanical brake 1 potentiometer speed Brake chopper with braking resistance for dynamic braking STO (Safe Torque Off) 3 fixed speeds 4-quadrant operation possible
DELAY TIME	< 10 ms, On-delay < 10 ms, Off-delay
NUMBER OF INPUTS (ANALOG)	0
NUMBER OF INPUTS (DIGITAL)	4
RADIO INTERFERENCE CLASS	C2, C3: depending on the motor cable length, the connected load, and ambient conditions. External radio interference suppression filters (optional) may be necessary. C1: for conducted emissions only
NUMBER OF OUTPUTS (DIGITAL)	2
STARTING CURRENT - MAX	200 %, IH, max. starting current (High Overload), For 2 seconds every 20 seconds, Power section
NUMBER OF PHASES (INPUT)	3
NUMBER OF PHASES (OUTPUT)	3
POWER CONSUMPTION	58 W
INTERFACES	Number of slave addresses: 31 (AS-Interface®) Max. total power consumption from AS-

	Interface® power supply unit (30 V): 250 mA Specification: S-7.4 (AS-Interface®)
EFFICIENCY	98 % (η)
RATED CONTROL VOLTAGE (UC)	180/207 V DC (external brake 50/60 Hz) 24 V DC (-15 %/+20 %, external via AS-Interface® plug)
SUPPLY FREQUENCY	50/60 Hz
LEAKAGE CURRENT AT GROUND IPE - MAX	3.5 mA
MAINS VOLTAGE - MIN	380 V
NOMINAL OUTPUT CURRENT I2N	5.6 A
NUMBER OF HW-INTERFACES (INDUSTRIAL ETHERNET)	0
NUMBER OF HW-INTERFACES (OTHER)	0
NUMBER OF HW-INTERFACES (PARALLEL)	0
NUMBER OF HW-INTERFACES (RS-232)	0
NUMBER OF HW-INTERFACES (RS-422)	0
NUMBER OF HW-INTERFACES (RS-485)	1
NUMBER OF HW-INTERFACES (SERIAL TTY)	0
NUMBER OF HW-INTERFACES (USB)	0
NUMBER OF INTERFACES (PROFINET)	2
NUMBER OF OUTPUTS (ANALOG)	0
OUTPUT AT LINEAR LOAD AT RATED OUTPUT VOLTAGE - MAX	2.2 kW
OUTPUT AT QUADRATIC LOAD AT RATED OUTPUT VOLTAGE - MAX	2.2 kW
OUTPUT FREQUENCY - MAX	500 Hz
OUTPUT FREQUENCY - MIN	0 Hz
SHORT-CIRCUIT PROTECTION (EXTERNAL OUTPUT CIRCUITS)	Type 1 coordination via the power bus' feeder unit, Main circuit
SHOCK RESISTANCE	15 g, Mechanical,

	According to IEC/EN 60068-2-27, 11 ms, Half-sinusoidal shock 11 ms, 1000 shocks per shaft
SWITCHING FREQUENCY	8 kHz, 4 - 32 kHz adjustable, fPWM, Power section, Main circuit
RATED OPERATIONAL CURRENT (IE)	5.6 A at 150% overload (at an operating frequency of 8 kHz and an ambient air temperature of +40 °C)
RATED OPERATIONAL VOLTAGE	480 V AC, 3-phase 400 V AC, 3-phase
VIBRATION	Resistance: 10 - 150 Hz, Oscillation frequency Resistance: According to IEC/EN 60068-2-6 Resistance: 57 Hz, Amplitude transition frequency on acceleration Resistance: 6 Hz, Amplitude 0.15 mm
HEAT DISSIPATION AT CURRENT/SPEED	36.6 W at 25% current and 0% speed 38.1 W at 25% current and 50% speed 42 W at 50% current and 0% speed 42.5 W at 50% current and 90% speed 44.2 W at 50% current and 50% speed 55.9 W at 100% current and 0% speed 58.3 W at 100% current and 90% speed 60.4 W at 100% current and 50% speed

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
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