## Speed controllers, 2.4 A, 0.75 kW, Sensor input 4, AS-Interface \$ , S-7.4 for 31 modules, HAN Q4/2



Part no. RASP5-2400A31-4120000S1 198728

Product name	Eaton Moeller® series Rapid Link Speed controller
Part no.	RASP5-2400A31-4120000S1
EAN	4015081967865
Product Length/Depth	157 millimetre
Product height	270 millimetre
Product width	220 millimetre
Product weight	3.41 kilogram
Certifications	UL approval CE ROHS UL 61800-5-1 IEC/EN 61800-5-1
Product Tradename	Rapid Link
Product Type	Speed controller
Product Sub Type	None
Catalog Notes	can be switched over from U/f to (vector) speed control Connection of supply voltage via adapter cable on round or flexible busbar junc Diagnostics and reset on device and via AS-Interface Four fixed speeds integrated PTC thermistor monitoring and Thermoclick with safe isolation optional: 4 sensor inputs with M12-Y adapter for switchover to creep 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
Features	Diagnostics and reset on device and via AS-Interface Parameterization: Fieldbus Parameterization: drivesConnect Parameterization: Keypad Parameterization: drivesConnect mobile (App)
Fitted with:	Internal DC link Key switch position AUTO Key switch position HAND Two sensor inputs through M12 sockets (max. 150 mA) for quick stop and interlocked manual operation Selector switch (Positions: REV - OFF - FWD) PTC thermistor monitoring Key switch position OFF/RESET IGBT inverter Control unit PC connection Thermo-click with safe isolation Four fixed speeds
Degree of protection	NEMA 12 IP65
Electromagnetic compatibility	1st and 2nd environments (according to EN 61800-3)
Overvoltage category	III
Product category	Speed controller
Protocol	ASI AS-Interface profile cable: S-7.4 for 31 modules
Radio interference class	C1: for conducted emissions only C2, C3: depending on the motor cable length, the connected load, and ambient conditions. External radio interference suppression filters (optional) may be necessary.
Rated impulse withstand voltage (Uimp)	2000 V
System configuration type	Center-point earthed star network (TN-S network) AC voltage Phase-earthed AC supply systems are not permitted.

Mounting position	Vertical
Shock resistance	15 g, Mechanical, According to IEC/EN 60068-2-27, 11 ms, Half-sinusoidal shock ms, 1000 shocks per shaft
Vibration	Resistance: 10 - 150 Hz, Oscillation frequency Resistance: 57 Hz, Amplitude transition frequency on acceleration Resistance: 6 Hz, Amplitude 0.15 mm Resistance: According to IEC/EN 60068-2-6
Altitude	Above 1000 m with 1 % performance reduction per 100 m Max. 2000 m
Ambient operating temperature - min	-10 °C
Ambient operating temperature - max	40 °C
Ambient storage temperature - min	-40 °C
Ambient storage temperature - max	70 °C
Climatic proofing	In accordance with IEC/EN 50178 < 95 %, no condensation
Current limitation	Adjustable, motor, main circuit 0.2 - 2.4 A, motor, main circuit
Delay time	< 10 ms, On-delay < 10 ms, Off-delay
Efficiency	97 % (η)
Heat dissipation at current/speed	27.5 W at 50% current and 90% speed 31.8 W at 100% current and 90% speed 33.5 W at 25% current and 50% speed 34.6 W at 50% current and 50% speed 35.1 W at 25% current and 0% speed 36.6 W at 100% current and 50% speed 36.8 W at 50% current and 0% speed 40.7 W at 100% current and 0% speed
Input current ILN at 150% overload	2.5 A
Leakage current at ground IPE - max	3.5 mA
Mains current distortion	120 %
Mains switch-on frequency	Maximum of one time every 60 seconds
Mains voltage - max	480 V 380 V
Mains voltage - min  Mains voltage tolerance	380 · 480 V (-10 %/+10 %, at 50/60 Hz)
Operating mode	U/f control Synchronous reluctance motors Sensorless vector control (SLV) BLDC motors PM and LSPM motors
Output frequency - max	500 Hz
Output frequency - min	0 Hz
Overload current	At 40 °C For 60 s every 600 s
Overload current IL at 150% overload	3.6 A
Rated frequency - max	66 Hz
Rated frequency - min	45 Hz
Rated operational current (le)	2.4 A at 150% overload (at an operating frequency of 8 kHz and an ambient air temperature of +40 $^{\circ}\text{C})$
Rated operational power at 380/400 V, 50 Hz, 3-phase	0.75 kW
Rated operational voltage	400 V AC, 3-phase 480 V AC, 3-phase
Resolution	0.1 Hz (Frequency resolution, setpoint value)
Starting current - max	200 %, IH, max. starting current (High Overload), For 2 seconds every 20 second Power section
Supply frequency	50/60 Hz
Switching frequency	8 kHz, 4 - 32 kHz adjustable, fPWM, Power section, Main circuit
Assigned motor power at 460/480 V, 60 Hz, 3-phase	1 HP
Braking current	≤ 0.6 A (max. 6 A for 120 ms), Actuator for external motor brake
Braking torque	Adjustable to 100 % (I/Ie), DC - Main circuit

Rated conditional short-circuit current (Iq)	10 kA
Short-circuit protection (external output circuits)	Type 1 coordination via the power bus' feeder unit, Main circuit
Rated control voltage (Uc)	24 V DC (-15 %/+20 %, external via AS-Interface® plug)
Communication interface	AS-Interface
Connection	Plug type: HAN Q4/2
Interfaces	Number of slave addresses: 31 (AS-Interface®)  Max. total power consumption from AS-Interface® power supply unit (30 V): 190 mA  Specification: S-7.4 (AS-Interface®)
Cable length	$C2 \le 5$ m, maximum motor cable length $C1 \le 1$ m, maximum motor cable length $C3 \le 25$ m, maximum motor cable length
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.
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.
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.

## **Technical data ETIM 8.0**

Low-voltage industrial components (EG000017) / Frequency converter =< 1 kV (EC001857) Electric engineering, automation, process control engineering / Electrical drive / Static frequency converter / Static frequency converter = < 1 kV (ecl@ss10.0.1-27-02-31-01 [AKE177014]) Mains voltage 380 - 480 Mains frequency 50/60 Hz Number of phases input 3 3 Number of phases output Max. output frequency Hz 500 Max. output voltage 500 2.4 Nominal output current I2N Α kW Max. output at quadratic load at rated output voltage 0.75 kW Max. output at linear load at rated output voltage 0.75 10 Relative symmetric net frequency tolerance % Relative symmetric net voltage tolerance % 10 Number of analogue outputs 0 Number of analogue inputs 0 Number of digital outputs 0

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Supporting protocol for PROFIsafe         Mo           Supporting protocol for SafetyBUS p         No           Supporting protocol for BACnet         No           Supporting protocol for other bus systems         No           Number of HW-interfaces industrial Ethernet         O           Number of HW-interfaces PROFINET         0           Number of HW-interfaces RS-232         O           Number of HW-interfaces RS-422         O           Number of HW-interfaces RS-485         1           Number of HW-interfaces RS-485         0           Number of HW-interfaces RS-485         0           Number of HW-interfaces serial TTY         0           Number of HW-interfaces sterial Ethernet         0           Number of HW-interfaces sterial Ethernet         No           With pcc connection         No           With pcc connection         No           Vide pcc connection possible         No           Vide pcc converter         No           Degree of protection (IP)         Vec           Degree of protection (NEMA)         In <tr< td=""><td>Supporting protocol for DeviceNet Safety</td><td></td><td>No</td></tr<>	Supporting protocol for DeviceNet Safety		No
Supporting protocol for SafetyBUS p         No           Supporting protocol for BACnet         No           Supporting protocol for other bus systems         No           Number of HW-interfaces industrial Ethernet         O           Number of HW-interfaces RS-232         O           Number of HW-interfaces RS-422         O           Number of HW-interfaces RS-485         O           Number of HW-interfaces RS-486         O           Number of HW-interfaces RS-487         O           Number of HW-interfaces Serial TTY         O           Number of HW-interfaces Serial TTY         O           Number of HW-interfaces Serial TTY         O           Number of HW-interfaces other         O           Number of HW-interfaces other         No           With optical interface         No           With optical interface         No           With optical interface         No           With optical interface         No           Vital potential presistance         No           4-quadrant operation possible         No           Type of converter         Po           Degree of protection (IP)         No           Degree of protection (NEMA)         No           Height         Mm	Supporting protocol for INTERBUS-Safety		No
Supporting protocol for BACnet         No           Supporting protocol for other bus systems         No           Number of HW-interfaces industrial Ethernet         C           Number of interfaces PROFINET         C           Number of HW-interfaces RS-232         C           Number of HW-interfaces RS-422         C           Number of HW-interfaces RS-485         C           Number of HW-interfaces serial TTY         C           Number of HW-interfaces USB         C           Number of HW-interfaces other         C           With optical interface         C           With optical interface other         No           With pC connection         Yes           Integrated breaking resistance         No           4-quadrant operation possible         No           Type of converter         U converter           Degree of protection (IP)         IP65           Degree of protection (NEMA)         Image: Part of the par	Supporting protocol for PROFIsafe		No
Supporting protocol for other bus systems         No           Number of HW-interfaces industrial Ethernet         6           Number of interfaces PR0FINET         6           Number of HW-interfaces RS-232         6           Number of HW-interfaces RS-422         6           Number of HW-interfaces RS-485         6           Number of HW-interfaces serial TTY         0           Number of HW-interfaces USB         0           Number of HW-interfaces other         1           With optical interface         No           With optical interface         No           With PC connection         Yes           Integrated breaking resistance         No           4-quadrant operation possible         No           Type of converter         U converter           Degree of protection (IP)         1P65           Degree of protection (NEMA)         12           Height         mm         270           Width         mm         200	Supporting protocol for SafetyBUS p		No
Number of HW-interfaces industrial Ethernet                   0           Number of interfaces PROFINET                   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         0           Number of HW-interfaces USB         0         0           Number of HW-interfaces parallel         0         0           Number of HW-interfaces other         0         1           With optical interface         No         No           With PC connection         Yes         No           Integrated breaking resistance         No         No           4-quadrant operation possible         No         No           5-quadrant operation possible         No         No           6-quadrant operation (IP)         No         No           7-quadrant operation (IP)         Possible         No           8-quadrant operation (IP)         Possible         No           9-quadrant operation (IP)         Possible         No           9-quadrant operation (IP)         Possible         Possible           9-quadrant	Supporting protocol for BACnet		No
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Number of HW-interfaces RS-232         0           Number of HW-interfaces RS-422         1           Number of HW-interfaces RS-485         1           Number of HW-interfaces serial TTY         0           Number of HW-interfaces USB         0           Number of HW-interfaces parallel         0           Number of HW-interfaces other         1           With optical interface         No           With PC connection         Yes           Integrated breaking resistance         No           4-quadrant operation possible         No           Type of converter         Voonverter           Degree of protection (IP)         IP65           Degree of protection (NEMA)         1           Height         mm         270           Witth         mm         270           Witth         mm         270           Witth         mm         270	Number of HW-interfaces industrial Ethernet		0
Number of HW-interfaces RS-422         1           Number of HW-interfaces RS-485         1           Number of HW-interfaces serial TTY         0           Number of HW-interfaces USB         0           Number of HW-interfaces uSB         0           Number of HW-interfaces other         1           With optical interface         No           With PC connection         Yes           Integrated breaking resistance         No           4-quadrant operation possible         No           Type of converter         U converter           Degree of protection (IP)         IP65           Degree of protection (NEMA)         IP65           Height         mm         270           Witth         mm         200	Number of interfaces PROFINET		0
Number of HW-interfaces RS-485         I         1           Number of HW-interfaces Serial TTY         0         0           Number of HW-interfaces USB         0         0           Number of HW-interfaces parallel         0         0           Number of HW-interfaces other         1         1           With optical interface         No         Yes           With PC connection         Yes         No           Integrated breaking resistance         No         No           4-quadrant operation possible         No         No           Type of converter         U converter         V converter           Degree of protection (IP)         P65         12           Degree of protection (NEMA)         mm         270           With Optical interfaces other         mm         270	Number of HW-interfaces RS-232		0
Number of HW-interfaces serial TTY         0           Number of HW-interfaces USB         0           Number of HW-interfaces parallel         0           Number of HW-interfaces other         1           With optical interface         No           With PC connection         Yes           Integrated breaking resistance         No           4-quadrant operation possible         No           Type of converter         U converter           Degree of protection (IP)         1P65           Degree of protection (NEMA)         12           Height         mm         270           Witth Office of With Members of the With PW-interfaces other         mm         220	Number of HW-interfaces RS-422		0
Number of HW-interfaces USB         0           Number of HW-interfaces parallel         0           Number of HW-interfaces other         1           With optical interface         No           With PC connection         Yes           Integrated breaking resistance         No           4-quadrant operation possible         No           Type of converter         V converter           Degree of protection (IP)         P65           Degree of protection (NEMA)         T         12           Height         mm         270           Width         mm         270           Width         mm         200	Number of HW-interfaces RS-485		1
Number of HW-interfaces parallel  Number of HW-interfaces other  With optical interface  With PC connection  With PC connection  Integrated breaking resistance  4-quadrant operation possible  Type of converter  Degree of protection (IP)  Degree of protection (NEMA)  Height  With PC connection  mm 270	Number of HW-interfaces serial TTY		0
Number of HW-interfaces other         I         1           With optical interface         No         No           With PC connection         Yes         No           Integrated breaking resistance         No         No           4-quadrant operation possible         No         No           Type of converter         V converter         V converter           Degree of protection (IP)         IP65           Degree of protection (NEMA)         Yes           Height         mm         270           Width         mm         220	Number of HW-interfaces USB		0
With optical interface With pc connection With PC connection With PC connection Integrated breaking resistance Integrated br	Number of HW-interfaces parallel		0
With PC connection  Integrated breaking resistance  4-quadrant operation possible  Type of converter  Degree of protection (IP)  Degree of protection (NEMA)  Height  Width  Width  Yes  No  No  Vonverter  U converter  12  12  12  12  12  12  12  12  12  1	Number of HW-interfaces other		1
Integrated breaking resistance 4-quadrant operation possible Type of converter Degree of protection (NEMA) Degree of protection (NEMA) Midth  No  Converter U converter 12  12  12  12  12  12  13  14  15  15  15  16  17  18  18  18  18  18  18  18  18  18	With optical interface		No
4-quadrant operation possible  Type of converter  Degree of protection (IP)  Degree of protection (NEMA)  Height  Width  No  Voonverter  U converter  1P65  12  12  12  12  12  13  14  15  15  15  15  16  17  18  18  18  18  18  18  18  18  18	With PC connection		Yes
Type of converter  Degree of protection (IP)  Degree of protection (NEMA)  Height  Width  U converter  IP65  12  12  Mmm  270  Mmm  200  Mmm  Mmm	Integrated breaking resistance		No
Degree of protection (IP)  Degree of protection (NEMA)  Height  Width  IP65  12  20  mm 270  20  Mm 220	4-quadrant operation possible		No
Degree of protection (NEMA)12Heightmm270Widthmm220	Type of converter		U converter
Height mm 270 Width mm 220	Degree of protection (IP)		IP65
Width mm 220	Degree of protection (NEMA)		12
	Height	mm	270
Depth mm 157	Width	mm	220
	Depth	mm	157