Speed controller, 5.6 A, 2.2 kW, Sensor input 4, 230/277 V AC, AS-Interface \$, S-7.4 for 31 modules, HAN Q5, with manual override switch, with braking resistance



Part no. RASP5-5402A31-512R100S1 198576

Product name	Eaton Moeller® series Rapid Link Speed controller
Part no.	RASP5-5402A31-512R100S1
EAN	4015081964512
Product Length/Depth	157 millimetre
Product height	270 millimetre
Product width	220 millimetre
Product weight	3.59 kilogram
Certifications	IEC/EN 61800-5-1 UL 61800-5-1 CE RoHS UL approval
Product Tradename	Rapid Link
Product Type	Speed controller
Product Sub Type	None
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 juncti Diagnostics and reset on device and via AS-Interface 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	Parameterization: drivesConnect Parameterization: drivesConnect mobile (App) Parameterization: Keypad Diagnostics and reset on device and via AS-Interface Parameterization: Fieldbus
Fitted with:	Key switch position AUTO Two sensor inputs through M12 sockets (max. 150 mA) for quick stop and interlocked manual operation Braking resistance Breaking resistance Selector switch (Positions: REV - OFF - FWD) PTC thermistor monitoring Internal DC link PC connection Manual override switch Key switch position OFF/RESET Thermo-click with safe isolation IGBT inverter Control unit Key switch position HAND
Functions	For actuation of motors with mechanical brake 3 fixed speeds Brake chopper with braking resistance for dynamic braking 1 potentiometer speed 4-quadrant operation possible
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	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	AC voltage Center-point earthed star network (TN-S network) 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: According to IEC/EN 60068-2-6 Resistance: 57 Hz, Amplitude transition frequency on acceleration Resistance: 6 Hz, Amplitude 0.15 mm
Altitude	Max. 2000 m Above 1000 m with 1 % performance reduction per 100 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	< 95 %, no condensation In accordance with IEC/EN 50178
Current limitation	0.5 - 5.6 A, motor, main circuit Adjustable, motor, main circuit
Delay time	< 10 ms, Off-delay < 10 ms, On-delay
Efficiency	98 % (η)
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 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
Input current ILN at 150% overload	5.3 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
Mains voltage - min	380 V
Mains voltage tolerance	380 - 480 V (-10 %/+10 %, at 50/60 Hz)
Operating mode	BLDC motors Synchronous reluctance motors U/f control PM and LSPM motors Sensorless vector control (SLV)
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	8.4 A
Rated frequency - max	66 Hz
Rated frequency - min	45 Hz
Rated operational current (Ie)	5.6 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	2.2 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

Cable length Ca	Assigned motor power at 460/480 V, 60 Hz, 3-phase	3 HP
Braking torque Adjustable to 10 % [Viol, DC. Main circuit Braking verlage 20277 V AC -15 % / + 10 %, Actuator for external motor brake Switch-on threshold for the braking transistor Switch-on threshold for the braking transistor Reted conditional short-circuit current (iq) Short-circuit protection (external output circuits) Reted control voltage (Uc) 20277 V AC (external trans 2000 Nc) Communication interface AS-Interface Plug type: HAN QS Commettion Interfaces AS-Interface Plug type: HAN QS Contestion Interfaces As Interface (Interface) Cabel length	Braking current	≤ 0.6 A (max. 6 A for 120 ms), Actuator for external motor brake
Switch-on threshold for the braking transistor Rated conditional short-circuit current [tq] Short-circuit protection (external output circuits) Rated control voltage [Uc] Rated control voltage [Uc] Special control voltage [Uc] Communication interface AS-Interface Connection Communication interface Connection Interfaces Connection Interfaces Connection Control Control (Control Control Cont		≤ 30 % (I/Ie)
Rated conditional short-circuit current (In) Short-circuit protection (external output circuits) Part circuit protection (external output circuits) Part of continuous (Inc.) Rated control voltage (ILc) 24 V DC (-15 % / 20 %, external via AS-Interface® plus) 23/277 V AC (external larake 5000 Hz) Communication interface AS-Interface Plug type: HAN DS Number of slave addiressee: 31 (AS-Interface®) Number of slave addiressee: 31 (AS-Interface®) Seperitication: 57 4 (AS-Interface®) Seperitication: 57 4 (AS-Interface®) Seperitication: 57 4 (AS-Interface®) Seperitication: 57 4 (AS-Interface®) Cale length Cale length Cale length Cale Sin, maximum motor cable	Braking voltage	230/277 V AC -15 % / +10 %, Actuator for external motor brake
Short-circuit protection (external output circuits) Rated control voltage (Uc) 24 V D G L 15 54 / 20 54, external vis AS-Interface® plug) 292/277 V AC (external vis AS-Interface®) Interfaces Connection Plug type: HAN 05 Number of stave addresses: 31 (AS-Interface®) Max. total power consumption from AS-Interface®) power supply unit (30 V: 190 m/s. total power consumption from AS-Interface®) Max. total power consumption from AS-Interface® power supply unit (30 V: 190 m/s. total power consumption from AS-Interface®) Max. total power consumption from AS-Interface® power supply unit (30 V: 190 m/s. total power consumption from AS-Interface®) Max. total power consumption from AS-Interface® power supply unit (30 V: 190 m/s. total power consumption from AS-Interface®) Max. total power consumption from AS-Interface® power supply unit (30 V: 190 m/s. total power consumption from AS-Interface®) Max. total power consumption from AS-Interface® power supply unit (30 V: 190 m/s. total power consumption from AS-Interface®) Max. total power consumption from AS-Interface®) Max. total power consumption from AS-Interface® power supply unit (30 V: 190 m/s. total power consumption from AS-Interface®) Meast the product standard's requirements. 10.2.2 Excertion of the face of insulating materials to normal heat Meast the product standard's requirements. Meast the product standard's requirements. 10.2.2 Interface decrease and creepage distances Meast the product standard's requirements. 10.2.3 Degree of protection against electric shock Does not apply, since the entire switchgear needs to be evaluated. 10.3 Degree of protection against electric shock Does not apply, since the entire switchgear needs to be evaluated. 10.4 Clearances and creepage distances Meast the product standard's requirements. 10.5 Power-frequency electric strength Does not apply, since the entire switchgear needs t	Switch-on threshold for the braking transistor	765 V DC
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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 responsibile 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	10.6 Incorporation of switching devices and components	Does not apply, since the entire switchgear needs to be evaluated.
10.9.2 Power-frequency electric strength 10.9.3 Impulse withstand voltage 10.9.4 Testing of enclosures made of insulating material 10.10 Temperature rise 10.11 Short-circuit rating 10.12 Electromagnetic compatibility 10.13 Mechanical function 10.13 Mechanical function 11.15 Is the panel builder's responsibility. The specifications for the switchgear must be observed. 10.15 The device meets the requirements, provided the information in the instruction	10.7 Internal electrical circuits and connections	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 is responsibility. 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	10.8 Connections for external conductors	Is the panel builder's responsibility.
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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	10.9.3 Impulse withstand voltage	Is the panel builder's responsibility.
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observed. 10.13 Mechanical function The device meets the requirements, provided the information in the instruction	10.11 Short-circuit rating	
	10.12 Electromagnetic compatibility	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
	10.13 Mechanical function	

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 50/60 Hz Mains frequency Number of phases input 3 3 Number of phases output Max. output frequency Hz 500 Max. output voltage ٧ 500

Nominal aduptic current T2N Max. couptur at quadratic load at rated duptur voltage KW 2.2 Max. couptur at quadratic load at rated duptur voltage KW 2.2 Relative symmetric met frequency tolerance KW 10 Relative symmetric met frequency tolerance KW 10 Number of analogue inputs CW 0 Number of digital outputs CW 0 Number of digital outputs CW 24 With control element 4 2 Application in industrial area permitted CW 76 Application in industrial area permitted CW 76 Application in industrial area permitted CW 76 Supporting protocal for CFP0PB No 76 Supporting protocal for TP0PBUS No 76 Supporting protocal for MXN No 76 Supporting protocal for Mathus No 76	
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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 Yes	
4-quadrant operation possible Yes Yes	
4-quadrant operation possible Yes Type of converter U converter	
Degree of protection (IP) Degree of protection (NEMA) 12	
Height mm 270 Width mm 220	
Depth mm 157	