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# Eaton 198952

Eaton Moeller® series Rapid Link - Speed controllers, 2.4 A, 0.75 kW, Sensor input 4, Actuator output 2, PROFINET, HAN Q4/2, with manual override switch, with braking resistance

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<b>PRODUCT NAME</b>	Eaton Rapid Link Speed controller
<b>CATALOG NUMBER</b>	198952
<b>PRODUCT LENGTH/DEPTH</b>	157 mm
<b>PRODUCT HEIGHT</b>	270 mm
<b>PRODUCT WIDTH</b>	220 mm
<b>PRODUCT WEIGHT</b>	3.62 kg

<b>CERTIFICATIONS</b>	CE RoHS UL approval IEC/EN 61800-5-1 UL 61800-5-1
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- 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

## CATALOG NOTES

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

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ECAD MODEL	<a href="#">ETN.RASP5-2420PNT-412R100S1.edz</a> <a href="#">rasp5_v31.stp</a>
MCAD MODEL	<a href="#">ramo5_v31.dwg</a>
□□□□	<a href="#">eaton-powerxl-speed-control-unit-ethernet-profinet-rasp5-il034093zu.pdf</a>
□□□□	<a href="#">eaton-rapid-link-5-brochure-br040014en-en-us.pdf</a>
□□□□	<a href="#">eaton-rapid-link-5-mn034004en-us.pdf</a>
□□	<a href="#">eaton-bus-adapter-rapidlink-speed-controller-dimensions-003.eps</a> <a href="#">eaton-bus-adapter-rapidlink-speed-controller-dimensions-004.eps</a> <a href="#">eaton-bus-adapter-rapidlink-speed-controller-dimensions-002.eps</a> <a href="#">eaton-bus-adapter-rapidlink-speed-controller-dimensions-005.eps</a>

	standard's requirements.
<b>10.3 DEGREE OF PROTECTION OF ASSEMBLIES</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.4 CLEARANCES AND CREEPAGE DISTANCES</b>	Meets the product standard's requirements.
<b>10.5 PROTECTION AGAINST ELECTRIC SHOCK</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.7 INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS</b>	Is the panel builder's responsibility.
<b>10.8 CONNECTIONS FOR EXTERNAL CONDUCTORS</b>	Is the panel builder's responsibility.
<b>10.9.2 POWER-FREQUENCY ELECTRIC STRENGTH</b>	Is the panel builder's responsibility.
<b>10.9.3 IMPULSE WITHSTAND VOLTAGE</b>	Is the panel builder's responsibility.
<b>10.9.4 TESTING OF ENCLOSURES MADE OF INSULATING MATERIAL</b>	Is the panel builder's responsibility.
<b>FITTED WITH:</b>	<p>Key switch position HAND  Control unit  IGBT inverter  Key switch position  OFF/RESET  Selector switch (Positions:  REV - OFF - FWD)  Thermo-click with safe  isolation  Internal DC link  PTC thermistor monitoring</p>
<b>CLIMATIC PROOFING</b>	<p>In accordance with IEC/EN  50178  &lt; 95 %, no condensation</p>
<b>OPERATING MODE</b>	<p>PM and LSPM motors  Synchronous reluctance  motors  U/f control</p>

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

<b>OVERVOLTAGE CATEGORY</b>	III
<b>COMMUNICATION INTERFACE</b>	PROFINET, optional
<b>CONNECTION</b>	Plug type: HAN Q4/2
<b>CONVERTER TYPE</b>	U converter
<b>DEGREE OF PROTECTION</b>	IP65 NEMA 12
<b>ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE</b>	1 HP
<b>HEAT DISSIPATION CAPACITY PDISS</b>	0 W
<b>HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID</b>	0 W
<b>INPUT CURRENT ILN AT 150% OVERLOAD</b>	2.5 A
<b>MAINS CURRENT DISTORTION</b>	120 %
<b>PROTOCOL</b>	PROFINET IO
<b>OVERLOAD CURRENT</b>	At 40 °C For 60 s every 600 s
<b>OVERLOAD CURRENT IL AT 150% OVERLOAD</b>	3.6 A
<b>RATED FREQUENCY - MAX</b>	66 Hz
<b>RATED FREQUENCY - MIN</b>	45 Hz
<b>RATED OPERATIONAL POWER AT 380/400 V, 50 HZ, 3-PHASE</b>	0.75 kW
<b>ASSIGNED MOTOR CURRENT IM AT 400 V, 50 HZ, 150% OVERLOAD</b>	2.4 A
<b>ASSIGNED MOTOR CURRENT IM AT 440 - 480 V, 60 HZ, 150% OVERLOAD</b>	2.4 A
<b>SYSTEM</b>	Center-point earthed star network (TN-S network)
<b>CONFIGURATION TYPE</b>	AC voltage Phase-earthed AC supply systems are not permitted.
<b>BRAKING CURRENT</b>	≤ 0.6 A (max. 6 A for 120 ms), Actuator for external motor brake
<b>ELECTROMAGNETIC COMPATIBILITY</b>	1st and 2nd environments (according to EN 61800-3)
<b>CURRENT LIMITATION</b>	0.2 - 2.4 A, motor, main circuit

	Adjustable, motor, main circuit
<b>BRAKING TORQUE</b>	Adjustable to 100 % (I/I <sub>e</sub> ), DC - Main circuit
<b>CABLE LENGTH</b>	<p>C3 ≤ 25 m, maximum motor cable length</p> <p>C2 ≤ 5 m, maximum motor cable length</p> <p>C1 ≤ 1 m, maximum motor cable length</p>
<b>FUNCTIONS</b>	<p>4-quadrant operation possible</p> <p>Brake chopper with braking resistance for dynamic braking</p> <p>1 potentiometer speed</p> <p>3 fixed speeds</p>
<b>DELAY TIME</b>	<p>&lt; 10 ms, Off-delay</p> <p>&lt; 10 ms, On-delay</p>
<b>NUMBER OF INPUTS (ANALOG)</b>	0
<b>NUMBER OF INPUTS (DIGITAL)</b>	4
<b>RADIO INTERFERENCE CLASS</b>	<p>C2, C3: depending on the motor cable length, the connected load, and ambient conditions.</p> <p>External radio interference suppression filters (optional) may be necessary.</p> <p>C1: for conducted emissions only</p>
<b>NUMBER OF OUTPUTS (DIGITAL)</b>	2
<b>STARTING CURRENT - MAX</b>	<p>200 %, I<sub>H</sub>, max. starting current (High Overload), For 2 seconds every 20 seconds, Power section</p>
<b>NUMBER OF PHASES (INPUT)</b>	3
<b>NUMBER OF PHASES (OUTPUT)</b>	3
<b>POWER CONSUMPTION</b>	32 W
<b>INTERFACES</b>	<p>Max. total power consumption from AS-Interface® power supply unit (30 V): 250 mA</p> <p>Specification: S-7.4 (AS-Interface®)</p> <p>Number of slave addresses: 31 (AS-Interface®)</p>
<b>EFFICIENCY</b>	97 % (η)

<b>RATED CONTROL VOLTAGE (UC)</b>	24 V DC (-15 %/+20 %, external via AS-Interface® plug)
<b>SUPPLY FREQUENCY</b>	50/60 Hz
<b>LEAKAGE CURRENT AT GROUND IPE - MAX</b>	3.5 mA
<b>MAINS VOLTAGE - MIN</b>	380 V
<b>NOMINAL OUTPUT CURRENT I<sub>2N</sub></b>	2.4 A
<b>NUMBER OF HW-INTERFACES (INDUSTRIAL ETHERNET)</b>	0
<b>NUMBER OF HW-INTERFACES (OTHER)</b>	0
<b>NUMBER OF HW-INTERFACES (PARALLEL)</b>	0
<b>NUMBER OF HW-INTERFACES (RS-232)</b>	0
<b>NUMBER OF HW-INTERFACES (RS-422)</b>	0
<b>NUMBER OF HW-INTERFACES (RS-485)</b>	1
<b>NUMBER OF HW-INTERFACES (SERIAL TTY)</b>	0
<b>NUMBER OF HW-INTERFACES (USB)</b>	0
<b>NUMBER OF INTERFACES (PROFINET)</b>	2
<b>NUMBER OF OUTPUTS (ANALOG)</b>	0
<b>OUTPUT AT LINEAR LOAD AT RATED OUTPUT</b>	0.75 kW
<b>VOLTAGE - MAX</b>	
<b>OUTPUT AT QUADRATIC LOAD AT RATED OUTPUT</b>	0.75 kW
<b>VOLTAGE - MAX</b>	
<b>OUTPUT FREQUENCY - MAX</b>	500 Hz
<b>OUTPUT FREQUENCY - MIN</b>	0 Hz
<b>SHORT-CIRCUIT PROTECTION (EXTERNAL OUTPUT CIRCUITS)</b>	Type 1 coordination via the power bus' feeder unit, Main circuit
<b>SHOCK RESISTANCE</b>	15 g, Mechanical, According to IEC/EN 60068-2-27, 11 ms, Half-sinusoidal shock 11 ms, 1000 shocks per shaft
<b>SWITCHING FREQUENCY</b>	8 kHz, 4 - 32 kHz adjustable, fPWM, Power section, Main circuit

<b>RATED OPERATIONAL CURRENT (IE)</b>	2.4 A at 150% overload (at an operating frequency of 8 kHz and an ambient air temperature of +40 °C)
<b>RATED OPERATIONAL VOLTAGE</b>	400 V AC, 3-phase 480 V AC, 3-phase
<b>VIBRATION</b>	Resistance: 10 - 150 Hz, Oscillation frequency Resistance: 6 Hz, Amplitude 0.15 mm Resistance: 57 Hz, Amplitude transition frequency on acceleration Resistance: According to IEC/EN 60068-2-6
<b>HEAT DISSIPATION AT CURRENT/SPEED</b>	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

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