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## Eaton 198549

Eaton Moeller® series Rapid Link - Speed controller, 2.4 A, 0.75 kW, Sensor input 4, 230/277 V AC, AS-Interface®, S-7.4 for 31 modules, HAN Q5, with manual override switch

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| <b>PRODUCT NAME</b>         | Eaton Rapid Link Speed controller                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>CATALOG NUMBER</b>       | 198549                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>PRODUCT LENGTH/DEPTH</b> | 157 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>PRODUCT HEIGHT</b>       | 270 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>PRODUCT WIDTH</b>        | 220 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>PRODUCT WEIGHT</b>       | 3.58 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>CERTIFICATIONS</b>       | RoHS<br>CE<br>IEC/EN 61800-5-1<br>UL 61800-5-1<br>UL approval                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>CATALOG NOTES</b>        | <ul style="list-style-type: none"><li>• 3 fixed speeds and 1 potentiometer speed</li><li>• can be switched over from U/f to (vector) speed control</li><li>• Connection of supply voltage via adapter cable on round or flexible busbar junction</li><li>• Diagnostics and reset on device and via AS-Interface</li><li>• integrated PTC thermistor monitoring and Thermoclick with safe isolation</li><li>• optional: 4 sensor inputs with M12-Y adapter for switchover to creep</li></ul> |

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: Fieldbus

Parameterization: Keypad  
Diagnostics and reset on  
device and via AS-Interface

Parameterization:  
drivesConnect mobile  
(App)

**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**

Does not apply, since the

**DECLARATIONS OF  
CONFORMITY**

[eaton-speed-controller-  
declaration-of-conformity-  
uk251107en.pdf](#)

**ECAD MODEL**

[ETN.RASP5-2402A31-  
512R000S1.edz](#)

**MCAD MODEL**

[rasp5\\_v20.stp](#)  
[ramo5\\_v20.dwg](#)

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[eaton-powerxl-speed-  
control-unit-as-interface-  
rasp5-il034085zu.pdf](#)

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[eaton-rapid-link-5-  
brochure-br040014en-en-  
us.pdf](#)

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[eaton-rapid-link-5-  
mn034004en-us.pdf](#)

[eaton-bus-adapter-  
rapidlink-speed-controller-  
dimensions-002.eps](#)

[eaton-bus-adapter-  
rapidlink-speed-controller-  
dimensions-005.eps](#)

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[eaton-bus-adapter-  
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dimensions-003.eps](#)

[eaton-bus-adapter-  
rapidlink-speed-controller-  
dimensions-004.eps](#)

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| <b>IMPACT</b>                                                   | entire switchgear needs to be evaluated.                                                                                                                                                                                  |
| <b>10.2.7 INSCRIPTIONS</b>                                      | Meets the product 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.                                                                                                                                                                                    |
|                                                                 | Key switch position AUTO<br>Internal DC link<br>Two sensor inputs through M12 sockets (max. 150 mA) for quick stop and interlocked manual operation<br>PTC thermistor monitoring                                          |
| <b>FITTED WITH:</b>                                             | Control unit<br>Key switch position OFF/RESET<br>Manual override switch<br>IGBT inverter<br>Selector switch (Positions: REV - OFF - FWD)<br>Thermo-click with safe isolation<br>Key switch position HAND<br>PC connection |
| <b>CLIMATIC PROOFING</b>                                        | In accordance with IEC/EN 50178<br>< 95 %, no condensation                                                                                                                                                                |
| <b>OPERATING MODE</b>                                           | U/f control<br>Sensorless vector control (SLV)                                                                                                                                                                            |

|                                                              |                                                                                 |
|--------------------------------------------------------------|---------------------------------------------------------------------------------|
|                                                              | Synchronous reluctance motors<br>BLDC motors<br>PM and LSPM motors              |
| <b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP)</b>                | 2000 V                                                                          |
| <b>ALTITUDE</b>                                              | Above 1000 m with 1 % performance reduction per 100 m<br>Max. 2000 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>MOUNTING POSITION</b>                                     | Vertical                                                                        |
| <b>RATED CONDITIONAL SHORT-CIRCUIT CURRENT (IQ)</b>          | 10 kA                                                                           |
| <b>OVERVOLTAGE CATEGORY</b>                                  | III                                                                             |

|                                                                       |                                                                                                                      |
|-----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>COMMUNICATION INTERFACE</b>                                        | AS-Interface                                                                                                         |
| <b>CONNECTION</b>                                                     | Plug type: HAN Q5                                                                                                    |
| <b>CONVERTER TYPE</b>                                                 | U converter                                                                                                          |
| <b>DEGREE OF PROTECTION</b>                                           | NEMA 12<br>IP65                                                                                                      |
| <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>                                                       | ASI<br>AS-Interface profile cable:<br>S-7.4 for 31 modules                                                           |
| <b>OVERLOAD CURRENT</b>                                               | At 40 °C<br>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 CONFIGURATION TYPE</b>                                      | Center-point earthed star network (TN-S network)<br>Phase-earthed AC supply systems are not permitted.<br>AC voltage |
| <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                                                                                     |

|                                    |                                                                                                                                                                                                              |
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|                                    | Adjustable, motor, main circuit                                                                                                                                                                              |
| <b>BRAKING TORQUE</b>              | $\leq 30\%$ (I/Ie)<br>Adjustable to 100 % (I/Ie),<br>DC - Main circuit                                                                                                                                       |
| <b>BRAKING VOLTAGE</b>             | 230/277 V AC -15 % / +10 %, Actuator for external motor brake                                                                                                                                                |
| <b>CABLE LENGTH</b>                | C2 $\leq 5$ m, maximum motor cable length<br>C3 $\leq 25$ m, maximum motor cable length<br>C1 $\leq 1$ m, maximum motor cable length                                                                         |
| <b>FUNCTIONS</b>                   | For actuation of motors with mechanical brake<br>1 potentiometer speed<br>3 fixed speeds                                                                                                                     |
| <b>DELAY TIME</b>                  | < 10 ms, Off-delay<br>< 10 ms, On-delay                                                                                                                                                                      |
| <b>NUMBER OF INPUTS (ANALOG)</b>   | 0                                                                                                                                                                                                            |
| <b>NUMBER OF INPUTS (DIGITAL)</b>  | 4                                                                                                                                                                                                            |
| <b>RADIO INTERFERENCE CLASS</b>    | C2, C3: depending on the motor cable length, the connected load, and ambient conditions.<br>External radio interference suppression filters (optional) may be necessary.<br>C1: for conducted emissions only |
| <b>NUMBER OF OUTPUTS (DIGITAL)</b> | 0                                                                                                                                                                                                            |
| <b>STARTING CURRENT - MAX</b>      | 200 %, IH, max. starting current (High Overload),<br>For 2 seconds every 20 seconds, Power section                                                                                                           |
| <b>NUMBER OF PHASES (INPUT)</b>    | 3                                                                                                                                                                                                            |
| <b>NUMBER OF PHASES (OUTPUT)</b>   | 3                                                                                                                                                                                                            |
| <b>POWER CONSUMPTION</b>           | 32 W                                                                                                                                                                                                         |
| <b>INTERFACES</b>                  | Number of slave addresses: 31 (AS-Interface®)<br>Max. total power consumption from AS-Interface® power supply unit (30 V): 190 mA<br>Specification: S-7.4 (AS-Interface®)                                    |

|                                                               |                                                                                                             |
|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| <b>EFFICIENCY</b>                                             | 97 % ( $\eta$ )                                                                                             |
| <b>RATED CONTROL VOLTAGE (UC)</b>                             | 24 V DC (-15 %/+20 %, external via AS-Interface® plug)<br>230/277 V AC (external brake 50/60 Hz)            |
| <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 I2N</b>                             | 2.4 A                                                                                                       |
| <b>NUMBER OF HW-INTERFACES (INDUSTRIAL ETHERNET)</b>          | 0                                                                                                           |
| <b>NUMBER OF HW-INTERFACES (OTHER)</b>                        | 1                                                                                                           |
| <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>                        | 0                                                                                                           |
| <b>NUMBER OF OUTPUTS (ANALOG)</b>                             | 0                                                                                                           |
| <b>OUTPUT AT LINEAR LOAD AT RATED OUTPUT VOLTAGE - MAX</b>    | 0.75 kW                                                                                                     |
| <b>OUTPUT AT QUADRATIC LOAD AT RATED OUTPUT VOLTAGE - MAX</b> | 0.75 kW                                                                                                     |
| <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<br>adjustable, fPWM, Power<br>section, Main circuit                                                                                                                                                                                                                                                                        |
| <b>RATED OPERATIONAL<br/>CURRENT (IE)</b>    | 2.4 A at 150% overload (at<br>an operating frequency of<br>8 kHz and an ambient air<br>temperature of +40 °C)                                                                                                                                                                                                                                |
| <b>RATED OPERATIONAL<br/>VOLTAGE</b>         | 480 V AC, 3-phase<br>400 V AC, 3-phase                                                                                                                                                                                                                                                                                                       |
| <b>VIBRATION</b>                             | Resistance: 6 Hz,<br>Amplitude 0.15 mm<br>Resistance: 10 - 150 Hz,<br>Oscillation frequency<br>Resistance: 57 Hz,<br>Amplitude transition<br>frequency on acceleration<br>Resistance: According to<br>IEC/EN 60068-2-6                                                                                                                       |
| <b>HEAT DISSIPATION AT<br/>CURRENT/SPEED</b> | 27.5 W at 50% current and<br>90% speed<br>31.8 W at 100% current<br>and 90% speed<br>33.5 W at 25% current and<br>50% speed<br>34.6 W at 50% current and<br>50% speed<br>35.1 W at 25% current and<br>0% speed<br>36.6 W at 100% current<br>and 50% speed<br>36.8 W at 50% current and<br>0% speed<br>40.7 W at 100% current<br>and 0% speed |

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| <b>PROJECT NAME:</b>   |
| <b>PROJECT NUMBER:</b> |
| <b>PREPARED BY:</b>    |
| □□:                    |