Specifications

# Eaton 198820

## Catalog Number: 198820

Eaton Moeller® series Rapid Link - Speed controllers, 5.6 A, 2.2 kW, Sensor input 4, AS-Interface®, S-7.4 for 31 modules, HAN Q4/2, with manual override switch, with braking resistance



## General specifications

**Product Name**
Eaton Moeller® series Rapid Link Speed controller

**Catalog Number**
198820

**EAN**
4015081968787

**Product Length/Depth**
157 mm

**Product Height**
270 mm

**Product Width**
220 mm

**Product Weight**
3.59 kg

**Certifications**
UL 61800-5-1
IEC/EN 61800-5-1
CE
RoHS
UL approval

**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 device and via AS-Interface

Powering Business Worldwide

## Product specifications

### Features

Parameterization: drivesConnect mobile (App)

Parameterization: drivesConnect

Parameterization: Fieldbus

Diagnostics and reset on device and via AS-Interface

Parameterization: Keypad

### 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.

## Resources

### Application notes

Generation change from RA-SP to RASP 4.0

Configuration to Rockwell PLC for Rapid Link

Generation Change RA-SP to RASP5

Connecting drives to generator supplies

Generation Change RASP4 to RASP5

Electromagnetic compatibility (EMC)

Generation change from RA-MO to RAMO 4.0

Generation change RAMO4 to RAMO5

### Brochures

eaton-rapid-link-5-brochure-br040014en-en-us.pdf

eaton-powerxl-variable-frequency-drives-material-handling-brochure-br040017en-en-us.pdf

DA-SW-drivesConnect

### Catalogs

eaton-rapid-link-5-drive-system-catalog-ca040002en-en-us

Product Range Catalog Drives Engineering

### Declarations of conformity

DA-DC-00004508.pdf

DA-DC-00004184.pdf

DA-DC-00003964.pdf

DA-DC-00004514.pdf

### Drawings

eaton-bus-adapter-rapidlink-speed-controller-dimensions-003.eps

eaton-bus-adapter-rapidlink-speed-controller-dimensions-004.eps

eaton-bus-adapter-rapidlink-speed-controller-dimensions-002.eps

eaton-bus-adapter-rapidlink-speed-controller-dimensions-005.eps

### eCAD model

ETN.RASP5-5400A31-412R100S1.edz

### Installation instructions

IL034085ZU

### Installation videos

Rapid Link 5

### Manuals and user guides

MN040003_EN

MN034004EN

### 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 HAND
Braking resistance
Key switch position AUTO
Two sensor inputs through M12 sockets (max. 150 mA) for quick stop and interlocked manual operation
Control unit
Manual override switch
Thermo-click with safe isolation
PTC thermistor monitoring
Internal DC link
PC connection
Key switch position OFF/RESET
Selector switch (Positions: REV - OFF - FWD)
Breaking resistance
IGBT inverter

### Climatic proofing

< 95 %, no condensation
In accordance with IEC/EN 50178

### Operating mode

### mCAD model

rasp5_v24.stp

ramo5_v24.dwg

### Product notifications

eaton-drives-ecodesign-directive-mz040046en-en.pdf

PM and LSPM motors

U/f control

Synchronous reluctance motors

BLDC motors

Sensorless vector control (SLV)

### Rated impulse withstand voltage (Uimp)

2000 V

### Altitude

Max. 2000 m

Above 1000 m with 1 % performance reduction per 100 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

### 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 (Iq)

10 kA

### Overvoltage category

III

### Communication interface

AS-Interface

### Connection

Plug type: HAN Q4/2

### Converter type

U converter

### Degree of protection

IP65
NEMA 12

### Assigned motor power at 115/120 V, 60 Hz, 1-phase

3 HP

### Assigned motor power at 230/240 V, 60 Hz, 1-phase

3 HP

### Assigned motor power at 460/480 V, 60 Hz

3 HP

### 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

AS-Interface profile cable: S-7.4 for 31 modules

ASI

### 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 power at 380/400 V, 50 Hz, 3-phase

2.2 kW

### System configuration type

AC voltage

Phase-earthed AC supply systems are not permitted.

Center-point earthed star network (TN-S network)

### 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

### Cable length

C2 ≤ 5 m, maximum motor cable length

C1 ≤ 1 m, maximum motor cable length

C3 ≤ 25 m, maximum motor cable length

### Functions

3 fixed speeds

1 potentiometer speed

4-quadrant operation possible

Brake chopper with braking resistance for dynamic braking

### Delay time

< 10 ms, Off-delay

< 10 ms, On-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)

0

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

Max. total power consumption from AS-Interface® power supply unit (30 V): 190 mA
Specification: S-7.4 (AS-Interface®)
Number of slave addresses: 31 (AS-Interface®)

Efficiency

98 % ( η)

Rated control voltage (Uc)

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)

1

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)

0

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

400 V AC, 3-phase

480 V AC, 3-phase

### Vibration

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

### 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

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