

Eaton 198583

Catalog Number: 198583

Eaton Moeller® series Rapid Link - Speed controller, 8.5 A, 4 kW, Sensor input 4, 400/480 V AC, AS-Interface®, S-7.4 for 31 modules, HAN Q5, with braking resistance, with fan

General specifications

Product Name	Catalog Number
Eaton Moeller® series Rapid Link Speed controller	198583
	EAN
	4015081964581
Product Length/Depth	Product Height
195 mm	270 mm
Product Width	Product Weight
220 mm	3.61 kg
Certifications	Catalog Notes
UL 61800-5-1	3 fixed speeds and 1 potentiometer speed
CE	can be switched over from U/f to (vector) speed control
UL approval	Connection of supply voltage via adapter cable on round or flexible busbar junction
RoHS	Diagnostics and reset on device and via AS-Interface
IEC/EN 61800-5-1	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

Product specifications

Mains voltage - max

480 V

10.11 Short-circuit rating

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

Rated operational voltage

400 V AC, 3-phase

480 V AC, 3-phase

10.4 Clearances and creepage distances

Meets the product standard's requirements.

Output at quadratic load at rated output voltage - max

4 kW

Output voltage - max

500 V

10.2.3.1 Verification of thermal stability of enclosures

Meets the product standard's requirements.

Ambient storage temperature - min

-40 °C

Mains voltage - min

380 V

Fitted with:

Selector switch (Positions: REV - OFF - FWD)

Fan

Internal DC link

Braking resistance

Two sensor inputs through M12 sockets (max. 150 mA) for quick stop and interlocked manual operation

PTC thermistor monitoring

IGBT inverter

PC connection

Key switch position OFF/RESET

Braking resistance

Control unit

Key switch position AUTO

Key switch position HAND

Thermo-click with safe isolation

Output frequency - min

0 Hz

Starting current - max

Resources

3D models

rasp5_v21.dwg

DA-CD-ramo5_v21

DA-CS-ramo5_v21

rasp5_v21.stp

Application notes

Configuration to Rockwell PLC for Rapid Link

Generation change from RA-MO to RAMO 4.0

Generation change RAMO4 to RAMO5

Generation Change RASP4 to RASP5

Generation change from RA-SP to RASP 4.0

Generation Change RA-SP to RASP5

Brochures

Rapid Link 5 - brochure

DA-SW-Driver DX-CBL-PC-3M0

DA-SW-drivesConnect - installation help

DA-SW-drivesConnect - Installationshilfe

DA-SW-USB Driver PC Cable DX-CBL-PC-1M5

DA-SW-drivesConnect

DA-SW-USB Driver DX-COM-STICK3-KIT

Material handling applications - airports, warehouses and intra-logistics

Drawings

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

2190DIM-24

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

2190DIM-90

2190DIM-14

2190DIM-88

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

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

User guides

IL034085ZU

200 %, IH, max. starting current (High Overload), For 2 seconds every 20 seconds, Power section

Rated conditional short-circuit current (I_q)

10 kA

Ambient operating temperature - max

40 °C

Communication interface

AS-Interface

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

5 HP

Output frequency - max

500 Hz

Switching frequency

8 kHz, 4 - 32 kHz adjustable, fPWM, Power section, Main circuit

Features

Parameterization: Fieldbus

Parameterization: drivesConnect

Diagnostics and reset on device and via AS-Interface

Parameterization: drivesConnect mobile (App)

Parameterization: Keypad

Internal, temperature-controlled Fan

Ambient operating temperature - min

-10 °C

Braking current

≤ 0.6 A (max. 6 A for 120 ms), Actuator for external motor brake

Number of HW-interfaces (serial TTY)

0

10.6 Incorporation of switching devices and components

Does not apply, since the entire switchgear needs to be evaluated.

Nominal output current I_{2N}

8.5 A

10.2.6 Mechanical impact

Does not apply, since the entire switchgear needs to be evaluated.

10.3 Degree of protection of assemblies

Does not apply, since the entire switchgear needs to be evaluated.

Product category

Speed controller

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.

Heat dissipation capacity P_{diss}

0 W

Rated control voltage (U_c)

24 V DC (-15 %/+20 %, external via AS-Interface® plug)

400/480 V AC (external brake 50/60 Hz)

Assigned motor power at 460/480 V, 60 Hz, 3-phase

5 HP

Number of HW-interfaces (RS-422)

0

Mains current distortion

120 %

Protocol

ASI

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

10.9.2 Power-frequency electric strength

Is the panel builder's responsibility.

Overvoltage category

III

Degree of protection

IP65

NEMA 12

Ambient storage temperature - max

70 °C

Rated impulse withstand voltage (U_{imp})

2000 V

Connection

Plug type: HAN Q5

Overload current

At 40 °C

For 60 s every 600 s

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

Output at linear load at rated output voltage - max

4 kW

Mains voltage tolerance

380 - 480 V (-10 %/+10 %, at 50/60 Hz)

Leakage current at ground IPE - max

3.5 mA

Converter type

U converter

10.2.2 Corrosion resistance

Meets the product standard's requirements.

Supply frequency

50/60 Hz

10.2.4 Resistance to ultra-violet (UV) radiation

Meets the product standard's requirements.

10.2.7 Inscriptions

Meets the product standard's requirements.

Shock resistance

15 g, Mechanical, According to IEC/EN 60068-2-27, 11 ms, Half-sinusoidal shock 11 ms, 1000 shocks per shaft

Application in domestic and commercial area permitted

Yes

Number of inputs (analog)

0

Number of phases (output)

3

10.12 Electromagnetic compatibility

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.2.5 Lifting

Does not apply, since the entire switchgear needs to be evaluated.

Number of HW-interfaces (RS-485)

1

Number of HW-interfaces (industrial ethernet)

0

Efficiency

98 % (η)

System configuration type

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

Phase-earthed AC supply systems are not permitted.

AC voltage

10.8 Connections for external conductors

Is the panel builder's responsibility.

Switch-on threshold for the braking transistor

765 VDC

Protection

Finger and back-of-hand proof, Protection against direct contact
(BGV A3, VBG4)

Braking voltage

400/480 V AC -15 % / +10 %, Actuator for external motor brake

Application in industrial area permitted

Yes

Climatic proofing

In accordance with IEC/EN 50178

< 95 %, no condensation

10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

Overload current I_L at 150% overload

12.7 A

Input current I_{LN} at 150% overload

7.8 A

Number of HW-interfaces (RS-232)

0

Number of inputs (digital)

4

Current limitation

0.8 - 8.5 A, motor, main circuit

Adjustable, motor, main circuit

Cable length

$C1 \leq 1$ m, maximum motor cable length

$C3 \leq 25$ m, maximum motor cable length

$C2 \leq 5$ m, maximum motor cable length

10.5 Protection against electric shock

Does not apply, since the entire switchgear needs to be

evaluated.

Mounting position

Vertical

Mains switch-on frequency

Maximum of one time every 60 seconds

10.13 Mechanical function

The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

10.9.4 Testing of enclosures made of insulating material

Is the panel builder's responsibility.

Heat dissipation per pole, current-dependent P_{vid}

0 W

Electromagnetic compatibility

1st and 2nd environments (according to EN 61800-3)

Resolution

0.1 Hz (Frequency resolution, setpoint value)

Assigned motor power at 460/480 V, 60 Hz

5 HP

Relative symmetric net voltage tolerance

10 %

Rated operational current (I_e)

8.5 A at 150% overload (at an operating frequency of 8 kHz and an ambient air temperature of +40 °C)

Number of outputs (analog)

0

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

4 kW

Number of HW-interfaces (USB)

0

Operating mode

Sensorless vector control (SLV)

Synchronous reluctance motors

PM and LSPM motors

U/f control

BLDC motors

Rated frequency - min

45 Hz

Delay time

< 10 ms, On-delay

< 10 ms, Off-delay

Number of outputs (digital)

0

Power consumption

95 W

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.

Number of HW-interfaces (other)

1

Rated frequency - max

66 Hz

Vibration

Resistance: 6 Hz, Amplitude 0.15 mm

Resistance: 57 Hz, Amplitude transition frequency on acceleration

Resistance: According to IEC/EN 60068-2-6

Resistance: 10 - 150 Hz, Oscillation frequency

Short-circuit protection (external output circuits)

Type 1 coordination via the power bus' feeder unit, Main circuit

10.7 Internal electrical circuits and connections

Is the panel builder's responsibility.

Braking torque

Adjustable to 100 % (I/I_e), DC - Main circuit

≤ 30 % (I/I_e)

Relative symmetric net frequency tolerance

10 %

10.10 Temperature rise

The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.

Number of HW-interfaces (parallel)

0

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

5 HP

Interfaces

Max. total power consumption from AS-Interface® power supply

unit (30 V): 190 mA

Number of slave addresses: 31 (AS-Interface®)

Specification: S-7.4 (AS-Interface®)

Number of phases (input)

3

Heat dissipation at current/speed

51.6 W at 25% current and 0% speed

53.8 W at 25% current and 50% speed

60.9 W at 50% current and 0% speed

64 W at 50% current and 90% speed

65.4 W at 50% current and 50% speed

85.1 W at 100% current and 0% speed

94 W at 100% current and 50% speed

95.3 W at 100% current and 90% speed

Number of interfaces (PROFINET)

0

Altitude

Max. 2000 m

Above 1000 m with 1 % performance reduction per 100 m



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