



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 braking resistance



Part no. RASP5-2202A31-5120100S1
 Catalog No. 198546

Delivery program

| | | | |
|---|----------|--------|---|
| Product range | | | Speed controller |
| Rated operational voltage | U_e | | 400 V AC, 3-phase 480 V AC, 3-phase |
| Output voltage with V_e | U_2 | | 0 - U_{LN} |
| Mains voltage (50/60Hz) | U_{LN} | V | 380 (-15%) - 480 (+10%) |
| At 150% overload | I_e | A | 2.4 |
| assigned motor rating P | | | |
| Note | | | at 400 V, 50 Hz |
| 150 % Overload | P | kW | 0.75 |
| Note | | | at 480 V, 60 Hz |
| 150 % Overload | P | HP | 1 |
| Note | | | for normal internally and externally ventilated 4 pole, three-phase asynchronous motors with 1500 rpm^{-1} at 50 Hz or 1800 min^{-1} at 60 Hz |
| Description | | | integrated PTC thermistor monitoring and Thermoclick with safe isolation Two sensor inputs through M12 sockets (max. 150 mA) for quick stop and interlocked manual operation optional: 4 sensor inputs with M12-Y adapter for switchover to creep speed Connection of supply voltage via adapter cable on round or flexible busbar junction Diagnostics and reset on device and via AS-Interface with AUTO - OFF/RESET - HAND key switches Four fixed speeds can be switched over from U/f to (vector) speed control with selector switch REV - OFF - FWD optional: Faster stop if external 24 V fails |
| Sensor input | | Number | 4 |
| Control voltage external brake (50/60 Hz) | | V | 230/277 V AC |
| Interface/field bus (built-in) | | | AS-Interface® |
| AS-Interface profile cable | | | S-7.4 for 31 modules |
| Plug arrangement | | | HAN Q5 |
| Braking resistance | | | with braking resistance |
| Parameterization | | | Keypad Fieldbus drivesConnect drivesConnect mobile (App) |
| Instructions for actuation of motors with mechanical brake integrated brake chopper with braking resistance for dynamic braking | | | |

Technical data

General

| | | | |
|------------------------------------|-----------|----|---|
| Standards | | | IEC/EN 61800-5-1 UL 61800-5-1 Guideline 2011/65/EU (RoHS) CE approval UL approval |
| Climatic proofing | ρ_w | % | < 95%, non-condensing IEC/EN 50178 |
| Ambient temperature | | | |
| Operating ambient temperature min. | | °C | -10 |
| Operating ambient temperature max. | | °C | +40 |
| | | | -10 – +55 with derating |
| Storage | θ | °C | -40 - +70 |
| Overvoltage category | | | III |
| Rated impulse withstand voltage | U_{imp} | kV | 2 |
| Radio interference level | | | |

| | | | |
|--------------------------------|---|---|--|
| Radio interference class (EMC) | | | C1 (for conducted emissions only), C2, C3, depending on the motor cable length, the connected load, and ambient conditions. |
| Environment (EMC) | | | 1st and 2nd environments as per EN 61800-3 |
| maximum motor cable length | l | m | C1 ≤ 1 m C2 ≤ 5 m C3 ≤ 25 m |
| Mechanical shock resistance | | g | 1000 shocks per shaft, semi-sinusoidal 15 g/11 ms IEC/EN 60068-2-27 |
| Vibration | | | Oscillation frequency: 10 - 150 Hz Amplitude 0.15 mm: 6 Hz Amplitude transition frequency on acceleration: 57 Hz IEC/EN 60068-2-6 |
| Mounting position | | | Vertical |
| Altitude | | m | 0 - 1000 m above sea level above 1000 m with 1 % performance reduction per 100 m max. 2000 m |
| Degree of Protection | | | IP65 NEMA12 |

Main circuit

| | | | |
|---|------------|-----|--|
| Supply | | | |
| Rated operational voltage | U_e | | 400 V AC, 3-phase 480 V AC, 3-phase |
| Mains voltage (50/60Hz) | U_{LN} | V | 380 (-15%) - 480 (+10%) |
| Input current (150% overload) | I_{LN} | A | 2.5 |
| System configuration | | | AC voltage Center-point earthed star network (TN-S network) Phase-earthed AC supply systems are not permitted. |
| Supply frequency | f_{LN} | Hz | 50/60 |
| Frequency range | f_{LN} | Hz | 45–66 (± 0%) |
| Mains switch-on frequency | | | Maximum of one time every 60 seconds |
| Mains current distortion | THD | % | < 120 |
| Rated conditional short-circuit current | I_q | kA | < 10 |
| Short-circuit protection for output circuits, external | | | Type 1 coordination via the power bus' feeder unit |
| Power section | | | |
| Function | | | Variable frequency drive with internal DC link and IGBT inverter |
| On-delay | t_{ON} | ms | < 10 |
| Off-delay | t_{OFF} | ms | < 10 |
| Overload current (150% overload) | I_L | A | 3.6 |
| Note regarding overload current | | | For 60 s every 600 s at 40 °C |
| max. starting current (High Overload) | I_H | % | 200 |
| Note about max. starting current | | | for 2 seconds every 20 seconds at 40 °C |
| Output voltage with V_e | U_2 | | 0 - U_{LN} |
| Output Frequency | f_2 | Hz | 0 - 50/60 (max. 500) |
| Switching frequency | f_{PWM} | kHz | 8 adjustable 4 - 32 |
| Operation Mode | | | U/f control sensorless vector control (SLV) PM and LSPM motors Synchronous reluctance motors BLDC motors |
| Frequency resolution (setpoint value) | Δf | Hz | 0.1 |
| Rated operational current | | | |
| At 150% overload | I_e | A | 2.4 |
| Note | | | Rated operational current at a switching frequency of 8 kHz and an ambient air temperature of +40 °C |
| Motor current limit | l | A | 0,2 - 2,4 adjustable |
| Power loss | | | |
| Heat dissipation at rated operational current $I_e = 150\%$ | P_V | W | 32 |
| Efficiency | η | % | 97 |
| Maximum leakage current to ground (PE) without motor | I_{PE} | mA | 3.5 |
| Fitted with | | | without manual override switch |

| | | | |
|--|----------|---------|---|
| | | | without fan with braking resistance |
| Motor feeder | | | |
| Note | | | for normal internally and externally ventilated 4 pole, three-phase asynchronous motors with 1500 rpm^{-1} at 50 Hz or 1800 min^{-1} at 60 Hz |
| Note | | | at 400 V, 50 Hz |
| 150 % Overload | P | kW | 0.75 |
| Note | | | at 480 V, 60 Hz |
| 150 % Overload | P | HP | 1 |
| Actuator for external motor brake | | | |
| Braking voltage | U | V | 230/277 V AC -15% / +10% |
| Braking current | I | A | $\leq 0.6 \text{ A}$ (max. 6 A for 120 ms) |
| Braking function | | | |
| Braking torque | % | I/I_e | ≤ 30 |
| Switch-on threshold for the braking transistor | U_{DC} | V | 765 V DC |
| DC braking | % | I/I_e | ≤ 100 , adjustable |

Control section

| | | | |
|--------------------------------|-------|---|---|
| External control voltage | U_c | V | 24 V DC - 15 % / + 20 % via AS-Interface® plug |
| Interface/field bus (built-in) | | | AS-Interface® |
| AS-Interface® | | | max. total power consumption from AS-Interface® power supply unit (30 V): 190 mA Specification: S-7.4 Number of slave addresses: 31 |

Design verification as per IEC/EN 61439

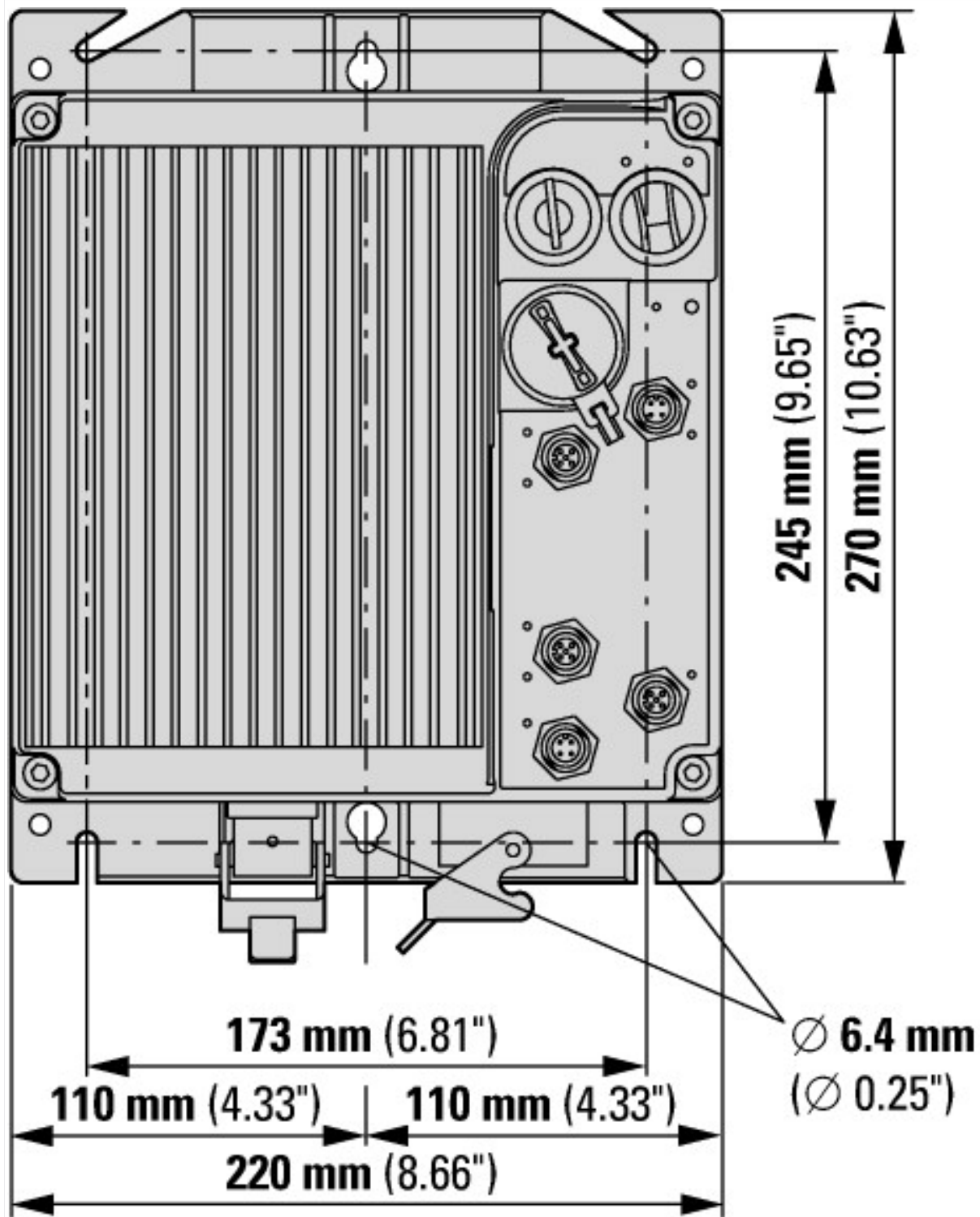
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|--|--|----|-----|
| Technical data for design verification | | | |
| Operating ambient temperature min. | | °C | -10 |
| Operating ambient temperature max. | | °C | 40 |

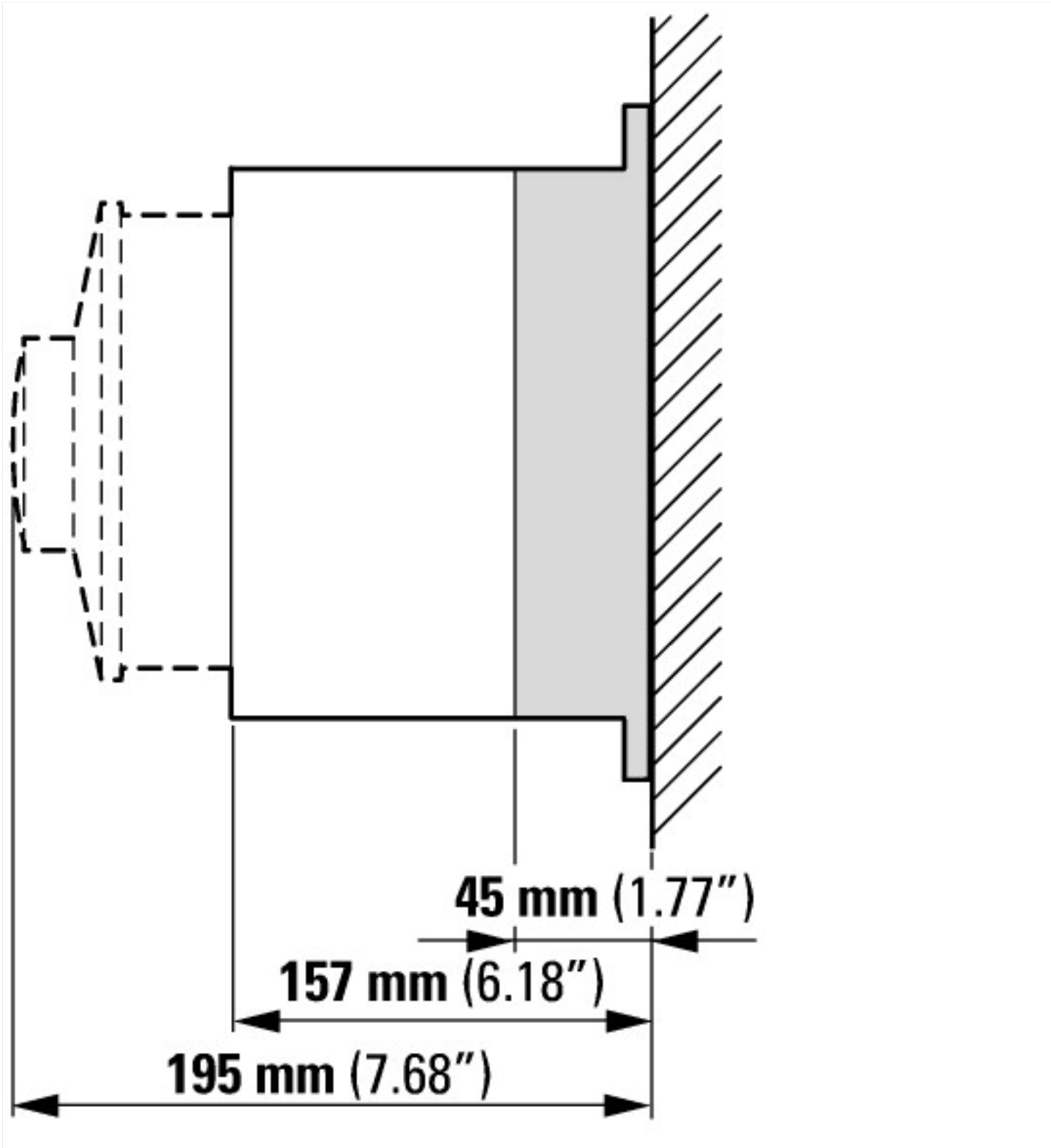
Technical data ETIM 7.0

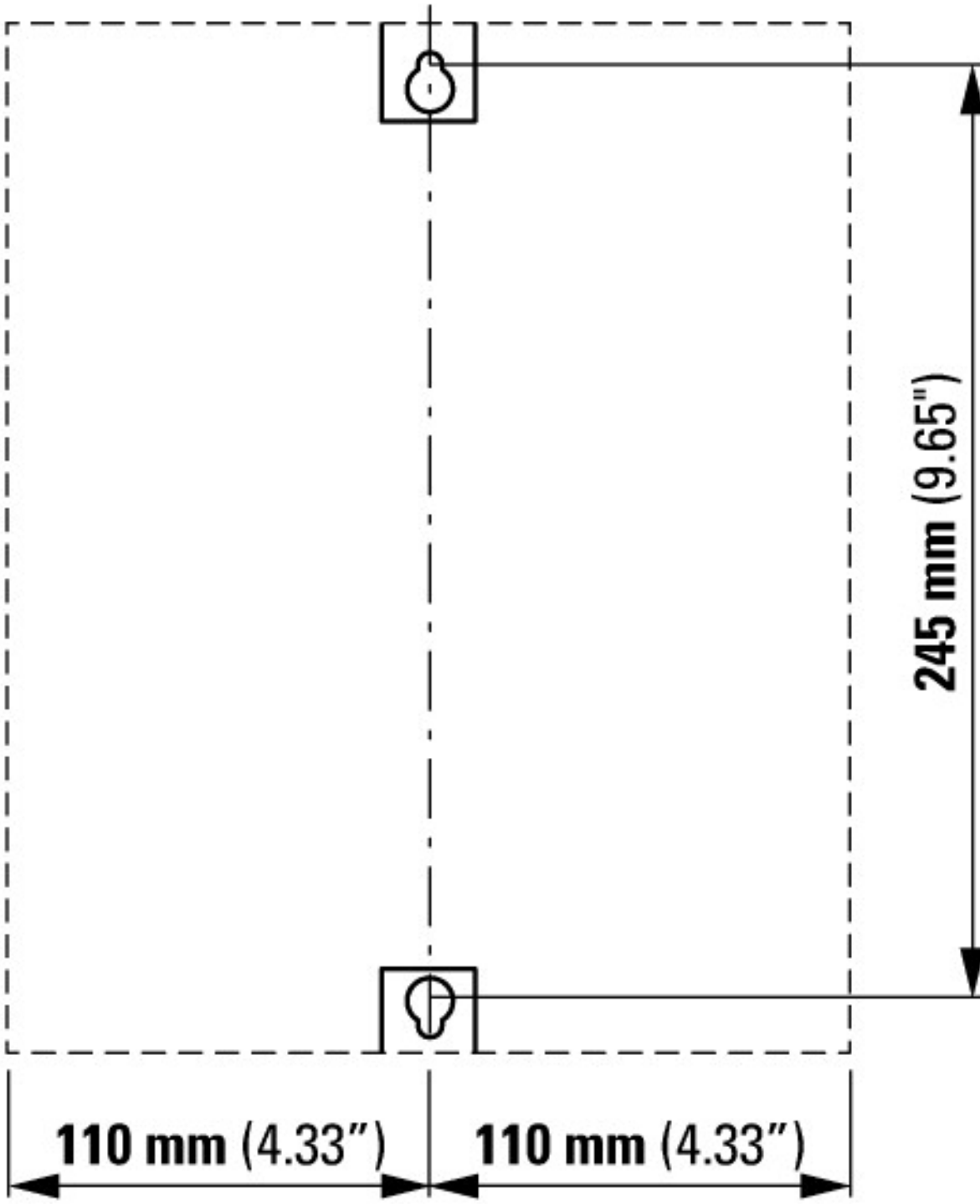
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|--|--|----|-----------|
| Low-voltage industrial components (EG000017) / Frequency converter $\leq 1 \text{ kV}$ (EC001857) | | | |
| Electric engineering, automation, process control engineering / Electrical drive / Static frequency converter / Static frequency converter = < 1 kV (ecl@ss10.0.1-27-02-31-01 [AKE177014]) | | | |
| Mains voltage | | V | 342 - 549 |
| Mains frequency | | | 50/60 Hz |
| Number of phases input | | | 3 |
| Number of phases output | | | 3 |
| Max. output frequency | | Hz | 500 |
| Max. output voltage | | V | 500 |
| Nominal output current I _{2N} | | A | 2.4 |
| Max. output at quadratic load at rated output voltage | | kW | 0.75 |
| Max. output at linear load at rated output voltage | | kW | 0.75 |
| Relative symmetric net frequency tolerance | | % | 10 |
| Relative symmetric net voltage tolerance | | % | 10 |
| Number of analogue outputs | | | 0 |
| Number of analogue inputs | | | 0 |
| Number of digital outputs | | | 0 |
| Number of digital inputs | | | 4 |
| With control unit | | | Yes |
| Application in industrial area permitted | | | Yes |
| Application in domestic- and commercial area permitted | | | Yes |
| Supporting protocol for TCP/IP | | | No |
| Supporting protocol for PROFIBUS | | | No |
| Supporting protocol for CAN | | | No |
| Supporting protocol for INTERBUS | | | No |
| Supporting protocol for ASI | | | Yes |
| Supporting protocol for KNX | | | No |

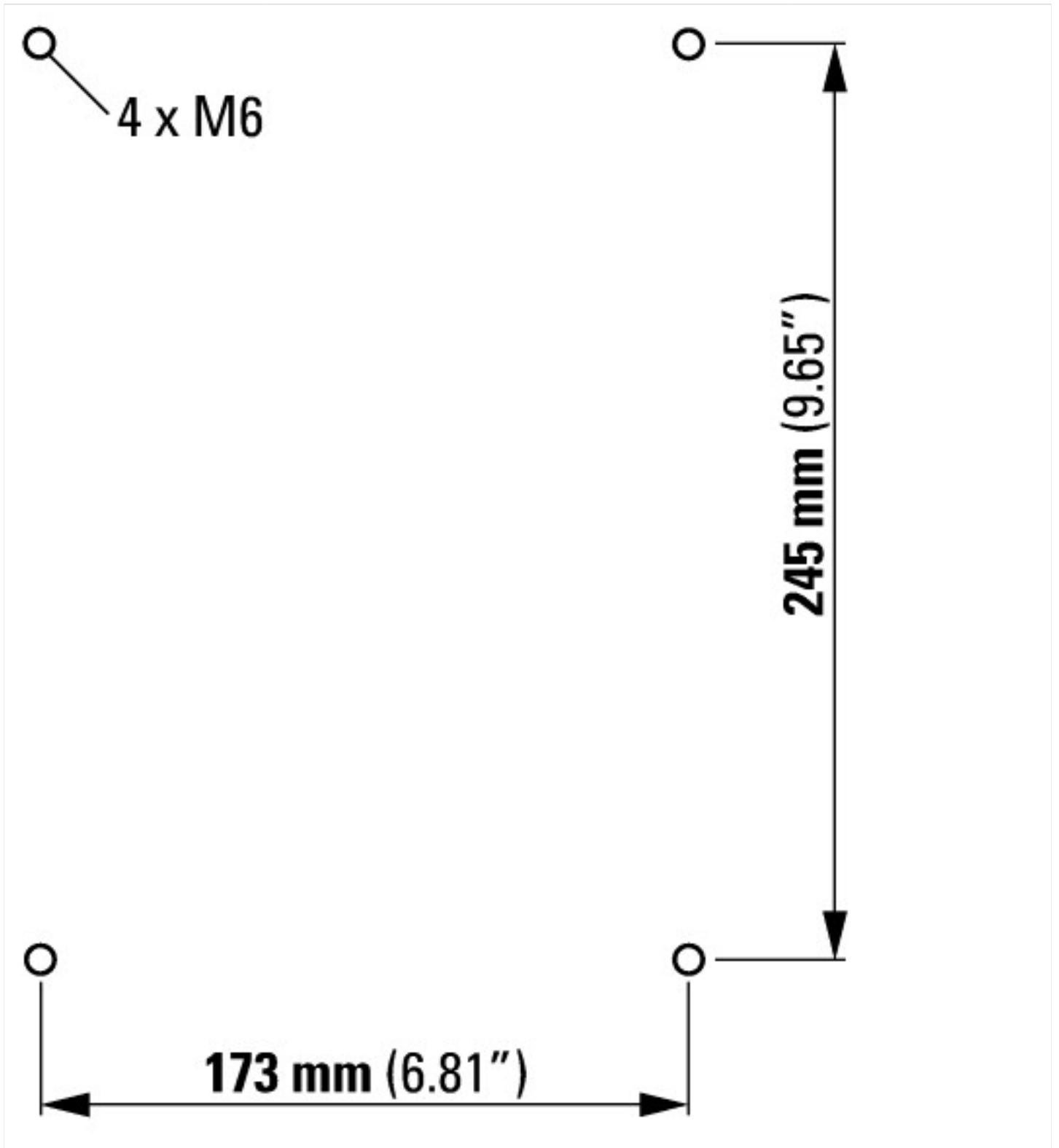
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|---|--|----|-------------|
| Supporting protocol for MODBUS | | | No |
| Supporting protocol for Data-Highway | | | No |
| Supporting protocol for DeviceNet | | | No |
| Supporting protocol for SUCONET | | | No |
| Supporting protocol for LON | | | No |
| Supporting protocol for PROFINET IO | | | No |
| Supporting protocol for PROFINET CBA | | | No |
| Supporting protocol for SERCOS | | | No |
| Supporting protocol for Foundation Fieldbus | | | No |
| Supporting protocol for EtherNet/IP | | | No |
| Supporting protocol for AS-Interface Safety at Work | | | No |
| Supporting protocol for DeviceNet Safety | | | No |
| Supporting protocol for INTERBUS-Safety | | | No |
| Supporting protocol for PROFIsafe | | | No |
| Supporting protocol for SafetyBUS p | | | No |
| Supporting protocol for BACnet | | | No |
| Supporting protocol for other bus systems | | | No |
| Number of HW-interfaces industrial Ethernet | | | 0 |
| Number of interfaces PROFINET | | | 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 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 |
| Type of converter | | | U converter |
| Degree of protection (IP) | | | IP65 |
| Degree of protection (NEMA) | | | 12 |
| Height | | mm | 270 |
| Width | | mm | 220 |
| Depth | | mm | 157 |

Dimensions









Additional product information (links)

IL034085ZU Rapid Link 5 Speed Control Unit

IL034085ZU Rapid Link 5 Speed Control Unit https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL034085ZU2020_09.pdf

MN034004 Rapid Link 5.0 RAMO RASP

MN034004 Schnellverbindung 5.0 RAMO RASP - Deutsch https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN034004_DE.pdf

MN034004 Rapid Link 5.0 RAMO RASP - English https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN034004EN.pdf

MN034004 Rapid Link 5.0 RAMO RASP - English https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN034004_EN.pdf