


AxM II

CONFIGURABLE MOTION
CONTROL PLATFORM

Catalogue 

TECHNICAL SPECIFICATIONS

| Technical specifications | SIZE 1 | | | | | | SIZE 2 | | SIZE 3 | SIZE 4 | | Units |
|------------------------------------|----------------------|-------------|-------------|-------------------|----------------|----------------|---------------------------------|----------------|---------------------------------|---------------------------------|------------------|-------------|
| | AxP 02.05.2 | AxP 04.09.2 | AxP 06.14.2 | AxM II 04.09.4 | AxM II 06.14.4 | AxM II 09.20.4 | AxM II 20.35.4 | AxM II 35.60.4 | AxM II 70.120.4 | AxM II 90.150.4 | AxM II 110.180.4 | |
| Voltage supply | 0 - 240 ± 10% | | | 0 - 460 Vac ± 10% | | | 0 - 460 ± 10% | | 0 - 460 | 0 - 460 ± 10% | | Vac 3 phase |
| Auxiliary feeding voltage | 22 - 30 | | | 22 - 30 | | | 22 - 30 / 2A | | 22 - 30 / 4A | 22 - 30 / 6A | | Vdc |
| Input current | 8,6 | | | 9 | 14 | 20 | 35 | 60 | 120 | 150 | 180 | Arms |
| Frequency | 40 - 65 | | | | | | 0 - 400 | | 0 - 400 | 0 - 400 | | Hz |
| Nominal power | 0,58 | 1,16 | 1,74 | 2,3 | 3,3 | 4,3 | 11 | 19 | 37 | 45 | 55 | KW |
| Current output, axis < 100 rpm, S1 | 2 | 4 | 6 | 4,5 (6*) | 6 (8,5*) | 9 (10*) | 20 | 35 | 70 | 90 | 110 | Arms |
| Current output, max speed, S1 | 1.27 | 2.5 | 3.9 | 3,5 (4*) | 4,5 (5*) | 6,5 (7*) | 18 | 31 | 61 | 78 | 94 | Arms |
| Peak current | 5 | 9 | 14 | 9 | 14 | 20 | 35 | 60 | 120 | 150 | 180 | Arms |
| Power Losses total | 60 | 75 | 85 | 85 | 95 | 110 | 330 | 580 | 1240 | 1750 | 2130 | W |
| Maximum voltage output | Vin x 0.95 | | | | | | | | | | | Vac |
| PWM | 8 | | | | | | 8 / 16 | | 8 / 16 | 8 / 16 | | KHz |
| Efficiency at nominal power | 97 | 97 | 98 | 96 | 96,5 | 97,5 | 97,8 | 97,8 | 96,4 | 97,4 | 97,4 | % |
| Input form factor | 0,9 | | | | | | 0,9 | | 0,9 | 0,9 | | Vac 3 phase |
| Maximum braking current | 100% of peak current | | | | | | | | | | | -- |
| Cooling | Forced ventilation | | | | | | 1 fan 92x92x38 / flow rate: 280 | | 2 fan 92x92x38 / flow rate: 560 | 3 fan 92x92x38 / flow rate: 840 | | m³/hour |
| Dimensions (WxHxD) | 78.5 x 148 x 167 | | | | | | 135 x 360 x 285 | | 200 x 360 x 285 | 320 x 596 x 285 | | mm |

| | | |
|--|-----------------------------------|--|
| Motor Feedback options (2 independent high speed inputs, main and secondary) | Main Encoder (500kHz) | Sincos encoder 5 channels (2 absolute analog tracks/2 incremental analog tracks/index) |
| | | Incremental encoder (sinusoidal/digital) |
| | | Sensoreless algorithm (w/o feedback) |
| | | Endat serial encoder (default) |
| | | Resolver |
| | Secondary Encoder (500kHz) | Incremental digital encoder without commutation tracks (500kHz) |
| | | Endat serial encoder |

| | | |
|---------------|--|--|
| Input signals | 2 Differential analog inputs (programmable) | ± 10V (12 bits) / Rin = 10kΩ Programmable |
| | 8 digital inputs (programmable) | 20-30V / Rin = 6.6kΩ to GND Programmable |

| | | |
|----------------|---|--|
| Output signals | 2 analog outputs (programmable) | ± 10V (12 bits) FS (5mA) |
| | 4 digital outputs (programmable) | PNP open collector 24V (100mA) Programmable |
| | 1 watch dog relay | 1A/250Vac NO/NC contacts |

| | |
|------------------------|--|
| Hardware configuration | <p>Processor speed: 80 MIPS μC + FPGA</p> <p>Task frequency:</p> <ul style="list-style-type: none"> - current /drive monitoring: 1 MHz - position/speed loop: 8 kHz - PLC fast task: 8 kHz - PLC slow task: 15.625 Hz to 1 kHz user-programmable <p>Position/target position register: 32 or 64 bits</p> <p>Full digital control Id/Iq, updated 16 kHz</p> |
|------------------------|--|

GENERAL MAIN CHARACTERISTICS

The highest efficiency and power density in high power AC-AC with and without active frontend converters is reached by the new fan cooled AxM range.

General Main Characteristics

Main Power Supply: Single Phase / 3 Phases 180-260 Vac +/- 10%

3 Phases 380-460 Vac +/-10% [50/60Hz]

Auxiliary Power Supply: 20-30Vdc [≤ 1 Amp]

PWM frequency: 8kHz

Position Control precision: +/- 1/4 encoder pulse

Speed Control precision: +/- 0.1%

Speed Control Range: 1÷5000

Operation condition: Temp. -10/40°C - Humidity $\leq 95\%$ - Vibration $\leq 0.5G$ [low frequency ≤ 10 Hz]

AxM / AxP Fan cooling (forced by thermostat)

Protection: IP20

MTBF operation condition: >50000 hours

Current control mode and Speed control mode

Reference Current/Speed with limit speed control
±10Vdc input signal for reference current/speed or input in param.

Output the encoder pulse interface to host controller

Feedbacks

Resolver 2poles

ENDAT 2.2 encoder (complete range)

SinCos 5 tracks encoder

Digital TTL encoder

Hall sensors

Auxiliary digital encoder input or 1 simulated encoder + index output

General Purpose Interface

Nr.2 programmable differential analogue inputs

Nr.2 programmable analogue outputs (0-10 V)

Nr.8 programmable digital inputs

Nr.4 programmable digital outputs

Communication

Nr.1 Analog $\pm 10V$

Nr.1 Serial port RS232/422/485

Nr.1 CANOpen port (Standard DS301 V4.02 - DSP402 V2.0)

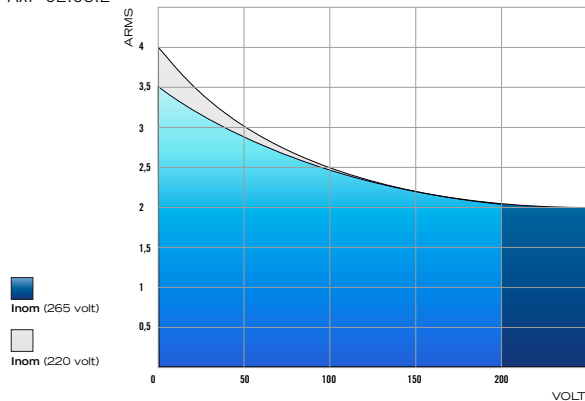
Nr.1 Industrial EtherCAT port

Sensorless algorithm

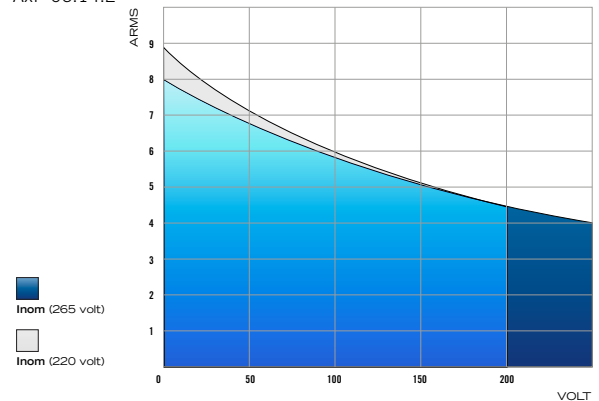
This algorithm allows to pilot (in speed and torque loop) a brushless motor without the position sensor (encoder or resolver) feedback simplifying a lot the cabling problems (costs, noises, maintenance.....)

Drive Operational Area AxM II Size 1

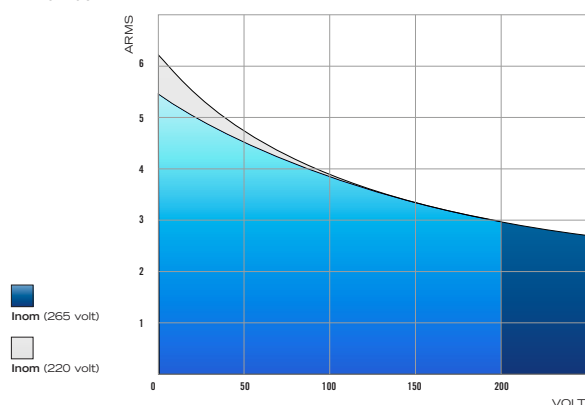
AxP 02.05.2



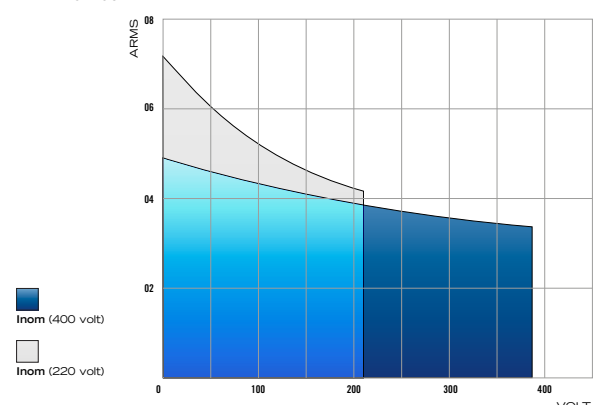
AxP 06.14.2



AxP 04.09.2

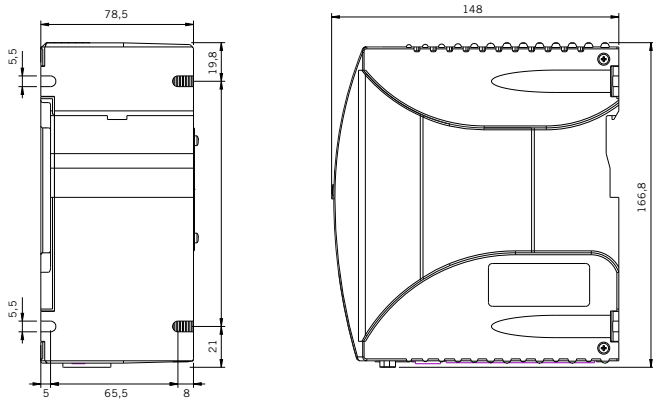


AxM II 04.09.4



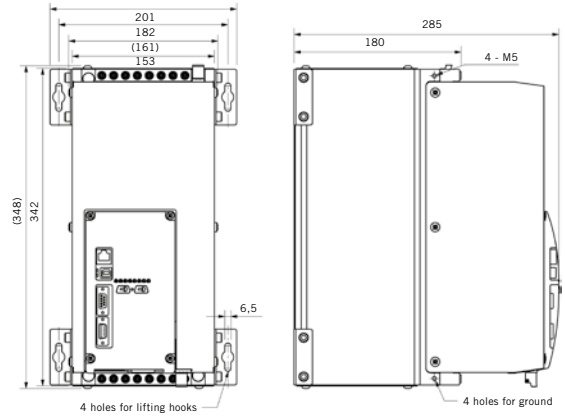
AxM II SIZE 1

Overall dimensions



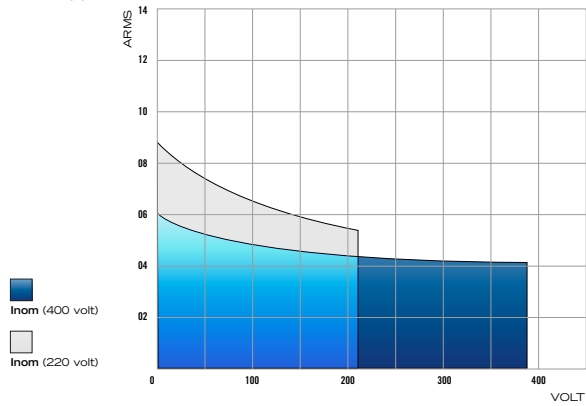
AxM II SIZE 2

Overall dimensions

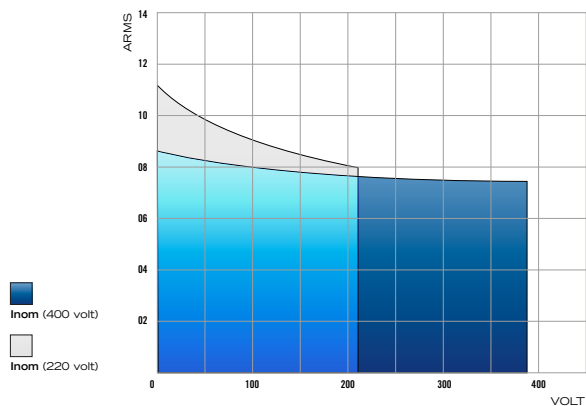


Drive Operational Area Area AxM II Size 2

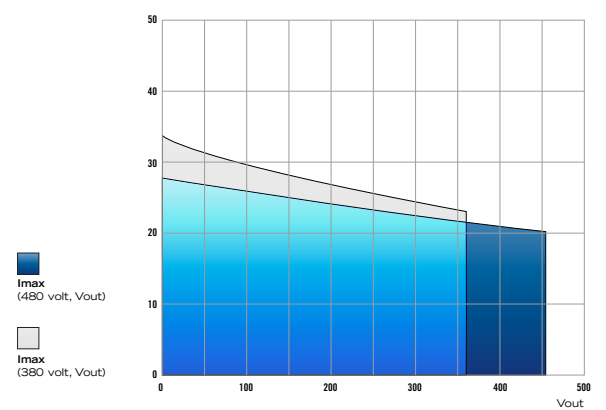
AxM II 06.14.4



AxM II 09.20.4



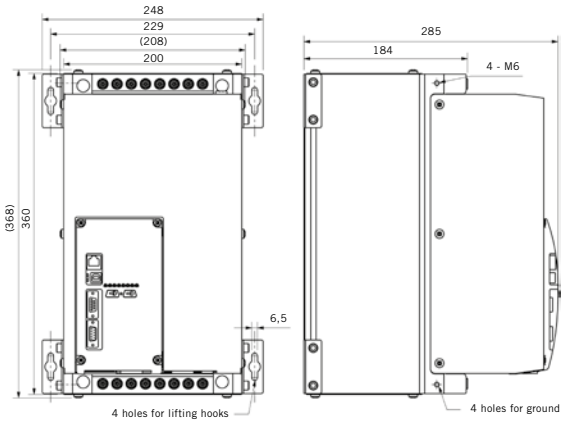
AxM II 20.35.4 / AxM II 35.70.4



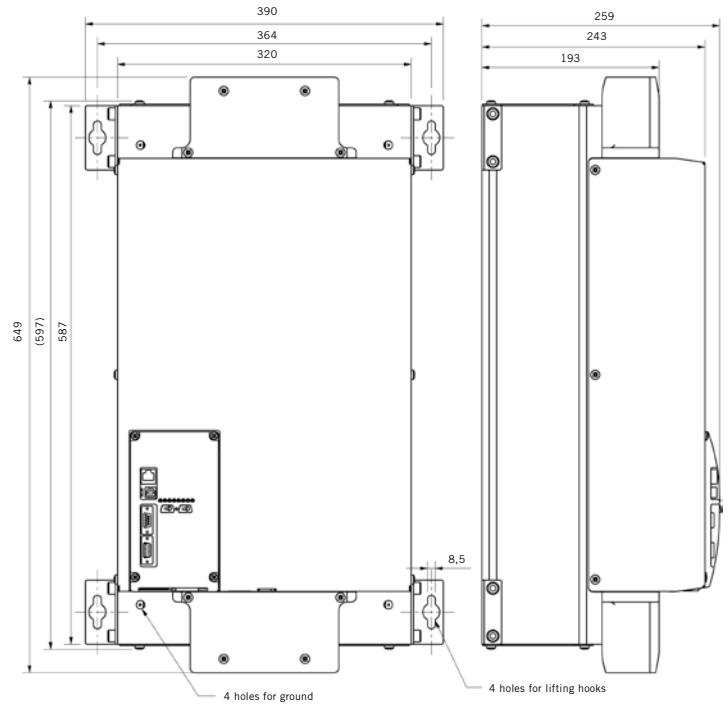
AxM II SIZE 3

AxM II SIZE 4

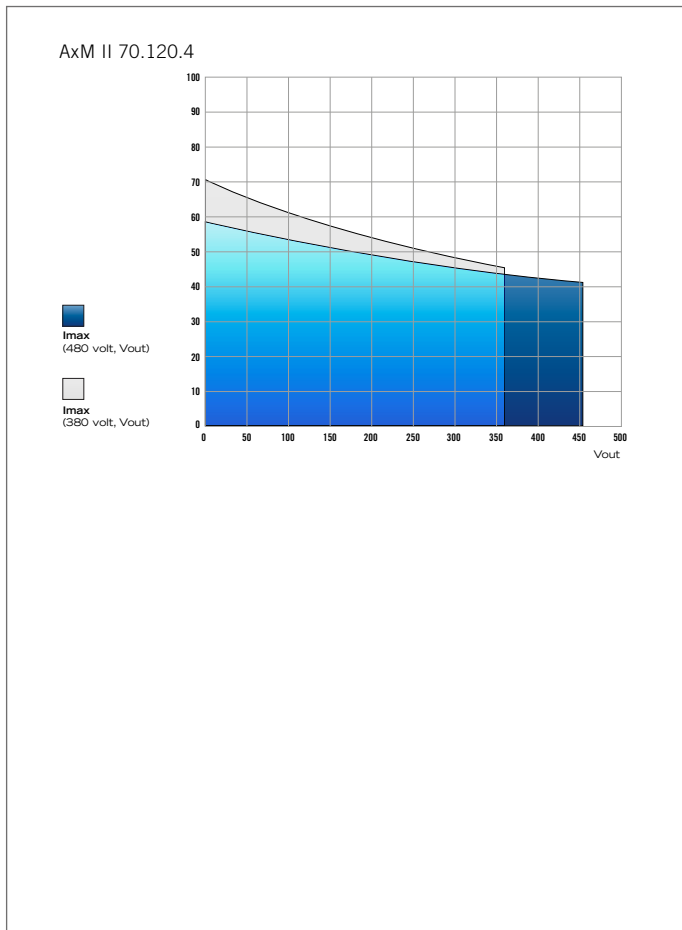
Overall dimensions



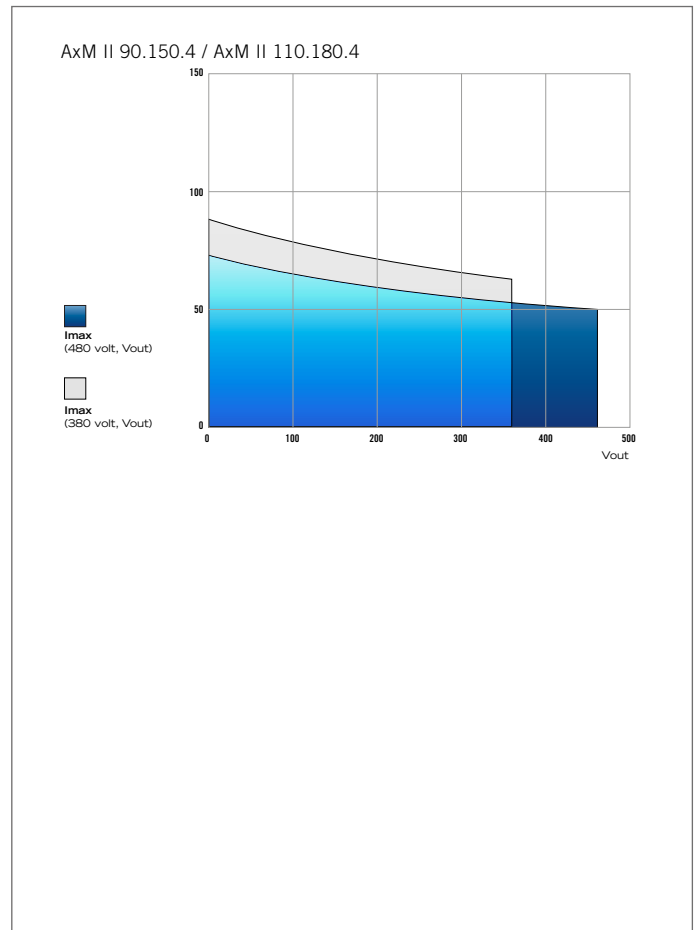
Overall dimensions

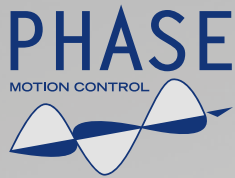


Drive Operational Area Area AxM II Size 3



Drive Operational Area Area AxM II Size 4





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