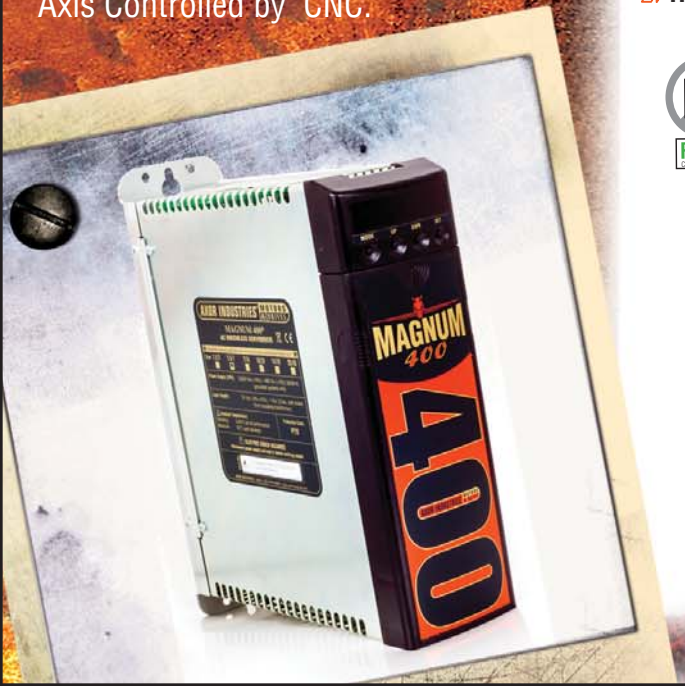
AXOR INDUSTRIES
MOTORS SERVO DRIVES
VICENZA - ITALY

Magnum 400

(M400)

STAND ALONE BRUSHLESS SERVODRIVE

Stand alone full digital servodrive 380÷480 Vac power supply range. Direct off-line. Driving motor ranges up to 32 Nm encoder or resolver feedback. Typical applications are: Axis Controlled by CNC.



Standard Features

- 380÷480 Vac supply with EMC line filter and in-rush circuit on- board
- Regen circuit with internal power resistor
- ***Speeder-One***® software interface (Windows 98/2000/XP based)
- Parameter setting by four keys on the front panel or RS232 (opto)
- Optical isolation between power stage and signals
- Feedback from encoder (max 250 KHz) sw divideble encoder emulation

Options

- Feedback from resolver (2-4-6-8 poles)sw encoder emulation
- **CBMD** CAN BUS - CAN V2.0B (°⚡) + RS232 to CAN BUS multidrop CAN OPEN protocol implementations: DS301-V4.02 - DSP402-V2.0
- **RS 485** interface, Mod Bus-RTU based (°⚡), 230 kbps max
- **ER** Encoder and Resolver feedbacks (both)
- Boostered dumping resistors (external)
- **SEF** Safety Enable Function (according to EN954-1/cat.3)
- **RXDB** Black-out dynamic brake function (with internal power resistor)
- **HBD** Internal Holding Brake Drive Circuitry

Pb RoHS COMPLIANT CE

Specifications

- Nominal switching frequency: 8 KHz
- Loops bandwidth: 2 KHz (current) - 200 Hz (velocity)
- Operating mode
  - Velocity reference (differential): ±10 Vdc (15 bit resolution)
  - Pulse /direction (for stepper motor control)
  - Torque control
  - Position control
  - Encoder following
- 9 opto-isolated digital inputs: 24 Vdc - 7 mA (PLC compatible)
- 2 opto-isolated digital outputs: 24 Vdc - 50 mA max (PLC compatible)
- 2 analog out (programmable)
- Monitor: ±10Vdc (at peak current/ max speed)
- Relé ok output contacts: 30 Vac/dc - 500 mA max
- Ambient temperature
  - operating at rated data: 0 ÷ 45°C (no derating)
  - rated and peak current derating: 45 ÷ 55°C (2.5% / °C)
  - maximum operating: 55°C max
  - storage: –20 ÷ 55°C
- Humidity (w/out condensation): 85% max (operating & storage)
- Altitude a.m.s.l.
  - operating at rated data: 1000 m
  - rated and peak current derating: 1000 ÷ 2500 m (1.5 %/100m)
- Enclosure protection: IP20
- Storage duration: 1 year max

After 1 year storage duration the internal electrolitic power capacitors must be re-formed. Contact Axor's technical department for details.

MODEL	MAGNUM 400					
SIZE	**1.5 / 3**	**3.5 / 7**	**7 / 14**	**10 / 20**	**14 / 28**	**20 / 40**
Rated Current (Arms)	**1.5**	**3.5**	**7**	**10**	**14**	**20**
Peak Current (Arms) x 5 sec.	**3**	**7**	**14**	**20**	**28**	**40**
F1: Supply Line Fuses (T-type = time-lag)	**4A** / 500V	**6A** / 500V	**8A** / 500V	**10A** / 500V	**16A** / 500V	**20A** / 500V
Power Supply (3PH) (grounded systems only)	3 x **380 Vac** (-10%) ÷ **480 Vac** (+10%) 50/60 Hz (single-ph 230 Vac permitted for setup only)					
Logic Supply (from insulating transformer)	**24 Vdc** (-0% +15%) - **1 Adc** (3 Adc with brake)					
Weight	4.2 Kg			4.6 Kg		

Part Number D.S./03.03/M400/07

CONNECTION DIAGRAM

J5 RS232: RXD, TXD, PGND, PE (9-pin)

J3 CAN BUS/485: 4 A, 3 PGND, 2 CAN L, 1 CAN H, B 5, N.C. 6, PGND 7, N.C. 8, PE

OPTIONAL J4 CAN BUS/485: 4 A, 3 PGND, 2 CAN L, 1 CAN H, B 5, N.C. 6, PGND 7, N.C. 8, PE

M1

1	DGT-OUT1
2	DGT-OUT1 RTN
3	DGT-OUT2
4	DGT-OUT2 RTN
5	CHA
6	CHA–
7	CHB
8	CHB–
9	CHZ
0	CHZ–
1	PGND
2	PULSE(+)
3	PULSE(–)
4	DIR(+)
5	DIR(–)

ENCODER EMULATED OUT

M3

OPTIONAL SEF

0	SEF IN (Safety Enable Function)
1	0V
2	0V
3	+24V

LOGIC SUPPLY

M4

1	L1
2	L2
3	L3
4	PE
5	– AT
6	– AT
7	+ AT
8	+ AT

POWER SUPPLY; DC BUS

OPTIONAL AT EXT
(External access to DC Bus)

M5

1	OPTIONAL MOTOR HOLDING BRAKE
2	
3	PE
4	W
5	V
6	U
7	–R
8	NC
9	+R

MOTOR; REGEN RESISTOR

OPTIONAL R05/R10
(External dumping resistor)

CABINET METAL ZINC COATED BACK PLANE

*: *All cables are provided with U-clips (conductive clamp). The cables' shield must be connected on the drive side to the cabinet's metal back plane (connected to ground) removing the outer insulation to expose the overall screen, and using U-clips to ensure good ground connection.*

M2

1	+ V.REF
2	– V.REF
3	AGND
4	DGT-IN1 (ENABLE)
5	DGT-IN2
6	DGT-IN3
7	DGT-IN4
8	DGT-IN5
9	DGT-IN6
10	DGT-IN7
11	DGT-IN8
12	DGT-IN9
13	DGT-IN RTN
14	TPRC
15	AN.OUT1 (SPEED)
16	AN.OUT2 (TORQUE)
17	AGND
18	RELE' OK
19	RELE' OK

PROGRAMMABLE; N.C.

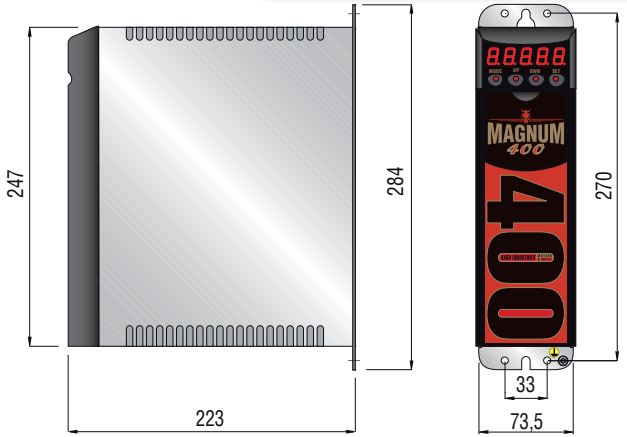
J1 Motor Feedback

14	SEN (–)
15	COS (–)
16	EXC (–)
17	T.SW/PTC
18	CHA (–)
19	CHB (–)
20	CHZ (–)
21	+5V ENC. S.
22	N.C.
23	SEN (+)
24	COS (+)
25	EXC (+)

1	HALL A (–)
2	HALL B (–)
3	HALL C (–)
4	T.SW/PTC
5	CHA
6	CHB
7	CHZ
8	PE
9	AGND
10	HALL A
11	HALL B
12	HALL C
13	AGND

PE

MECHANICAL DIMENSIONS



ORDERING CODE

HARD WARE CODE																						SOFTWARE CODE	
M	400 -	20/40	-	RXX	-	S	-	RO	-	0	0	0	0	0	0	-	XX	-	Sxxx			00000 /	00000

NAME: drive model

SIZE: see table on reverse

DUMPING SIZE:
RXX = Internal standard resistor
R05 = 500W external resistor (opt)
66Ω (for 1.5 / 3 to 7 / 14 sizes)
33Ω (for 10 / 20 to 20 / 40 sizes)
R10 = 1000W external resistors (opt)
33Ω + 33Ω 500W (for 1.5 / 3 to 7 / 14 sizes)
66Ω // 66Ω 500W (for 10 / 20 to 20 / 40)

PROTECTION:
S = Standard
T = Tropicalized

FEEDBACK:
RO = Resolver
EC = Encoder
ER = Encoder or Resolver (both)

ADDITIONAL FEATURES

CBMD CAN BUS+MULTIDROP Interface
1 = Present (opt)
0 = Not present (std)

RS485 Interface
1 = Present (opt)
0 = Not present (std)

RXDB Black Out dynamic brake function (available for 1.5/3 to 7/14 sizes)
1= Present (opt)
0= Not present (std)

AT EXT External DC Bus
1= Present (opt)
0= Not Present (std)

HBD Holding Brake Drive
1= Present (opt)
0= Not Present (std)

SEF Safety Enable Function
1= Present (opt)
0= Not Present (std)

EXPANSION CARDS:
XX=Not present (std)

SPECIFIC NUMBER PRESENCE (opt):
001÷999 = specific number

FIRMWARE VERSION

SETTING FILE

AXOR Ind.: viale Stazione,5 - 36054 Montebello Vic.no - Vicenza - Italy - phone: (+39) 0444 440441 - fax: (+39) 0444 440418 - www.axorindustries.com - e-mail: info@axorindustries.com