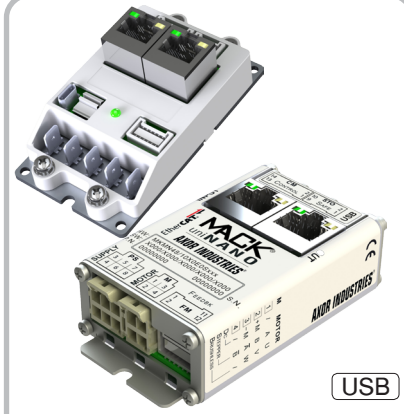
AXOR ★ INDUSTRIES ★ motors & drives SINCE 1988 ITALY

MACK® uni NANO

— MKUN —

SERVODRIVE



USB

CANopen

EtherCAT

RS 485 RTU

12-140 VDC	40 ARMS	2500 W

P. N. : D.S. / 13.07.17 / MKUN / P05

DRIVE MODEL	MKUN 48				MKUN 60		MKUN 110		MKUN 140	
SIZE	1	5	8	10	25	40	15	35	8	25
Rated Current (Arms)	1	5	8*	10*	25**	40**	15**	35**	8**	25**
Peak Current x 3 sec (Arms)	2	10	16	20	50	80	30	70	16	50
Power Supply	12 - 48 VDC (9 min - 65 VDC max)				12 - 60 VDC (9 - 82 VDC max)		12 - 110 VDC (9- 130 VDC max)		20 - 140 VDC (9- 182 VDC max)	
Backup Logic Supply	12 - 24 VDC (9 min-30 VDC max)									
External Breaking Resistor										
WEIGHT	75 g				110 g					
CASE	A				B					

NOTE * : Rated current refers to drive mounted on cabinet metal plate.
** : Rated current refers to drive mounted on alluminium plate or heat-sink (85°C max). Contact AXOR for details.

STANDARD FEATURES

- Driving motor range up to **2500W**
- Sinusoidal waveform current
- **BL** Brushless and **DC** Brushed Motor Control
- **EI** Incremental Encoder feedback for **DC** brushed motors, **SM** stepper motors
- **EIS** Incremental Serial Encoder feedback for **BL** brushless motors
- **EC** Commutation Encoder feedback for **BL** brushless motors
- **HS** Hall feedback for **BL** brushless motors
- **RA** Armature feedback for **DC** brushed motors
- **SL** Sensorless feedback for **BL** brushless, **SM** stepper motors
- **CD** Clock and Direction Command
- **RD** Differential analog ref. velocity/torque command ±10V (12 bit)
- **CB** Can BUS , **MB** ModBus-RTU, RS 485 Interface
- Two tone led drive status signal
- Over/Undervoltage, overtemperature, overcurrent and I^2t monitoring
- **Speeder-One®** software interface (Windows based)
- **USB** access for setting and monitoring
- 4 INPUT / 2 OUTPUT programmable
- Operating frequency 8KHz (default) / 16KHz[1] / 24KHz[1]
- Current loop update rate 8KHz
- Position & Velocity update rate 4KHz
- Ambient temp.[2]:.....- operating at rated data: ..... 0 - 40°C(no derating)
  - rated & pk current derating: 40 - 55°C max (2.5% / °C)
  - storage ..... -20 - 55°C
- Ambient Humidity[2]:.....- operating & storage ..... 85% RH max
- Altitude (a.m.s.l.):.....- operating & storage 1000m
  - rated & pk current derating: up to 2500m (1.5% / 100m)
- Protection rating:.....IP20
- Storage time:.....1 year[3]

OPTIONS

- **S** Stepper Motor Control (for case A only)
- **EC** EtherCAT
- **STO** Safe Torque Off
- **Dumping Circuit**

APPLICATIONS

- Printing Machines
- Textile Machines
- Coding Machines
- Conveyors
- Machine Tools
- AGV Battery operated Machines
- Upgrade replacement for stepper system
- Packaging Machines
- Sewing Machines
- Jewellery Machines
- Actuators
- Door operators
- Antenna positioners
- CNC axis control

NOTE: [1] 16KHz / 24KHz with derating of drive performances. Contact AXOR for details.
[2] Free from condensation [3] After one year storage the electrolytic capacitors must be reformed. Contact AXOR for details.

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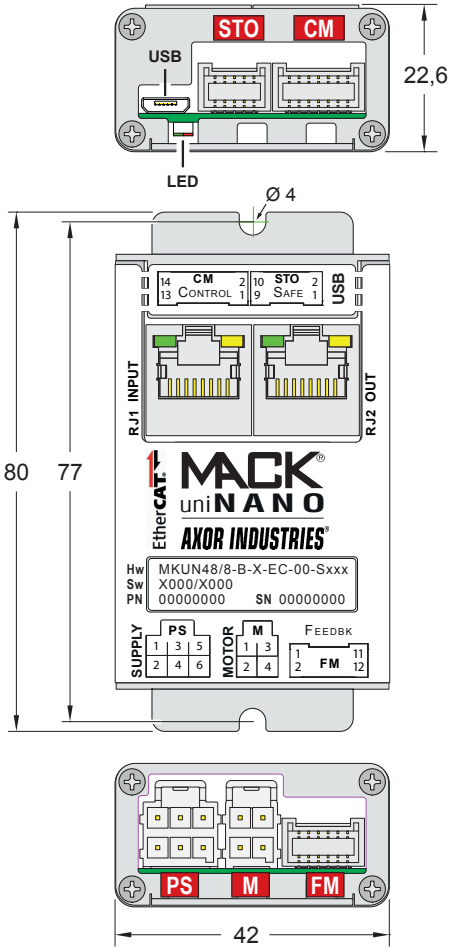


CASE A

M	BRUSHLESS
1	U
2	V
3	W
4	N.C.

MOTOR

M	BRUSHED
1	N.C.
2	+ M
3	– M
4	N.C.

MOTOR

M	STEPPER
1	A
2	B
3	A -
4	B -

MOTOR

PS	SUPPLY
1	+ AT
2	– AT
3	+ Bkup
4	– Bkup
5	+ RR
6	– RR

CM	CONTROL
1/2/3/4	D. IN 1/2/3/4
5/10	AGND
6	An / D.OUT 1
7	D.OUT 2
8/9	An.IN 1 + / –
11/12	D.IN HS 5 + / –
13/14	D.IN HS 6 + / –

FM	FEEDBACK
1	+ Ch. A / Data + / SE +
2	– Ch. A / Data – / SE –
3/4	Ch. B + / –
5	+ Ch. Z / (Zs) / Clock +
6	– Ch. Z / (Zs) / Clock –
7/8/9	Hall U / V / W
10	+ Tacho
11	AGND (–Tacho)
12	+5Vs

STO	SAFE
1/2	STO.IN 1 / 2
3/4	AGND
5/6	STO.OUT 1 / 2
7/8	N.C.
9	N.C.
10	N.C.

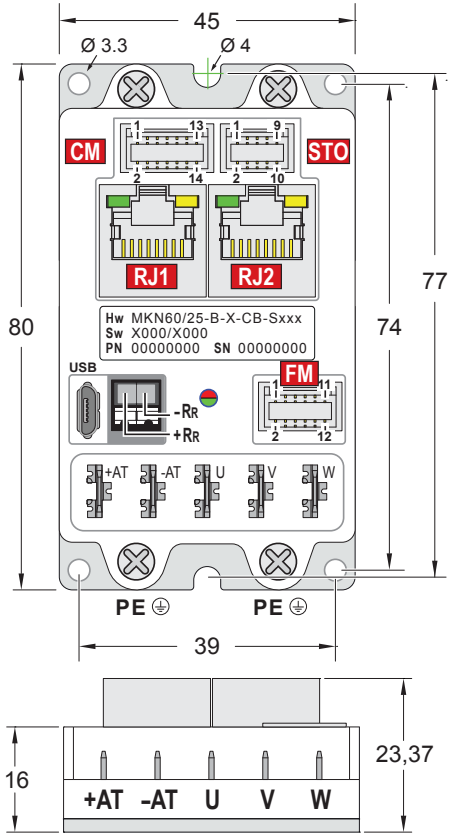
LED
- READY (flash)
- RUN
- I²t (flash)
- ALARM

CANopen
RS 485 RTU
RJ1 = RJ2

1 Can H
2 Can L
3 Can Gnd
4 RS485 A
5 RS485 B
6 N.C.
7 PGND
8 Bypass

EtherCAT
RJ1=INPUT
RJ2=OUTPUT

1 TX +
2 TX -
3 RX +
4 Reserved
5 Reserved
6 RX -
7 Reserved
8 Reserved



CASE B

CM	CONTROL
1/2/3/4	D. IN 1/2/3/4
5/10	AGND
6	An / D.OUT 1
7	D.OUT 2
8/9	An.IN 1 + / –
11/12	D.IN HS 5 + / –
13/14	D.IN HS 6 + / –

STO	SAFE
1/2	STO.IN 1 / 2
3/4	AGND
5/6	STO.OUT 1 / 2
7/8	N.C.
9	+Bkup
10	Bkup

FM	FEEDBACK
1	+ Ch. A / Data + / SE +
2	– Ch. A / Data – / SE –
3	Ch. B +
4	Ch. B –
5	+ Ch. Z / (Zs) / Clock +
6	– Ch. Z / (Zs) / Clock –
7	Hall U
8	Hall V
9	Hall W
10	+ Tacho
11	AGND (–Tacho)
12	+5Vs

POWER SUPPLY / MOTOR

	BRUSHED
+AT	POWER SUPPLY
-AT	
PE	
U	N.C.
V	+ M
W	– M
PE	MOTOR

	BRUSHLESS
+AT	POWER SUPPLY
-AT	
PE	
U	MOTOR
V	
W	
PE	

LED
- READY (flash)
- RUN
- I²t (flash)
- ALARM

CANopen
RS 485 RTU
RJ1 = RJ2

1 Can H
2 Can L
3 Can Gnd
4 RS485 A
5 RS485 B
6 N.C.
7 PGND
8 Bypass

EtherCAT
RJ1=INPUT
RJ2=OUTPUT

1 TX +
2 TX -
3 RX +
4 Reserved
5 Reserved
6 RX -
7 Reserved
8 Reserved

MACK® uni NANO

HARDWARE CODE

MKUN48 / 8 - B - X - CB - 0 0 - Sxxx

- **DRIVE LINE**
- **SIZE**
- **MOTOR TYPE:**
  - **B = Standard:**
    - **BL** Brushless
    - **DC** Brushed
  - **S = Optional: (for case A only)**
    - **SM** Stepper
    - **BL** Brushless
    - **DC** Brushed
- **FEEDBACK:**
  - **X = Standard**
- **CONTROL MODE:**
  - **CB** = Can BUS (std)
    RS 485 MODBUS-RTU
  - **EC** = EtherCAT (opt)
- **STO** (Safe torque Off):
  - 0 = w/out (std), 1 = with (opt)
- **DUMPING CIRCUIT:**
  - 0 = w/out (std)
  - 1 = with (opt)
- **SPEC. NUMBER** (opt)

SOFTWARE CODE

X000 / X000

- **FIRMWARE VERSION**
- **CONFIG FILE**