



MACK

N A N O

MKN

SERVODRIVE



USB

CANopen

RS 485 RTU

12-140 VDC	40 ARMS	2500 W
---------------	------------	-----------

P. N. : D.S. / 13.07.17 / MKN / P04

DRIVE MODEL	MKN 48				MKN 60		MKN 110		MKN 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 V _{DC} (9 min - 65 V _{DC} max)				12 - 60 V _{DC} (9 - 82 V _{DC} max)		12 - 110 V _{DC} (9- 130 V _{DC} max)		20 - 140 V _{DC} (9- 182 V _{DC} max)	
Backup Logic Supply	12 - 24 V _{DC} (9 min-30 V _{DC} max)									
External Breaking Resistor	N.A.									
WEIGHT	60 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
 - ♦ **DT** Tachogenerator Feedback for **DC** brushed motors
 - ♦ **SL** Sensorless feedback for **BL** brushless, **SM** stepper motors
 - ♦ **CD** Clock and Direction Command
 - ♦ **RD** Differential analog ref. velocity command ±10V (12 bit)
 - ♦ **CB** Can BUS
 - ♦ Single ended analog ref. torque ±10V (12 bit)

- ♦ Over/Undervoltage, overtemperature, overcurrent and I²t monitoring
 - ♦ **Speeder-One**® software interface (Windows based)
 - ♦ **USB** access for setting and monitoring
 - ♦ 4 INPUT / 2 OUTPUT programmable
 - ♦ Operating frequency 8KHz (default) / 16KHz¹ / 24KHz¹
 - ♦ 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 Humidity²:.....- 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 year³

OPTIONS

- ♦ **S** Stepper Motor Control (for case A only)
- ♦ **MB** ModBus-RTU, RS 485 Interface
- ♦ **Emulated Encoder** (for case B only)
- ♦ **Dumping Circuit** (for case B only)

APPLICATIONS

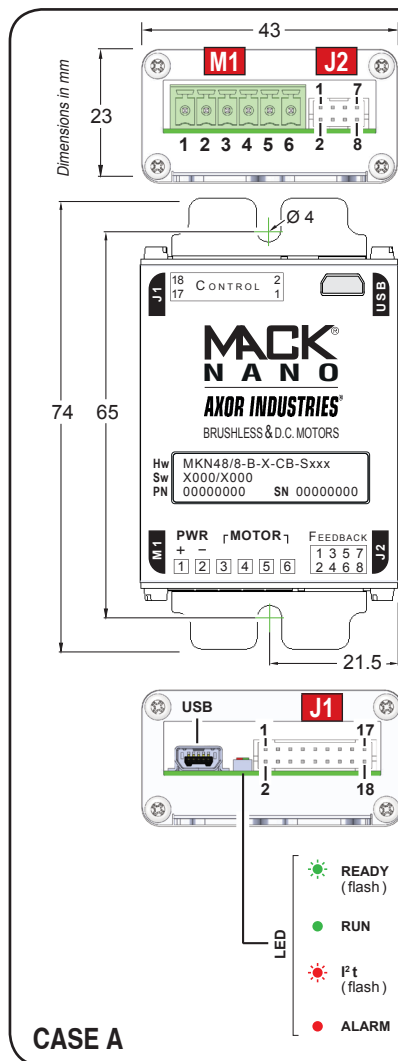
- ♦ Printing Machines
 - ♦ Textile Machines
 - ♦ Coding Machines
 - ♦ Conveyors
 - ♦ Machine Tools
 - ♦ AGV Battery operated Machines
 - ♦ Upgrade replacement for stepper system

- ♦ 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.





C O N T R O L M O D E

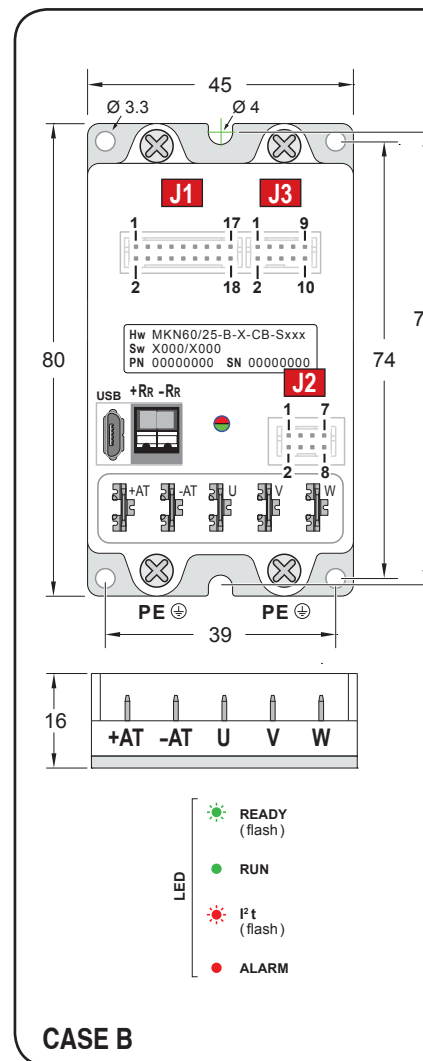
J1	CB (Can BUS)	MB (ModBUS)
1	+ Bkup Supply	+ Bkup Supply
2	AGND	AGND
3/4/5/6	D. IN 1/2/3/4	D. IN 1/2/3/4
7/8	An / D. OUT 1/2	An / D. OUT 1/2
9/10	An.IN 1 + / -	An.IN 1 + / -
11	An.IN Ref. Torque / +Tacho	An.IN Ref. Torque / +Tacho
12	AGND / -Tacho	AGND / -Tacho
13	Clock IN	Clock IN
14	Dir. IN	Dir. IN
15/16	Can H	RS485 B
17/18	Can L	RS485 A

F E E D B A C K

J2	FEEDBACK
1	+ Ch. A
2	+ Ch. B
3	+ Ch. Z / + Ch. Zs
4	Hall U
5	Hall V
6	Hall W
7	AGND
8	+5Vs

P O W E R S U P P L Y / M O T O R

M1	BRUSHLESS	M1	BRUSHED	M1	STEPPER
1	+ AT POWER	1	+ AT POWER	1	+ AT POWER
2	- AT SUPPLY	2	- AT SUPPLY	2	- AT SUPPLY
3	U	3	N.C.	3	A
4	V MOTOR	4	+ M MOTOR	4	B MOTOR
5	W	5	- M MOTOR	5	A- MOTOR
6	N.C.	6	N.C.	6	B- MOTOR



C O N T R O L M O D E

J1	CB (Can BUS)	MB (ModBUS)
1	+ Bkup Supply	+ Bkup Supply
2	AGND	AGND
3/4/5/6	D. IN 1/2/3/4	D. IN 1/2/3/4
7/8	An / D. OUT 1/2	An / D. OUT 1/2
9/10	An.IN 1 + / -	An.IN 1 + / -
11	An.IN Ref. Torque / +Tacho	An.IN Ref. Torque / +Tacho
12	AGND / -Tacho	AGND / -Tacho
13	Clock IN	Clock IN
14	Dir. IN	Dir. IN
15/16	Can H	RS485 B
17/18	Can L	RS485 A

F E E D B A C K ENC. EMULATED

J2	FEEDBACK	J3	ENC. EMULATED
1	+ Ch. A	1	CHA
2	+ Ch. B	2	CHA -
3	+ Ch. Z / + Ch. Zs	3	CHB
4	Hall U	4	CHB -
5	Hall V	5	CHZ
6	Hall W	6	CHZ -
7	AGND	7	AGND
8	+5Vs	8/9/10	N.C.

P O W E R S U P P L Y / M O T O R

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

MACK® NANO

DRIVE LINE	MODEL	SIZE	MOTOR TYPE:	FEEDBACK:	CONTROL MODE:	EMULATED ENCODER: (for case B only)	DUMPING CIRCUIT: (for case B only)	SPEC. NUMBER (opt)	FIRMWARE VERSION	CONFIG FILE
MKN	48 / 5	-	B	-	X	-	CB	- 0 0 -	Sxxx	X000 / X000
			B = Standard: BL Brushless DC Brushed	X = Standard	CB = Can BUS (std) MB = RS 485 MODBUS-RTU (opt)	0 = w/out (std), 1 = with (opt)	0 = w/out (std), 1 = with (opt)			
			S = Optional: (for case A only) SM Stepper BL Brushless DC Brushed							