



MACK[®]
uni NANO

— MKUN —
SERVODRIVE



USB

CANopen

Modbus

EtherCAT

RS 485 RTU

12-140 VDC	50 ARMS	2500 W
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P.N. : D.S. / 07.12.18 / MKUN / 03

DRIVE MODEL	MKUN 60						MKUN 110		MKUN 140	
SIZE	1	5	8	10	25	50	15	35	8	25
Rated Current (Arms)	1	5	8*	10*	25**	50**	15**	35**	8**	25**
Peak Current x 3 sec (Arms)	2	10	16	20	50	100	30	70	16	50
Power Supply	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	≥ 4 Ω			≥ 2 Ω			≥ 5 Ω		≥ 8 Ω	
WEIGHT	75 g						110 g			
CASE	A						B			

NOTE * : Current refers to drive mounted on cabinet metal plate. ** : Current refers to drive mounted on alluminium plate or heat-sink (85°C max).

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
- ◆ **Speeder-One.2**[®] software interface (Windows based)
- ◆ **USB** access for setting and monitoring
- ◆ Operating frequency 8KHz (default) / 16KHz¹ / 24KHz¹
- ◆ **Mack PLC** integrated (ANSI C or C++) 1 ms Realtime
- ◆ Update rate : - Current loop = 8KHz - Position & Velocity = 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)
- ◆ **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. ² Free from condensation ³ After one year storage the electrolytic capacitors must be reformed.



Dimensions: 80, 77, 22.6, 21.25, 42.5

CM CONTROL

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

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 +
2	- Ch. A / Data -
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

PS SUPPLY

1	+ AT
2	- AT
3	+ Bkup
4	- Bkup
5	+ RR
6	- RR

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

M BRUSHED

1	N.C.
2	+ M
3	- M
4	N.C.

M STEPPER

1	A
2	B
3	A-
4	B-

LED

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

CANopen RS 485 RTU RJ1 = RJ2

EtherCAT RJ1=INPUT RJ2=OUTPUT

Pin Headers:

- 1 Can H, 2 Can L, 3 Can Gnd, 4 RS485 A, 5 RS485 B, 6 N.C., 7 PGND, 8 Bypass
- 1 TX+, 2 TX-, 3 RX+, 4 Reserved, 5 Reserved, 6 RX-, 7 Reserved, 8 Reserved

Dimensions: 80, 77, 74, 39, 16, 23.37

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 +
2	- Ch. A / Data -
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	+ Bkup
10	- Bkup

POWER SUPPLY / MOTOR

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

LED

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

MACK® uni NANO					HARDWARE CODE			SOFTWARE CODE	
MKUN60 / 8 - B - X - CB - 00 - Sxxx								X000	X000
DRIVE LINE	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)			FIRMWARE VERSION	CONFIG FILE
SIZE				SPEC. NUMBER (opt)					