

elap MEM40B-MEM41B CANopen



Quick Reference Guide



MEM40 CANOPEN ENCODER PROFILE

- Complying with standards **CiA DS 301** “Application Layer and Communication Profile” and **DS 406** “Device Profile for Encoders”
- Class **C2**

MECHANICAL & ENVIRONMENTAL SPECIFICATIONS

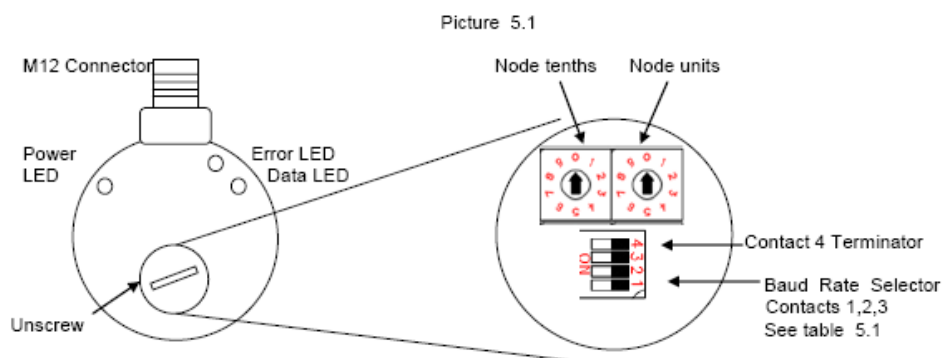
	MEM-Bus	40B	41B
• Materials: case shaft		Aluminium	Stainless steel
• Weight		100 g ca	
• Shaft/hollow shaft Ø		6, 8, 10 mm	8, 10 mm
• Revolutions/minute		6000	
• Starting torque		≤0,2 Ncm	
• Inertia		≤5 g cm ²	
• Max load		Magnetic	
• Vibrations resistance (10÷2000 Hz)		8192 steps/rev – 13 bit	
• Shock (11 ms)		65536/16 bit	
• Protection degree		< 1 s	IP65
• Operating temperature		>21 years power off	
• Stocking temperature		-20 ÷ 80°C	

ELECTRICAL & OPERATING SPECIFICATIONS

• Operating principle	Magnetic
• Resolution/revolution	8192 steps/rev – 13 bit
• Revolutions no. (multiturn)	65536/16 bit
• Initializing time	< 1 s
• Data memory	>30 years power off
• Fieldbus	CANopen
• Supply	10 ÷ 30 Vdc Protection against polarity reversal
• Power consumption	2 W
• Accuracy	± 0.2°
• Connection	M12 5 5 pin radial connector
• Interference immunity	EN 61000-6-2
• Emitted interference	EN61000-6-4

HARDWARE CONFIGURATION

The encoder rear cap must be removed to gain access to two rotary switches, one 4-pin DIP switch and one 8-pin tap connector (Picture 5.1).



SETTING THE NODE ID

The **node ID (user address)** is defined/modified in object 2101H or via LSS. In addition it is possible to set the user address using two rotary switches of the encoder (see TABLE 5.1). The max. set is 99.

If the switches are set at 0, at power on the encoder keeps as node number the one stored in object 2101H; otherwise it keeps the one set with the rotating switches.

The default set of the two switches is 00.

TABLE 5.1
NODE ADDRESS CONFIGURATION

TENTHS	UNITS	EG. NODE ID=4
TENTHS	UNITS	EG. NODE ID=28

ID = 00 Baud rate and Node ID correspond to the last stored values before power off, which can be modified via CAN bus

BAUD RATE SETTING

The **baud rate** is defined/modified in object 2100H or via LSS. In addition it is possible to set the baud rate by means of contacts 1, 2 and 3 of the encoder DIP switch (see TABLE 5.2).

If the switches relating to the baud rate are set at 0, at power on the encoder keeps as baud rate the one stored in object 2100H; otherwise it keeps the one set with the DIP switch.

The default set of the DIP switch contacts 1, 2 and 3 is: OFF ON OFF.

Terminating resistor

If the connected encoder is the last device in the bus line, the bus must be terminated with a resistor. The resistor can be connected by the contact 4 of the encoder DIP switch (see TABLE 5.2).

The resistor can be inserted by means of the DIP switch contact 4. The default set of DIP switch pin 4 is OFF.

Baud Rate	Switch 1	Switch 2	Switch 3
10Kbit/s	OFF	OFF	OFF
20Kbit/s	OFF	OFF	ON
50Kbit/s	OFF	ON	OFF
125Kbit/s	OFF	ON	ON
250Kbit/s	ON	OFF	OFF
500Kbit/s	ON	OFF	ON
800Kbit/s	ON	ON	OFF
1Mbit/s	ON	ON	ON

Switch 4 = ON : Termination inserted
Switch 4 = OFF : Termination diserted

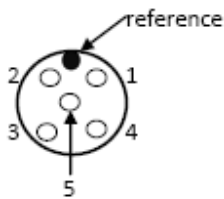


CONNECTIONS

The bus and supply cables must be connected to the M12 connector as shown in the Picture 6.2 and in the TABLE 6.2.

The encoder should always be connected with shielded conductors. The cable shield should be in placed at both ends of the cable. Connectors must be selected to permit a 360 degree contact of the shield. Ensure that no equalizing currents are discharged via the shield. As the encoder is not always connected to a defined earth potential depending on its mounting position, the encoder flange should always be additionally linked to earth potential.

Picture 6.2

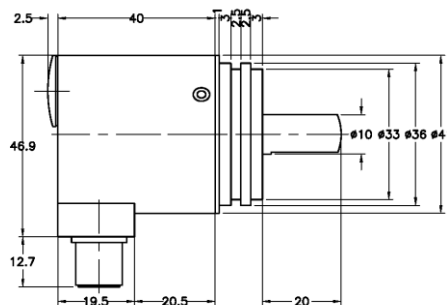
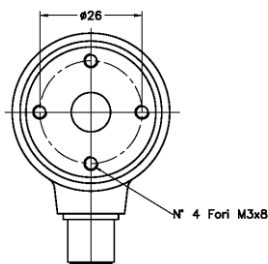


M12 male connector – insertion side

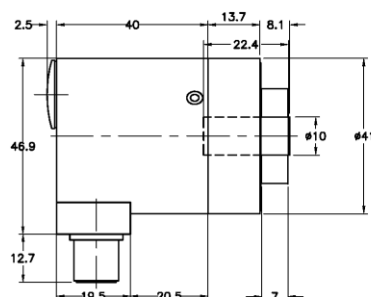
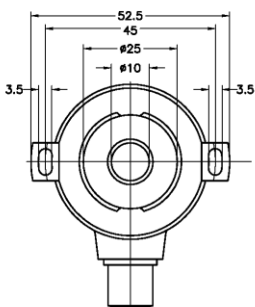
PIN NO.	NAME	DESCRIPTION
1	SHIELD	SHIELD CONNECTION
2	+V	10-30 VDC SUPPLY POSITIVE POLE
3	0V	10-30 VDC SUPPLY 0 V
4	CAN-H	CAN BUS HIGH SIGNAL
5	CAN-L	CAN BUS LOW SIGNAL

DIMENSIONS

MEM40B



MEM41B



Ref. M2081

Ref M2116

REFERENCES

Catalogues, Manuals, Software
available at :
<https://www.elap.it/absolute-encoders/encoder-mem40-canopen/>



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