midi ingénierie

MAC17

Technical data

Supply voltage :	24 VDC nom. 15 VDC min to 45 VDC max.
Holding torque :	0,5 Nm
Max speed :	3000 rpm at 45VDC
Max mechanical power:	15 W at 24 VDC
Resolution :	10.000 steps per revolution
Logical inputs :	6 optoisolated
Analog input:	1 differential
Logical outputs :	4 optoisolated
Communication :	RS485, optoisolated, 9600 to 115200bauds, point-to-point
Sequencer:	500 commands memory
Rotor inertia :	0,08 kg.cm²
Fastener :	NEMA 17 flange, 5mm axis
Dimension, Weight :	110 x 45 x 56mm, 800g.
Protection :	IP30 (Option IP55)

References

MAC17 (MAC17 RS485)

TD-MAC17 (Terminal strip MAC17)

DRVMI (DrvMi.dll)

SPxxx-48 (Power supply xxx W)

Options: Clock & Dir

Certifications

- CE Marked

- All midi ingénierie's PCB are UL certified

Description

MAC17 is a smart DSP motion controller integrated with a NEMA 17 high torque brushless motor, a microstepping driver and an embedded encoder.

Simplified MAC Language is used to send commands from the host to the module and to write programs that can be stored in Sequencer memory so that the module can execute the commands in a stand-alone mode.

The Sequencer can be used together with opto-isolated inputs and outputs, giving MAC17 true PLC-like capabilities.

The advanced current control technique used in MAC17 permits position or speed control over a wide speed range (up to 3000rpm). The controller prevents motor stall and eliminates the need for closed-loop control.

Great smoothness and performance can be achieved with MAC17 thanks to sinusoïdal motor current generator, S-curve speed ramps and optimized current mode. Resonance is significantly dampened over the entire speed range and audible noise is reduced.
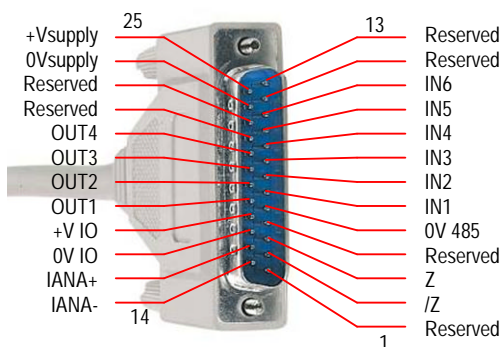
MAC17 is a compact, powerful and inexpensive solution assembly time for a large range of brushless motor applications

Specific serial protocol, based on RS485 standard, allows communication up to 115200bauds with multi-axis features for 2D and 3D application.

Main features

- S-curve speed ramps for smooth resonance-free mouvements.
- Optimised current mode to minimize thermal heating.
- Interpolation mode for multi-axis 2D and 3D applications.
- RS485 communication for noise immunity.
- User-configurable harware and software ends.
- Enhanced mouvements functionnalities.
- Integrated commands sequencer.
- High holding torque.
- DSP controller.

Connector pin-out

+Vsupply	25
0Vsupply	
Reserved	
Reserved	
OUT4	
OUT3	
OUT2	
OUT1	
+V IO	
0V IO	
IANA+	
IANA-	14

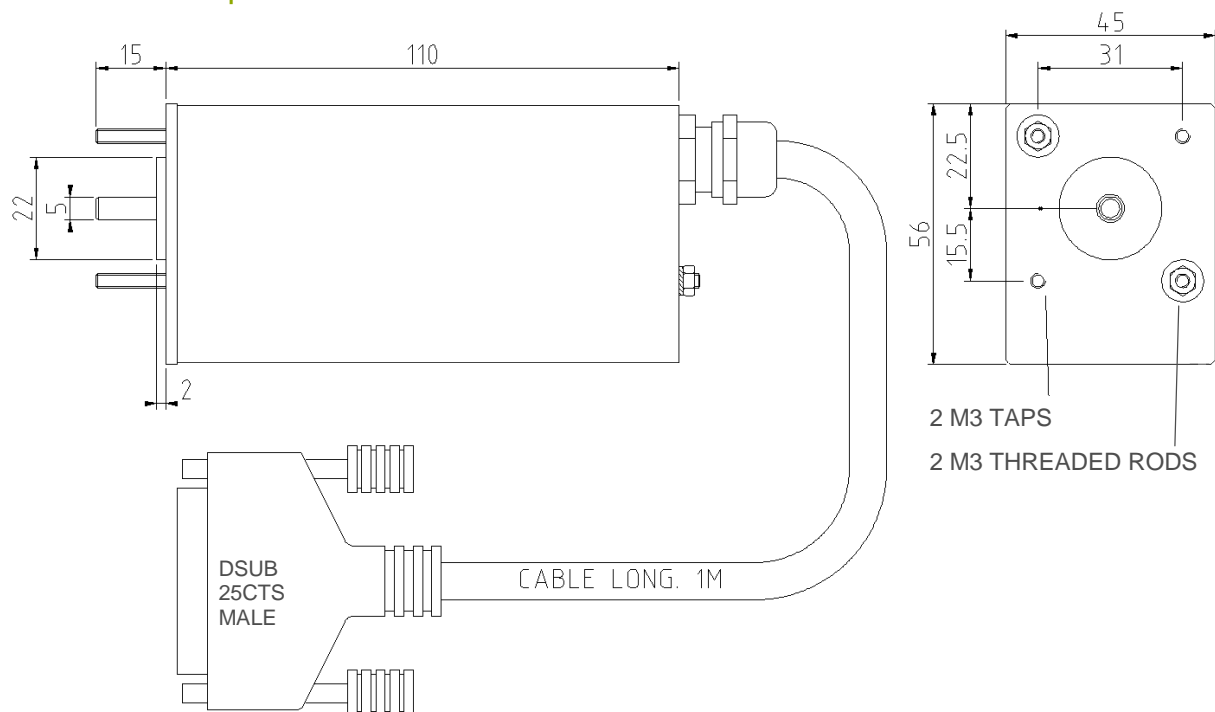| 13	Reserved
	Reserved
	IN6
	IN5
	IN4
	IN3
	IN2
	IN1
	0V 485
	Reserved
	Z
1	/Z
	Reserved

Sequencer

Integrated commands sequencer allows mouve-ments and actions automation in stand-alone mode. Up to 500 commands can be stored in non-volatile memory.

Sample sequence:

```
:1  #HIGH_SPEED := 3000
:2  MOVE_TO 12000
:3  WAIT 4000
:4  #V3 := #POSITION * 32000
:5  #OUTPUT.1 = 0
:6  IF #STATUS.5 = 1 JUMP 2
:7  MOVE_SPEED 4000
:8  IF #INPUT_ANALOG > 67 CALL 120
```

Mechanical specifications

15   110   45
31
22   5
56   22.5
15.5
2

2 M3 TAPS

2 M3 THREADED RODS

DSUB
25CTS
MALE

CABLE LONG. 1M