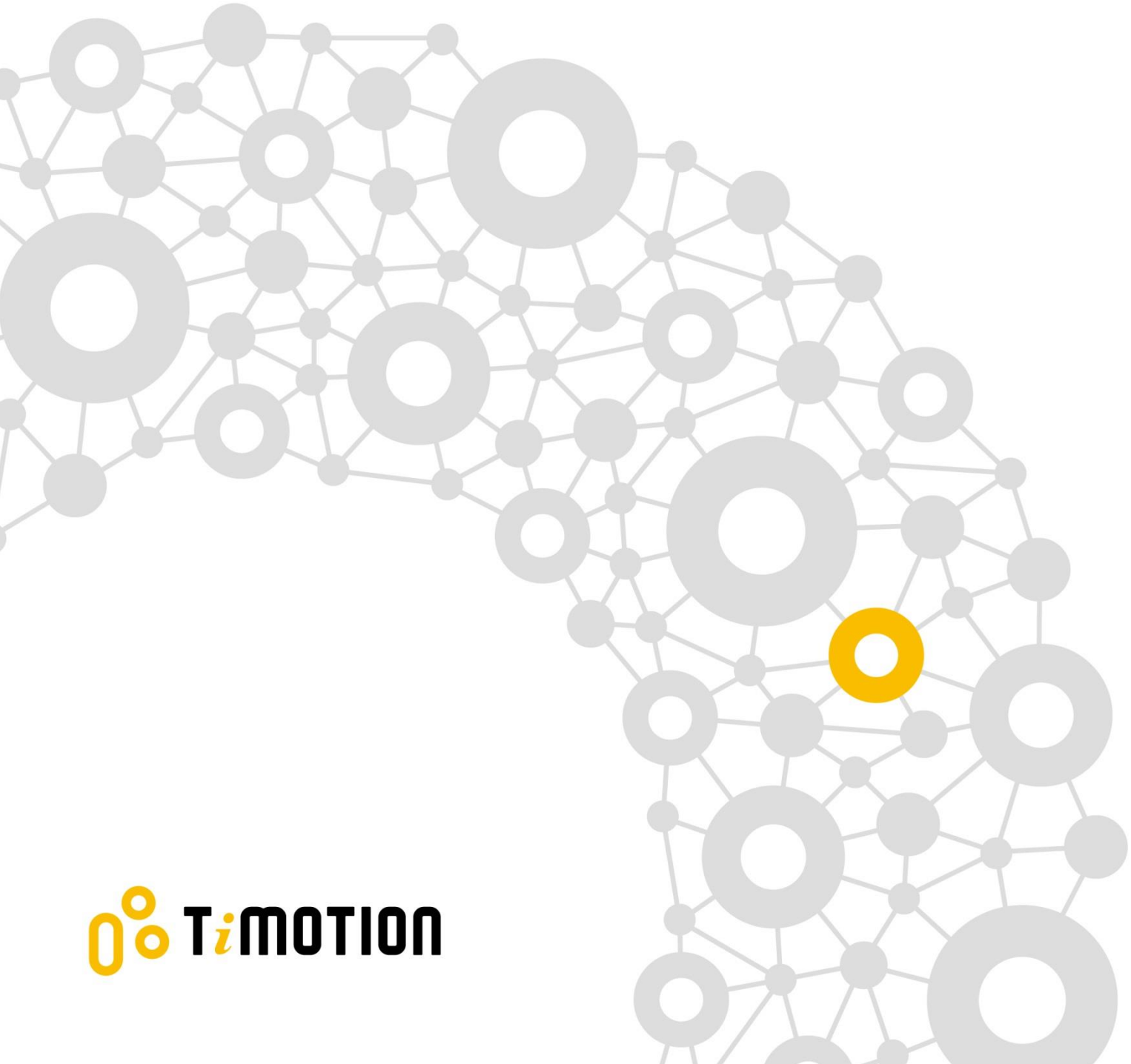
VERSION A

User Manual

TID1



TiMOTION

Contents

1. About

1.1 About this manual

This user manual is provided to the manufacturer of the equipment or system rather than end-users. This manual provides information needed to install, use, and maintain the TiMOTION products. Manufacturers are responsible for providing a user guide to the end-users using the relevant safety information passed from this manual.

This manual contains installation directions as well as technical data for the TiMOTION industrial actuator driver. Carefully read through each user manual section before the equipment is unpacked, installed, or operated. Please note all the dangers, warnings, cautions, and notes stated in this manual. Please follow the instructions provided in this manual to ensure safe, reliable operation.

1.2 Target Personnel

Please allow qualified mechanical and electrical professionals to perform all installation, maintenance, and replacement of the TiMOTION products. Please keep the products away from people who do not have the required experiences or knowledge of the product.

1.3 Warranty

In general, TiMOTION provides a 24-month warranty on Industrial actuator drivers based on the manufacturing date. The warranty is valid only if the equipment is properly operated and maintained correctly. The application of the product is the responsibility of the buyer. TiMOTION makes no representation or warranty as to the product's suitability for any particular use or purpose.

1.4 Transport and storage

The product should only be stored and transported in the original TiMOTION packaging. The temperature during transportation and storage must be between -40 to +90 °C (-40 to +194 °F). Please avoid shocks to the package. If the package is damaged, check the product for visible damage and notify the carrier and TiMOTION.

1.5 Packaging

The sample order packaging contains the product and the QR code directly to this manual. For large

quantity orders, packaging may vary, and TiMOTION reserves the right to change it.

1.6 Support

If any technical support or information is needed for this product, please contact your TiMOTION sales engineer. You can also visit https://www.TiMOTION.com/en for the product or contact information.

1.7 Disclaimer

This user manual has been written based on our current technical knowledge. TiMOTION is constantly working on updating our product information. We reserve the right to carry out technical modifications.

1.8 Notification and warnings

1.8.1 Mounting/dismounting the actuator

- Please read through this user manual before working on the equipment that the driver is or shall be a part of.
- Adhere to the information contained in this user manual and on the product label. Never exceed the performance limits stated herein.
- Be sure the driver is not in operation.
- Refrain from unplugging any cables or connectors during operation or while power is on.
- Immediately stop using the driver if it seems faulty or damaged. Notify your TiMOTION sales engineer so corrective actions can be taken.

1.8.2 Operation

- Be sure the driver is correctly mounted as indicated in the user instructions.
- Be sure the equipment can be moved easily over the driver's whole working area.
- Be sure the driver is connected to a main electricity supply/transformer with the correct voltage specified on the specification label.
- Stop the driver immediately if anything unusual is observed.
- Only use the driver within the specified working limits.

1.8.3 Equipment power off

- Switch off the main supply to prevent any unintentional operation.
- Regularly check for extraordinary wear.

1.8.4 Duty cycle

- The standard-duty cycle is 20% - Max. 2 min. run / 8 min. stop.
- If the product is customized, please refer to the approval drawings.

2. Specification

2.1 Technical data

Electrical	Operating voltage		12 VDC rated: 24 VDC rated:	9～16 VDC 20～34 VDC
	Standby current		12 VDC rated: 24 VDC rated:	110 mA 70 mA
	Power output (actuator)	Max. current(per channel)	20 A	
		PWM frequency	7.8 kHz	
	Aux. power output (sensor)	Supply voltage Max. current	3.5～5.0 VDC 10 mA	
	Hall signal input	Logic level	high: low:	3.5～5.5 VDC 0～2.0 VDC
		Pull up resistor	14.7 KΩ	
		Max. frequency	1 kHz	
	EOS signal input	Signal type	EOS[1]: PNP open MOS[2]: PNP N.C.	
		Impedance	1000 mΩ	
	POT signal input	Voltage range	0～5 VDC	
		Resolution	12 bit	
	Aux. power output (control)	Supply voltage Max. current	4.5～5 VDC 100 mA	
	Switch input	Logic level	high: low:	3.5～5.5 VDC 0～2.0 VDC
		Impedance	3.9 KΩ	
	POT control input	Voltage (Resistance)	0～5 VDC (0~10KΩ; linear)	
		Resolution	12 bit	
Mechanical	Dimension L x W x H (without fixation plate)		160 x 137.9 x 46 mm[3]	
Environment	Temperature	Operation	-35～+75 °C	

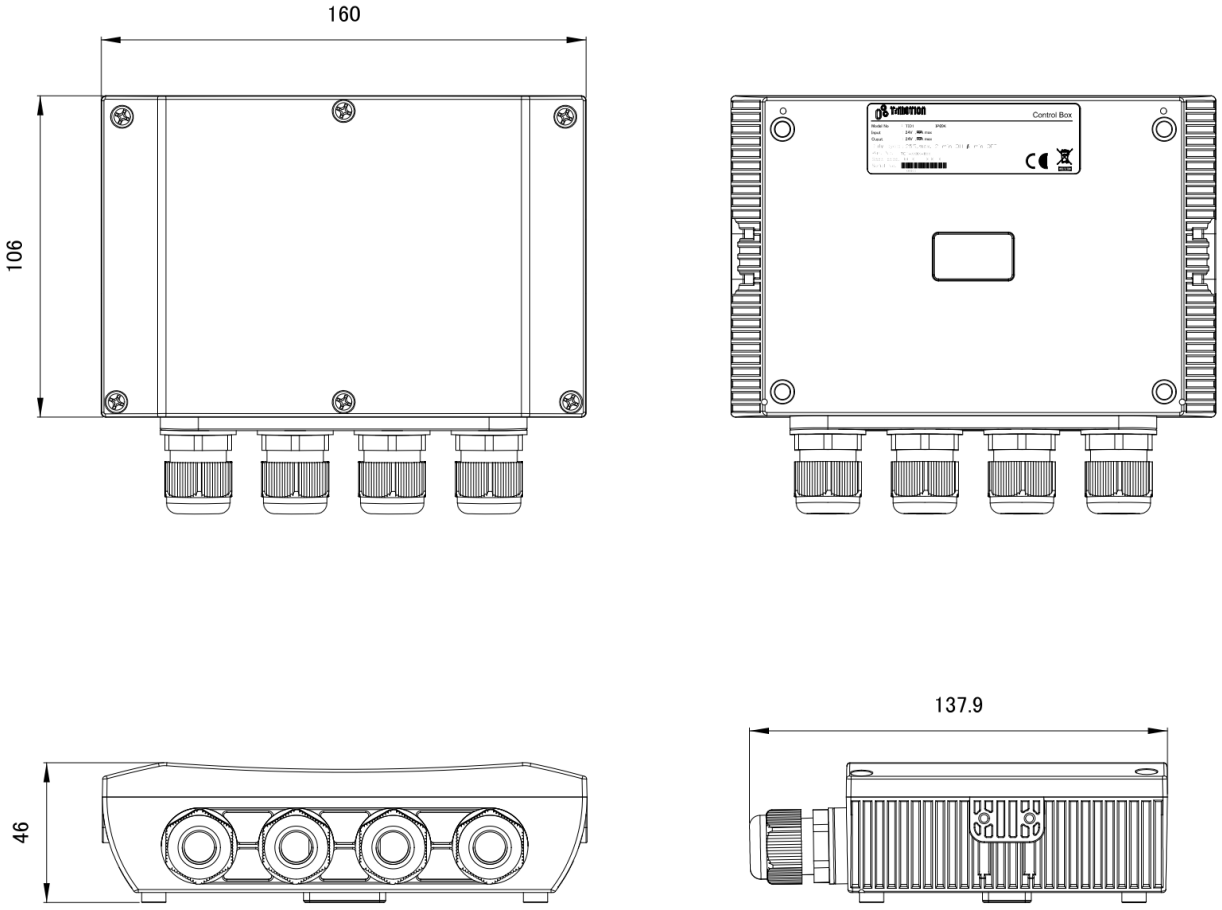
[1] EOS: end of stroke

[2] MOS: middle of stroke

	Storage	-40～+90 °C
	IP rating	IP69K

2.2 Dimensional drawing

Unit: mm

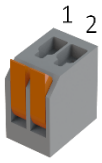


3. Connections

TB1 — Wire: 20 to 10 AWG

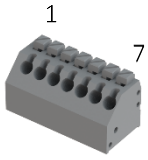
PIN		Description
1	GND	Ground
2	$+V_{CC}$	Power supply voltage

TB2 & TB5 — Wire: 24 to 12 AWG



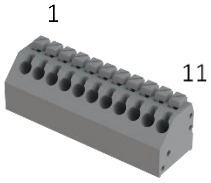
PIN		Description
1	Actuator M-	Actuator retract +
2	Actuator M+	Actuator extend +

TB3 & TB4 — Wire: 24 to 16 AWG



PIN		Description
1	Aux. power supply (sensor)	Sensor supply voltage +5 VDC
2	HS 1	Hall sensor 1 input
3	HS 2	Hall sensor 2 input
4	GND	Ground
5	EOS 1	End of stroke signal input 1
6	EOS 2	End of stroke signal input 2
7	POT	POT signal input

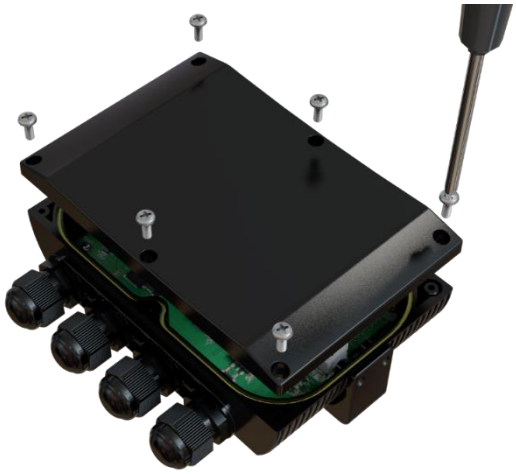
TB6 — Wire: 24 to 16 AWG



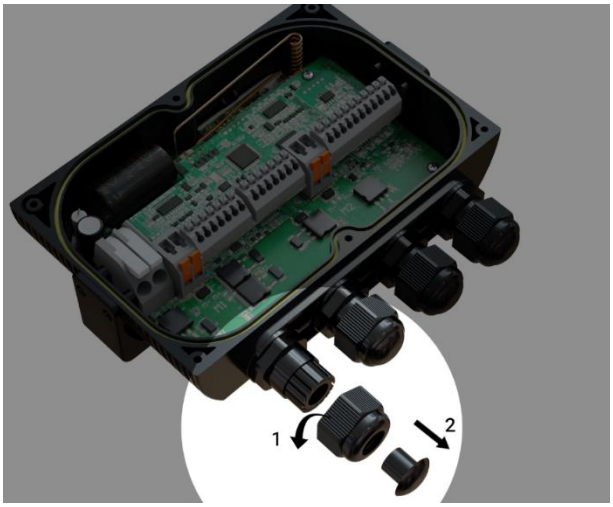
PIN		Description
1	Aux. power supply (control)	Control supply voltage; +5 VDC
2	TxD	RS232 transmit
3	RxD	RS232 receive
4	GND	Ground
5	SW1	Switch input 1
6	SW2	Switch input 2
7	SW3	Switch input 3
8	SW4	Switch input 4
9	POT control	POT control input
10	CAN+	CAN high
11	CAN-	CAN low

4. Wiring

4.1 Open TID1 and insert cable

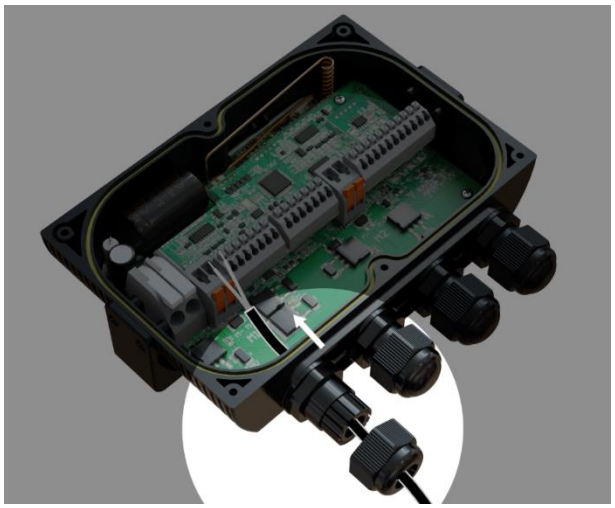


a. Use Philips screwdriver to unscrew and open TID1



b. unscrew cable gland

c. remove sealing plug

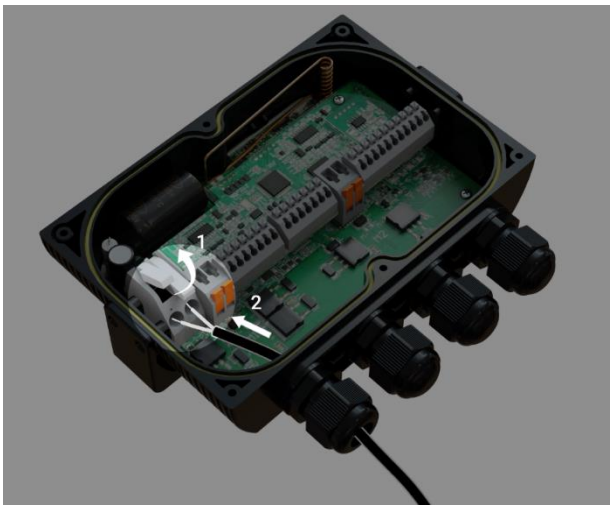


d. Put the cable through the cable gland

4.2 Wire fixation

Terminal block - lever

a. Pull up the lever
b. Insert the wire
c. Push down the lever

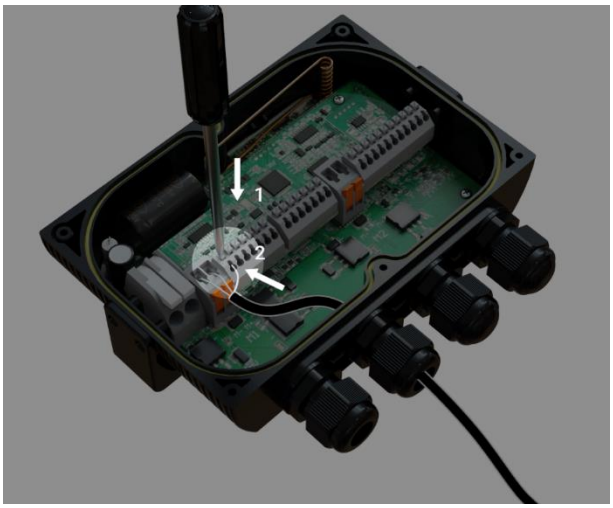


Terminal block - lever

a. Pull the lever forward
b. Insert the wire
c. Push the lever back

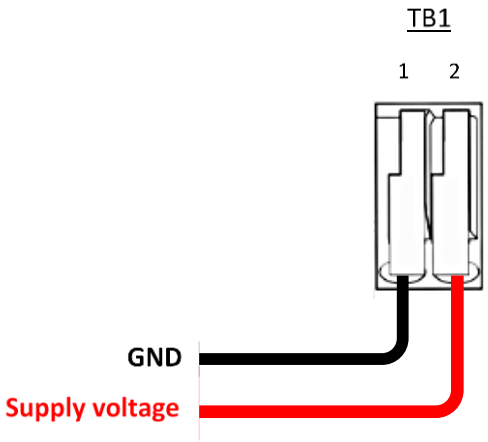
Terminal block – push-button

a. Push down the button using a flat-bladed tool
b. Insert the wire
c. Release the button



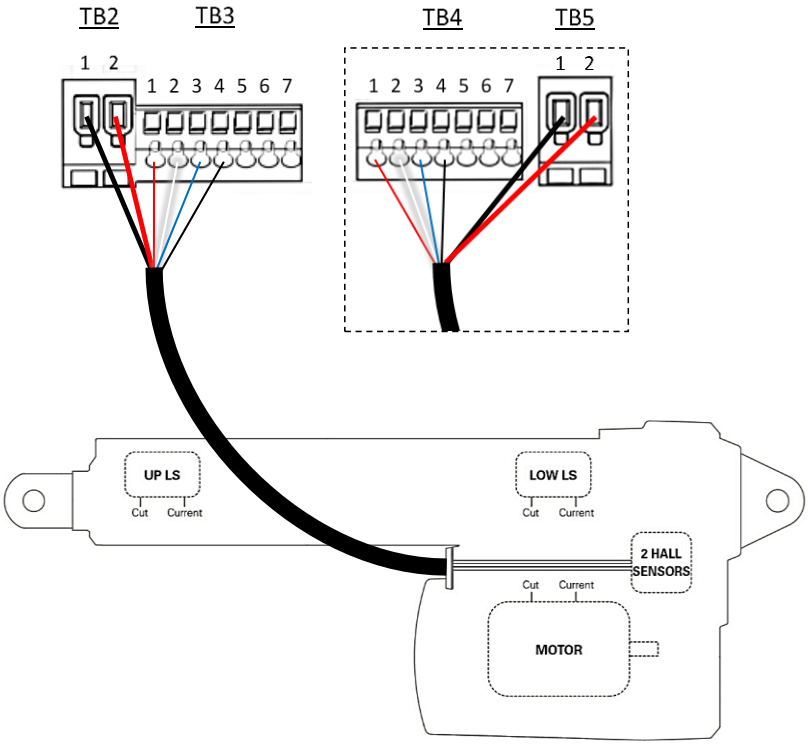
4.3 Connect with power supply

Supply voltage

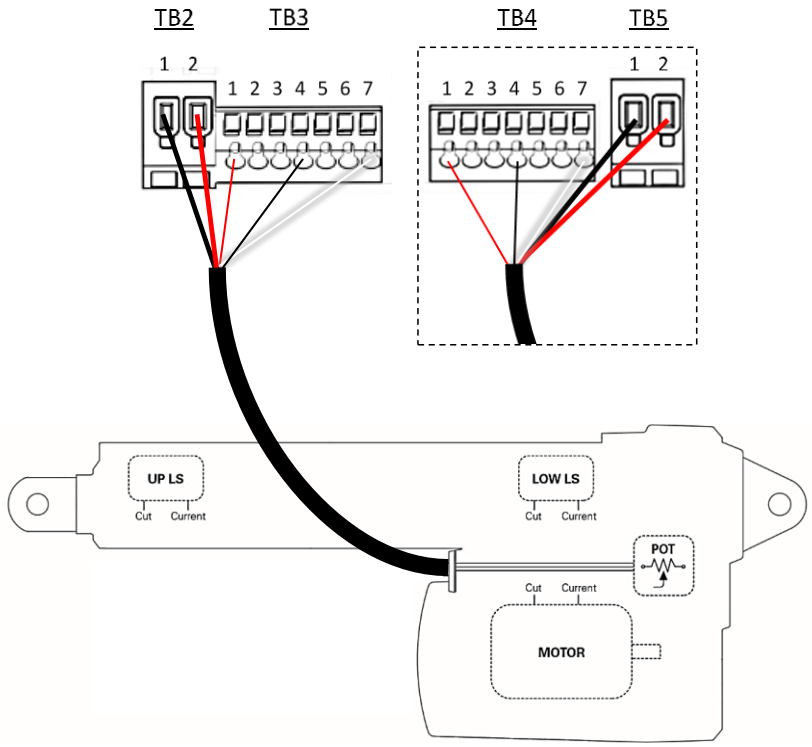


4.4 Connect with actuator

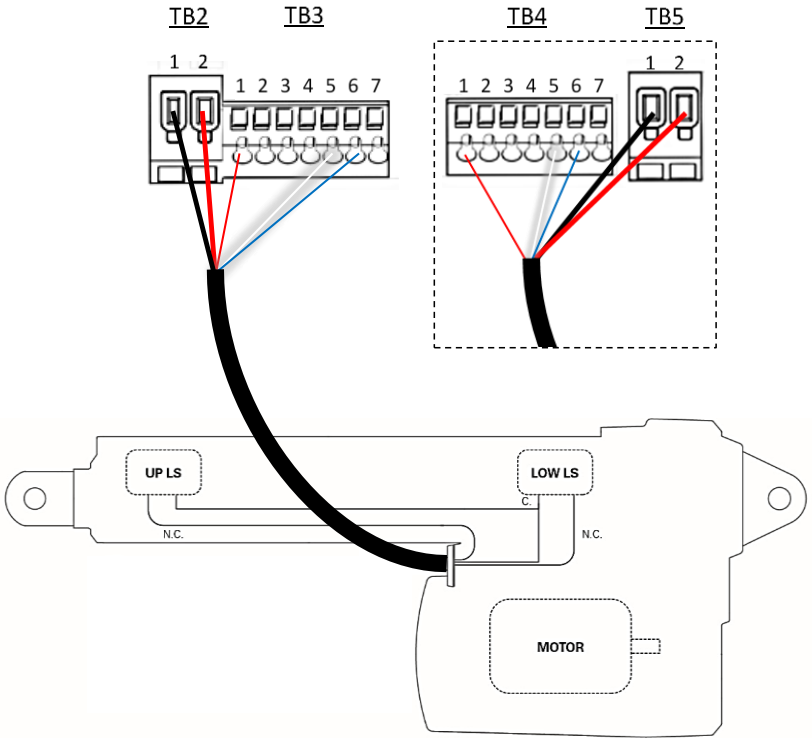
Actuator
with Hall signals



Actuator
with POT

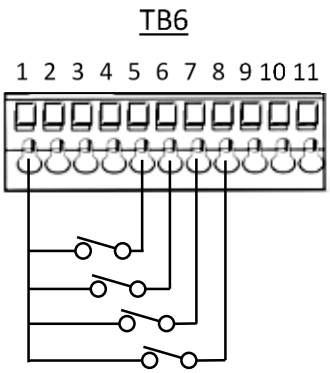


Actuator
with EOS signal

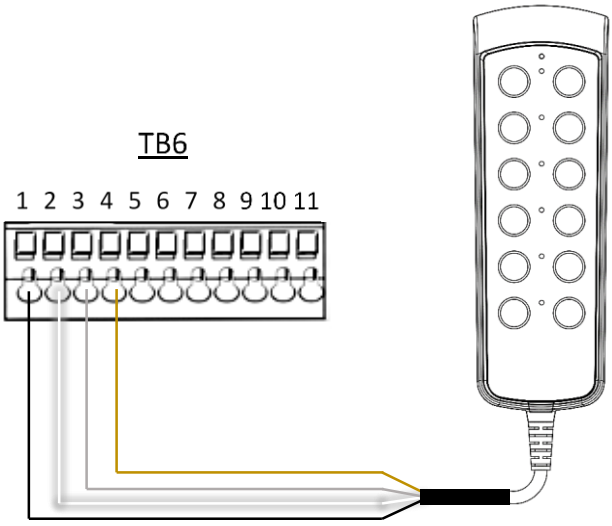


4.5 Connect with wired control

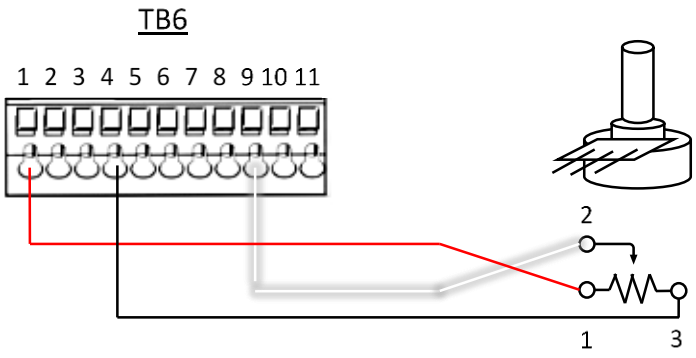
Switch(es)



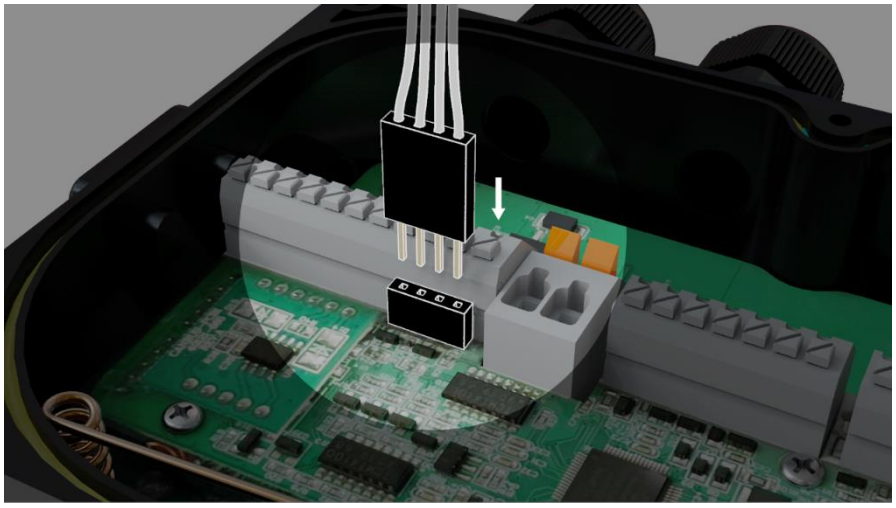
T-Bus handset



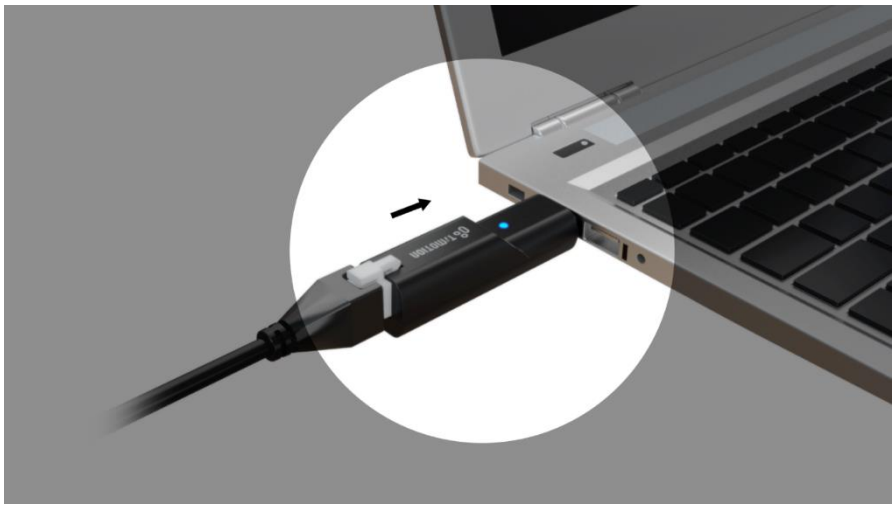
POT control



4.6 Connect with PGTID



a. Connect the programming cable with TID1.



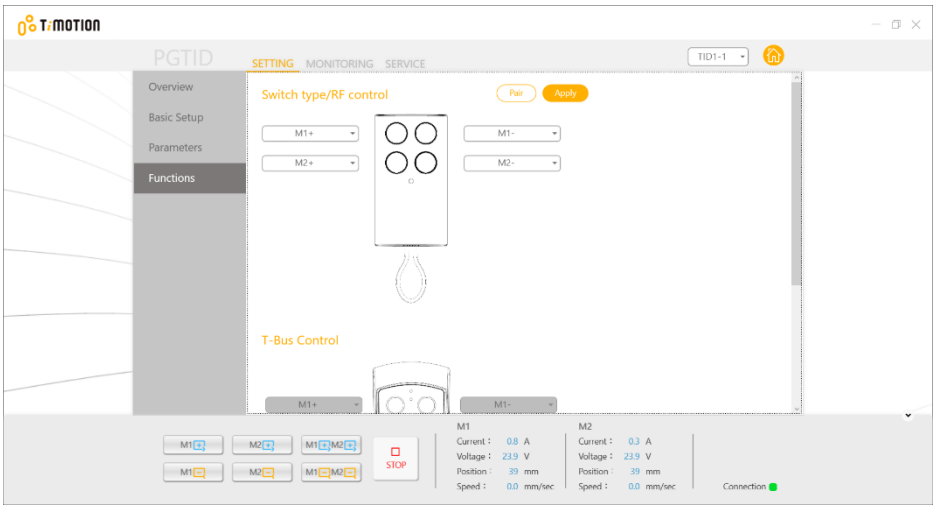
b. Connect the other end(TAD1) with PC.

c. Open the PGTID[3] programmer software.

[3] Please refer to the user manual of PGTID for more information.

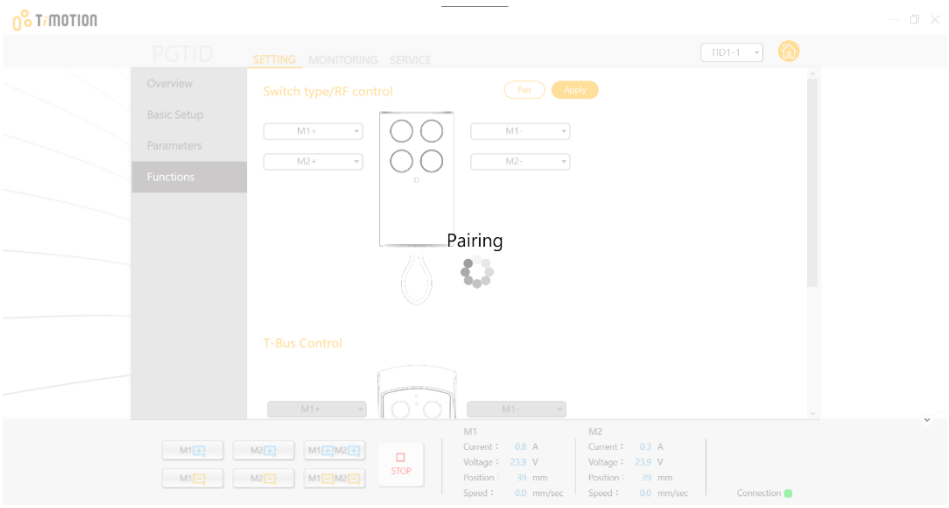
4.7 Pairing wireless handset

4.7.1 RF (PR3)



a. Open PGTID, then go to "Settings" → "Functions."

b. Press the "Pair" button.



c. Press any key at least once on PR3 during the pairing.

4.7.2 2.4Ghz (TH30)

- **Steps:**

a. Make sure the TID1 is in T-Bus mode
b. Set both 2.4GHz control (TH30) and TID1 in pairing mode simultaneously. Then, they will pair automatically.
c. If pairing succeeds, the blue LED on TH30 will blink twice.

- **Set TH30 in pairing mode:**

Press SW1 and SW2 on TH30 together for at least 5 seconds to initiate the pairing mode, which will last for 7 seconds. (i.e., Blue LED on TH30 will light up for 7 seconds)

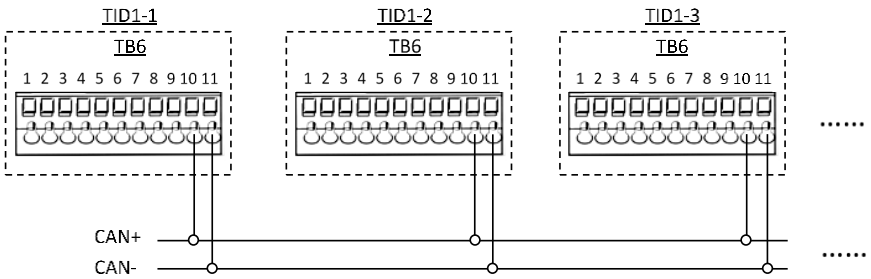
- **Set TID1 in pairing mode:**

Restart TID1 by turning the power off then on again; TID1 will be in the pairing mode for the first 10 seconds.

4.8 TID1 Cascading

Use PGTID to set up TID1 for cascading.

Connect multiple[4] TID1 together.



[4] Max. number of TID1 in cascading is 4.

5. Troubleshooting

Symptom	Cause/Possibility	Remedy
The actuator does not move	No supply voltage, incorrect supply voltage	Make sure the supply voltage is within the valid range(See Chapter 2)
	The actuator isn't connected properly to TID1	Make sure the actuator is properly connected(See Chapter 4)
	Actuator defective	Replace the actuator and contact your local TiMOTION sales representatives.
TID1 executes an incorrect function or no function	Settings in PGTID isn't in correspondence with the actuator/control connected	Connect to PGTID to check the settings. Please refer to the user manual of PGTID for more information.
	TID1 defective	Contact your local TiMOTION sales representatives.