

# PMXM01

## Twinning card for Matrix

### Installation manual

#### Introduction

The Twinning function is used to synchronize twin gates: therefore there will be a **Master** gate and a **Slave** gate. However it is possible to command each gate individually (to allow pedestrian opening for example).

The synchronization expects the gates to work at the same speed and same slow down, no matters if gates have different length. Speed will adjust automatically during cruise. However it is also possible to programm the two **Matrix** systems independently, every one with its own working times.

In order to synchronize the two systems and activate the **TWINNING function**, it is necessary to plug the **TWINNING cad** on each system. In this way both motors will be able to exchange mutual communication.

Both cards shall be wired together using a shielded bipolar cable, while each **Matrix** shall be set up, through **parameter H.6**. one as **MASTER** and the other as **SLAVE**.

#### Master and slave

The **Master** system is the main one: any safety device, start wired contact, and remote control shall be connected here. It starts any duty cycle.

The **Slave** system is free of any safety device, start wired contact and remote control, but it can stop the **Master** gate when encountering an obstacle. In this case both motors will reverse.

The **Slave** system starts just when the **Master** system starts and stops when the **Master** system stops. If the **Master** gate has completed the duty cycle and the **Slave** not yet, the **Slave** will be allowed to complete it anyhow.

Under these conditions, the following two scenarios may be set up (the **Master** gate commands)

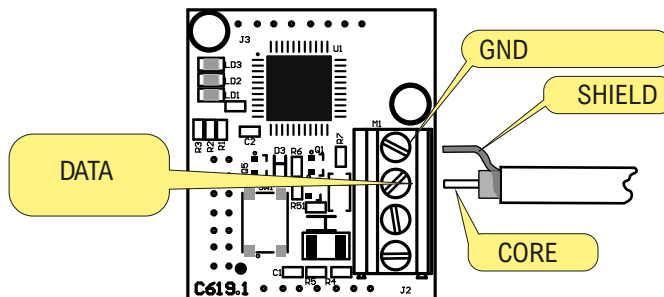
**1** Full opening: **Master** and **Slave** start opening together and stop when opening is completed; if automatic closing is set, both **Master** and **Slave** will start closing together.

**2** Pedestrian/partial opening: the **Master** will activate the pedestrian partial opening while the **Slave** will remain still. If automatic closing has been set, the **Master** will close.

The **Slave** can open and close independently (step-by-step mode), remaining the **Master** still. The automatic closing even if set up, will remain OFF. In any moment the **MASTER** may command over the **SLAVE**.

The **Master** works even when the **Slave** is OFF or temporarily disconnected. It is important to choose which motor will be **MASTER** and which will be **SLAVE** since they behave in a different way.

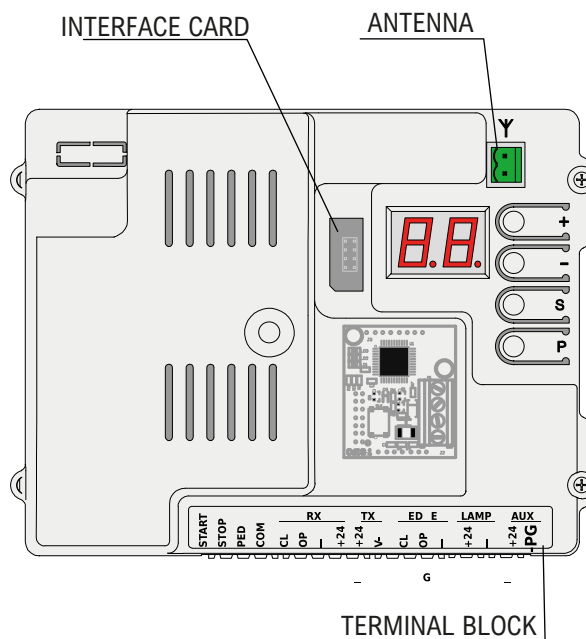
#### Wiring diagram



Above a **TWINNING** card top view showing wirings (a shielded or RG58 cable is required). A small section cable will be sufficient, since it is used just for signal transfer.

The **TWINNING** card has to be plugged in the proper seat included in the control unit: the according wire can come out from terminals block, **INTERFACE CARD** or antenna slot, or it is possible to drill a hole on the plastic housing.

Here below some possible suggestions about where the card wire may come out:

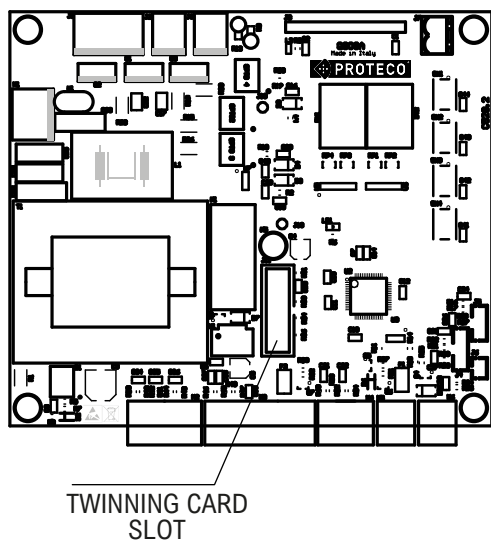


After outlining the wiring plan, proceed to remove the plastic cover: pull out the antenna connector, loose the 2 screws and open the housing. If you decided to drill a hole to let the wires pass through, do it at this stage.

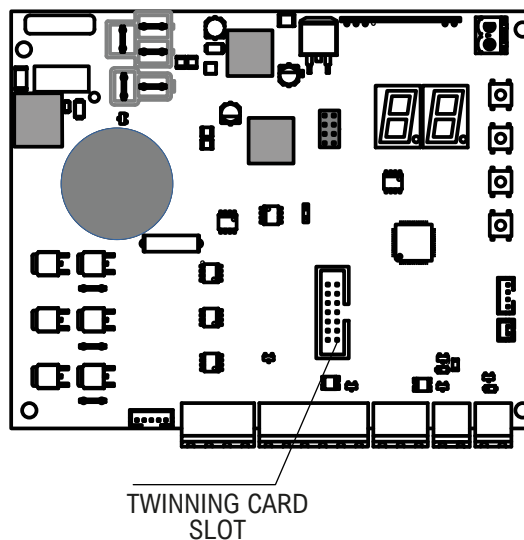
Wire the signal and core of the shielded cable to the **TWINNING** card terminals, and then plug the card in the slot.

**Matrix** is available in different models, but the card location is the same and has just one plug orientation that prevents incorrect insertion.

MATRIX 2500/1800 (230V)



MATRIX bldc/hi-Speed (brushless 48V)



## Programming

Standard programming must be performed for each motor; since no safety devices will be wired to the **Slave** system, it is necessary to set **parameter P.2 to 0 (for SLAVE only)**. Remember, being mirror gates, motors will open to opposite direction.

When programming is completed check the good operation of both systems, using key "+" on board to give a START command. Do not forget that at this stage both motors work individually.

Now proceed to connect the two motors, activating the TWINNING function, through **parameter H.6**. as follows:

- **MASTER** = set parameter **H.6 to 1**
- **SLAVE** = set parameter **H.6 to 2 (or 3)**.  
Normally we suggest to set to 2, in order to synchronize both gates (they open and close together at the same time).
- Option 3, may be rarely used: if gates are of different length, they will open and close with different opening and closing times.

Now the **Slave** programming is completed.

The **Master** programming is not completed and it can follow on connecting wired start commands, remote control storage, adjustment of working times and so on.

In any moment it is possible to deactivate the Twinning function if necessary (when maintenance service is required or the installation has to be inspected).

If **parameter H.6** is set to **0**, the system will be separated from the other one even if still wired together.

Be careful, **Slave has no safety devices nor start commands wired**: it can be commanded just using keys on board and the gate area will not be protected during operation.

## Additional tips

### Function "Dead Man"

This setting cannot be used, neither on the **Master** nor on the **Slave** system.

### Photocells, Safety edges and STOP emergency button

As previously mentioned, any safety device shall be wired to the **Master**.

However it is possible (but not recommended) to wire safety devices to the **Slave** too. In this case, if **Slave** stops, **Master** will as well, showing a fault message on the control unit's display.

There is an exception for safety edges and stop emergency buttons: it would be recommended to wire them to the gate they serve. In this case a permanent safe operation shall be granted even if the communication between **Master** and **Slave** for some reason cuts.

### Flashing light

It is possible to fit just one single flashing light in this kind of installation and it has to be fitted to the Master system. However it is possible to wire more than one if connected in parallel.

If Slave is set up to be activated on its own, or if gates have different working times, it would be wise to fit 1 flashing light to each gate.



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