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OPERATING INSTRUCTIONS

DRIVE SET FOR SWING GATES

with solar panels and battery

BRAND: VELTRIX

V-D-400-PV-B

V-D-400-2PV-2B

04/2025

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1. General information

Before installing and using the device, please read this manual carefully and follow the instructions contained herein.

The product has been created and designed for the automatic opening and closing of swing gates. All safety precautions must be observed during installation and use. Incorrect installation or improper use of the product may result in serious danger to the health or life of people and animals, as well as material damage.

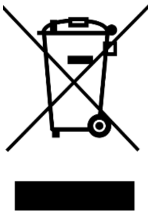
The product should not be operated by children or persons without the appropriate experience and knowledge. For safety reasons, ensure that no animals, children or bystanders are near the gate during use.

The installer must provide full information on how to operate the system in emergency situations and provide the user with the operating instructions supplied with the product. Repairs and modifications should be carried out by qualified persons. The installer is responsible for ensuring the safe use of the automation system by securing the area around the gate.

Before starting any installation or maintenance work, the power supply must be switched off. Inspections and maintenance work must be carried out regularly.

Appropriate overload protection devices should be used in the installation network to ensure complete disconnection under the conditions specified by overvoltage category III.

The manual must be kept and stored in a known location throughout the entire period of use of the device. Failure to follow the instructions may result in damage to the device, loss of warranty and lack of guarantee. The seller is not liable for damage resulting from improper use of the product.



Waste electrical and electronic equipment (WEEE) must not be disposed of with other municipal waste. Such equipment should be taken to a specialised WEEE collection point, such as municipal waste sorting centres (PSZOK), collection points run by electrical and electronic equipment retailers (e.g. when purchasing a new device) or another location designated by the local authorities.

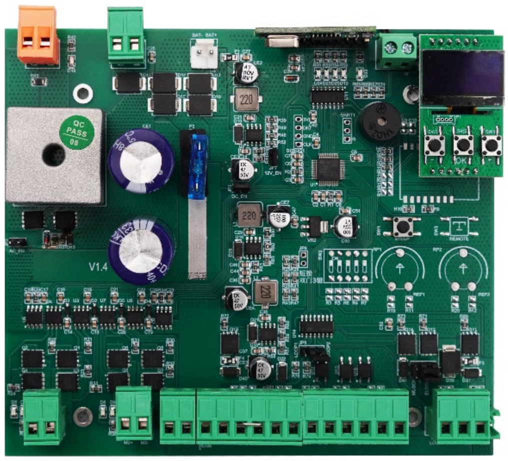
2. Contents of the kit

After unpacking the kit, check its condition and completeness. If any items are missing, defective or otherwise problematic, contact the retailer.

The contents of the kit are listed below:

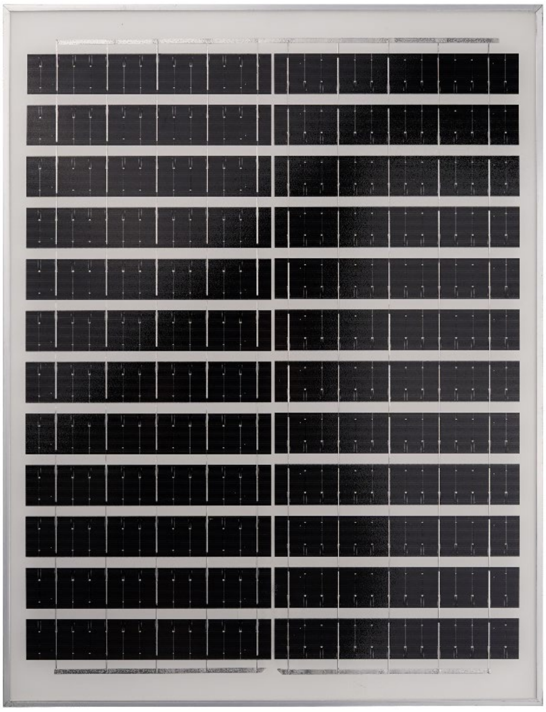
• Drive actuators with mounting brackets – 2 pcs.

• Drive controller with mounting accessories – 1 pc.



• Limiter – 1 pc. (optional)

• Photovoltaic panel (1 or 2 depending on the model)



• Battery (1 or 2 depending on model)

• Remote control – 4 pcs.

• Photocell set – 1 pc.

• Signal lamp – 1 pc.

3. product information

3.1 Key features

• Obstacle detection: the drive automatically stops the gate if it encounters increased resistance during operation.

• Automatic closing: the automatic closing function can be activated with the option of adjusting the time after which the gate closes.

• Speed adjustment and soft start – the drive allows you to adjust the speed of gate opening and closing, and ensures smooth starting and stopping, which reduces wear and tear on the mechanisms.

• Quiet and smooth operation: the drive is extremely quiet, which increases comfort of use, especially in residential areas.

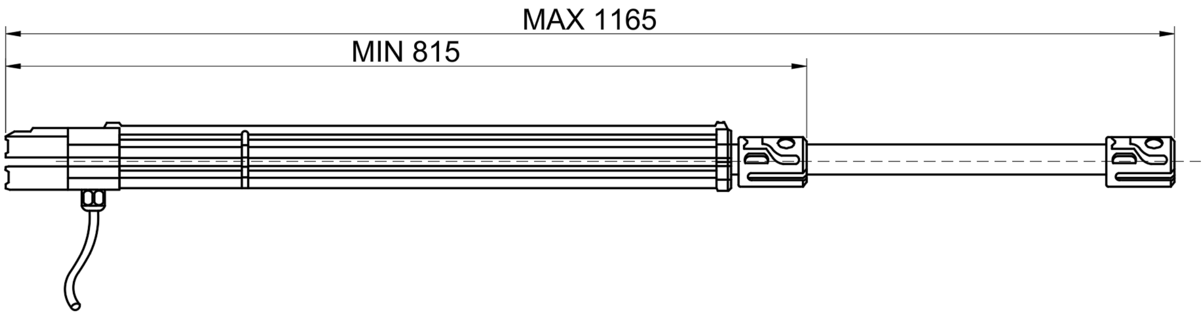
• Flexible operating mode configuration: the drive is compatible with both single-leaf and double-leaf gates.

• Expandability: the system can be expanded with various accessories (e.g. solar module, Wi-Fi, photocells, batteries, electric lock, alarm, external control panel), allowing it to be adapted to the specific needs of the user.

3.2 technical data

Mains power supply	AC 230V 50 Hz
Controller power supply	AC/DC 12/24V
Power	50W
Maximum arm movement	350 mm
Maximum gate opening angle	100
Maximum length of one leaf	2 m
Maximum weight of one leaf	200 kg
Permissible ambient temperature	-20°C to 70°C
Ingress protection class (water and dust resistance)	IP45

Actuator dimensions in extreme positions (dimensions between axes reduced by 30 mm) – maximum dimensions depend on the setting of limit switches.



Photocell technical data

Range	Up to 15 m May be reduced by up to 30% in adverse weather conditions (rain, dust, etc.)
Infrared wave frequency	1.92 kHz
Power	12–24 V DC/AC
Infrared wavelength	940 nm
Current consumption	RX receiver 15 mA TX transmitter 30 mA
Temperature range	-20°C to 70°C
Relay	Up to 1A, up to 36V
Dimensions	100x40x35 mm

3.3 Power supply requirements

• Main power supply 230V AC – 3 x 1.5 mm^{22}

• Photocell

o Transmitter 2 x 0.5 mm^2

o Receiver 4 x 0.5 mm^2

• Signal lamp – 2 x 1 mm^2

• Manual control panel (optional) – quantity depends on the number of buttons, 0.5 mm^2 .

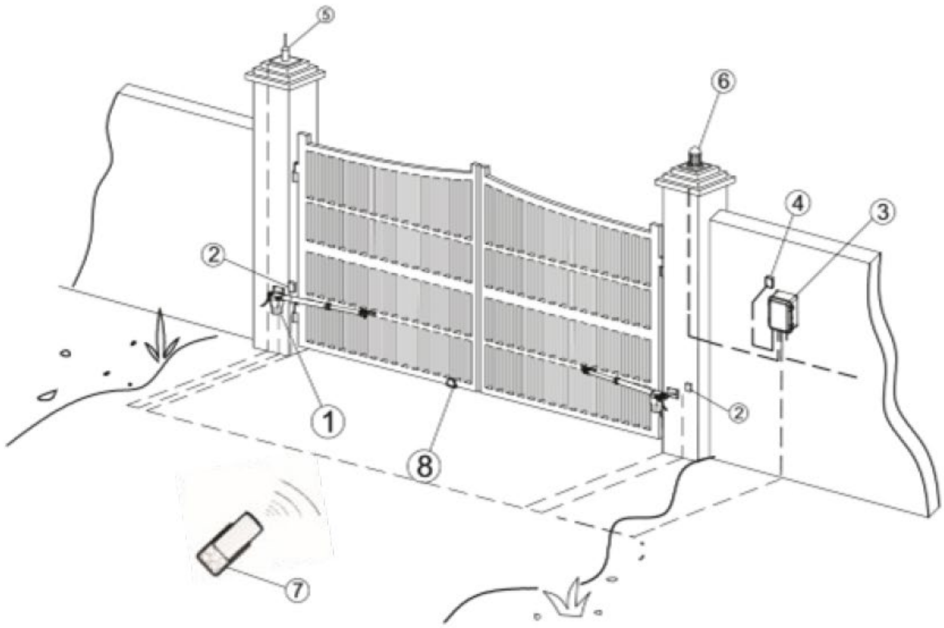
CAUTION! Exercise extreme caution when working with a 230V power supply. Use a 10A overcurrent protection device in the drive power supply circuit.

4. Assembly and configuration instructions

4.1 Installation information

The figure below shows how to install the gate drive. The drive unit must be installed on the inside of the gate so that unauthorised persons cannot access it.

Illustrative diagram of drive mounting:



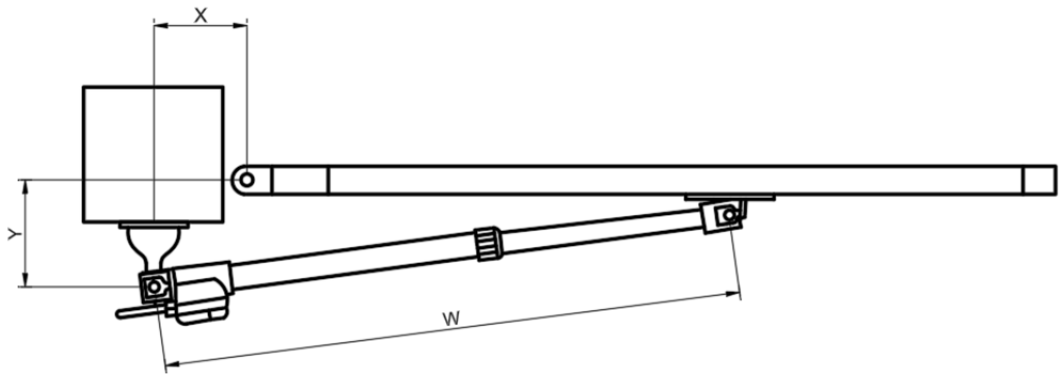
1. Actuators
2. Photocells
3. Drive controller
4. Panel with buttons for gate operation (optional)
5. Antenna (optional)
6. Signal lamp
7. Remote control
8. Gate closing limiter

Before installing the drive, pay attention to where the actuator brackets can be mounted, both on the post and on the gate.

The actuator with gate brackets should be pre-fitted to assess whether it is possible to mount the actuator on both sides without exposing it to bending.

Incorrect installation of the actuator may cause resistance when opening and closing the gate, and using the drive in this way may result in damage.

Dimensions for actuator installation

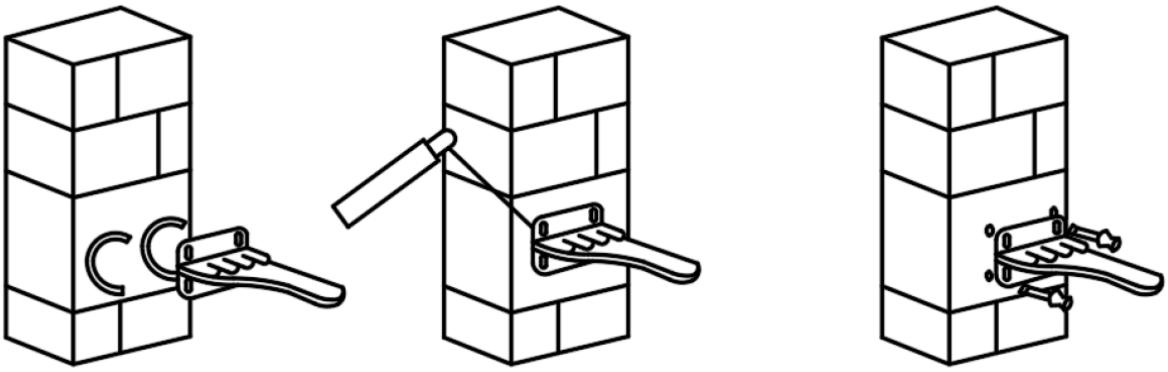


ANGLE	X	Y	Distance from hinge to front mounting	W (Actuator length when the gate is closed)	Minimum actuator length
90	125	215	995	1135	785
95	135	195	990	1135	785
100	130	190	990	1135	785

The dimensions are approximate and depend on many factors – the length of the actuator, the operating range of the actuator, the thickness of the gate, and the relative distances between the mounting points of the actuator and the gate. For a more accurate determination of the mounting points, we recommend using the gate actuator calculator available on the Internet and/or consulting an experienced installer.

Mounting the rear actuator bracket to the post

Spacing of holes for attaching the bracket to the post:



Depending on the material to which the drive is mounted, the actuator mounting brackets can be bolted or welded to the post.

In the case of screws mounted in the post (figure on the left), place the bracket in the designated location and tighten the screws.

In the case of welding, drill holes at the mounting points, then place the actuator mounting bracket on the prepared holes and weld the actuator bracket to the post.

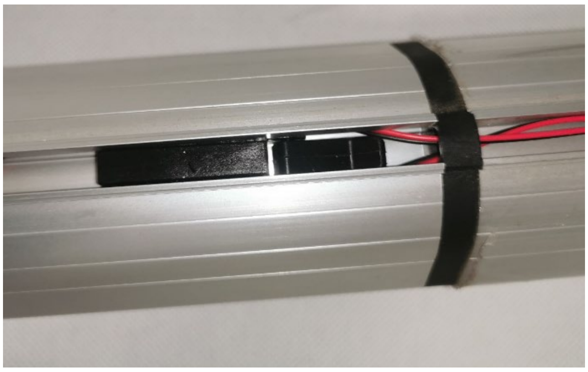
For concrete posts, drill holes according to the spacing of the holes in the bracket. Then insert concrete bolts into the drilled holes, attach the rear bracket and tighten the nuts.

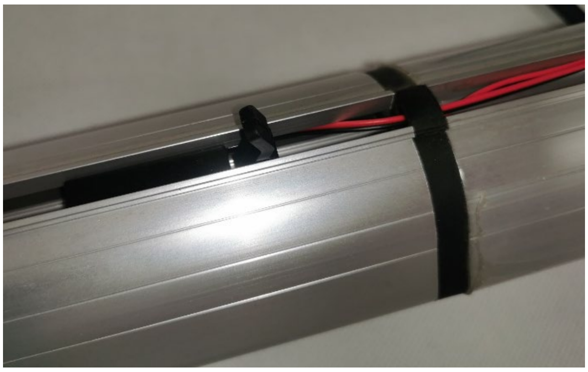
4.2 Manual gate operation

In the event of a power failure or malfunction, to open or close the gate manually, unscrew the screw securing the actuator to the front bracket (attached to the gate), disconnect the actuator from the front bracket and open or close the gate manually.

4.3 Setting the limit switches in the actuator

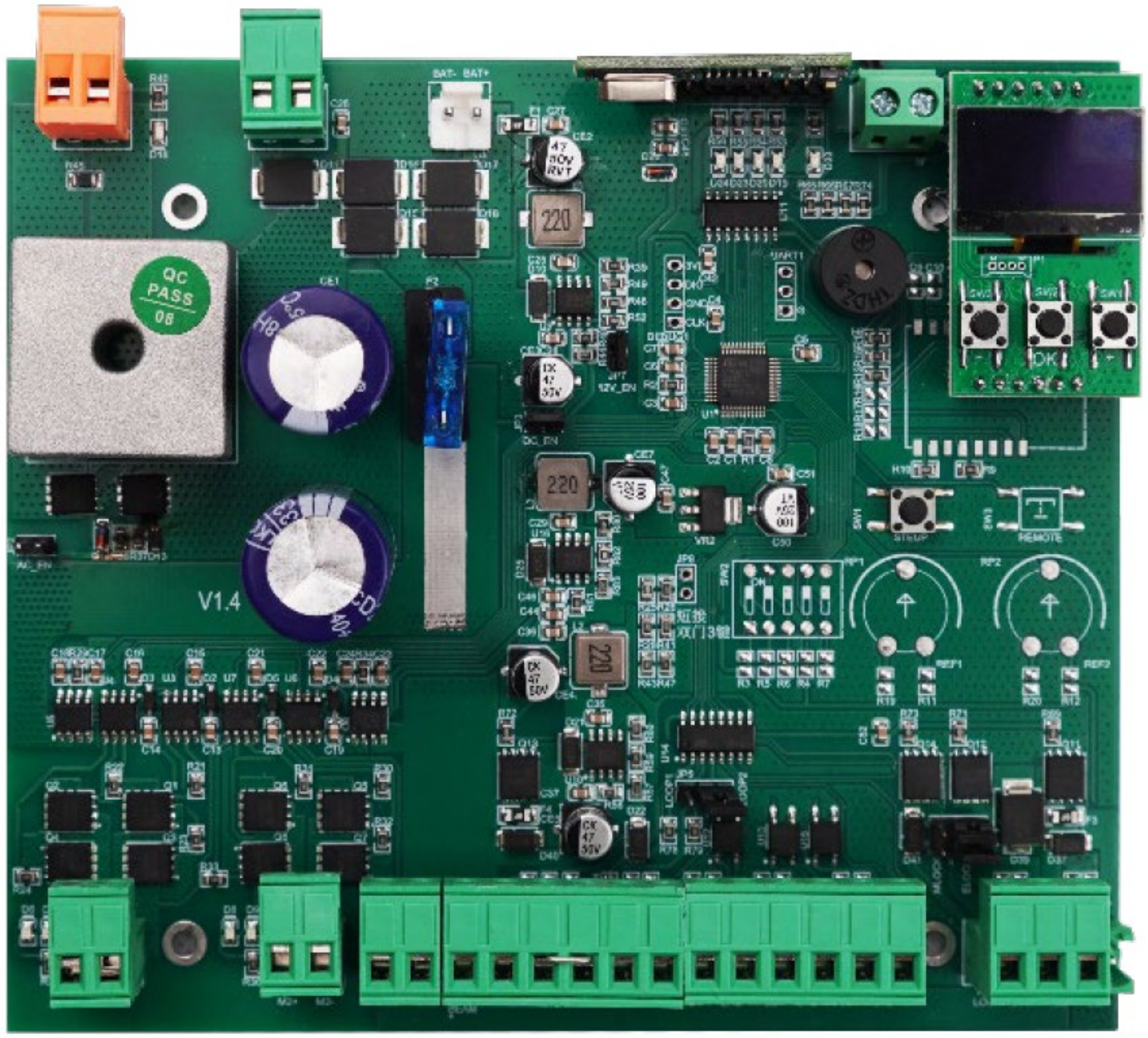
Unscrew the screws shown in the photo. Lift the cover. Slide out the strip covering the limit switches. Lift the lever locking the limit switch in place. Move the limit switch to the appropriate position and lock its position with the lever. Reassemble the actuator.





5. Drive controller

5.1 Description of connectors



AC_N	AC 24V power supply
AC_L	AC 24V power supply
Solar+	Solar panel +
Solar-	Solar panel -
BAT-	DC battery connector
BAT+	DC battery connector+
ANT	Antenna
GND	Antenna shield
M1+	Motor power supply (main) DC+
M1-	Motor power supply (main) DC-
M2+	Auxiliary motor power supply DC+
M2-	DC auxiliary motor power supply
VCC	DC+ 24V
GND	GND
POWER FOR BEAM+	DC+ 24V
GND	GND
BEAM	NC photocell connector
GND	GND
LOOP	
GND	GND
PB1	Close
GND	GND
PB2	Single gate wing operation (MOTOR 1) / STOP
GND	GND
PB3	Operation of two gate leaves / Open
GND	GND
LOCK+	24V DC electric lock+
LOCK-	24V DC electric lock-
LED+	Signal lamp 24V DC+
LED-	24V DC signal lamp-

Jumpers

Jumpers allow you to enable or disable specific functions.

JP1	**BAT-/BAT+**	Connector for connecting the battery
JP2	**AC_EN**	Mains power on/off
JP3	**DC_EN**	Battery power on/off
JP4	**REMOTE**	Remote control receiver connector
JP5	**LOOP1/LOOP2**	Support for one or two gate wings
JP6	**MLOCK/ELOCK**	Selection of magnetic/electric lock
JP7	**12V_EN**	12V power jumper (close for 12V power supply, leave open for 24V power supply)

-	Down (next option)
OK	Confirmation button
+	Up (next option)

Electric lock

The lock should be installed on the gate leaf that opens first (M1).

In the controller, select the type of lock – electromechanical (requires power to be turned on to open) or magnetic (requires power to be turned off to open). The selection is made by setting the JP6 jumpers (**MLOCK/ELOCK)** accordingly**.**

5.2 Main menu

To enter the main menu, press the "OK" button.

Use the -/+ buttons to navigate between the available functions. To select an option, press the "OK" button.

To exit the menu, select Exit or Cancel.

Language	Language	Chinese/English	Chinese/English
Parameter list	Parameter set		
Controller configuration	Programming	Start learning? Cancel Yes	Start configuration? Cancel Yes Remote
Adding a remote	Add remote	Add remote? Cancel Yes	Add remote? Cancel Yes
Remote control deletion	Delete remote	Delete remote? Cancel Yes	Delete remote? Cancel Yes
Current consumption calibration	Current cal	Start zero calibration? Cancel Yes	Start zero calibration? Cancel Yes
Current consumption graph preview	Current wave	M1 current wave M2 current wave Exit	Current consumption of motor M1 M2 motor current consumption Exit
Restore default settings	Restore default	Restore default? Cancel Yes	Restore default settings? Cancel Yes
Select door type	Set door type	Slide 1 key Slide 3 key Swing 1 key Swing 3 key	Sliding (single-key operation) Sliding (three-button operation) Swing (single-button operation) Swing (three-button operation)
Exit	Exit		

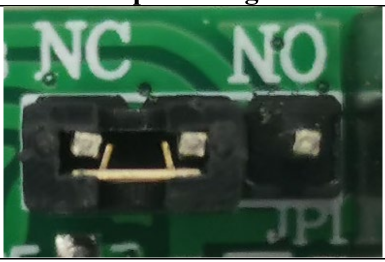
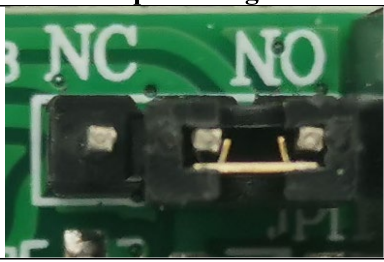
Parameter name	Default value	
F opentime1	8	Opening time for gate M1 at higher speed
S opentime1	5	Gate M1 opening time at lower speed
F closetime1	8	Closing time of gate M1 at higher speed
S closetime1	5	Closing time for gate M1 at lower speed
F closetime2	8	Opening time of gate M2 at higher speed
S opentime2	5	Gate M2 opening time at lower speed
F closetime2	8	Closing time of gate M2 at higher speed
S closetime2	5	Closing time for gate M2 at lower speed
Autoclose	2	Time until automatic closing
Delay open	2	Opening delay
Delay close	2	Close delay
Obstacle	45	Obstacle detection force [%]
Stop force	27	Stopping force [%]
F Open speed	99	Higher opening speed [%]
S Open speed	50	Lower opening speed [%]
F Close speed	99	Higher closing speed [%]
S Close speed	50	Lower closing speed [%]
Start speed	60	Initial speed [%]
Exit		Exit

6. Photocell connection

The photocells included in the set significantly improve the safety of the device. The photocells are connected as follows:

- The positive pole of the infrared transmitter and receiver power supply should be connected to the **POWER FOR BEAM+** connector.
- The negative power supply terminal should be connected to the **GND** connector.
- The output cable of the infrared receiver should be connected to the **BEAM** connector.

NOTE! The receiving photocell should be installed in such a way that it is not exposed to strong sunlight. Solar radiation can significantly affect the sensitivity of the photocell.

Photocell output configuration - NC	**Photocell output configuration - NO**
	

When the red LED is lit, the light beam from the transmitter reaches the receiver, which means there is no obstacle.

When the red and blue LEDs are lit, an object is blocking the light beam, which causes a signal to be sent to open the gate when it is in closing mode.