SETTING DETECTION SPEED

The Receiver module can be set to either an immediate response or to a delayed (LO) response when the beam is interrupted. The delayed response requires for the beams to be broken for a longer period of time before initiating a trigger. This is useful when using the beams in an area where birds could fly through the beam, thereby triggering the Relay output. To set a delayed response, set switch number 3 to On and, for an immediate response, set it to OFF.

OPEN COLLECTOR

In power sensitive applications, such as when solar power is used, the Relay can be disabled by switching the number 2 switch to OFF. In these applications the Open Collector output can be used as the connection to the gate operator to conserve power. The Open Collector output can also be used as the gate connection when the Relay is used for a different function, such as switching pillar lights.

LIABILITY

DACE will not be held responsible for any accident or incident resulting in damage, injury or death ensuing from the incorrect installation and use of DuraOptics Safety Beams. This also serves as a reminder that if the beams have been placed in override that the gate may automatically close and can cause injury, damage or death.

WARRANTY

DACE warrants the original purchaser, at the point of sale, that the product is in good working order and free from defect. Warranty period is 24 months from date of manufacture. This warranty does not cover incorrect installation; incorrect wiring; lightning; flooding; power surge; fire; insect infestation or any abnormal use of the equipment.

Technical Specifications	
Power Supply	**Receiver**: 12 to 24v DC or AC **Transmitter**: 2 x AA Battery
Low Battery Indication	High bright external LEDs
Max. Distance	20m
Relay Outputs	N/C, N/O & COM
Relay Operating Mode	Fail Safe
Relay Rating	230V 5A
Open Collector	100mA switched to ground
Low Power Mode	Only when connected to a Tritek Control Board
Self Test Mode	Enabled via a compatible gate operator Control Board

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DURAOPTICS

Instruction Leaflet

Wireless Safety Beams

INTRODUCTION

DuraOptics Wireless Safety Beams are designed to be used as a multifunctional device.

The Receiver module comes with both Relay and Open Collector (FET) outputs and, as a standard operation, both outputs will switch on when the beam is interrupted and off again when the beam status is restored.

The Relay can, instead of the standard operation, be programmed to give an extended pulse output when the beam is broken, while the Open Collector Output (FET) will always follow the beam status and cannot be adjusted. This allows for the Open Collector Output to be used as a normal beam input on a gate operator while the Relay Output can be used for another function, such as switching on pillar lights.

The Transmitter module is completely wireless and is powered by two AA batteries that can last for more than 5 years. The Receiver module will give a warning indication in advance of the Transmitter module's batteries going flat and, should the user neglect to replace the batteries during this time, it is possible to temporarily override the beam using the Near Field Technology (NFT) incorporated into the Receiver module.

With three built in LEDs indicating alignment of the Transmitter and Receiver modules, high infrared luminance and a large tolerance for misalignment installation is a simple process.

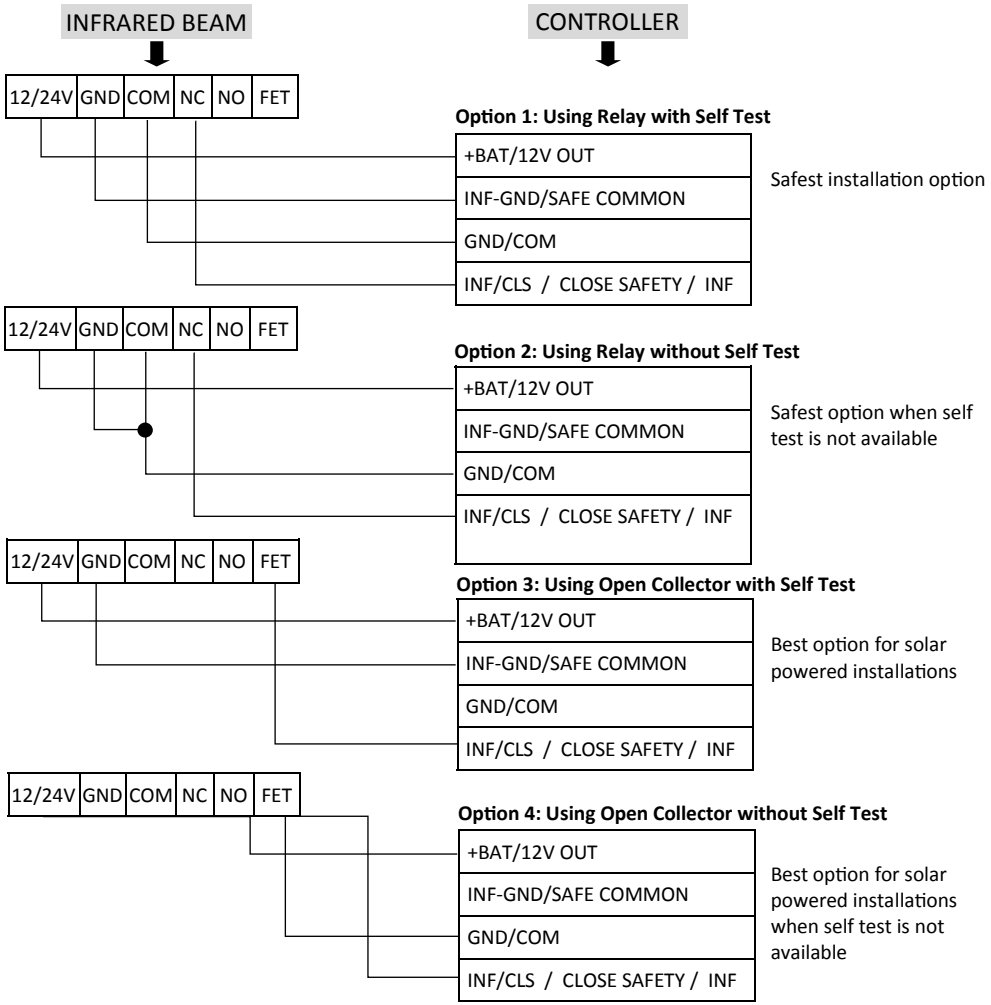
INSTALLATION

IMPORTANT: Before any wiring takes place, remove all power on the gate operator

1. Safety beam modules should be mounted at least 700mm off the ground, high enough to ensure that larger vehicles, such as a horse & trailer, will break the beam when passing between the gate posts.
2. Remove the Receiver module cover and break the cable entry tab on both the cover and back housing. Ensure that the cable being used is thin enough to allow the housing to be closed again without any interference.
3. Remove the circuit board from the Receiver housing to allow access to the mounting holes.
4. Place the Receiver back housing on the wall, remembering that the Receiver and Transmitter modules must ultimately face each other, and mark the hole positions.
5. Using a 5mm masonry bit, drill holes in the wall and fasten the back housing to the wall with the screws and wall plugs provided.
6. Use general purpose silicone to cover the screw heads to prevent moisture or ants from entering.
7. Replace the Receiver circuit board and connect the wiring as indicated in the wiring diagram.
8. Replace the Receiver cover.
9. Remove the plastic cover from the batteries in the Transmitter module to allow it to power up. The Green LED will blink for 2 minutes indicating that the power is connected. Thereafter it will blink every 40 seconds to indicate that the Transmitter module is working.
10. Restore power to the gate operator. The Receiver will automatically go into NFT Installer Mode which checks that the modules are correctly aligned.

11. Position the Transmitter module on the opposite side of the driveway, at the same height and facing the Receiver module.
12. When the two modules are aligned the Green LED will burn solidly and when misaligned the Red LED will burn solidly (only when in Installer Mode**)**. The Receiver will remain in Installer Mode for 10 min, thereafter it will automatically time out and go back into normal user mode. To reactivate or deactivate Installer Mode hold the gate remote against the Receiver module and press one of the buttons.
13. When the two modules are aligned, mark the position of the Transmitter module on the wall and attach as instructed in points 5 & 6.
14. Before closing up, test that the gate does stop when the beam is interrupted.
15. Replace the cover. Use a general purpose silicone sealant and run the sealant around the outside of the cover and the wall to prevent moisture and ants from entering through the back of the modules. Finally, also seal around the cable entry point. NOTE: ants are destructive, every effort must be taken to ensure that there are no holes for ants to enter.
16. If connecting DuraOptics Safety Beams to a DACE operator with a red control board, always remember to put DIP Switch No.2 off.

WIRING DIAGRAMS



PROGRAMMING RELAY OUTPUT

The Receiver beam Relay output can be programmed to either 'follow' the beam status or to Pulse**.** Following the beam status means that when the beam is broken the Relay will trigger and when the beam is restored the Relay will restore. Setting the output to Pulse allows for the programming of a delay in restoring the beam after it has been broken. The delay can be set from 250ms to 24 hours and is useful for the switching of pillar lights etc.

To set the Relay output to Pulse switch number 1 switch to ON. This changes the Relay from Gate Beam mode to Pulsed mode. Now switch number 4 switch to ON. All 3 LEDs will come on at the same time, at which point the Pulse time is set to 250ms. After one second the Green LED will start blinking. Each blink of the Green LED indicates that the Relay Pulse time is extended by another second i.e. 10 blinks indicate that the Relay will Pulse for 10 seconds. After 60 blinks the Yellow LED will start blinking. Each blink of the Yellow LED indicates that the Pulse time has been extended by an additional minute i.e. 60 Yellow blinks means that the Relay will pulse for one hour. When the desired Pulse period is reached switch number 4 switch to OFF, the Pulse period is now locked in. Examples:

- To set a Pulse period to 5 minutes, wait 1 minute & 4 seconds. The first minute will add 1 minute to the Pulse period and there after each second will add another minute then switch number 4 switch OFF immediately.
- To set a Pulse period to 1 hour, wait 2 minutes then switch number 4 switch OFF immediately.
- To set a Pulse period to 3 hours, wait 4 minutes then switch number 4 switch OFF immediately.

LOW BATTERY

The Receiver module monitors the Transmitter module battery voltage and, when the batteries begin to run low, the external yellow LED will blink to indicate the low battery.
When the batteries are completely flat, or if the transmitter signal is lost for an extended period of time, the external red LED will burn solid.

FLAT BATTERIES & TEMPORARY OVERRIDE

If the Transmitter module batteries run flat the gate will not be able to close. To temporarily override the beams hold a gate remote against the Receiver module and press any button for 3 seconds. This will override the beams for up to 24 hours. When in override mode the external LEDs on the Receiver module will toggle between green, yellow and red. It is important to note that while in override mode the gate operator cannot respond to the beams being broken and injury or damage to property can occur so it is vital to replace the flat batteries immediately.

TRANSMITTER MODULE & POWER CONSUMPTION

The Transmitter module uses Nano Watt power consumption technology and, in low power mode, the battery life is extended to more than 5 years.
There are 3 jumper settings on the circuit board. The jumper setting at the bottom of the circuit board enables or disables the Transmitter LED blinking.
The Range jumper, on the top left of the circuit board, should be fitted if the Transmitter and Receiver modules are placed more than 10 meters apart.
The Power jumper, on the top right of the circuit board, should be fitted if the Receiver module is in direct sunlight during sunrise or sunset.
Note: the battery life will be reduced when fitting the Range or Power jumpers.