DTS ECO 500

SLIDING GATE MOTOR
INSTALLATION MANUAL

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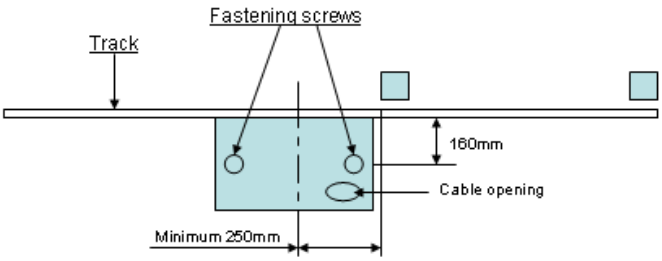
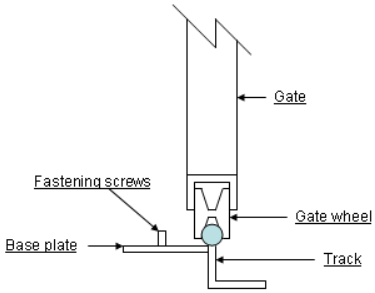
BASE PLATE MOUNTING INSTRUCTIONS





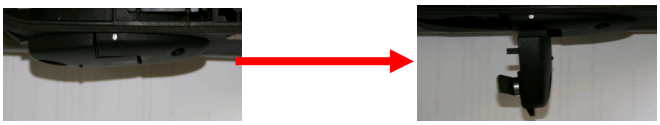
1. Assemble base plate by fastening M10x30 Hex set screws into base plate from under the base plate up and tightening into position.
2. Mount base plate with bolts 160mm from the centre of the gate track and centre of base plate a minimum of 250mm away from the gate opening.
3. Secure the base plate to the gate track by welding the base plate directly to the gate track. (Ensuring a distance of 160mm from centre of gate track to centre of fastening screws).
4. Fit all required cabling through hole provided in base plate.
5. Support the back of the base plate with 40x40x3 angle iron (not provided) or similar off cut steel knocked approximately 300 to 400mm into the ground.
6. Fill area below and around the base plate with approximately 300x400x300 concrete to ensure that the motor will be secure.
7. **NOTE** - For **SAFETY** reasons, **ALL** motors should be fitted with a set of IR beams.

Gearbox mounting instructions

1. Fit gearbox over mounting bolts protruding from base plate.
2. Slide gate fully open and closed, insuring pinion gear has approximately 5mm clearance to gate at all times.
3. Fasten gearbox down firmly to base plate using M10 washers and nuts.

How to override the gate motor for manual operation

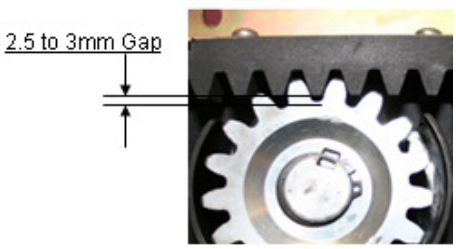
1. Unlock and open the override lever on the gearbox.



2. The gate can now be opened and closed manually.

Rack mounting instructions

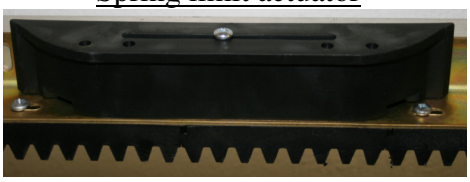
1. Unlock and open manual override lever fully to disengage gearbox. (See above).
2. Using a 2.5 to 3mm spacer between the pinion gear and the rack, mount the rack using Tek screws No12x20 (not provided) and screw the rack to the gate starting from the tail of the gate and ensuring that the rack is mounted level.
   (A 2.5 to 3mm spacer can also be put between motor and base plate when fitting rack. This must be removed once the rack is in place).
   NB: **Ensure that one of the screws attaching the nylon rack to the angle is in line with the read switch or limit switch spring when the gate is fully closed and open position.**



Limit switch actuator mounting instructions

1. Remove the screw attaching the nylon rack to the angle that is closest to the position of the spring on the motor when the gate is in the close and open position.
2. Fit limit switch actuators with screws provided onto the nylon rack.
3. Setting the gate close actuator – Close the gate with approximately 120mm gap between gate and close stopper. Now move the actuator until the close LED lights up. Fasten the actuator.
4. Setting the gate open actuator – Open the gate with approximately 120mm gap between gate and open stopper. Now move the actuator until the open LED lights up. Fasten the actuator.
5. (The gate must never bump against the close or open end stoppers).

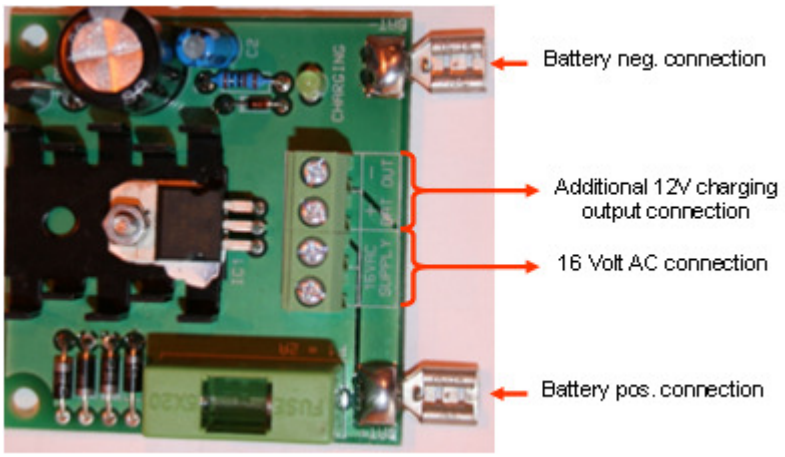
Spring limit actuator



Important: For safety reasons, a solid stop must be fitted at **both ends** of the gate to prevent the gate from moving past its full open or close position.

Low voltage Plug in transformer.

Connect 16volt AC from the transformer to the charger board marked as 16 VAC supply.



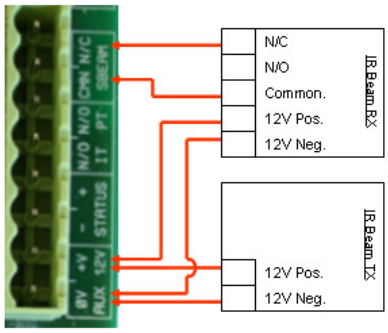
Low voltage on board (OBT) transformer – 220V at gate.

Connect 220V AC to input side of Eco500/16volt AC transformer (black & brown wires), or to NEL (Neutral/Earth/ Live) connector on side of transformer, then connect the output wires (red) to the charger board marked as 16 VAC supply.

DO NOT CONNECT 220V DIRECTLY TO PCB

WHEN 220V IS USED AT GATE MOTOR, A SEPARATE DOUBLE POLE ISOLATOR MUST BE FITTED WITHIN 1METER FROM THE MOTOR.

Diagram to connect IR Beams to PCB



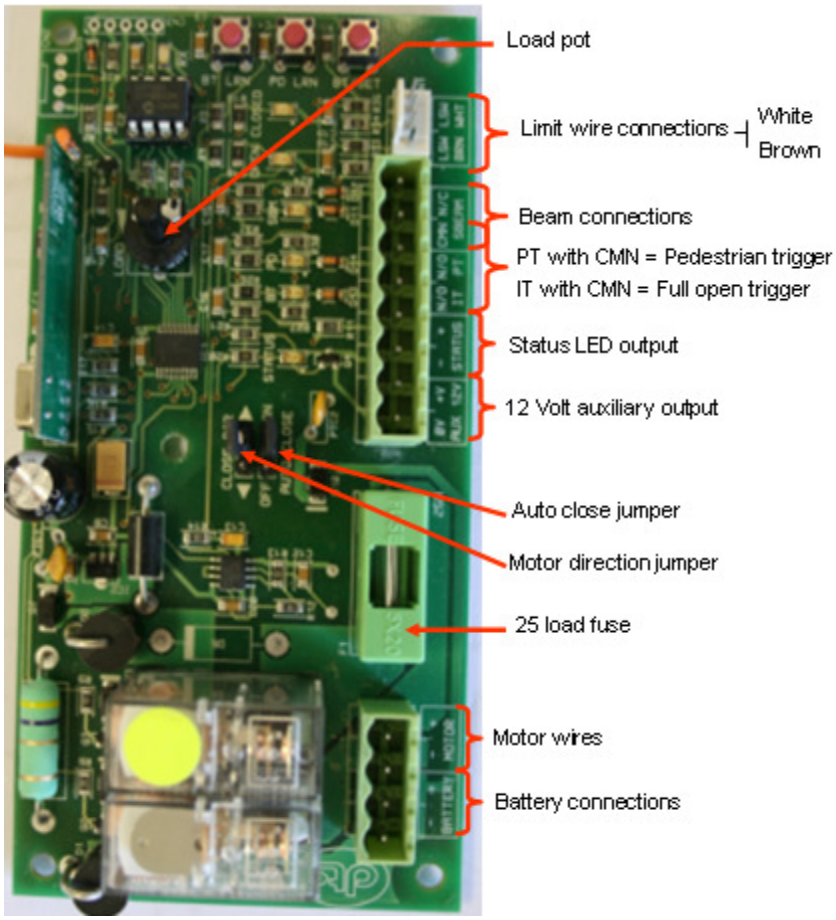
Note: If sentry beams are fitted, then SBEAM, N/C on the PCB must be connected to N/O on the RX.

Pedestrian Opening (Default 1 meter / 8 seconds auto close)

Load setting

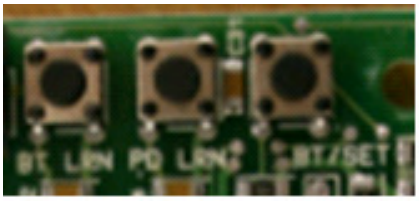
To adjust the load turn the load pot to determine the load setting (Minimum, anticlockwise & Maximum, clockwise).

PCB Control card. (Please note, can only connect a low voltage power supply and therefore cannot be modified as a High excess motor)



ON BOARD RECEIVER PROGRAMMING

The onboard receiver is designed to work with most rolling code transmitters.



PROGRAMMING A TRANSMITTER (TX) FOR FULL OPEN OPERATION – BT LRN (Version 1.3)	PROGRAMMING A TRANSMITTER FOR PEDESTRIAN OPERATION - PD LRN (Version 1.3)
1. Push the BT LRN button, the RX led will go on.	**1.** Push the PD LRN button, the RX led will go on.
2. Push the required button on the transmitter, at arms length from PCB once, the Rx led will flash. Press the same button again, the RX, Close & Open led will flash 3 times for a full Keelog transmitter or twice for other transmitters.	**2.** Push the required button on the transmitter, at arms length from PCB once, the Rx led will flash. Press the same button again, the RX, Close & Open led will flash 3 times for a full Keelog transmitter or twice for other transmitters.
3. Repeat Step 1 and 2 for additional transmitters. Up to **31** transmitter (Slots) signals can be programmed as a joint combination between BT LRN & PD LRN.	**3.** Repeat Step 1 and 2 for additional transmitters. Up to **31** transmitter (Slots) signals can be programmed as a joint combination between BT LRN & PD LRN.

The button used for BT LRN CANNOT be used for PD LRN and vice versa.

To individually erase transmitters:
To erase a button from the receiver, in case of incorrect programming i.e. blue button should be for BT LRN and not PD LRN. Simply push and hold the BT LRN button for 5 seconds, the RX led will light up and the Close & Open led will flash once. Release the BT LRN button. Now push and release the TX button you want to erase, the RX, Close & Open led will flash twice as confirmation. The TX is erased and can be re-learned into correct input.

To master erase:
Push and hold the BT LRN button, after 5 seconds the RX led will light up. Keep holding for another 5 - 10 seconds then the Close & Open will start flashing. Release BT LRN button. The RX led will flash 5 times as indicating, all transmitters erased.

Note: When memory full & trying to program remote (TX) no.32, the Close & Open led will give a burst of rapid flashes for 1.5 seconds after releasing the BT LRN button indicating, receiver (RX) is full.
The RX will abort programming automatically.
A TX must then be deleted before a next TX can be programmed to the RX.
If a transmitter is already programmed, the RX led will go off on the 1st press from the TX.

ELECTRONICS

FEATURES:

1. Standard mode.
2. Easy motor direction change. (via jumper)
3. Auto close facility. (Infra red beams must be fitted if auto close is activated).

1. Standard Mode. (No function selected).

When the gate is activated it will open and can be stopped in mid cycle by pressing the transmitter or manual push button. Pressing the transmitter or push button can reverse the gate. In standard mode the gate will remain on its open limit until it is triggered to close. If main power fails, the motor will still operate until battery reaches 9.5Volt. Change to manual by overriding the motor by the override lever. When the main power comes on again, lock in the override lever and the motor will function as normal.

2. Easy motor direction change.

By selecting the jumper, the motor direction and the limit wires are changed automatically. (Please note: the gate must close on first trigger after power up).

3. Auto close. (20 seconds, fixed) (Infra-red beams must be fitted if auto close is selected).

When Auto close is selected via the jumper on the PCB and the Gate opens to the open limit, the gate will wait the factory default time before automatically closing. If the gate is triggered while the gate is in its closing cycle it will stop and reopen.
If the transmitter or manual push button is pressed while the gate is in its opening cycle, the gate will stop and close after the factory default auto close time (from any position, not only from the open limit).

4. Pedestrian function

A default auto close time (8 Seconds) and opening distance (Approximately 1 meter) has been preprogrammed and cannot be changed.

List of LED indications.

- **LED ON when open limit is activated. (gate open).**
- **LED OFF when close limit is activated. (gate closed).**
- **LED flashing SLOW (1 sec. on/1 sec. off) (gate is in motion).**
- **LED flashes 2 long/3 short continuously (gate is stopped midway).**
- **LED flashes fast (250ms on/250ms off) continuously. (gate in overload).**
- **LED flashes 3 fast flashes every 1.5 seconds. (Battery low, <11VDC).**

NB – When connecting intercoms to the control card (IT and CMN), please ensure that your intercom trigger output is potential free (**ZERO voltage**). If not, a gate relay module **must** be fitted.

TROUBLESHOOTING

SYMPTOMS	CAUSES	ACTION
When pressing the remote transmitter or manual push button the gate operator will not respond at all.	Transmitter battery flat.	Replace transmitter battery.
	Transmitter or manual push button is physically damaged.	Check with supplier.
	Transmitter has not been programmed into the receiver memory or manual push button is not connected to the PCB or push button.	Follow the receiver setup instructions. Check wiring between PCB and push button.
PCB responds but gate will not open.	Motor/Load fuse is faulty or motor brushes not making contact with armature.	Replace fuse. (Fast blow fuse). Repair or replace motor brushes.
The gate opens but will not close.	Safety infra-red beams are obstructed or the beams equipment/cabling are faulty or incorrectly wired.	Clear obstruction, repair or replace safety infra-red beams equipment/cable, fix incorrect wiring connections.
The gate when closing stops and reverses or when opening stops.	The unit is sensing an obstruction	Clear obstruction or adjust load sensing.
	The infra-red beam has been triggered.	Clear obstruction.
	Another trigger has been received by the control card.	Check with other operators on the system.
Gate does not remain open.	Auto close has been activated.	De-activate auto close or use auto close override.
The unit opens partially and stops and then auto closes.	Another user has triggered the unit.	Check with other operators on the system.
	The pedestrian (PT) mode on the PCB is being triggered.	Check equipment /cabling attached to the pedestrian (PT) on the PCB input.
	A transmitter code has been programmed incorrectly into the pedestrian (PD LRN) function of the receiver.	Delete the transmitter and re-program the transmitter into the receivers (BT LRN) as per instructions.
When gate reaches a limit actuator, the unit does not stop running.	Limit input wired incorrectly (out of sync' with the motor direction.)	Re-wire
	Limit switch is faulty.	Change limit switch or check with supplier.
Gate motor is jumping teeth on the rack.	Pinion to rack spacing is incorrect.	Re-align.
	Rack is insufficiently fastened to gate leaf.	Re-align and correct fastening.
	Debris on track.	Clean track.
Gate jams in the open or closed position and is not easy to manually release.	Gate is running too far.	Adjust the limit actuators until there is a gap between gate and stoppers of approximately 10 – 15 mm
Gate opens pedestrian when full open trigger is given.	Gate is running past its limit actuator.	Replace the switch, rewire correctly or check limit spring assembly.
	Gate is overloading in the close position after it received a pedestrian trigger.	Move the closing limit actuator towards the closing cycle approximately 10mm.
Gate auto opens	Jumper for motor direction is incorrectly selected and auto close is active.	Select correct positioning of motor direction jumper.
	Receiving a trigger from somewhere else.	Check wiring to inputs CMN & IT connections on PCB.
		Master erase onboard RX and re-learn all transmitters.
Open & Close Led flashes simultaneously	The gate motor was over loaded.	Find and fix the cause for overloading the motor.

Manufacturers warranty.

- **All motors manufactured by DTS Security carry a 24 month factory warranty from date of invoice. (Excluding batteries & Remote controls).**
- **Batteries & remote controls carry a 12 months warranty.**
  (Remote batteries are consumables and therefore carry NO warranty)
- **All goods are warranted to be free from faulty components and manufacture.**
- **Faulty goods will be repaired or replaced at the sole discretion of DTS Security Products, free of charge.**
- **This warranty is subject to the goods being returned to the premises of DTS Security Products.**
- **This warranty excludes lightning damage, insect damage and damage caused by faulty installation.**
- **In the event of the goods being supplied by dealer, merchant, agent or duly appointed installer of DTS Security Products, the claim must be directed to that supplier.**
- **The carriage of goods is for the customer's account.**
- **This warranty is only valid if the correct installation and application of goods, as laid out in the applicable documentation accompanying said goods, is adhered to.**
- **All warranty claims must be accompanied by the original invoice.**
- **The liability of DTS Security Products and / or their distributors is limited as herein set out DTS Security Products and / or their distributors will not be liable for consequential, incident damage or injury howsoever arising.**