



## DEIMOS BT KIT UL QUICK REFERENCE GUIDE

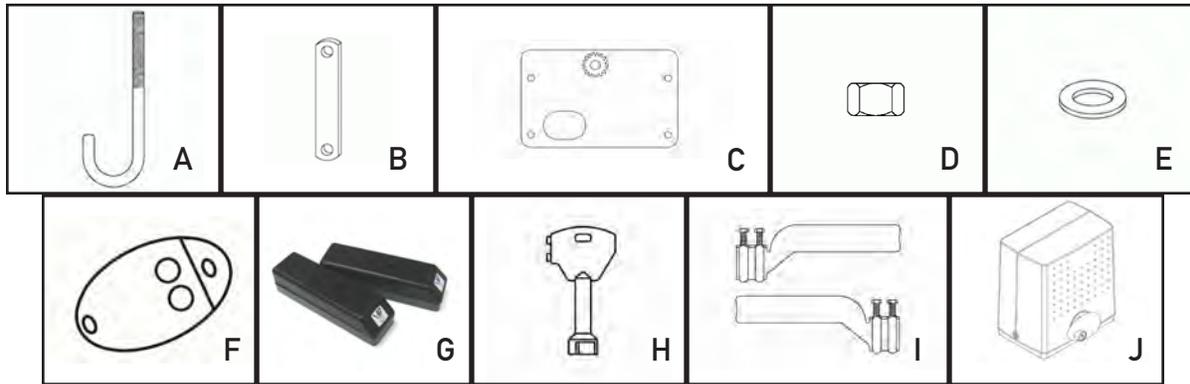


- Read and follow all instructions and safety procedures.
- Never let play on or walk in the automatic gate area.
- Keep all gate controls out of the reach of children.
- Stand clear of a moving gate and never cross the path of a moving gate.
- All wiring should only be done by a qualified technician.
- Always make adjustments and connections with supply power turned “off”.
- This document does not supersede the full instruction manual included with each product.

# TABLE OF CONTENTS

• <b>DEIMOS BT Kit Components</b>	.....	<b>3</b>
• <b>Technical specifications</b>	.....	<b>3</b>
• <b>Spare parts</b>	.....	<b>4</b>
• <b>Accessories and replacement parts</b>	.....	<b>4</b>
• <b>Anchoring plate installation</b>	.....	<b>5</b>
• <b>Operator and rack installation</b>	.....	<b>6 - 7</b>
• <b>Wiring instructions</b>	.....	<b>8 - 10</b>
• <b>Battery backup installation</b>	.....	<b>11</b>
• <b>Control board quick programming</b>	.....	<b>12 - 13</b>
• <b>Menu flow chart</b>	.....	<b>14 - 15</b>
• <b>Wiring diagram</b>	.....	<b>16</b>
• <b>Troubleshooting</b>	.....	<b>17</b>
• <b>Notes</b>	.....	<b>18 - 19</b>

# THE DEIMOS BT KITS CONTAIN THE FOLLOWING COMPONENTS

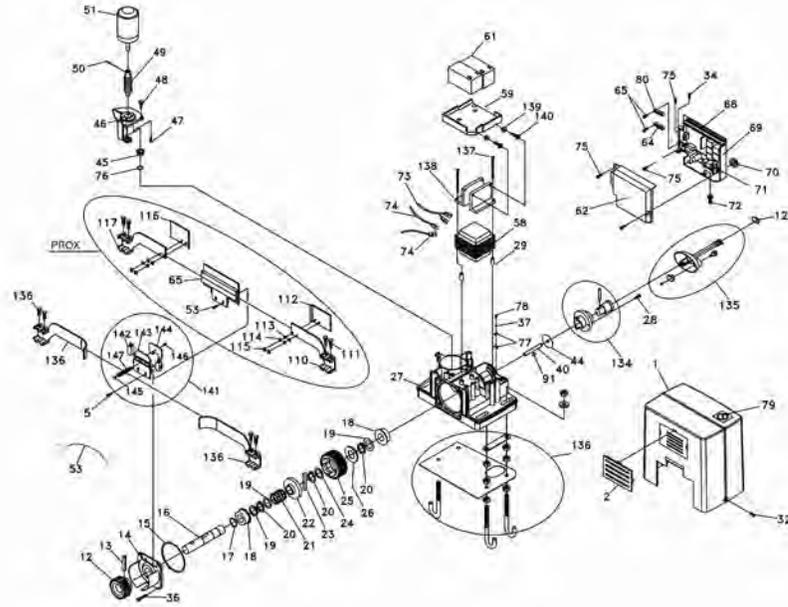


Components	Deimos BT KIT UL (Ref. # R925228 00003)
A. ANCHORING HOOK	4
B. HEIGHT ADJUSTMENT PLATE	2
C. POSITIONING TEMPLATE PLATE	1
D. M10 NUT	16
E. M10 WASHER	4
F. TRANSMITTER - MITTO 2	1
G. PHOTOCELLS - FL 130B	1
H. MANUAL RELEASE KEY - CLS	1
I. LEFT AND RIGHT LIMIT SWITCH BRACKETS	1
J. OPERATOR - DEIMOS BT	1

## Technical Specifications:

Power supply:	120 V ac $\pm$ 10% - 60 Hz
Working torque:	14.75 lb ft
Pinion pitch:	0.157" (14 teeth)
Gate travel speed	7.9 "/s
Limit switches	Incorporated (electromechanical)
Manual operation:	Release key
Cycles per day:	100
Gate length:	up to 75'
Gate weight:	up to 1100 lbs

# DEIMOS BT SPARE PARTS, ACCESSORIES AND REPLACEMENT PARTS



1	D222262	21	I098434	45	I101102	68	D111754 00001	82	N999359	143	I098401
2	D221651	22	I098434	46	I101102	69	D221826	91	I101111	143	I098421
5	I098401	23	I098434	47	I101102	72	D511318	125	I098416	144	I098401
12	I098404	24	I098434	48	I101102	73	D141382	134	I098416	144	I098421
12	I098501	25	I098434	49	I101102	74	D141379	135	I098416	145	I098401
13	I098404	26	I098434	50	I101102	75	D511184	136	N999359	145	I098421
13	I098425	27	I098417	51	I101102	76	I101102	136	N999359	146	I098401
13	I098501	28	I098416	52	I101103	77	I098417	136	N999359	146	I098421
14	I098404	29	D221904	58	D110941 00002	78	I098417	136	N999359	147	I098401
15	I098404	32	D511286	59	D221520	79	D802089	136	N999359	147	I098421
16	I098434	34	I098417	62	D221827	80	D221464	136	N999359		
17	I098434	36	I098404	64	D221463	81	I098401	137	I098435		
18	I098512	36	I098417	65	D511272	81	I101109	141	I098401		
18	I098434	37	I098417	66	I098401	81	N999359	141	I098421		
19	I098434	40	I098416	66	I101109	82	I098401	142	I098401		
20	I098434	44	I098416	66	N999359	82	I101109	142	I098421		

## REPLACEMENT PARTS

ITEM	REF. #
• OPERATOR - DEIMOS BT	P925186 00002
• CONTROL BOARD - QSCD UL	D111754 00001
• TRANSMITTER - MITTO 2	D111750
• PHOTOCELLS - FL 130B	P111043 00001
• MANUAL RELEASE KEY - CLS	D610180
• ANCHORING SYSTEM FOR DEIMOS BT	N999359

## OPTIONAL ACCESSORIES

ITEM	REF. #
• DIGITAL KEYPAD (external)- SELETTO E	P121013
• DIGITAL KEYPAD (flush)- SELETTO	P121012
• INTERFACE FOR SELETTO - SCS1	P111376
• STEEL REINFORCED PLASTIC RACK (3'3") - CP	D221073
• STEEL ADJUSTABLE RACK (3'3") - CVZ	D571053
• 18 TEETH PINION (10.5 "/s gate speed)	I098425
• PERSONALISED KEY RELEASED KNOB - MSC	N999158
• RECEIVER ANTENNA - AEL 433	D113632
• 24 Vdc BATTERY BACKUP	P125002

# ANCHORING PLATE INSTALLATION

- Inspect all components of the gate to insure proper manual operation and smooth sliding.
- Gate must slide freely and smoothly throughout its travel.
- Make sure that mechanical stops preventing the gate from slipping off the upper guide when manually operated are present and sound enough.
- The gate track must be horizontal and straight. Non straight track will not allow proper operation of pinion and rack.

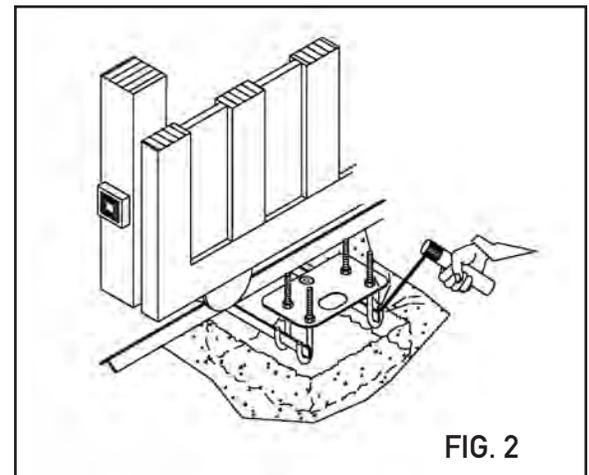
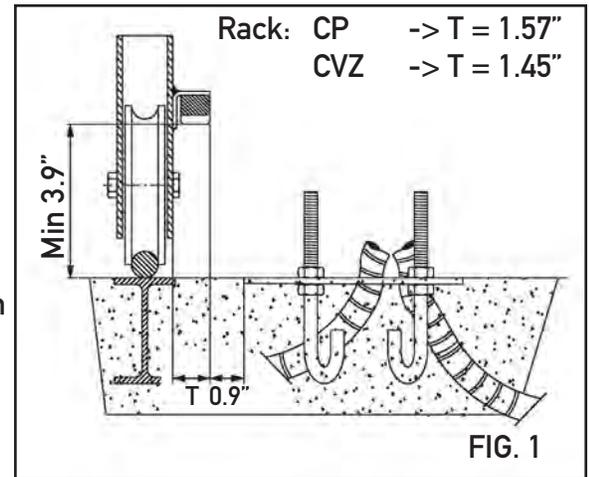
## STEP 1

**CAUTION:** *Never install the rack prior to installation of the operator, installing the rack before the operator will not allow proper mesh of pinion and rack.*

The operator has to be installed at the opening post edge.

- Dig a hole for the concrete pad.
- Using provided nuts (**D**), bolt the anchoring hooks (**A**) to the positioning template plate (**C**). The template plate must be positioned all the way down to the thread of the hooks.
- Measurements for the positioning of the template plate are shown in Fig. 1. It is required at this stage to take into consideration the thickness of the rack as it is important to position the template plate so that rack-template plate distance is 0.9" (rack not installed yet at the moment). For CP rack T measure is 1.57", for CVZ rack T measure is 1.45".
- Position the template plate in the hole, make sure it is level. The template plate must have the pinion engraving next to the gate. In case the hole can be executed under the track, it is suggested to weld two steel bars across the anchoring hooks and the track of the gate as shown in Fig. 2, so that if the track sags, the concrete pad will sag too, keeping the play between pinion and rack constant over time.
- Remember that cable conduits have to pass through the hole in the template plate. Pour concrete.

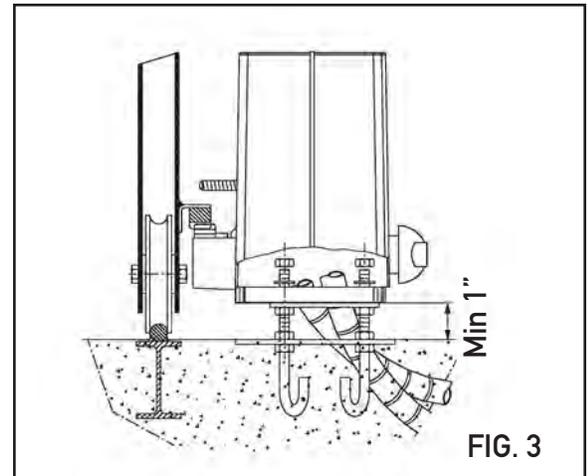
**NOTE:** if a concrete pad is already existing, the installation can be carried out simply drilling holes in the concrete pad using the template plate as reference and anchoring the operator using chemical anchors and threaded bars instead of anchoring hooks (chemical anchors, threaded bars and nuts not provided).



# OPERATOR AND RACK INSTALLATION

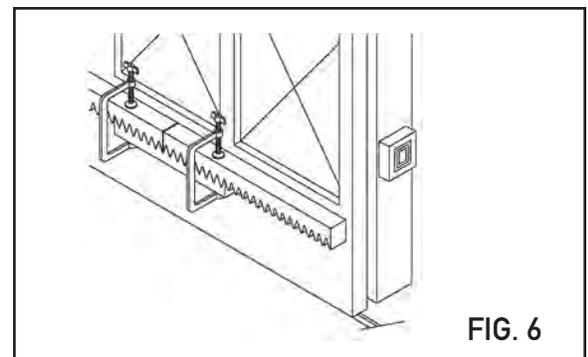
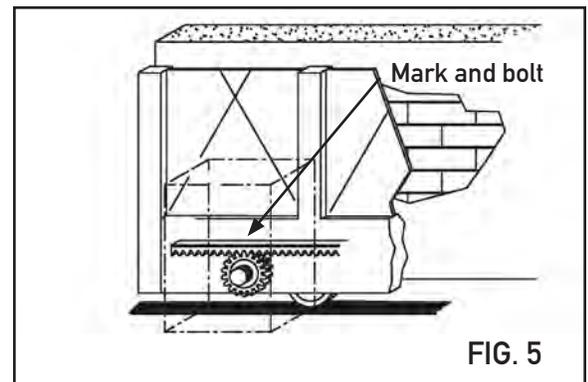
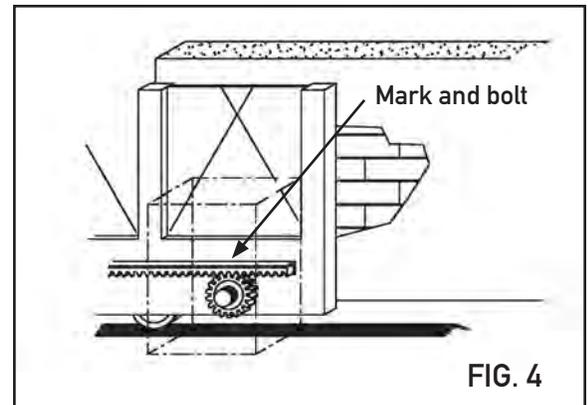
## STEP 2

- Position provided nuts **(D)** and height adjustment plates **(B)** on the anchoring hooks **(A)** at least 1" higher than the template plate **(C)** (Fig. 3).  
This clearance is very important, in case the V-tracks sags, having no clearance prevents any future adjustment, the pinion will bear part of the weight of the gate, leading to wear of the rack and pinion teeth and possible damage to pinion shaft and bearings.
- Level height adjustment plates using the 4 lower nuts **(D)**.
- Remove the cover of the operator **(A)** and place it on the two height adjustment plates. Slide it into its final operating position (pinion close to the gate).
- Use provided nuts **(D)** to secure the operator.
- Disengage the gate by turning the release knob clock-wise until a "click" is heard.



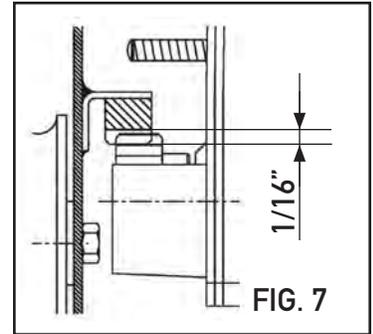
## CP – STEEL REINFORCED PLASTIC RACK

1. Start with gate in closed position.
2. Put one end of rack section on the sprocket. Make it level and mark on the gate the center of the slot (Fig. 4).
3. Manually slide the gate so that the mark on the gate is reachable. Drill a hole on the gate and connect the rack to the gate using a self tapping screw (not provided). Make sure that the screw is centered in the slot for future adjustment.
4. Put the rack on the pinion and slide the gate so that the other end of the rack section is on the pinion, mark the center of the slot on the gate (Fig. 5).
5. Manually slide the gate, drill a hole on the mark and connect the second end of the rack to the gate using a self tapping screw (not provided).
6. The first section of the rack is positioned, use a third screw to secure the section (at least 3 screws for section have to be used).
7. Repeat steps from 2 to 6 to position other sections of the rack until proper length is reached.
8. It is suggested to use an additional section of the rack clamped on the section which is already connected to the gate and on the section to be connected to grant proper teeth pitch between different section (Fig. 6).
9. If needed, cut the last section to meet gate length.  
**Note:** rack length must be longer than actual travel of the gate to accommodate limit switch brackets **(I)** (1' 6" approx. on each side).



# OPERATOR AND RACK INSTALLATION

10. Lower the operator using nuts so that the play between rack and pinion is between 1 and 2 mm (1/16") throughout the whole length of the gate (Fig. 7).
11. Check that the gate runs smoothly throughout its whole length. Check that the play between rack and pinion is optimal throughout the whole length of the gate.
12. Check that the mesh of pinion and rack is correct (Fig. 8), the rack teeth must engage the pinion teeth throughout their full thickness. If not, adjust the position of the operator by sliding it in required direction.
13. If needed, position of the rack can be adjusted for each section changing the position of the screws in the slots.



## CVZ – GALVANIZED STEEL ADJUSTABLE RACK

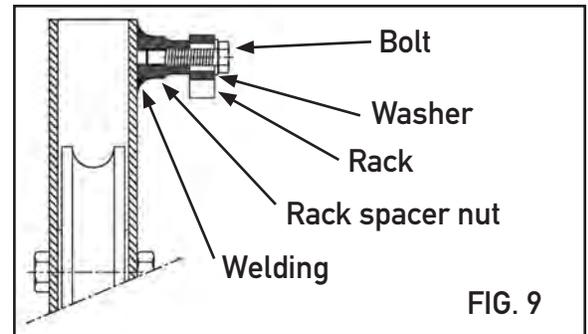
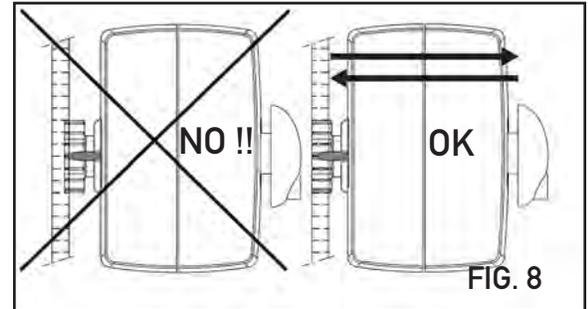
Install provided bolts, rack nuts and washers on each section of the rack.

Take care to tighten bolt and nuts at the center of each slot for possible future adjustment.

Proceed then the same way as CP rack for installation. Instead of bolting the rack on the gate, rack nuts have to be welded on the gate (Fig. 9).

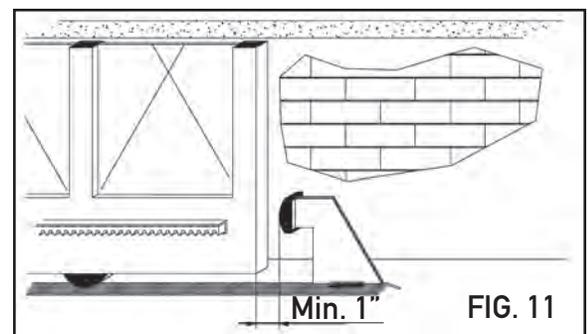
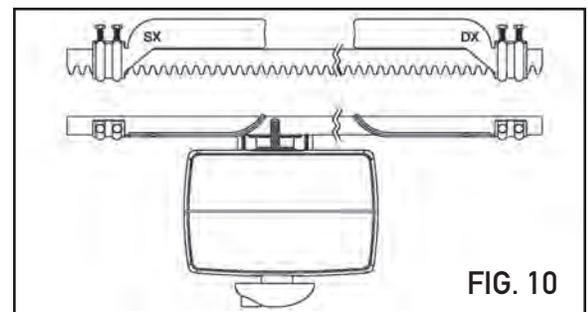
In order to be able to rotate the rack, simply loosen the rack bolts.

**Note:** rack length must be longer than actual travel of the gate to accommodate limit switch brackets (l) (1' 6" approx. on each side).



## STEP 3

- Position the limit switch brackets (l) so that the operator will stop at the desired position (the operator stops when the limit switch spring is pushed by the limit switch bracket) (Fig. 10). Limit switch brackets are generally positioned at the two ends of the rack.
- Inertia will drive the gate a little further. At least 1" between the gate and the positive stop has to be granted (Fig. 11). Not providing this clearance will result in possible jamming of the gearbox. A power operated sliding gate must never hit gate positive stops.
- If no positive stops are present they have to be installed on both sides.

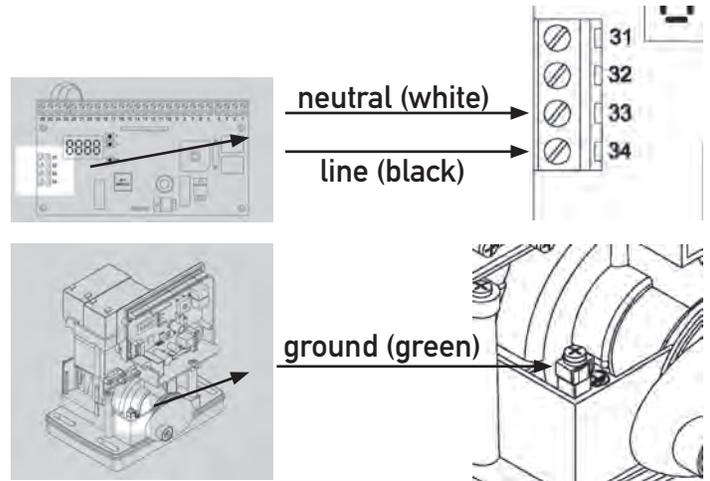


# WIRING INSTRUCTIONS

## CONNECTING THE POWER:

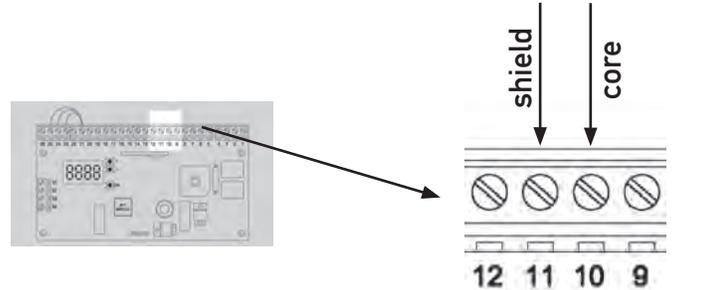
- Connect the line wire of the 120 volt power source to terminal 34 of the Deimos BT control board.
- Connect the neutral wire of the 120 volt power source to terminal 33 of the Deimos BT control board.
- Connect the ground wire of the 120 volt power source to ground terminal on the motor basement. No spade connector is needed, stripped wire is fine.

Wires not supplied



## CONNECTING THE ANTENNA (OPTIONAL):

- Connect the antenna cable to Deimos BT circuit board. Strip cable and connect the **core wire** to terminal 10 and the **shield wire** to terminal 11.

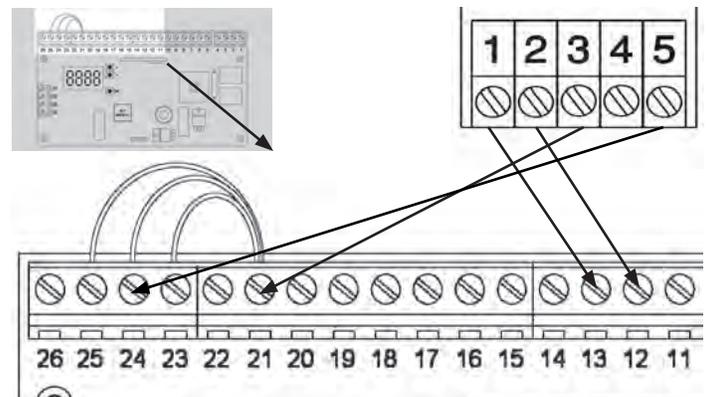


## CONNECTING THE PHOTOEYE (THROUGH BEAM):

- Connect #1 & #2 of the photoeye receiver to the terminal 13 & 12 of the Deimos BT control board.
- Connect #3 & #5 of the photoeye receiver to the terminal 21 & 24 of the Deimos BT control board.

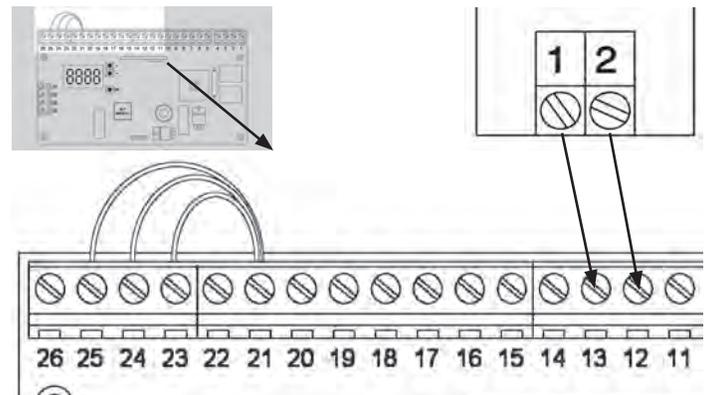
Remove jumper wire on terminals 21-24.

Wires not supplied.



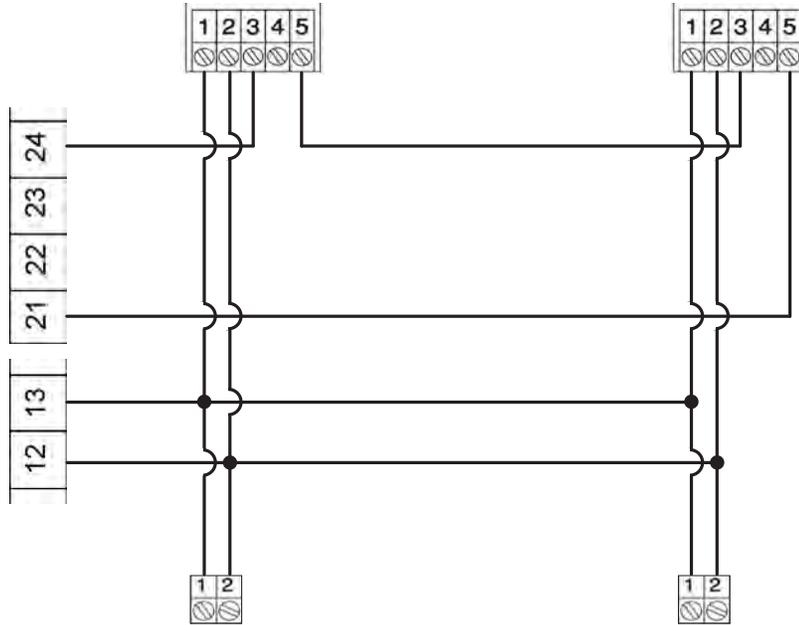
- Connect #1 & #2 of the photocell transmitter to the terminal 13 & 12 of the Deimos BT control board.

Wires not supplied.



# WIRING INSTRUCTIONS

- **NOTE:** on BFT control boards safety contacts are always N.C., multiple safety devices connected to the same contact have to be connected in series.  
Command contacts are always N.O., multiple command devices connected to the same contact have to be connected in parallel.
- **CAUTION:** All command and safety contacts are dry contacts, giving tension to these contacts will damage the board.
- In case more than one photobeam is required, photoeyes have to be connected in series (NC contact). Follow the diagram (install receivers to avoid cross talking):



## CONNECTING THE SAFETY LOOPS:

- Safety loops detectors have to be connected as photoeyes, as they use the same PHOT contact (21 – 24). Every device connected to PHOT contact, including the safety loops, has to be a N.C. contact and will be connected in series.

## CONNECTING OTHER ACCESSORIES:

- Accessories such as telephone entry systems and free exit loops will be connected to the OPEN contact (21 – 26). Every device connected to OPEN contact has to be a N.O. contact and will be connected in parallel.
- Accessories such as Single Button Control or external receiver contact will be connected to the START contact (21 – 22).

The START command operates the gate as below:

OPEN/STOP/CLOSE in sequence (3 step logic ON)

OPEN/STOP/CLOSE/STOP in sequence (3 step logic OFF)

For further details on programming the control board, refer to “Finalizing the installation” chapter at page 12.

**NOTE:** START-CLOSE logic has to be set to OFF for the Single Button Control to work correctly.

For further details on programming the control board, refer to “Finalizing the installation” chapter at page 12.

# WIRING INSTRUCTIONS

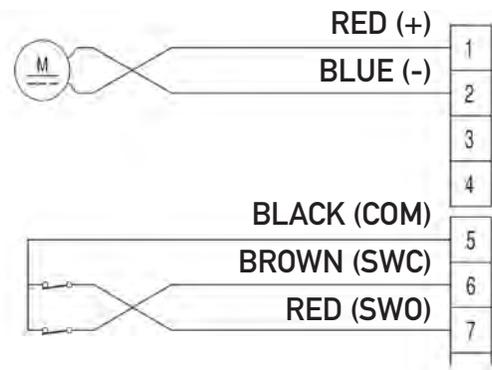
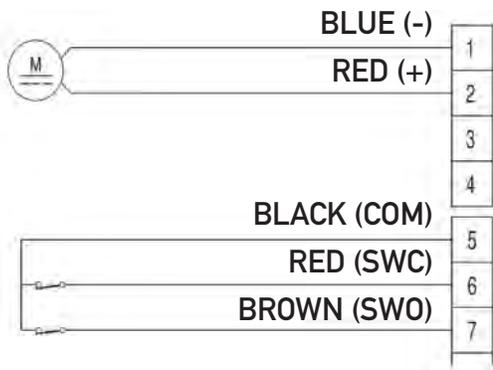
## CHECKING MOTOR DIRECTION:

The operator can be installed on the left side or on the right side of the drive way (depending on the sliding gate). In order to have right direction of movement of the gate, proceed with following steps:

- Turn power off and disengage the operator.
- Put the gate halfway open.
- Re-engage the operator and turn power on.
- Give a START command (a momentary jumper of terminals 21 – 22) or program a remote (see page 12 for details).

### If the gate is closing:

- Turn the power off.
- Reverse the connection of the motor and the limit switches:  
swap terminals 1 and 2  
swap terminals 6 and 7

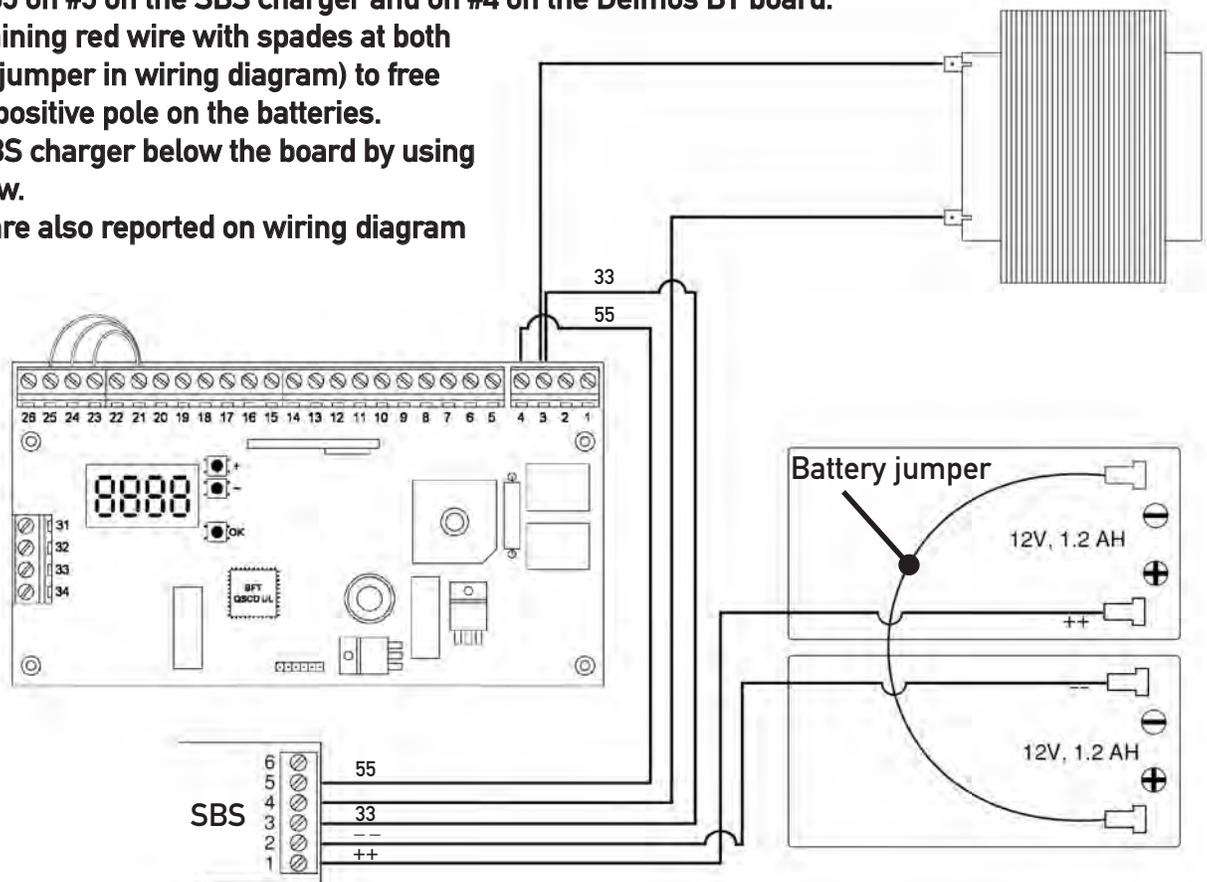
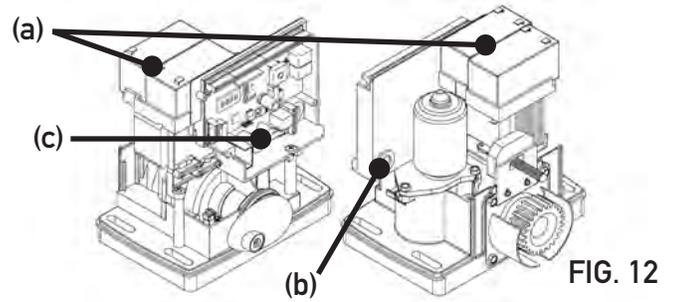


### If the gate is opening:

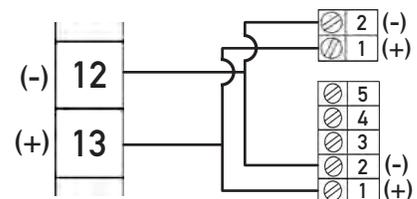
No further steps are required and the operator is ready to be programmed.

# BATTERY BACKUP INSTALLATION

- Turn the power off.
- Place batteries (a) on the battery support base as shown in Fig. 12. Cut a hole in the black rubber cap (b) to allow wires in.
- Run battery wire (++ red and -- black) into the provided black sheath. Disconnect wire on terminal 4 on the Deimos BT control board and run it through the hole. Run through the hole provided wires (marked 55, 33, ++ and --).
- Keep SBS charger (c) loose to facilitate wiring operation. Connect wire labeled ++ to #1 on the SBS charger, wire labeled -- to #2 on the SBS charger, wire labeled 33 to #3 on the SBS charger and to #3 on the Deimos BT board (this wire will share #3 on the DEIMOS BT board with transformer wire, to facilitate wiring use provided ferrule), connect wire originally connected to #4 on the Deimos BT board to #4 on the SBS charger, wire labeled 55 on #5 on the SBS charger and on #4 on the Deimos BT board.
- Connect remaining red wire with spades at both ends (battery jumper in wiring diagram) to free negative and positive pole on the batteries.
- Secure the SBS charger below the board by using provided screw.
- Connections are also reported on wiring diagram below:

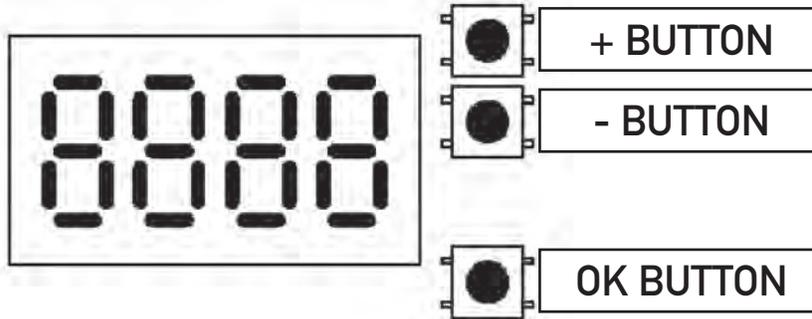


- Check that 24 Vdc polarity is respected with photocells and accessory power supply:  
When in battery mode #13 is + (positive), #12 is - (negative).
- On BFT photocells #1 is + (positive), #2 is - (negative):
- Check other accessories polarity according to the manufacturer's installation manual.



# CONTROL BOARD QUICK PROGRAMMING

## NAVIGATING THROUGH THE MENUS:



- The “OK” button is used for: switching on the display, confirming changes to the programming, entering the menus.
- The “+” button is used for: scrolling up the menus (go up in the menus as shown at page 14), increasing values.
- The “-” button is used for: scrolling down the menus (go down in the menus as shown at page 14), decreasing values.
- The “+” and “-” buttons pushed at the same time are used for: getting back one level in the menus, discarding changes to programming, exiting from the programming mode (turning off the display).

## FINALIZING THE INSTALLATION:

- Turn off power to the control board.
- Connect any external control device according to wiring diagram on page 16.
- Turn on power to control board. Check red power light on Libra control board.

## **ADDING TRANSMITTERS TO THE RECEIVER**

1. Turn on the display (by pressing twice the “OK” button).
2. Scroll down(“-”button) to “**RADIO**” menu and press “OK”.
3. The display will show “**ADD START**”. Press “OK”
4. The display will show “**HIDDEN BUTTON**”. Press the two front buttons of the transmitter at the same time as shown on Fig. A.  
**Note:** Older models will have the hidden button on the back side of the transmitter as shown on Fig. C.
5. The display will show “**DESIRED BUTTON**”. Press the button you want to activate the gate with as shown on Fig. B.
6. The display will show “**ADD START**” . Repeat the programming procedure from step #3 to install other transmitters.
7. Switch off the display by pressing “+” and “-” buttons at the same time twice.

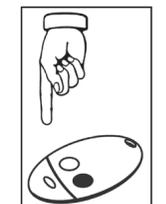
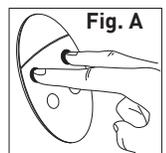


Fig. B

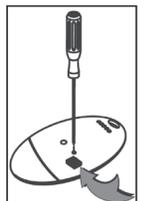


Fig. C

# CONTROL BOARD QUICK PROGRAMMING

## SETTING THE FORCE

1. Turn on the display (by pressing twice the “OK” button).
2. Scroll down (“-” button) to “Autoset” menu.

The autoset feature will automatically let the control board learn torques required to correctly operate the gate.

**⚠ WARNING:** *Once “OK” button is pressed the gate will start to move, obstruction detection is disabled during Autoset. Be sure that no obstacle is within the working range of the gate while Autoset is being performed.*

**NOTE:** *the Autoset must be launched from a fully closed position. Autoset run from a different position may lead to improper control board setting.*

3. Press “OK”. The gate will open and close automatically. Two cycles will be executed.
4. At the end of the second cycle the display will show “OK” (Autoset successful) press “OK” (if “KO” is displayed, the autoset failed, usually the cause of it, is a much too heavy gate).
5. Turn off the display.

## COMMON SETTINGS

### Parameters:

TCA:	Timer to close (sec).
Normal opening speed time:	Working time (sec) at full speed during opening, after this time motor will proceed at slow down speed).
Normal closing speed time:	Working time (sec) at full speed during closing, after this time motor will proceed at slow down speed).
Slow speed:	Slow down speed: 0 (25% of full speed)

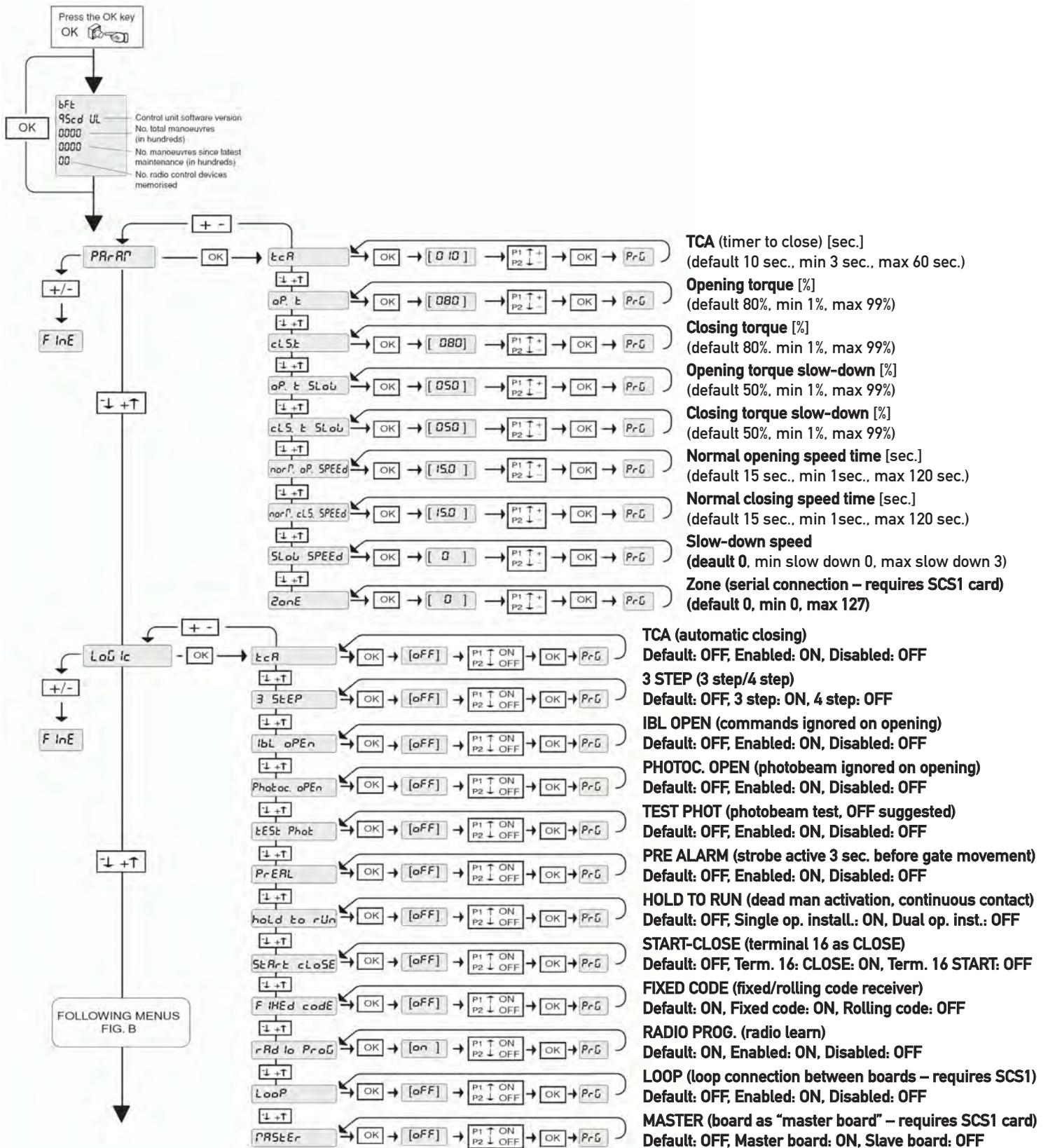
**WARNING!** *after changing the above parameters (except TCA) an Autoset is required.*

### Logics:

TCA:	Auto close enabled (ON)
3 step:	3 step logic (ON)
lbl open:	Commands during opening ignored (ON).
Photoc. Open:	Photocells will be ignored while the gate is opening (ON)
1 mot on:	Single gate installation (ON) Dual gate installation (OFF)

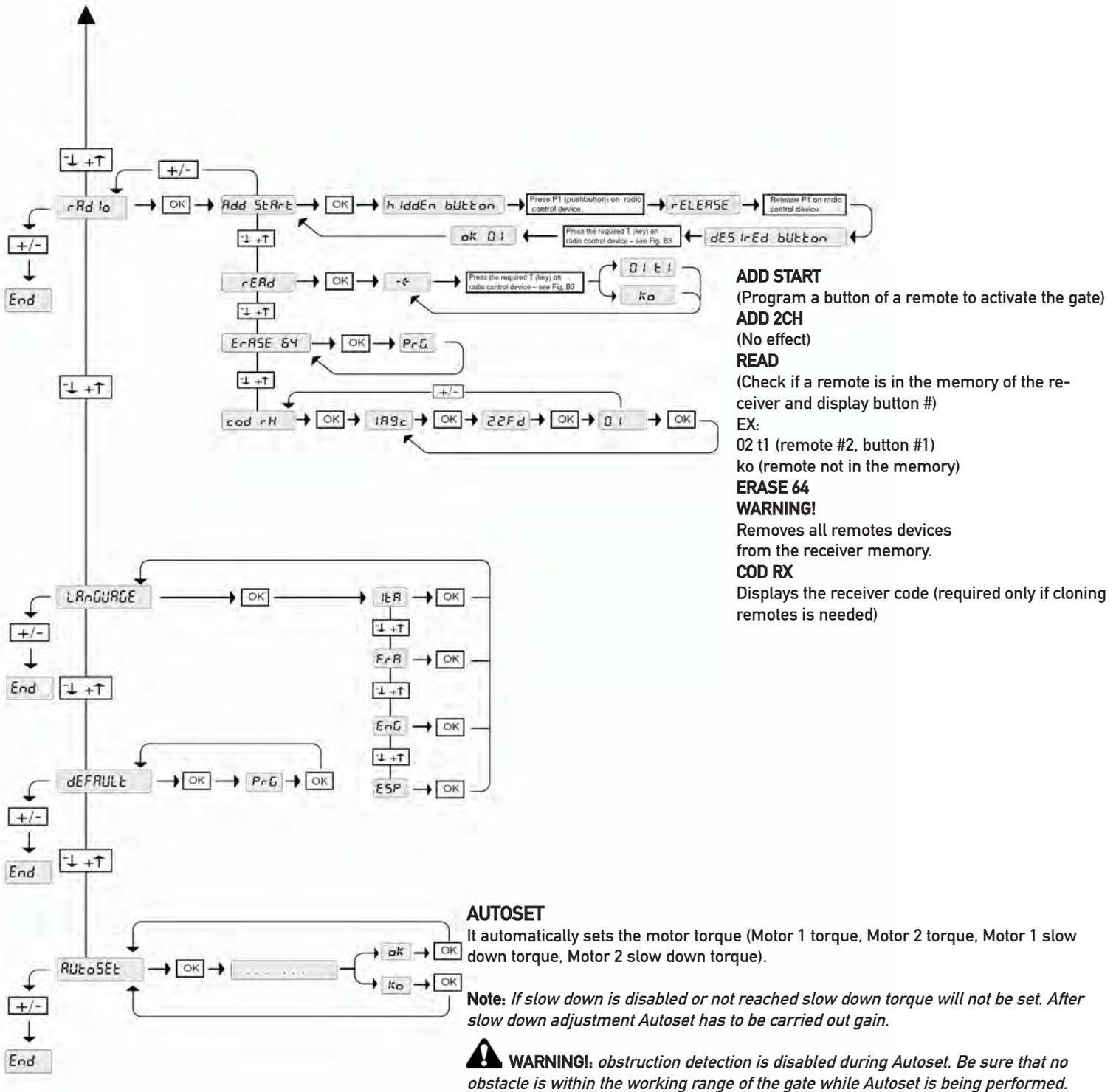
**WARNING!** the automation will not function properly if logic “1 mot on” is not set correctly.

# MENU FLOW CHART

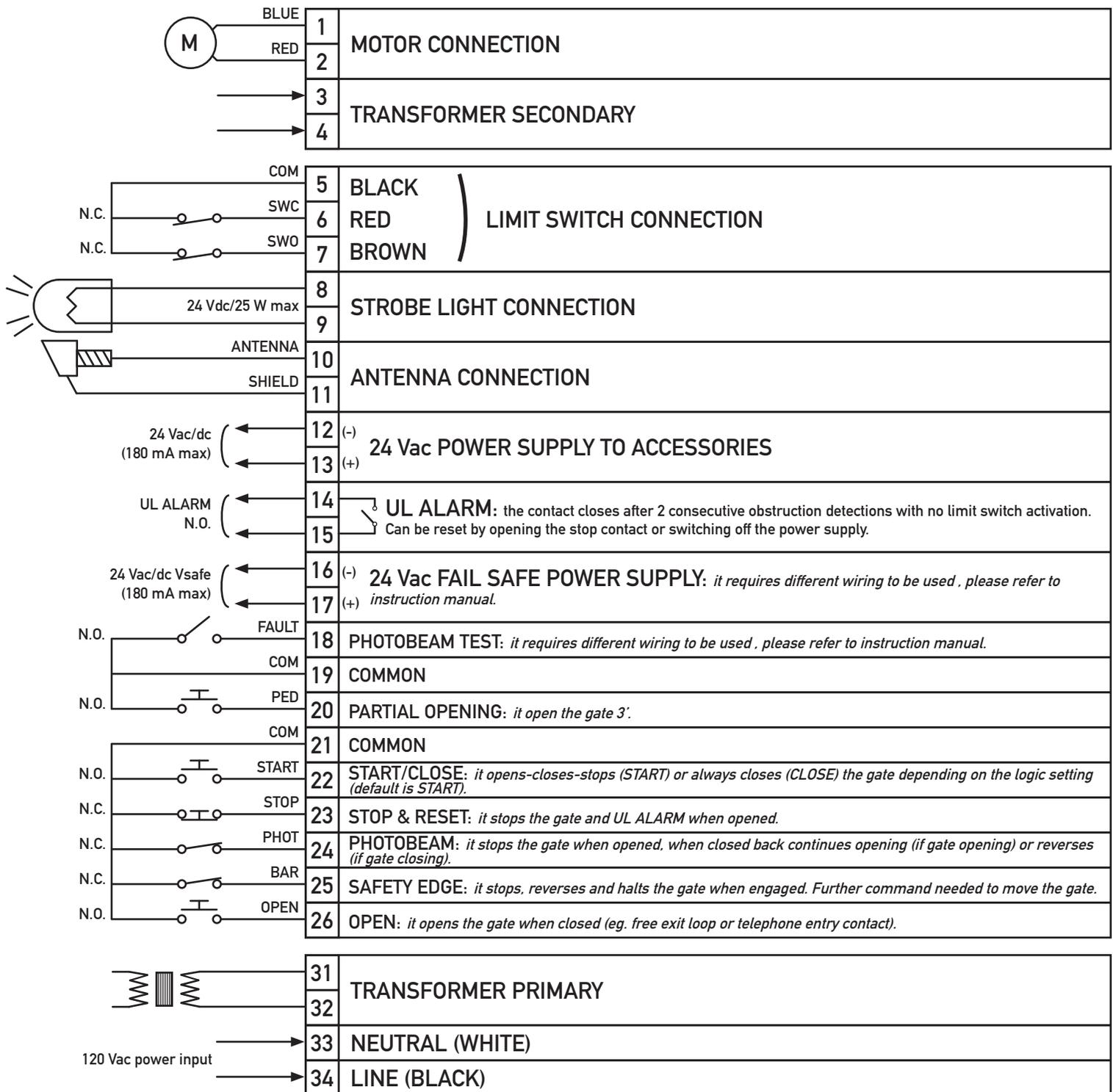


**Warning:** the logic MASTER has no relation to single/dual operator installation, it is used only if serial connection with multiple boards is required.

# MENU FLOW CHART



# WIRING DIAGRAM



**WARNING!** when the UL ALARM is active (#14-15 open) the board does not respond to any command. To make the board operational again, reset the board (open and close STOP terminal #21-23 or turn the power off and back on).

# TROUBLESHOOTING

FAULT	DIAGNOSTIC	CAUSE	FIX
The LED on the board is OFF		Power or transformer connection is loose.	Check power and transformer connections.
		Main fuse (next to 120 Vac input) is blown.	Replace fuse.
		Bad control board.	Replace control board.
OPERATOR DOES NOT RUN remote or single button control (terminal 21-22) not working. <b>No relay clicking audible.</b>	STOP	STOP contact is open (21 – 23).	Check STOP contact connections.
	PHOT	PHOT contact is open (21 – 24).	Check PHOT connections or obstructions on photobeam. Check proper functioning of connected devices.
	Display blank and STRT displayed when hitting the button	UL ALARM activated (contact 14 - 15 closed).	Reset the board (open and close STOP contact (21-23) or turn the power off and back on.
		Logic "Test Phot" set to ON and photobeam wired traditionally (4 wires for the receiver) or photobeam not present.	Set "Test Phot" logic to OFF.
	STRT not displayed when hitting the button	Remote not programmed.	Program remote (see remote programming at page 12).
		Remote battery out of charge (LED off on the remote when pressing button).	Replace battery.
		Motor fuse blown.	Replace fuse.
Bad control board.		Replace control board.	
OPERATOR DOES NOT RUN <b>Relay clicking audible.</b>	STRT displayed when giving the command	Gearbox jammed.	Disengage the operator. Move it manually. Re-engage the operator. Check limit switch brackets adjustment to avoid further jamming.
		Bad control board.	Replace control board.
		Bad motor.	Replace motor.
GATE OPENS BUT DOESN'T CLOSE	OPEN	OPEN contact (21-26) continuously closed (ex. open button stuck).	Open the OPEN contact.
	PHOT	PHOT contact is open (21 – 24). The gate opens because photoeye is ignored on opening in the logic setting.	Check PHOT connections or photoeye obstructed. Check proper functioning of connected devices.
GATE STOPS AND REVERSES AFTER STARTING TO MOVE	AMP or BAR displayed when starting reversing	Torque setting too low.	Increase manually the torque (Motor 1 torque, Motor 2 torque, Motor 1 torque slow-down, Motor 2 torque slow-down in parameters section) or run another Autoset.
		Obstruction present.	Remove obstructions.
GATE TIMES OUT AND OPENS INSTEAD OF CLOSING		Motor and limit switch connection reversed.	Reverse motor and limit switch connection (see checking motor direction at page 10).
GATE DOES NOT CLOSE AUTOMATICALLY		Automatic closing is disabled.	Set automatic closing (TCA in logics section) to ON.
	OPEN	OPEN contact (21-26) continuously closed (ex. open button stuck).	Open the OPEN contact.
	PHOT	PHOT contact is open (21 – 26). The gate opens because photoeye is ignored on opening in the logic setting.	Check PHOT connections or photoeye obstructed. Check proper functioning of connected devices.
GATE RUNS TOO SLOW		Working time at normal speed is set too low.	Increase working time at normal speed (Normal opening and closing speed time parameters section) to desired value.
GATE DOES NOT SLOW DOWN		Slow down is disabled.	Activate slow down (Slow-down speed in parameters section).
		Working time at normal speed is higher than the time required to get to the full opening/closing position.	Decrease working time at normal speed (Normal opening and closing speed time parameters section) to desired value.

# NOTES

A series of horizontal dotted lines for taking notes.

# NOTES

A series of horizontal dotted lines for taking notes.

# DEIMOS BT



- UL 325 approved by CSA
- Rack and pinion drive for smooth gate movement
- LCD display programming for maximum installation speed and flexibility
- Exhaustive diagnostic messages by the display
- Built-in rolling code receiver
- Very compact design, control board and battery back up fit in the operator
- Very energy efficient motor at only 70 W (3 amps)
- Autaset feature to quickly and simply adjust torque level on the gate
- Opening width up to 75'
- Adjustable slow down, 3 different slowdown speeds
- Battery backup available, batteries are engaged only when main power is out
- Easy manual release through triangular key
- Inherent obstruction detection system for maximum safety

## Also available from BFT



Road barriers



Hydraulic underground operators



Hydraulic arm operators



Electromechanical arm operators



Accessories