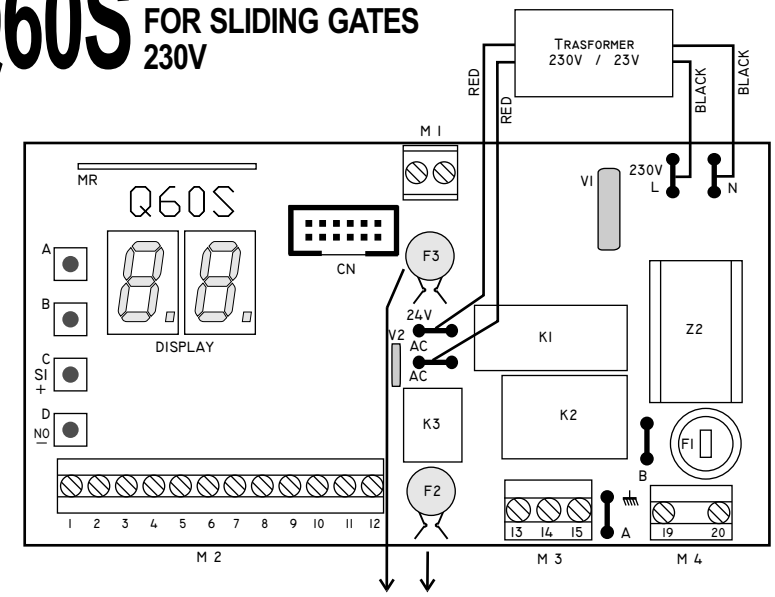
Q60S CONTROL UNIT FOR SLIDING GATES 230V



RESTORABLE FUSE 24V
IMPORTANT: IF A TEMPORARY SHORT CIRCUIT OCCURS THE FUSE WILL RESTORE ITSELF AFTER FEW SECONDS.

IN CASE OF A PERMANENT SHORT CIRCUIT, CUT THE MAIN POWER OFF, REMOVE THE TERMINAL BLOCKS 2A AND 2B, WAIT FEW SECONDS AND THEN POWER THE UNIT AGAIN.
THE FUSE WILL BE AUTOMATICALLY RESTORED.
FIND AND REMOVE THE SHORT CIRCUIT CAUSE BEFORE PLUGGING THE TERMINAL BLOCKS IN.

CONTROL UNIT COMPONENTS

A	TOP LEVEL MENU BUTTON
B	LOWER LEVEL MENU BUTTON
C	BUTTON TO INCREASE OR CHANGE TO YES (SI)
D	BUTTON TO DECREASE OR CHANGE TO NO
F1	230V FUSE 5A
F2	24V FUSE (RESTORABLE) 0,6A
F3	24V FUSE (RESTORABLE) 1,6A
DISPLAY	7 SEGMENTS DISPLAY
M1	RADIO/AERIAL TERMINAL BLOCK
M2A/M2B	CONTROLS AND SAFETY DEVICES TERMINAL BLOCKS
M3	MOTOR TERMINAL BLOCK
M4	MAIN POWER TERMINAL BLOCK
A B	EARTH CONNECTIONS
MR	RADIO UNIT
CN	NOT USED CONNECTOR
Z2	FILTER
K1/ K2	MOTOR RELAY
K3	BLINKER RELAY
VI	PRIMARY VARISTOR
V2	SECONDARY VARISTOR

PROTECO S.r.l.
Via Neive 77 - 12050 Castagnito (CN) ITALY
Tel. +39 0173 210.111 - Fax +39 0173 210.199
www.proteco.net info@proteco.net

PARAMETERS

B use **button B** to move to next parameter
C use **button C** to **INCREASE** a numeric value or change **NO** to **YES**
D use **button D** to **DECREASE** a numeric value or change **YES** to **NO**
To save changes and to ensure that they are not lost when power is removed, use **button B** to step through SU parameter, the press and hold **button C** until the display reverts to idle display .

BUTTON A → CYCLE ROUND THE TOP LEVEL MENU
BUTTON B → MOVE FROM THE TOP LEVEL MENU TO THE LOWER LEVEL MENU
BUTTON C → INCREASE TIME OR CHANGE TO YES
BUTTON D → DECREASE TIME OR CHANGE TO NO

DISPLAY

DISPLAY SIGNALS
- AP **Opening**
- CH **Closing**
- tP Delay time before automatic **Closing**

- **STAND BY**
- **PARAMETERS**
- **RADIO**
- **DEFAULT**
- **SEQUENTIAL PROGRAMMING**

CODE	FUNCTIONS
r-	SHOW STORED CODES
tc	NEW REMOTE CONTROL CODE ACQUISITION
CP	REMOTE CONTROL CODE ACQUISITION WITH STOP FUNCTION
Pd	REMOTE CONTROL CODE ACQUISITION WITH PEDESTRIAN FUNCTION
rC	DELETE ALL REMOTE CONTROL CODES

CODE	FUNCTIONS
In	ONLY 1 MOTORE

CODE	FUNCTIONS
rP	PRESS & HOLD BUTTON C TO SET DEFAULTS

CODE	TIMES	VALUES
n1	MOTOR WORKING TIME 0 - 99	21
F1	MOTOR TORQUE 6 - 19	14
Fr	MOTOR POWER DURING DECELERATION 6 - 19	19
r1	MOTOR DECELERATION TIME 0 - 99	6
tP	DELAY TIME BEFORE AUTOMATIC CLOSING 0 - 99	3
Pd	PEDESTRIAN OPENING TIME 0 - 99	7

FUNCTIONS	STANDARD DEFAULT VALUES
SU PRESS & HOLD **BUTTON C** TO SAVE CHANGES. PRESS **BUTTON D** TO ABANDON CHANGES	
P8 PHOTOCELLS TEST	SI
P7 MOTOR TEST	SI
P6 DECELERATION ON	SI
P4 PRE BLINKING	NO
P3 AUTOMATIC CLOSING STEP BY STEP	SI
P2 MULTI OCCUPATION	NO

PROGRAMMING THE RADIO rA

IMPORTANT: BEFORE PROGRAMMING FOR THE FIRST TIME THE RADIO RECEIVER, DELETE ALL THE RECORDED TEST CODES. SEE FUNCTION rC AT THE BOTTOM OF THIS CHAPTER

IN CASE OF TRANSMITTERS WITH DIP-SWITCHES, SET THE MICROSWITCHES TO CREATE A NEW PERSONAL CODE.
(For security reasons avoid to set the microswitches all in OFF or all in ON position).

IN CASE OF HIT TYPE TRANSMITTERS, THE ABOVE MENTIONED PROCEDURE IS NOT NECESSARY BECAUSE EACH TRANSMITTER COMES WITH ITS OWN CODE RANDOM.

r= DISPLAYING STORED CODES
Press the **button A** repeatedly until the display shows rA
Press **button B** until the display shows r=
The display will now cycle trough each stored code from 01 to 50.
TO ERASE A SINGLE STORES CODE
Press **button D** when the number of the code to be removed is displayed

tc STORING NEW REMOTE CONTROL CODE
- Press the **button A** repeatedly until the display shows rA
- Press **button B** until the display shows tc
- Press and hold the remote control button until a dot appears on the display (this means that the receiver is ready to store a new code) and simultaneously press **button C** to store the new code

CP STORING NEW REMOTE CONTROL CODE with STOP function
- Press the **button A** repeatedly until the display shows rA
- Press **button B** until the display shows CP
- Press and hold the remote control button until the dot appears on the display and simultaneously press **button C** to store the new code.

Pd STORING NEW REMOTE CONTROL CODE with PEDESTRIAN function
- Press the **button A** repeatedly until the display shows rA
- Press **button B** until the display shows Pd
- Press and hold the remote control button until the dot appears on the display and simultaneously press **button C** to store the new code

rC DELETING ALL STORED CODES
- Press the **button A** repeatedly until the display shows rA
- Press **button B** until the display shows rC
- Press and hold **button D** until the display shows r=
This indicates that all the codes have been erased

PROGRAMMING THE Q60S PARAMETERS PA

Method **1** = **STANDARD**
Method **2** = **SEQUENTIAL**

Warning:
Before powering up and programming the control unit refer to the wiring scheme and then:
1 Check that the motor connections are correct
2 Check that the photocell connections are correct
Important:
If the photocells are not installed in closing phase, you must link terminals 3 and 9.
If the photocells are not installed in opening phase, you must link terminals 4 and 9.
3 Check that the control connections are correct.
Important:
If an emergency stop button is not fitted, you must link terminals 2 and 8.
4 Use the motor release key supplied to disengage the electric motor from the mechanical drive; then close the gate and re-engage.
5 Power the control unit up

STANDARD PROGRAMMING PROCESS (*Method 1)*

a) Give a **START** signal (terminal 1 and terminal 8).
After an opening movement of about 240mm, the deceleration phase will start (since the control board is pre-adjusted for an opening of 2,50 m). T
he motor will wait about 3 seconds and after that will start again with the closing phase.

b) Give a **START** signal to verify which functions and times are not suitable with the installation and take note.

c) Enter the programming phase through the **buttons A** and **B** to reach the wished parameter
d) Use the buttons **C** and **D** to change or confirm every single parameter
e) **IMPORTANT:** save the changes by selecting the parameter SU and pushing the **button C**.

Example:
Increase the motor working time by 5 seconds

With the switched on control board , ensure that the display shows :	⟶	--
Press **button A**	until the display shows ⟶	PA
Press **button B**	until the display shows ⟶	t1
Wait	until the display shows ⟶	21
Press 5 times the **C**	until the display shows ⟶	26
Press **button B**	until the display shows ⟶	SU
Press the button C for some seconds	until the display shows ⟶	--

The motor working time has been increased from 21 to 26 seconds

SEQUENTIAL PROGRAMMING (*method 2)*

SLIDING GATE SEQUENTIAL PROGRAMMING

a) Press **button A** (steps through the top menu) until the display shows AS

b) Press **button B** (steps through the sub-menu) until the display shows IN

c) Give a **START** signal: the leaf starts opening and the display shows t1

d) Wait until the leaf has done the 90% of the opening cycle and then give another **START** signal: the display shows t1 and the deceleration phase begins.

e) When the opening phase has been completed (**OPENING LIMIT SWITCH**) and the display shows tP, the control board has stored the opening and deceleration times and starts calculating the "**stay open**" (pause) time

f) At the reaching of the desired pause time, give another **START** impulse. The control board has stored the "**stay open**" time and the gate starts the closing cycle.

g) When the closing cycle has completely finished, till the complete closure of the gate, the control unit automatically exits from the sequential programming process and all the working times have been saved.

SELF-DIAGNOSIS DISPLAY MESSAGES

EF	PHOTOCELL'S TEST ERROR
tA	FOTOCELLULA O COSTA DI SICUREZZA IN APERTURA
tC	CLOSING PHASE PHOTOCELL BEAM INTERRUOTED OR WIRING FAULT
FH	BOTH OPENING AND CLOSING PHASE PHOTOCELL BEAM INTERRUPTED OR WIRING FAULT
St	STOP PRESSED (OR OPEN CIRCUIT BETWEEN TERMINAL 2 & 8)
FA	LIMIT SWITCH IN OPENING PHASE
FC	LIMIT SWITCH IN CLOSING PHASE
PE	PEDESTRIAN START SIGNAL (SHORT CIRCUIT BETWEEN TERMINAL7 & 8)
Go	START SIGNAL (SHORT CIRCUIT BETWEEN TERMINAL 1 & 8)
--	RADIO FOB CONTINUOUSLY TRASMITTING
A1	MOTOR PROBLEM (WIRING FAULT, OBSTRUCTION OR TORQUE SETTING TOO LOW)

SPECIAL FUNCTIONS

P3 AUTOMATIC CLOSING FUNCTION
When set to YES ("SI"):
- an impulse during the opening phase will stop the motors until another impulse is received
- an impulse during the closing phase will stop and reverse the motors

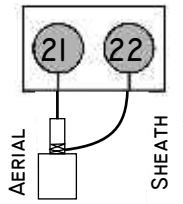
When set to NO, the step-by-step operation is active:
- 1st impulse starts the **opening phase**
- 2nd impulse stops the **opening phase**
- 3rd impulse starts the **closing phase**

P2 MULTI-USER FUNCTION
when set to **YES** ("SI"):
The control unit will not accept any command during the opening phase

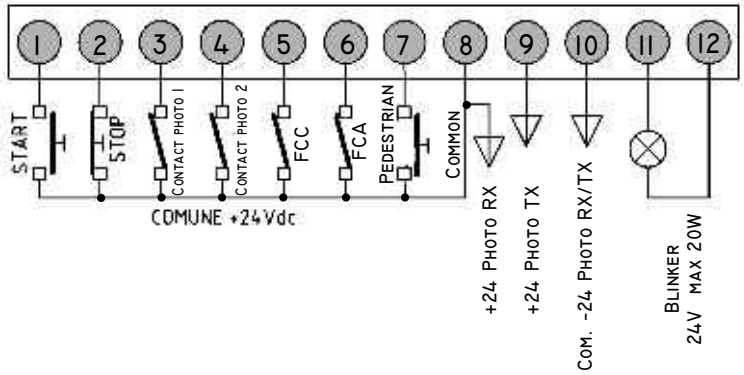
TERMINAL BLOCK CONNECTIONS

All the connections must be done without power supply.

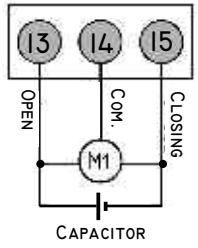
TERMINAL BLOCK 1



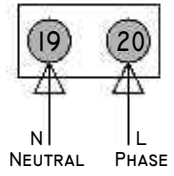
TERMINAL BLOCK 2



TERMINAL BLOCK 3



TERMINAL BLOCK 4



EARTH TERMINAL BLOCK CONNECTIONS

	Connect the yellow/green motors cable to earth terminal **A** . Connect the yellow/green network cable to earth terminal **B**.

TERMINAL BLOCK1 CONNECTIONS

21	Antenna or radio receiver signal
22	Sheath or negative for radio receiver

TERMINAL BLOCK 2 CONNECTIONS

1-8	**Start control** normally open (NA) for button, key selector , radio receiver or Timer clock connection. The Start control starts the programmed running cycle.
2-8	**Stop control** normally closed (NC). Emergency button. When pressed the gate stops immediately. In Opening phase and Break-time: at the first impulse the gate closes. In Closing phase: at the first impulse the gate opens. **If, temporarily, the Stop contact is not used, link terminal 2 with terminal 8.**
3-8	**Input of one safety photocell in closing phase.** **Input of safety rubber edges and of safety photocell in closing phase.** **Input of several safety photocells in closing phase**. The receiver contacts must be connected in series. Normally closed (NC). In opening phase: does not work In closing phase: Stop, break-time for 2 seconds, opening phase again. **If, temporarily, the photocell contacts are not used, link terminal 3 with terminal 9.**
3-9	**Input only for safety rubber edges in closing phase.** The contacts must be connected in series if there is more than one safety rubber edge. Normally closed (NC). In opening phase: does not work. In closing phase: Stop, break-time for 2 seconds, opening phase again.
4-8	**Input for safety photocells in opening phase (for sliding gate).** Normally closed (NC). In opening phase: Stops and changes direction for 3 seconds In closing phase: does not work If you also want to connect the safety rubber edges, you must connect in series their contacts with the photocell ones. **If, temporarily, the photocell contacts are not used, link terminal 4 with terminal 9.**
4-9	**Input safety rubber edges in opening phase (for sliding gate).** Normally closed (NC). In opening phase: Stops and changes direction for 3 seconds In closing phase: does not work Using more than one safety rubber edges, the contacts must be connected in series.
5-8	**Limit switch input in closing phase.**
6-8	**Limit switch input in opening phase.**
7-8	**Pedestrian start input**. Normally open (NA).Only one leaf start to open
8-10	**Output for photocell receiver power supply.** **Output for extra 24V dc accessories power supply.** With all Standard accessories included 100 m A are still available for extra accessories.
9-10	**Output for photocell transmitter power supply.**
11-12	**Blinker intermittent output.** 24V 20W max**.**

TERMINAL BLOCK 3 CONNECTIONS

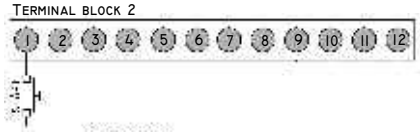
13 **14** **15**	**Motor M1- output** (13=Brown; 14= Blue; 15=Black) The motor is preset to be fixed on the right side of the gate (looking from the interior side). If you fix the motor on the left side, you have to exchange the wire 13 with the 15 (motor) and the wire 5 with the 6 (limit switch) in the control board. Capacitor between connector 13 and 15.

TERMINAL BLOCK 4 CONNECTIONS

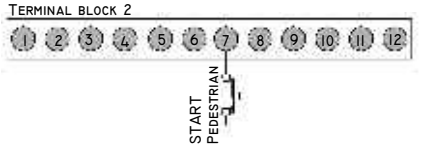
19-20	Power input 230-240 Vac - 50/60 Hz. (19=Neutral - 20=phase)

WIRING SCHEME FOR THE Q60S CONTROL UNIT

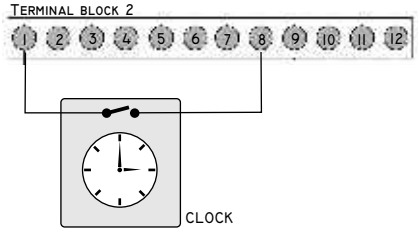
1 START

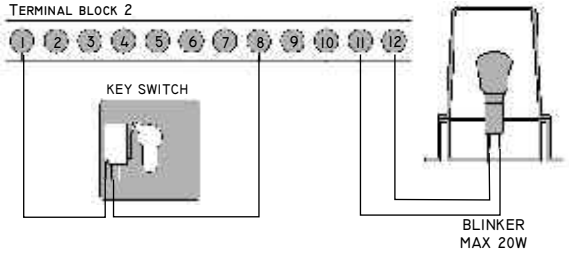


2 PEDESTRIAN START

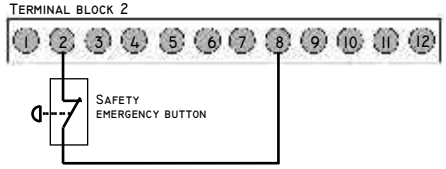


3 PERMANENT START COMMAND WITH TIMER

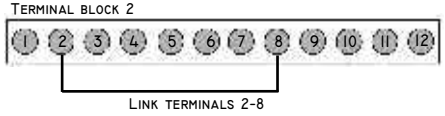




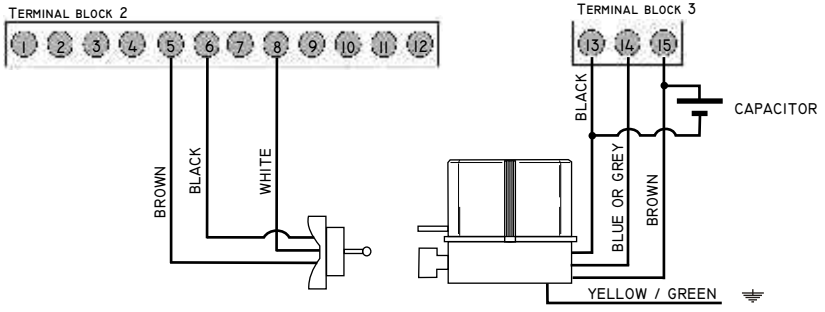
4 EMERGENCY STOP BUTTON



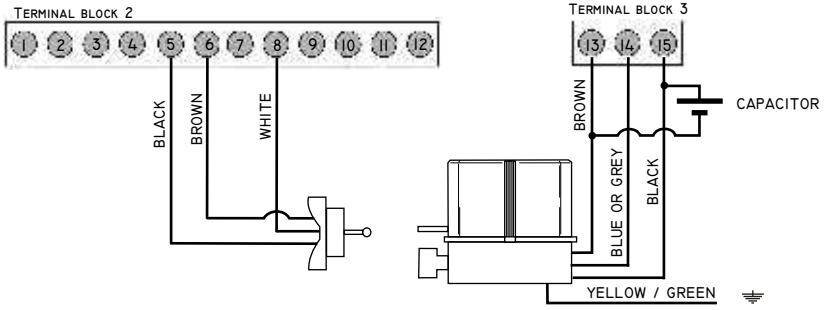
N.B.: Link terminals **2** and **8** if an emergency STOP button is NOT USED



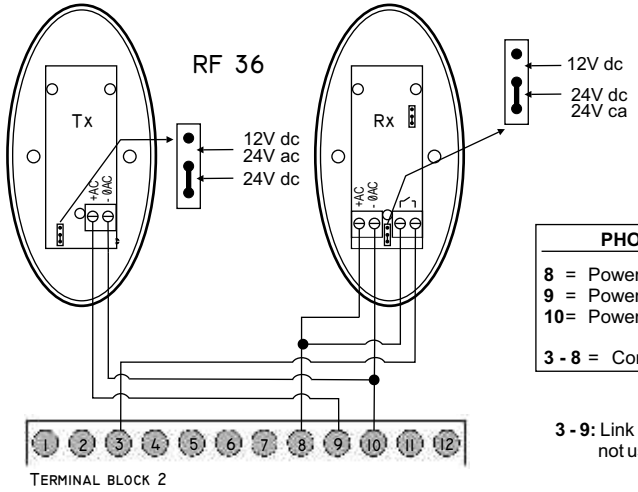
5 MOTOR AND LIMIT SWITCH



IF IT IS MOUNTED ON THE LEAF-HAND SIDE (looking the inside)
TO INVERT WIRE 13 WITH WIRE 15 END WIRE 5 WITH WIRE 6



6 CONNECTING PHOTOCELL IN CLOSING PHASE

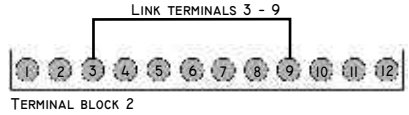


PHOTOCELLS CONNECTIONS

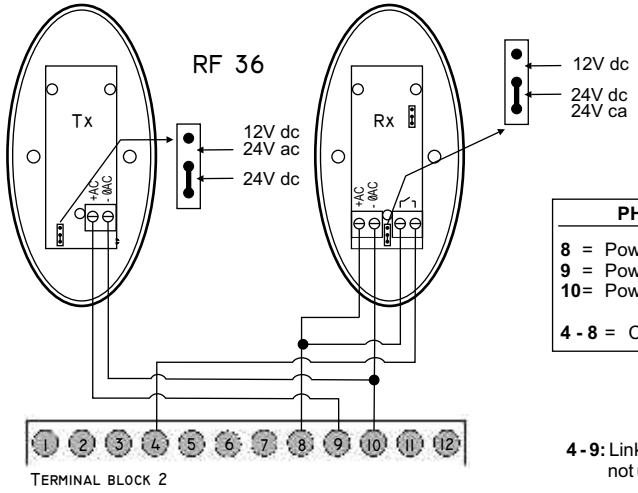
8 = Power supply + PHOTO RX
9 = Power supply + PHOTO TX
10= Power supply - COM. PHOTO TX/RX

3 - 8 = Connections photocells

3 - 9: Link terminals **3** and **9** if the photocells are not used in the closing phase.



CONNECTING PHOTOCELL IN OPENING PHASE



PHOTOCELLS CONNECTIONS

8 = Power supply + PHOTO RX
9 = Power supply + PHOTO TX
10= Power supply - COM. PHOTO TX/RX

4 - 8 = Connections photocells

4 - 9: Link terminals **4** and **9** if the photocells are not used in the opening phase.