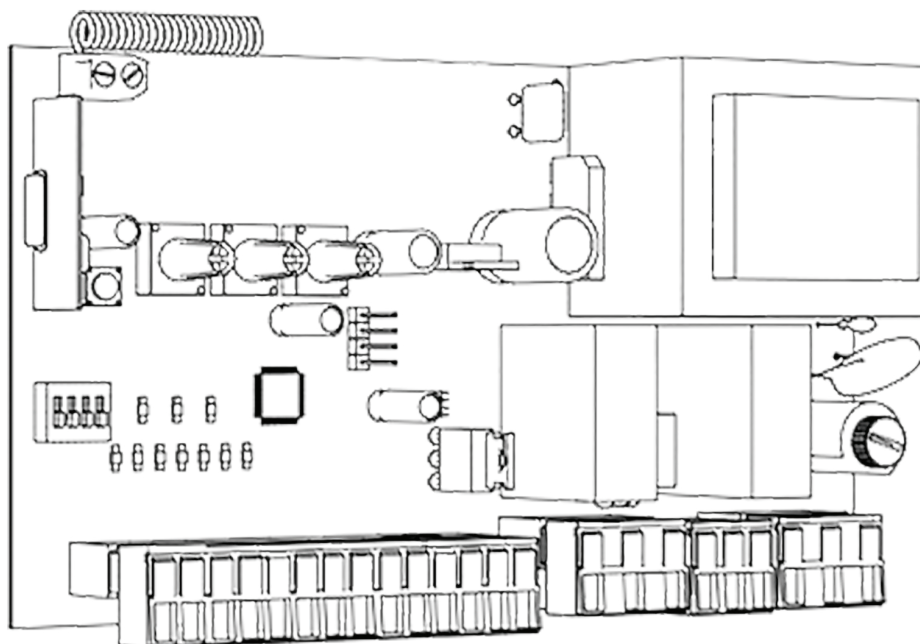# CONTROL BOARD PCB-SL

TO OPERATOR SLIDING

Programming instructions board PCB-SL

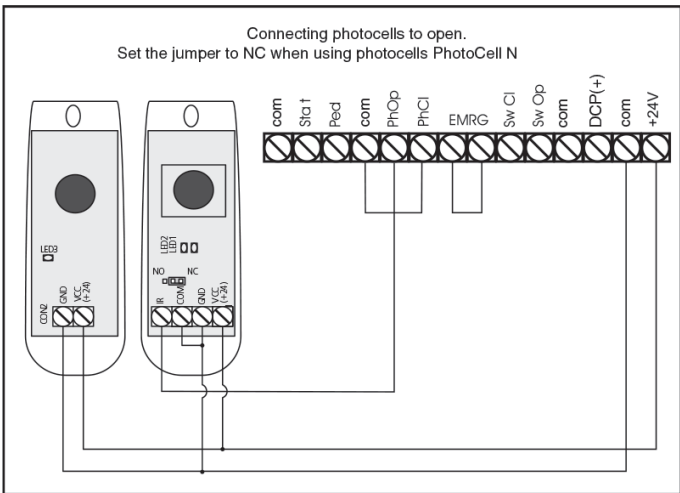Actual versions:
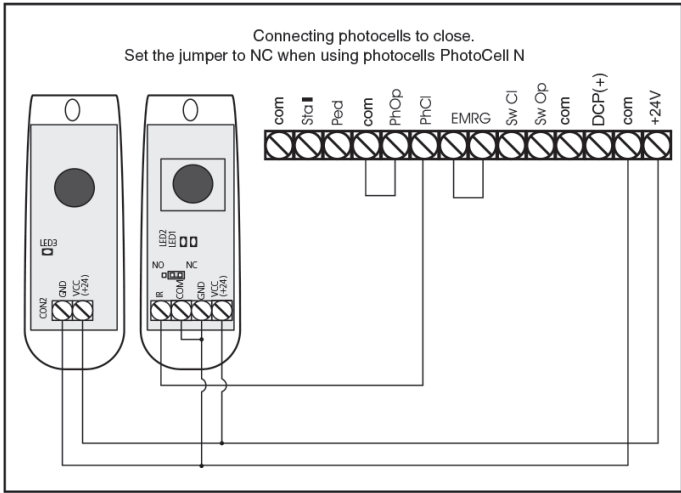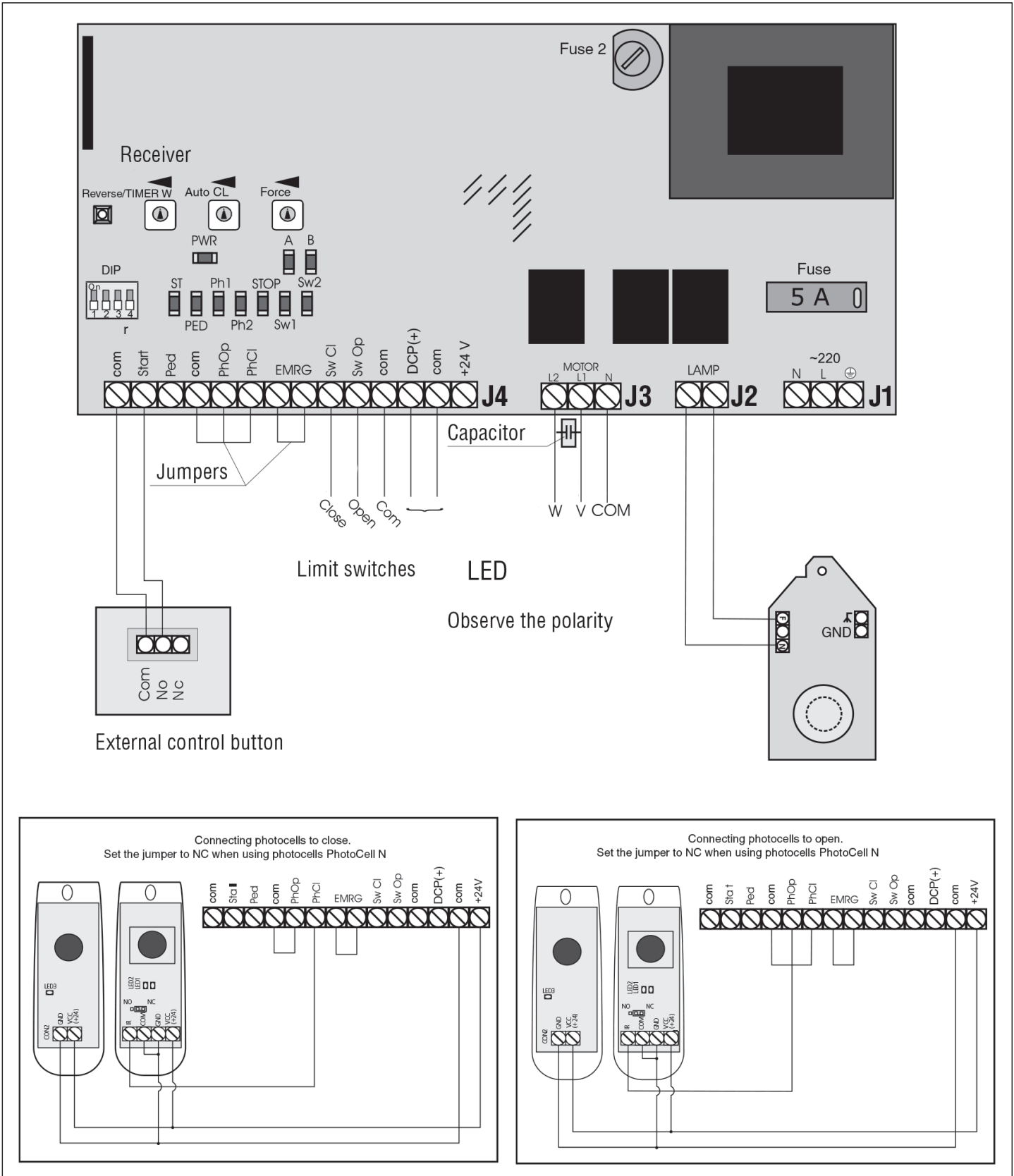Soft — v 1.1; pcb — v 1.0

1. ELECTRICAL INTERFACES

1.1. WIRING DIAGRAM OF CONTROL UNIT

⚠ **WARNING!** Switch off the power before operating with control board. Always install power cables apart from signal ones. Use a braided shield cable to reduce induces noise. The wires in the cable shall be protected from contact with any rough and sharp details.

1.2. DESCRIPTION OF ELEMENTS OF CONTROL UNIT

Elements of control unit

Elements	Description
TR1	transformer
DIP	group of DIP-switches
FUSE	high-voltage fuse
FUSE2	low-voltage fuse
Reverse/TIMER W	adjustment of reverse time after limit switch response
AUTO CL	time delay before automatic closing
FORCE	adjustment of traction force

Contacts of control unit

Pins	Description
~220 (N, L, PE)	supply voltage
Motor (N, L1, L2)	pin to connect motor
Lamp	signal lamp connector (220 V)
–	accessories power contact negative (24 V), 500 mA
+24 V	positive power supply accessory (24 V), 500 mA
DCP(+)	signal lamp connector (24 V)
Sw Op	open limit control contact (NC)
Sw Cl	closing limit switch control contact (NC)
EMRG	contact pair for emergency stop (NC)
Ph Cl	output contact for photocells to open (NC)
Ph Op	output contact for photocells to close (NC)
Ped	command to close (DIP2 is on) (NO)
Start	command to open or step-by-step control (NO)

Control unit LEDs

LEDs in bold type indicate the state when the gate is stopped in the middle position.

LED	Function	On	Off
PWR	motor power supply	**on**	off
A (red)	record of transmitter code	on	**off**
B (yellow)	failure (emergency)	on	**off**
ST	START command	**on**	off
PED	PED command	**on**	off
Ph1	photocells to open	**do not respond**	respond
Ph2	photocells to close	**do not respond**	respond
STOP	STOP command	**out**	on
Sw1	limit switch to close	**does not respond**	responds
Sw2	limit switch to open	**does not respond**	responds

1.3. DESCRIPTION OF TERMINALS OF CONTROL UNIT

Pins to connect power supply (pin J1)
~220 (N, L, PE) — pin to connect power supply unit.
PE — protection earth.
N — power supply (neutral).
L — power supply (phase).

Pins to connect motor (pin J2)
MOTOR (N, L1, L2) — to connect motor unit. Make sure that the motor is connected as shown at the diagram.

Pins to connect warning light (pin J3)
LAMP — pin to connect warning light of 230 V, max 40 W. Operates at any movement of the gate leaf.

Pins to connect accessories (pin J4)
START — command Complete opening (NO).

Closing of the contacts of the device connected to this terminal triggers the control unit for complete opening and/or closing of the gate (the exact logic depends on the position of DIP1 switch).
DIP1-off — generates the command in cycle mode Open — Stop — Close — Stop.
DIP1-on — generates the command in cycle mode Open — Limit switch — Close (no stop is provided during movement). To connect some devices, it's necessary to connect normally open (NO) contacts of these devices in parallel.

Ped — command Pedestrian (pedestrian crossing) (NO**).**

DIP2-off — ped command results in the gate opening for approximately 1 m. Repeated Ped command results in the gate closing. If Start command follows after Ped command, the control unit generates a command for complete closing of the gate. Ped command at DIP2-off in the closed position of the gate opens the gate for 1 m, in the opened position of the gate closes the gate completely.

DIP2-on — carries out separate operator control, i.e. Start command opens the gate, Ped command closes the gate. To connect some devices, it's necessary to connect normally open (NO) contacts of these devices in parallel.

SW OP/SW CL — limit switches signals in extreme positions of the gate leaf.
Limit switch operation (opening of the contact) SW OP/SW CL means that the gate leaf is in the extreme opened/closed position and further movement in the same direction is prohibited.

Photo Cl — contacts to connect safety devices to close (NC). Devices operation results in immediate reverse movement of the gate leaf for complete opening. Operation of the devices connected to these terminals has no effect on operation during the gate opening. If the gate is open and sensors connected to these terminals respond, it will prevent from the gate movement to close. To connect some devices with NC contacts, it's necessary to connect the contacts of these devices in series.

⚠ **WARNING!** If no devices are connected to these terminals, it's necessary to install the jumper between contact terminals Ph CL and "–" (see wiring diagram).

Photo Op — contacts to connect safety devices to open (NC). These connections are used to protect the gate leaf when opening. Operation of the devices results in immediate stop. Operation of the devices connected to these terminals has no effect on operation during the gate closing. If the gate is closed and sensors connected to these terminals respond, it will prevent from the gate movement to open. To connect some devices with NC contacts, it's necessary to connect the contacts of these devices in series.

EMRG — contacts to connect emergency stop devices (NC). These connections are used to protect the gate leaf when opening and closing. Any logic of control unit operation by signal from these devices when opening and closing the gate provides immediate stop of the gate. If the gate is at rest and sensors connected to these terminals respond, it will prevent from any gate movement. To connect some devices with NC contacts, it's necessary to connect the contacts of these devices in series.

⚠ **WARNING!** If no devices are connected to these terminals, it's necessary to install the jumper between contact terminals Ph Op and "–" (see wiring diagram).

24 V DC — output terminals of power supply transformer with 24 V DC, max load of 600 mA.

1.4. DIP-SWITCHES ADJUSTMENT

⚠ **WARNING!** When changing the position of DIP-switches, it's necessary to turn off and on again supply voltage of the operator. Otherwise, adjustment will not take place.

Switcher	Function	Implementation of functions	Switch position
DIP1	reject to receive commands during the gate movement	yes	ON
		no	OFF
DIP2	separate control: START — opens, PED — closes	yes	ON
		no	OFF
DIP3	operator location relative to the gate opening	to the right	ON
		to the left	OFF
DIP4	drive-down in front of the limit switches	yes	ON
		no	OFF

1.5. DESCRIPTION OF MECHANICALLY OPERATED CONTROLS

Reverse/TIMER W — of reverse time after limit switch response.

AUTO CL — adjustment of time delay before the gate automatic closing. Time delay can be adjusted within the range from 0 to 70 seconds. Automatic closing function is off in the leftmost position of the control.

FORCE — adjustment of operator traction force (set of maximum useful current). The operator force has a maximum value in the rightmost position of the control, and the operator is operating at its full capacity (not recommended).

Adjusting of mechanically operated controls

To increase the parameter, turn the corresponding control clockwise.
To reduce the parameter, turn the corresponding control counterclockwise.

2. TRANSMITTER PROGRAMMING

2.1. CLEANING OF THE RECEIVER'S MEMORY

After power is on, hold down the record button for transmitter (CODE/Radio) for 20 seconds. Indicator "A" will be constantly on, warning light will flash, then indicator "B" will be on for one second and go out to confirm erasing of stored codes, warning light and indicator "A" will go out.

2.2. RECORD OF   TRANSMITTER IN THE RECEIVER

To record transmitter, press and hold down the record button for transmitter (CODE/Radio) for 3 seconds. Press twice the selected button (you later want to control the operator operation) within 10 sec. when indicator "A" is on. Indicator "B" will flash once and go out to confirm successful record of code of transmitter in the receiver's memory, warning light and indicator "A" will go out.

⚠ **NOTE!** Repeat the recording procedure for each new transmitter to set up some TRANSMITTER.
In case of memory overflow in receiver, indicator "B" will flash three times (maximum number of transmitter in the receiver's memory — 60 pcs.).

2.3. ONE TRANSMITTER DELETION FROM RECEIVER MEMORY

To delete one particular transmitter, you must press and hold the CODE / Radio button, release it afterwards the indicator "A" starts to blink (about 12 seconds). Then twice press the recorded transmitter button which you want to delete from receiver memory. The "B" indicator will flash three times, which will indicate the successful deletion of the data. from the receiver's memory.
* Relevant for software version 1.1.

2.4. REMOTE PROGRAMMING FOR   TRANSMITTER

Perform the items 1–4 within five-second interval:

1. Press and hold down the button 2 (see figure) of programmed transmitter.
2. Without releasing the pressed button 2, press and hold down the button 1.
3. Release the buttons.
4. Press programmed button on the transmitter, the receiver enters the programming mode for transmitter.
(indicator "A" will be constantly on, warning light will flash).

⚠ **NOTE!** The record of transmitter can be carried out within 10 seconds after entering the programming mode,
then receiver exits the programming mode.

5. Press the button (to later control the operation of the receiver channel) twice on new transmitter. Indicator "B" will flash once and go out to confirm successful record of code of transmitter in the receiver's memory, warning light and indicator "A" will go out.

⚠ **NOTE!** Programming of the transmitter shall be carried out within the operating range of the operator receiver.
In case of memory overflow in receiver, indicator "B" will flash three times (maximum number of transmitter in
the receiver's memory — 60 pcs.).

2.5. DISABLING REMOTE PROGRAMMING OF   TRANSMITTER

If the function is turned on — when the power is applied to the card, the light turns on and off briefly of the HL9 (a) HL10 (b).

If the function is turned off — when the power is applied to the board, the LEDs are not turned on.

To disable / enable the function, you must hold and hold the CODE / Radio button, then, without releasing the button, apply power to the board.

* Relevant for software version 1.1.