

5. PROGRAMMING

To program operation of the automated system, you have to access the "PROGRAMMING" mode.

Programming is split into two parts: *BASIC* and *ADVANCED*.

5.1. BASIC PROGRAMMING

To access BASIC PROGRAMMING, press key **F**:

- if you press it (and hold it down), the display shows the name of the first function.
- if you release the key, the display shows the value of the function that can be modified with keys **+** and **-**.
- if you press **F** again (and hold it down), the display shows the name of the next function, etc.
- when you reach the last function, press **F** to exit the program, and the display resumes showing the gate status.

The following table shows the sequence of functions accessible in BASIC PROGRAMMING:

BASIC PROGRAMMING		(F)
Display	Function	Default
LO	FUNCTION LOGICS (see table of logics): <i>A</i> = Automatic <i>AP</i> = "Stepped" automatic <i>S</i> = "Safety" Automatic <i>E</i> = Semi-automatic <i>EP</i> = "Stepped" Semi-automatic <i>C</i> = Dead-man <i>b</i> = "B" Semi-automatic <i>bC</i> = Mixed Log. (B opening / C closing)	EP
PA	PAUSE TIME: This has effect only if the automatic logic was selected. Adjustable from 0 to 59 sec. in one-second steps. Subsequently, display changes to minutes and tens of seconds (separated by a point) and time is adjusted in 10-second steps, up to the maximum value of 4.1 minutes. E.g. if the display shows 2.5, pause time is 2 min. and 50 sec.	2.0
FO	FORCE: Adjusts Motor thrust. 01 = minimum force 50 = maximum force	50
d1	OPENING DIRECTION: Indicates the gate opening movement and makes it possible not to change the motor and limit-switches connections on the terminal board. -3 = Right-hand opening movement E- = Left-hand opening movement	-3
St	STATUS OF AUTOMATED SYSTEM: Exit from programming, save data, and return to gate status viewing. 00 = Closed 01 = Now opening 02 = At "STOP" 03 = Open 04 = Pause 05 = "FAIL SAFE" tripped 06 = Now closing 07 = Now reversing 08 = Photocells tripped	

5.2. ADVANCED PROGRAMMING

To access *ADVANCED PROGRAMMING*, press key **F** and, as you hold it down, press key **+**:

- if you release key **+**, the display indicates the name of the first function.
- if you release key **F** too, the display shows the value of the function that can be modified with keys **+** and **-**.
- if you press key **F** (and hold it down), the display shows the name of the next function, and if you release it, the value that can be modified with keys **+** and **-** is shown.
- when you reach the last function, press **F** to exit the program, and the display resumes showing the gate status.

The following table shows the sequence of functions accessible in *ADVANCED PROGRAMMING*:

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ADVANCED PROGRAMMING		(F) + (+)
Display	Function	Default
bo	MAXIMUM TORQUE AT INITIAL THRUST: The motor operate at maximum torque (ignoring the torque setting) at start of movement. Useful for heavy leaves. 4 = Active no = Disabled	4
br	FINAL BRAKING: When the gate engages the opening or closing limit-switch, a braking stroke can be selected to ensure the leaf is stopped immediately. If decelerations are selected, braking starts when they finish. At 00 value, braking is disabled. Time can be adjusted from 01 to 20 in 0.01-second steps. 00 = Braking disabled from 01 to 20 = Timed braking	05
FS	FAIL SAFE: If this function is activated, it enables a function test of the photocells before any gate movement. If the test fails (photocells not serviceable signalled by value 05 on the display), the gate does not start moving. 4 = Active no = Disabled	no
PF	PRE-FLASHING (5 s): Activates the flashing lamp for 5 seconds before start of movement. no = Disabled oP = Only before opening cL = Only before closing oC = Before every movement	no

Display	Function	Default
SP	<p>INDICATOR-LIGHT: If 00 is selected, the output functions as a standard indicator-light (lighted at opening and pause, flashing at closing, and off when gate closed).</p> <p>Courtesy light: Different figures correspond to timed activation of the output, which can be used (by a relay) to power a courtesy lamp. Time can be adjusted from 1 to 59 sec. in 1-second steps, and from 10 to 41 min. in 10-second steps.</p> <p>Electric lock command and 'traffic lights' functions: If you press key - from the 00 setting, the command for the E1 closing electric lock is activated; If you press - again, the command for the E2 closing and opening electric lock is set; if you press the - key again, you can set the 'traffic lights' functions E3 and E4. 00 = Standard indicator-light from 01 to 41 = Timed output. E1 = electric lock command before opening movement E2 = electric lock command before opening and closing movements E3 = 'traffic lights' function: the output is active in "open" and "open on pause" status and is disabled 3 seconds before the closing manoeuvre starts. Note: there is 3 seconds of pre-flashing before the closing manoeuvre. E4 = 'traffic lights' function: the output is active only in "closed" status.</p> <p>Attention: do not exceed the output's maximum load (24Vdc-3W). If necessary, use a relay and a power supply source outside the equipment.</p>	00
Ph	<p>CLOSING PHOTOCELLS LOGIC: Select the tripping mode of the closing photocells. They operate for the closing movement only: they stop movement and reverse it when they are released, or they reverse it immediately. 4 = Reverse on release no = Reverse immediately to opening</p>	no
oP	<p>OPENING PHOTOCELLS LOGIC: Select the tripping mode of the opening photocells. They operate for the opening movement only: they stop the movement and restart it when they are released, or they reverse it immediately. 4 = Reverse immediately to closing no = Restart movement on release</p>	no

Display	Function	Default
EC	<p>ENCODER: If the encoder is used, you may select its presence. If the encoder is present and enabled, "decelerations" and "partial opening" are controlled by the encoder (see relevant paragraphs). The encoder operates as an anti-crushing device: If the gate strikes an obstacle during opening or closing, the encoder immediately reverses gate leaf movement for 2 seconds. If the encoder operates again during the 2-seconds reversing time, it stops movement (STOP) without commanding any reversing. If no sensor is supplied, the parameter must be set on 00. If there is the encoder, adjust the sensitivity of the anti-crushing system, by varying the parameter between 01 (maximum sensitivity) and 99 (minimum sensitivity).</p> <p>from 01 to 99 = Encoder active and sensitivity adjustment 00 = Encoder disabled</p>	00
rP	<p>Pre-limit switch DECELERATION: You can select gate deceleration before the opening and closing limit-switches have been tripped. Time can be adjusted from 00 to 99 in 0.04-second steps. If an encoder is used, the adjustment is not determined by time but by motor revs, thus obtaining greater deceleration precision.</p> <p>00 = Deceleration disabled from 01 to 99 = Deceleration enabled</p>	00
rA	<p>Post-limit switch DECELERATION: You can select gate deceleration after the opening and closing limit-switches have been tripped. Time can be adjusted from 00 to 20 in 0.02-second steps. If an encoder is used, the adjustment is not determined by time but by motor revs, thus obtaining greater deceleration precision.</p> <p>00 = Deceleration disabled from 01 to 20 = Deceleration enabled</p>	05
PO	<p>PARTIAL OPENING: You can adjust the width of partial leaf opening. Time can be adjusted from 01 to 20 in 1-second steps. If an encoder is used, the adjustment is not determined by time but by motor revs, thus obtaining greater partial-opening precision. For example, with pinion Z20, partial opening can vary from about 60 cm to 4 m.</p>	05

Display	Function	Default
E	<p>WORK TIME (time-out): We advise you to set a value of 5 to 10 seconds over the time taken by the gate to travel from the closing limit-switch to the opening limit-switch and vice versa. Adjustable from 0 to 59 sec. in one-second steps. Subsequently, display changes to minutes and tens of seconds (separated by a point) and time is adjusted in 10 second steps, up to a maximum value of 4.1 minutes.</p> <p>Attention: the set value does not exactly match the motor's maximum operating time, because the latter is modified according to the performed deceleration spaces.</p>	4.1
AS	<p>ASSISTANCE REQUEST (combined with next function): If activated, at the end of countdown (settable with the next function i.e. "Cycle programming") it effects 2 sec. (in addition to the value already set with the PF function) of pre-flashing at every Open pulse (job request). Can be useful for setting scheduled maintenance jobs. 4 = Active no = Disabled</p>	no
nc	<p>CYCLE PROGRAMMING: For setting countdown of system operation cycles. Settable (in thousands) from 00 to 99 thousand cycles. The displayed value is updated as cycles proceed. This function can be used to check use of the board or to exploit the "Assistance request".</p>	00
St	<p>GATE STATUS: Exit from programming, data saving, and return to viewing gate status (see par. 5.1.).</p>	

NB.: modification of programming parameters comes into effect immediately, whereas definitive memory storage occurs only when you exit programming and return to gate status viewing. If the equipment is powered down before return to status viewing, all modifications will be lost.
To restore the default settings of the programming disconnect terminal strip J1, press the three buttons **+**, **-**, **F** simultaneously and keep them pressed for 5 seconds.

6. START-UP

6.1. INPUTS CHECK

The table below shows the status of the LEDs in relation to the status of the inputs.

Note the following: **LED LIGHTED** = closed contact
LED OFF = open contact

Check the status of the LEDs as per Table.

Operation of the signalling status LEDs

LEDS	LIGHTED	OFF
FCA	Limit-switch free	Limit-switch engaged
FCC	Limit-switch free	Limit-switch engaged
OPEN B	Command activated	Command inactive
OPEN A	Command activated	Command inactive
FSW OP	Safety devices disengaged	Safety devices engaged
FSW CL	Safety devices disengaged	Safety devices engaged
STOP	Command inactive	Command activated
EDGE	Safety devices disengaged	Safety devices engaged

NB.:

- The status of the LEDs while the gate is closed at rest are shown in bold.

7. FINAL OPERATIONS

At end of programming, run a few complete cycles to check if the automated system and the accessories connected to it are operating correctly, giving special attention to safety devices, operator thrust force adjustment, and to the anti-crushing device (Encoder sensor, optional). Hand over the "User's guide" page (in the operator instructions) to the customer, and describe how the system works, as well as the operator release and locking operations indicated in the said guide.

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