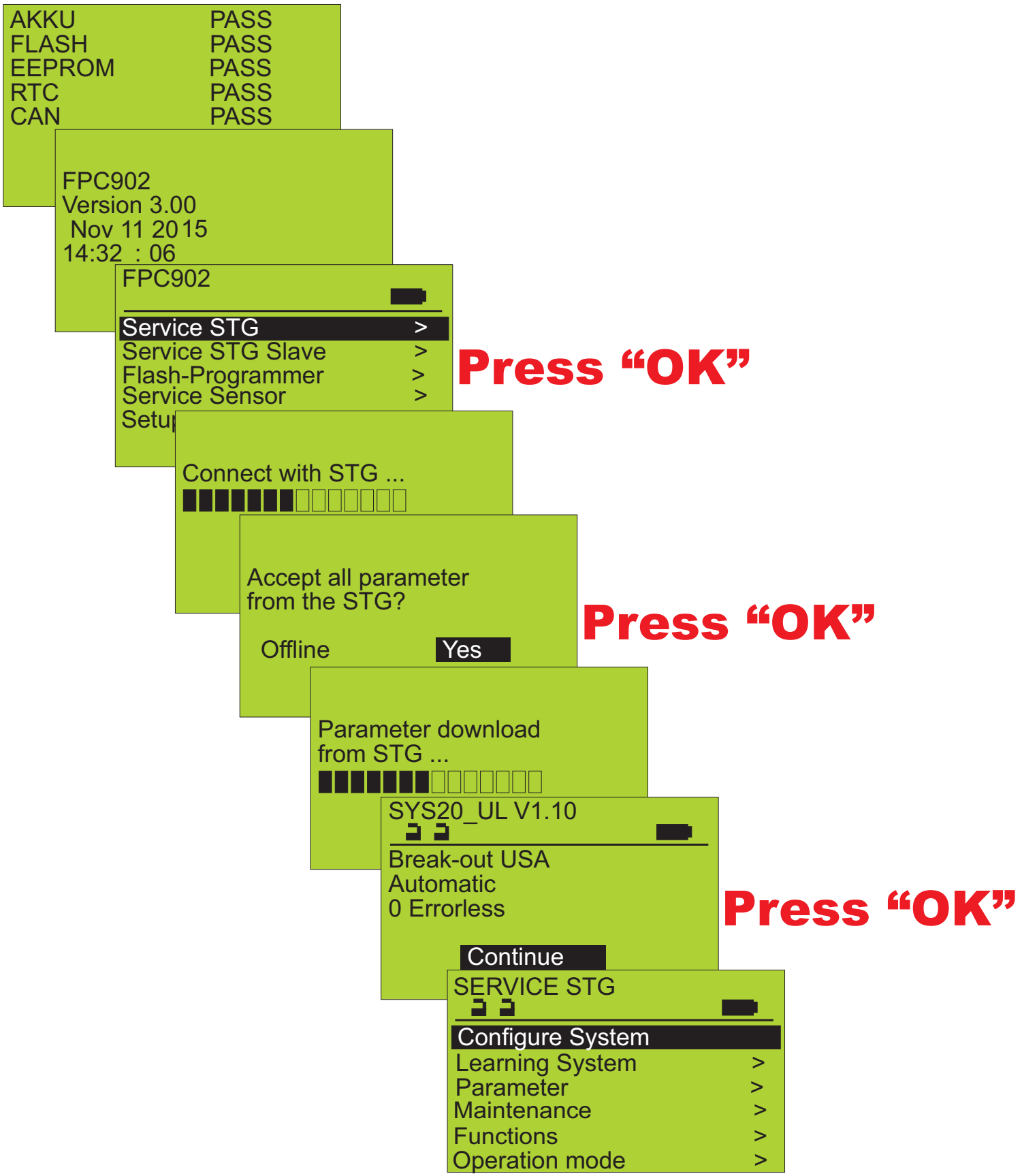
Servicing the Series 5100(Sys.20) with the FPC-902 Hand Terminal

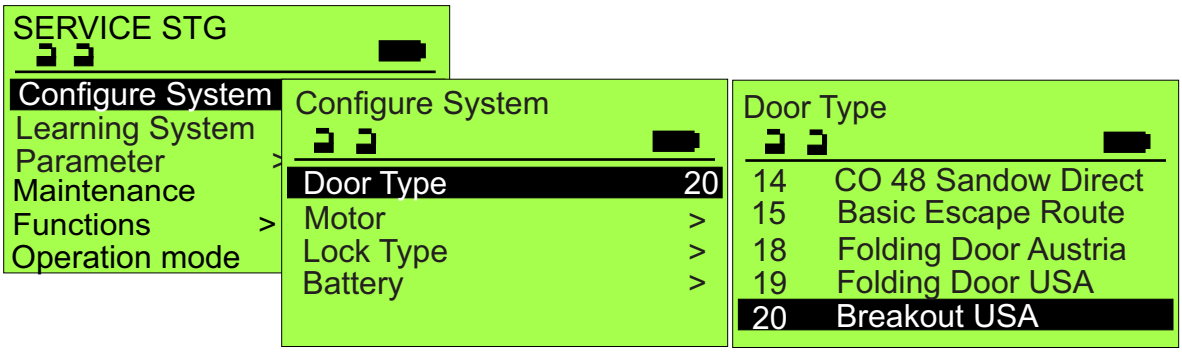
record

Nov 2015 BG

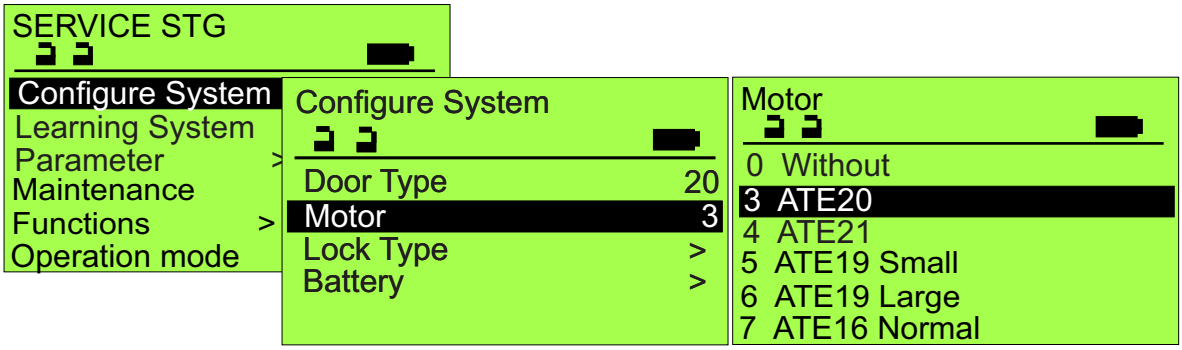
Connect the FPC-902 to the black 4 conductor plug located on the left side of the Series 5100 control. The following sequence of screens should occur.



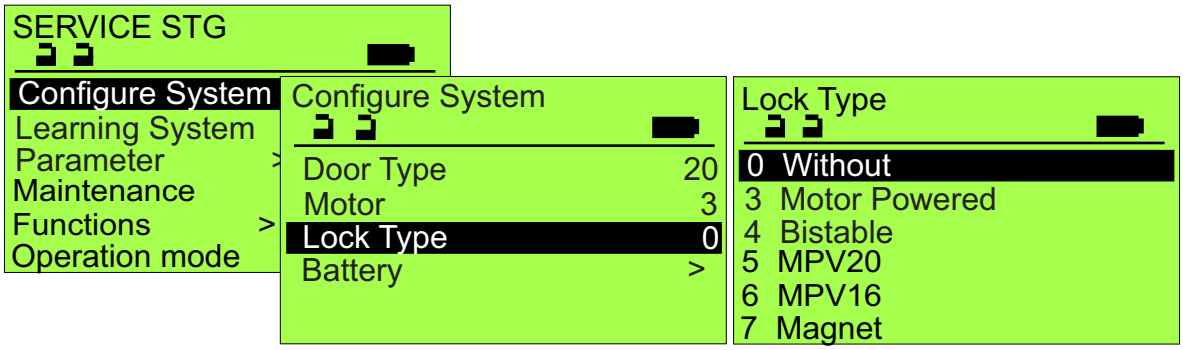
The screen sequences on the following pages start from this point and document the various adjustable parameters in the control. When at any of the screens shown below, the above screen can be accessed by pressing the "ESC" key one or more times.



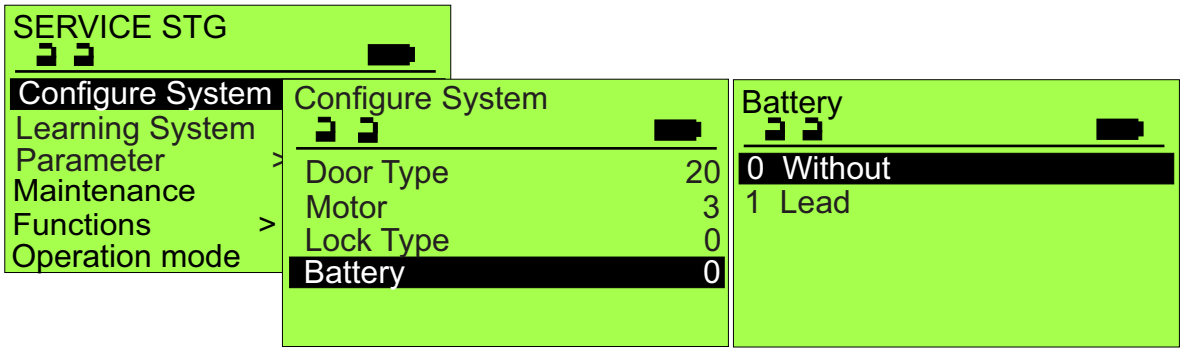
Press "OK"



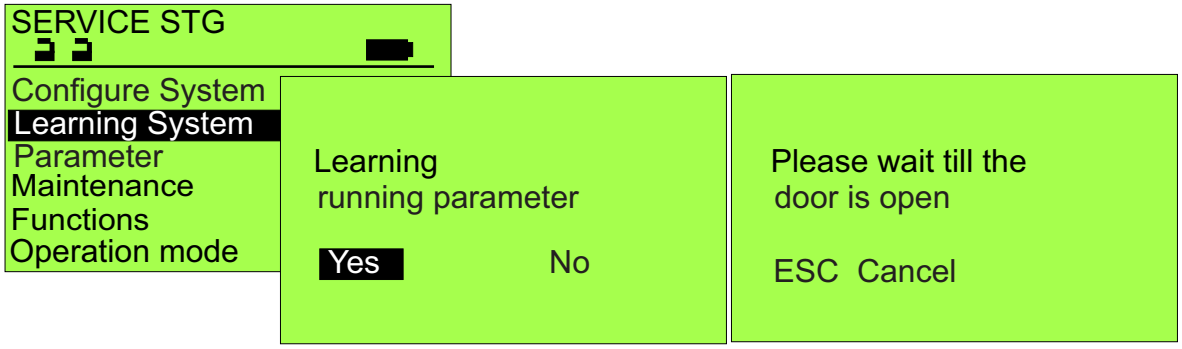
Press "OK"



If Lock on-board will need set to (11)Fail-Secure or (12)Fail Safe. Press OK

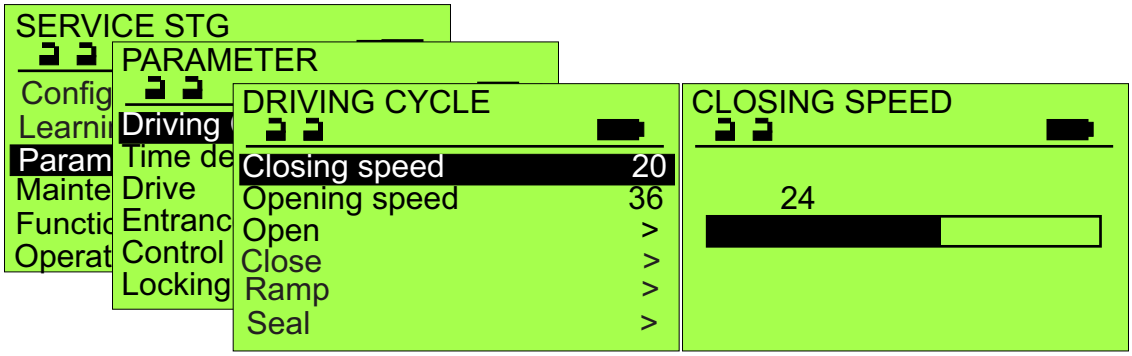


Set to (1)Lead if Lead Acid Battery onboard. Press OK

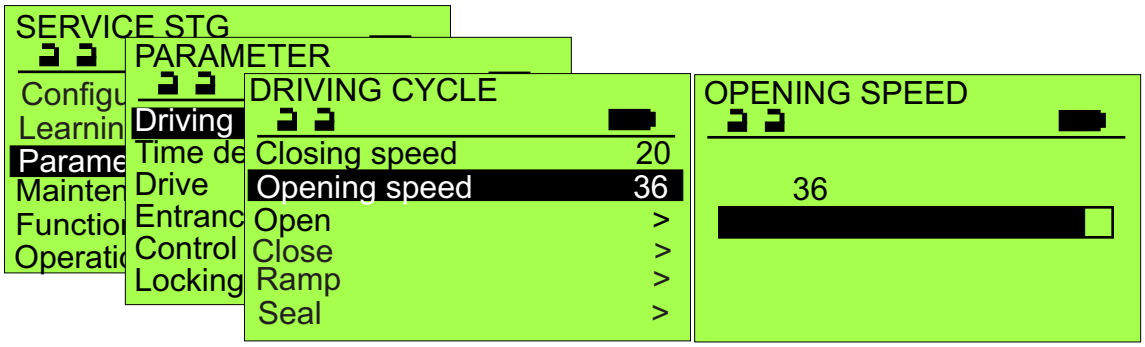


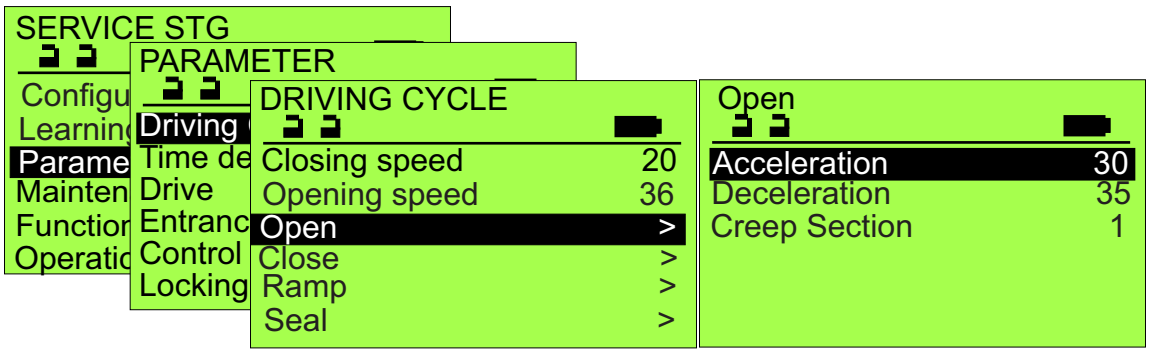
Follow prompts for door calibration, typically 2 cycles & screen "Learning running param. completed". Learning Sensors select "No" & "Ok".

At this point, retrieve the "Parameter Sheet" found in the plastic sleeve attached to the inside of the removable cover to the unit. Proceed by confirming that all the Settings in the "Plant" columns have been completed.

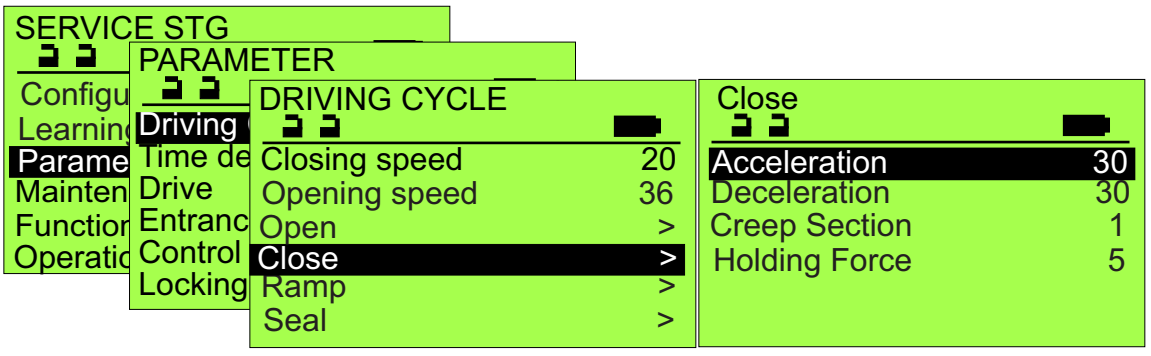


The closing speed is limited to 1 foot per second max.

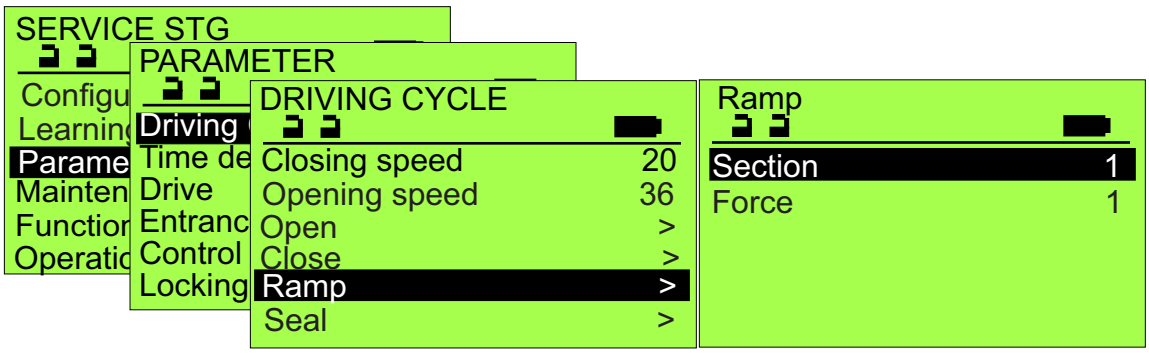




Acceleration and Deceleration: Higher value= faster cycle
0= no creep section
1= 2.5% of last travel
40= 100% of travel
Note: As Creep Section is increased, door speed is decreased.

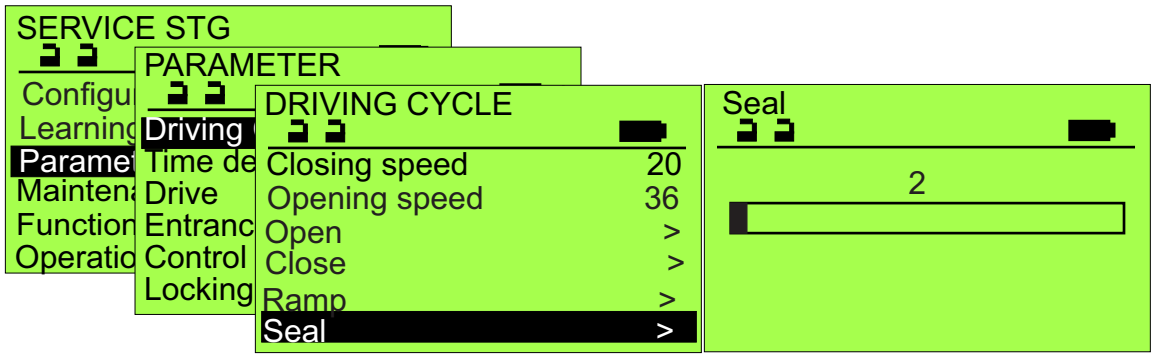


0= no creep section
1= 2.5% of last travel
40= 100% of travel
High Holding Force increases Motor Temp. Recommend not to exceed a setting of 20. Push to Actuate cancels Holding Force.

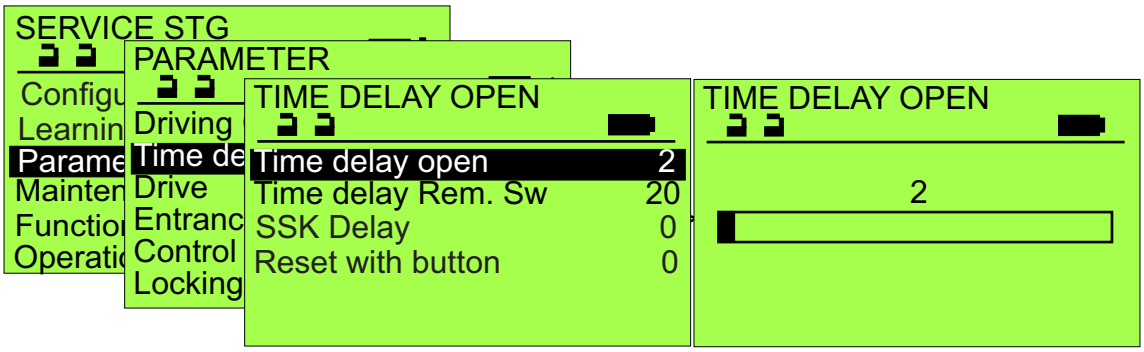


Section= Length of Ramp. 0= no ramp
1= appr. 1.5” ramp
40= appr. 4.75” ramp measured @ belt.
Force & ramp should be kept to minimum for no obstruction during force & ramp.

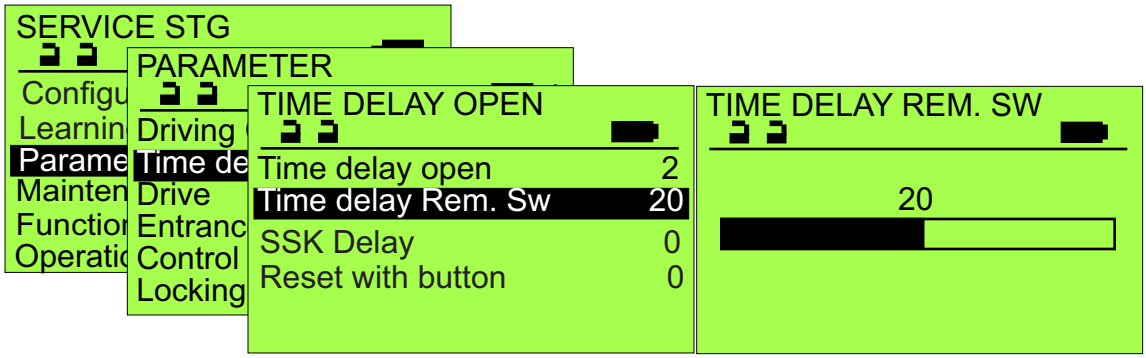
During Ramp, Obstruction sensitivity is significantly reduced



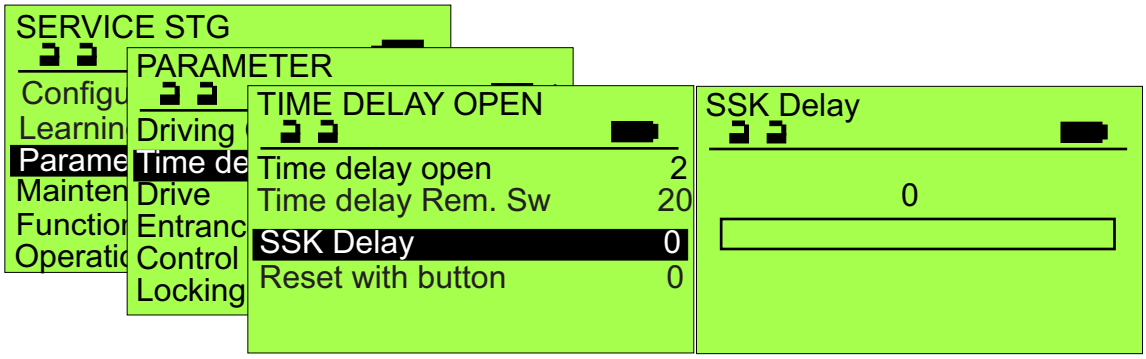
0= no seal
1= appr. 4" seal
40= appr. 12" seal
Measured @ belt.
Obstruction significantly reduced during Seal - keep to minmum.



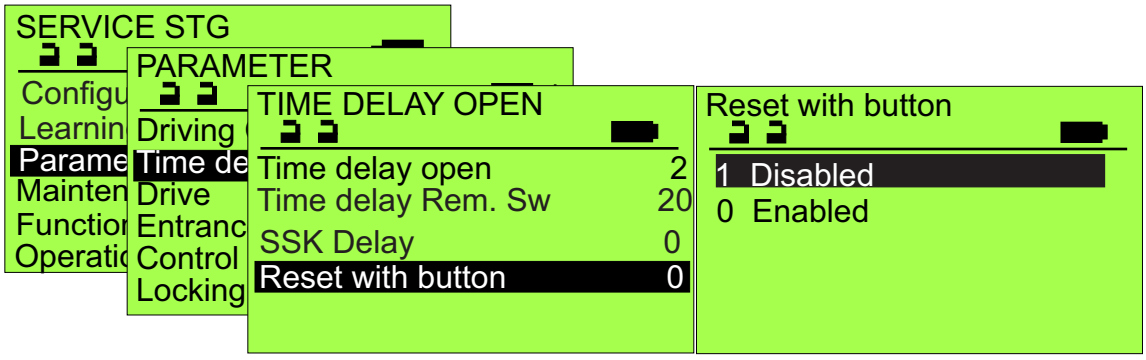
0 thru 20 are in 1 sec. intervals;
21 thru 40 are in 2 sec. intervals providing 60 sec. maximum delay.
For compliance with ANSI A156.10, do not set less than 2.



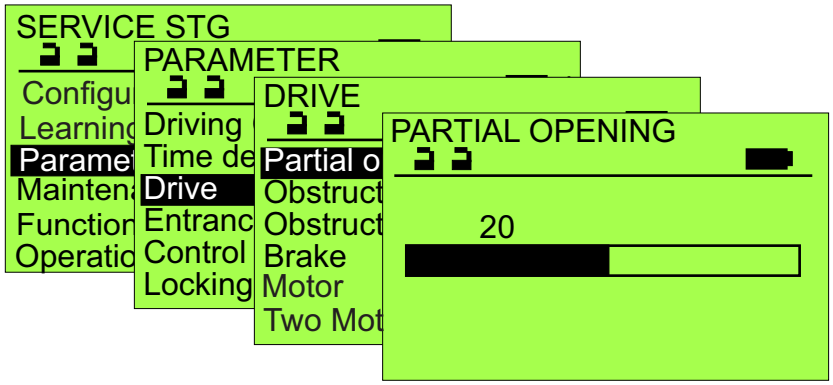
0 thru 20 are in 1 sec. intervals;
21 thru 40 are in 2 sec. intervals providing 60 sec. maximum delay.
SSK, Special Activation, & Time Delay Rem. Sw. all refer to control input terminals 11 & 12.



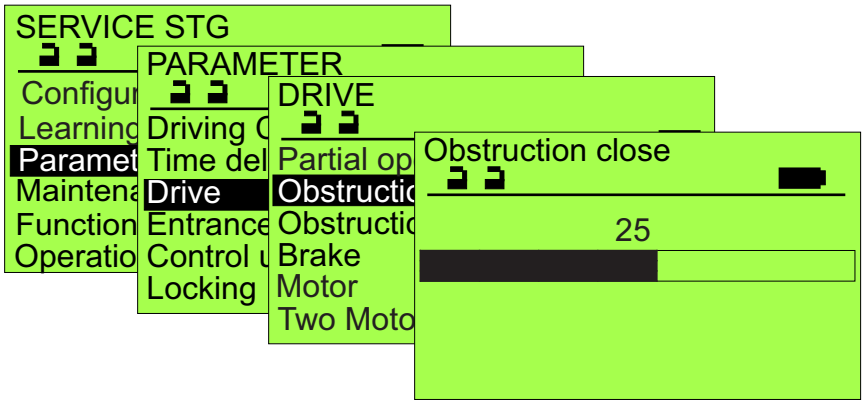
Delay before door starts opening from above inputs terminals 11 & 12..
0= no delay
40= 8 second delay
SSK signal is only delayed if door is closed.



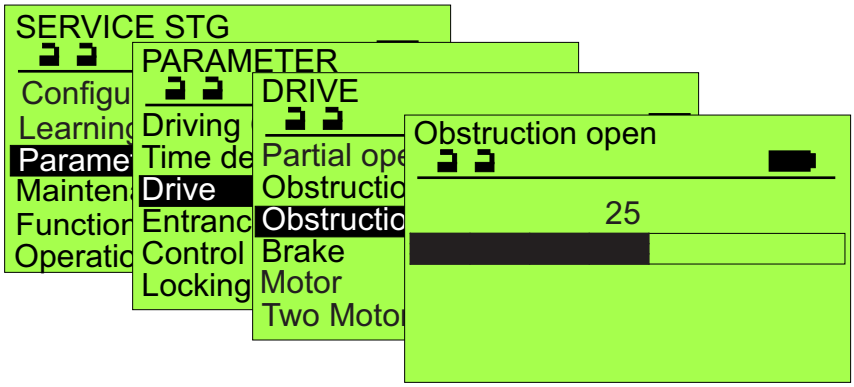
Enables early closing by sending same signal again during hold open.
Disabled= no interruption
Enabled= Hold time can be interrupted with a signal from AKI, AKA, & SSK.



Reduced opening limits:
0 = 8 inches (minimum);
40 = 100% of opening.

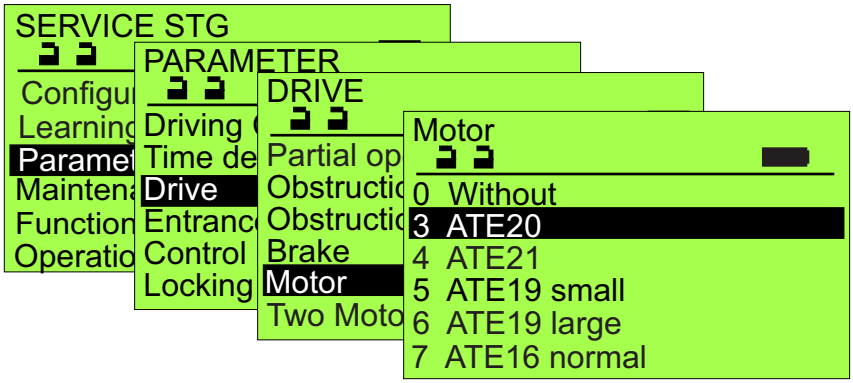


If the door is reversing due to extraordinarily tight weather seals or extreme stack pressures, change from 0 to higher number.



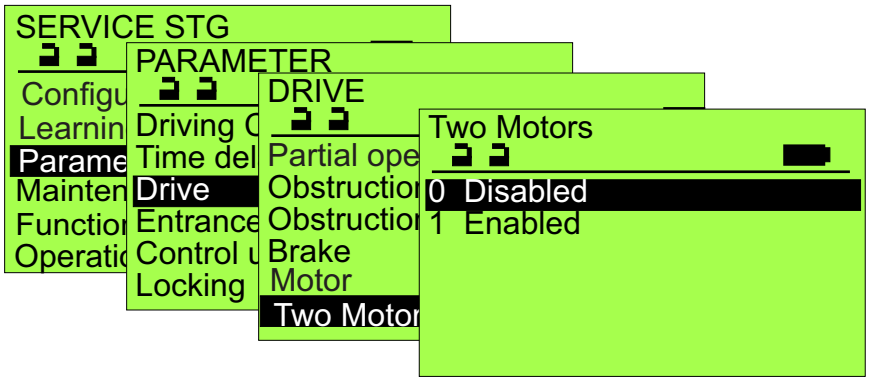
If the door is reversing due to extraordinarily tight weather seals or extreme stack pressures, change from 0 to higher number.

Note: Brake not available in North America

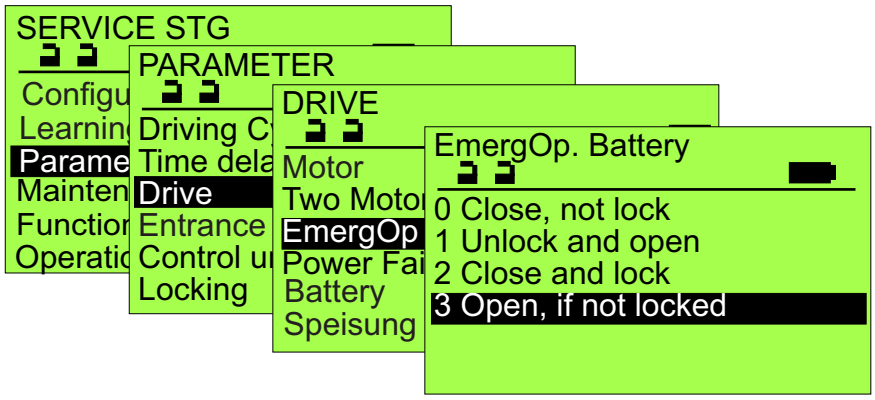


Definition of the Motor type being used. Automatic Identification with current System 20 Motor

If older unit (System 19) with small encoder, select " 6 ATE19 Large

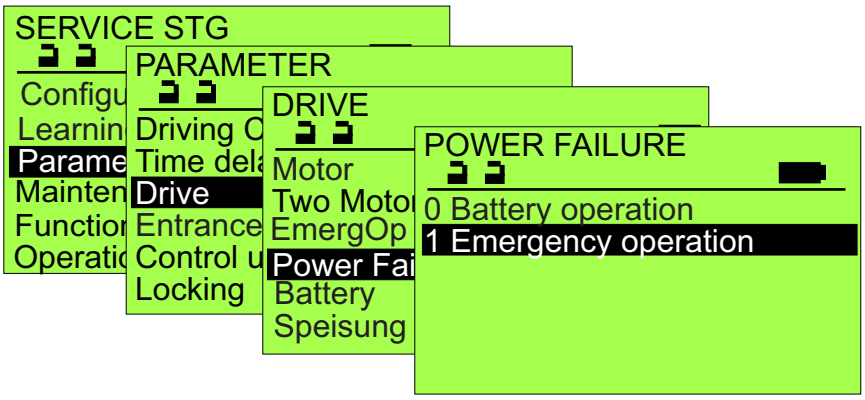


Normally, the second motor is automatically identified.



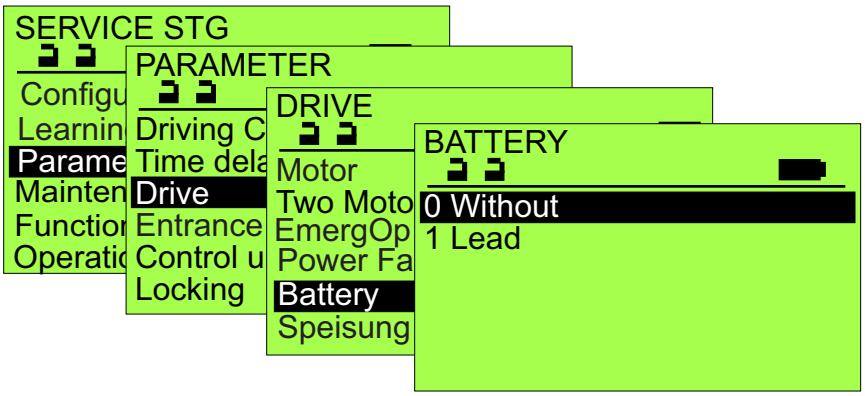
Determines Battery Operation

If "1 Emergency Operation" is selected in "POWER FAILURE" below, " EmergOp.Battery" will determine what function the door will do upon a power failure. After completion, the control will shut down.



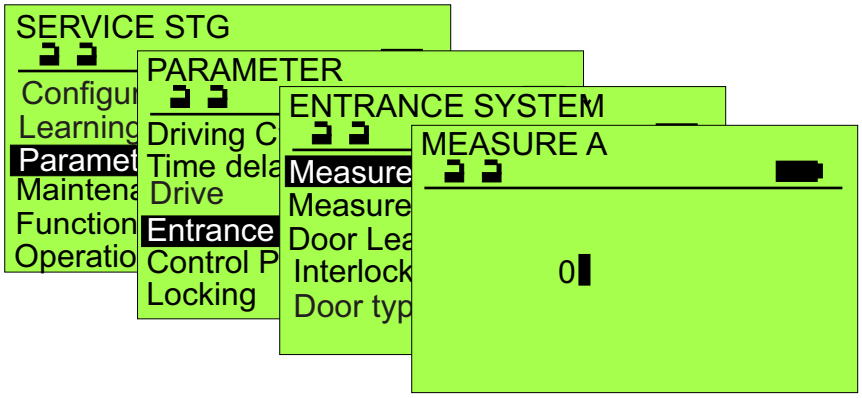
Battery Operation is only possible with Lead Battery.
In case of low battery, upon a power failure, Emergency operation is immediately executed.

If "Lead is selected in "Battery" below, "0 Battery operation will maintain full door operation until battery is significantly discharged, then function selected in "EmergOp. Battery" is performed, followed by control shutting down.

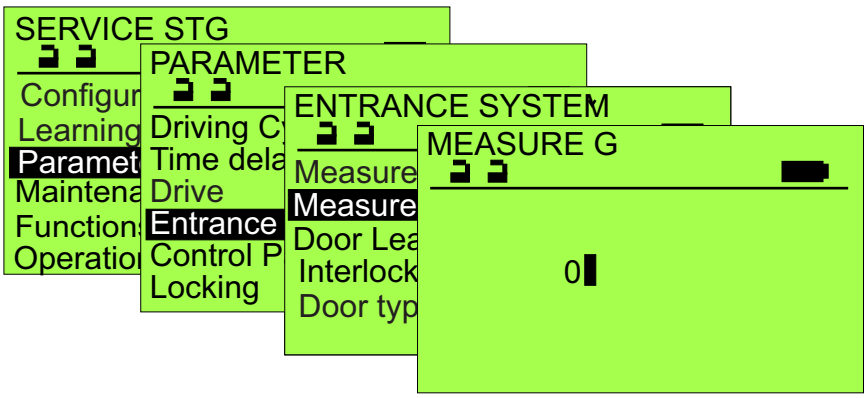


Automatically identified if battery connected prior to commissioning. If battery is added after commissioning, this parameter must be enabled manually. Additionally, the battery charge/monitor pcb, 9-51-00167, must be installed in the door control.

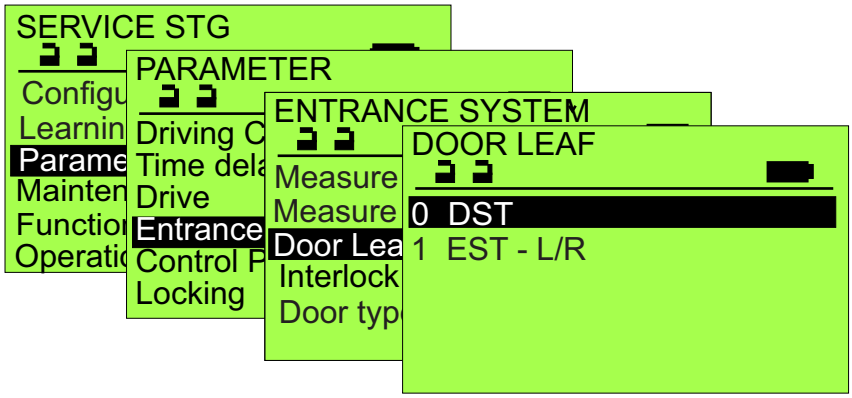
Note: " Speisung 24VDC" not used in North America.



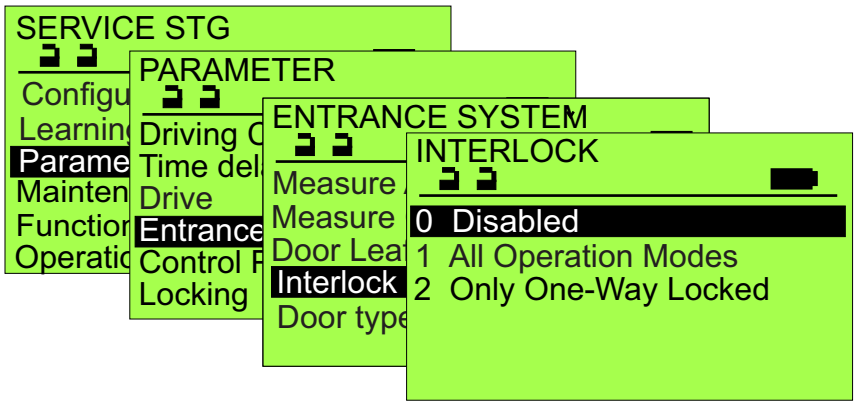
Door Opening Width Measured in mm. 650.....2000 Default setting. Only compulsory for folding doors. In sliding door configurations, value is automatically set during calibration. For 4500 and FlipFlow, value shouild be set to "2000"



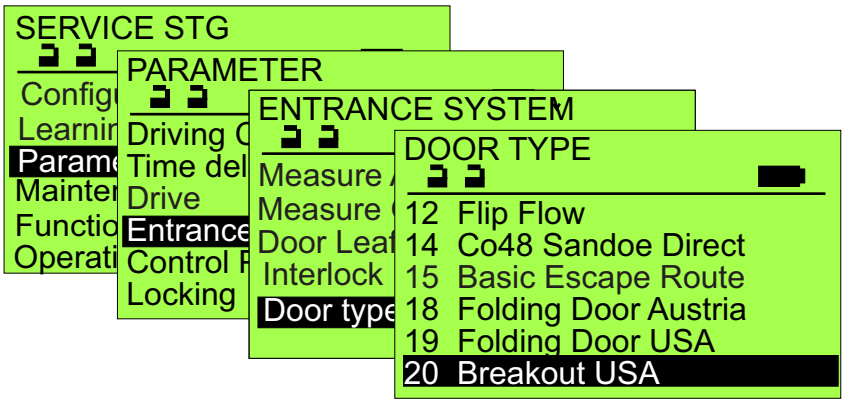
Door Opening Height Measured in mm. Not used yet.



Enables more accurate automatic setting of door cycle parameters, providing a smoother, more efficient door operation.
Supports calculation of door parameters.
DST=Bi-parting Door D-STA,D-TSA
EST-L/R=Single Slide Door Left/Right, E-STA, E-TSA

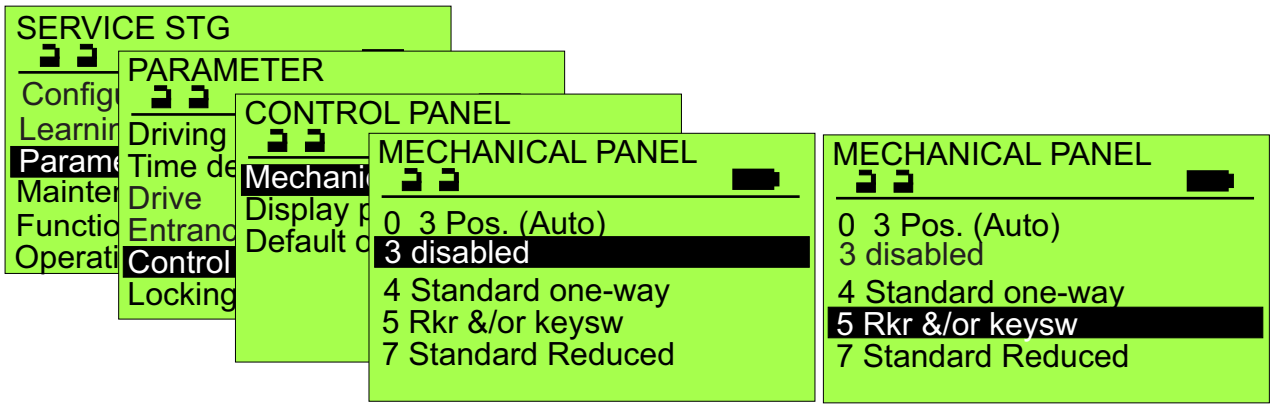


Requires a FEM-1.
Direction detecting sensors are recommended to avoid nuisance open cycles (depending on the operating mode).
A SIS-signal during the closing cycle affects only the open door.
The reduced opening width is supported. Refer to 5100 Installation Instructions for more detail..

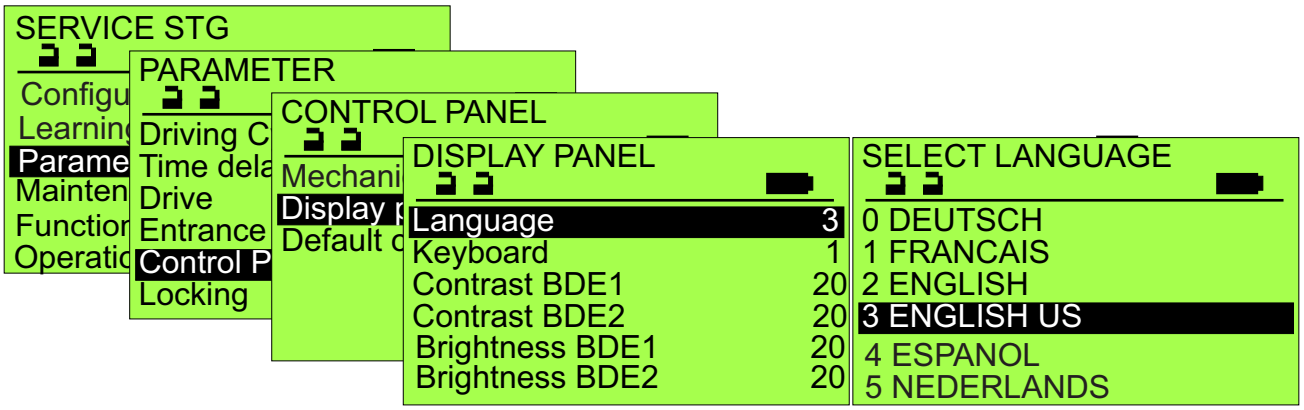


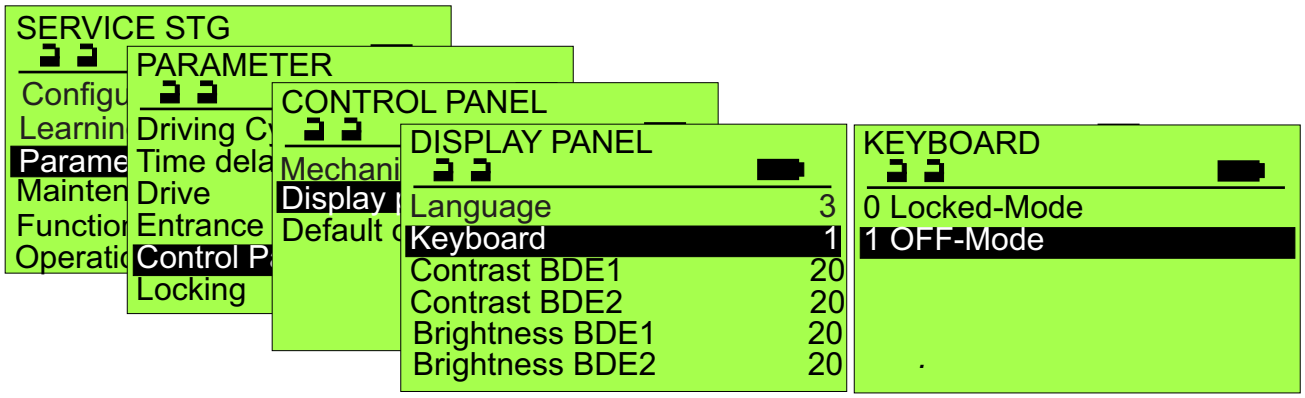
NOTICE: A modification of door type causes a reset of the running parameters and sets certain parameters, such as AUX0-IN, to a predefined function.

Typically select “Break-out USA”; select “Ratchet” for Push-to-Open/Push-to-Close operation.

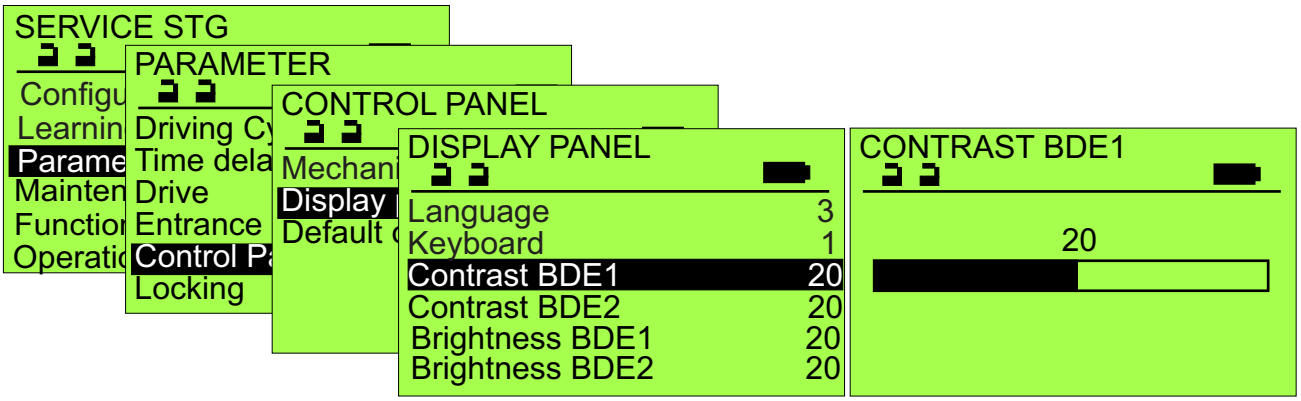


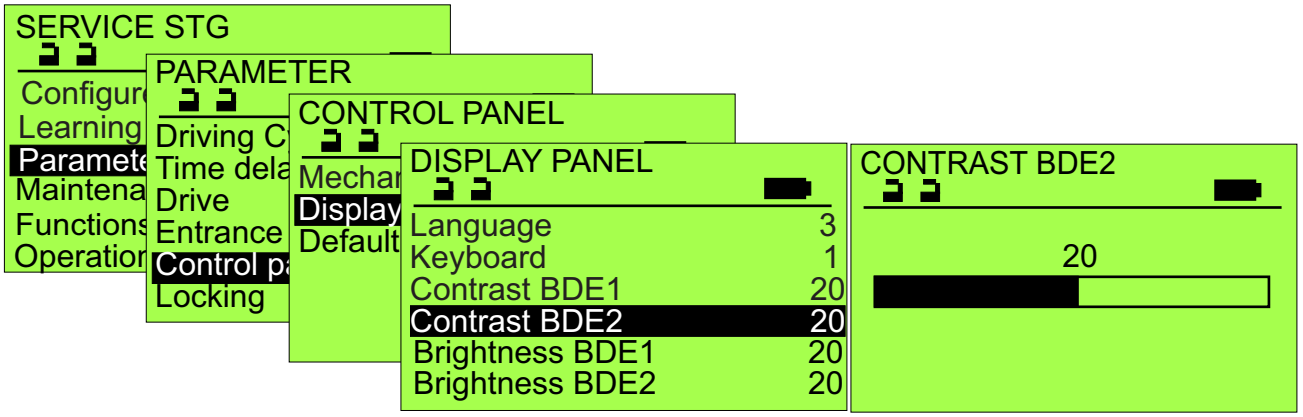
Typically select “disabled” unless one of the Rocker switch control panels has been connected.
For proper door operation, Inputs AUX00_IN and AUX01_IN (parameter Input/Output / STG) must be properly enabled, and panel connected per diagram S5100Sys20MechanicalControlPanels.

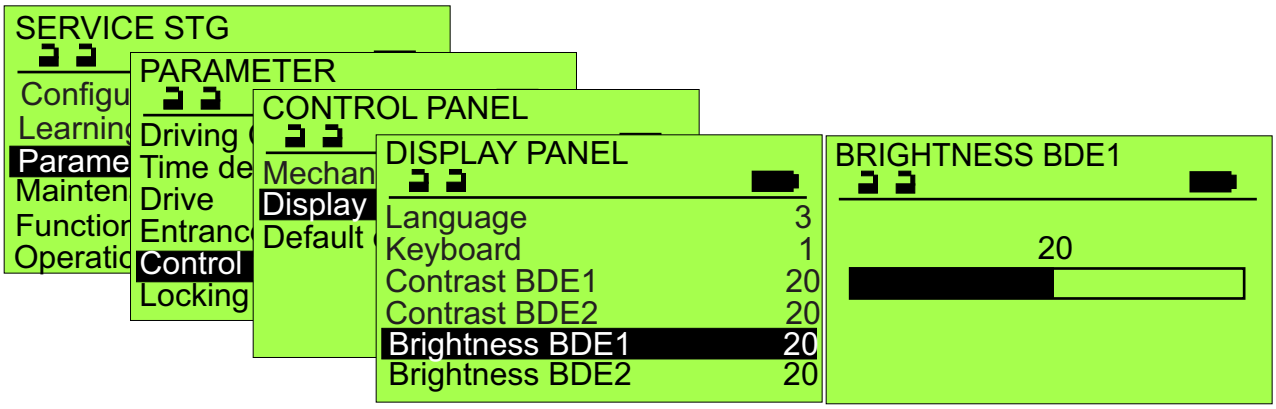


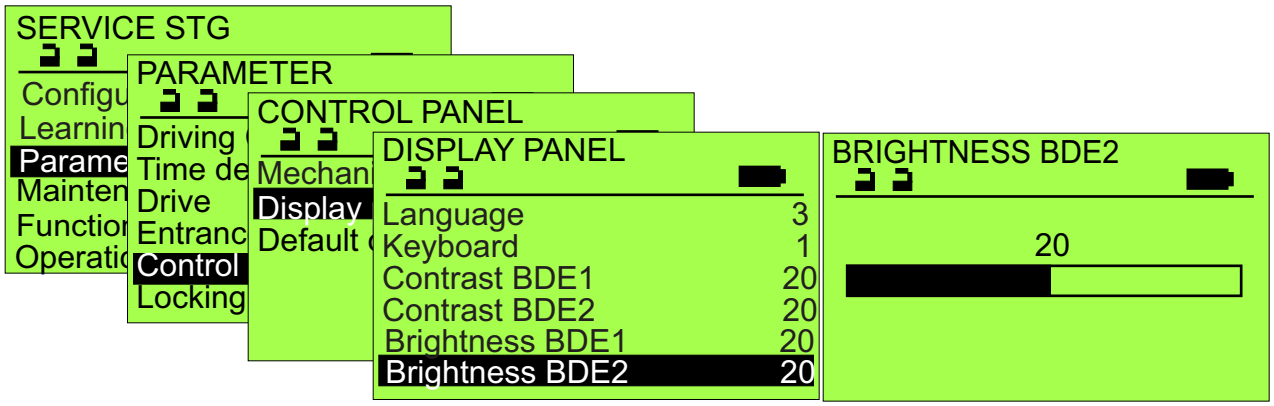


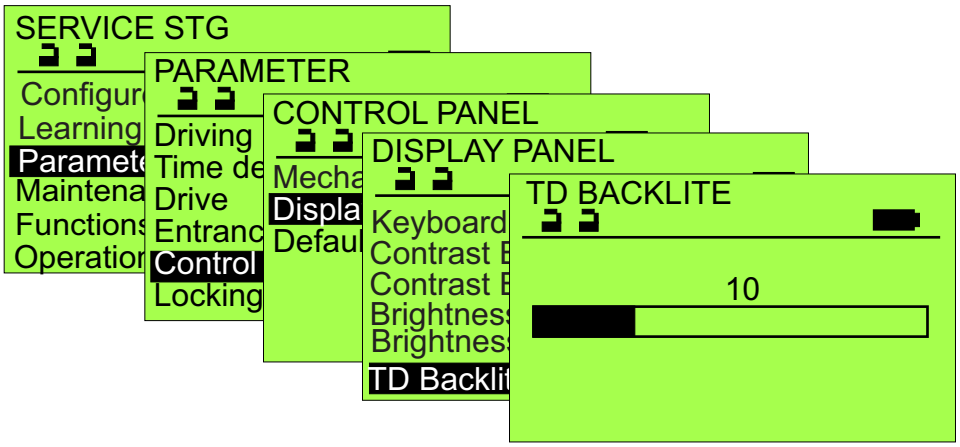
Typically select "OFF-Mode" unless using a Fail-Safe lock and it is to be locked when door is off.



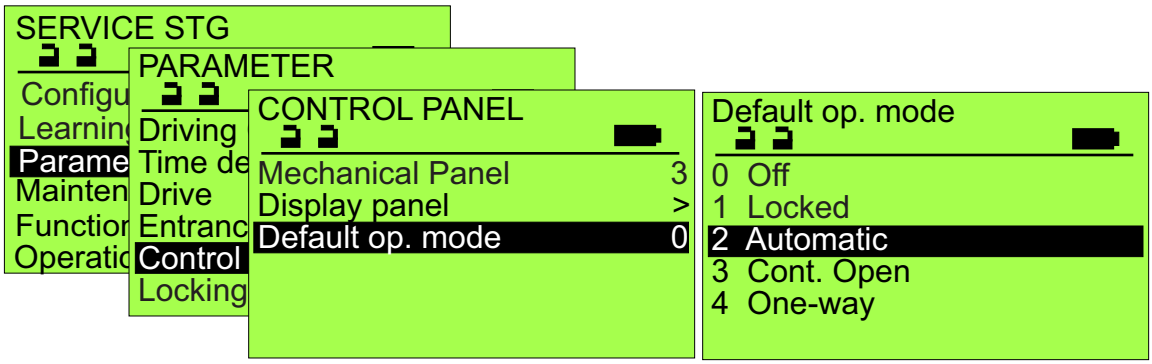




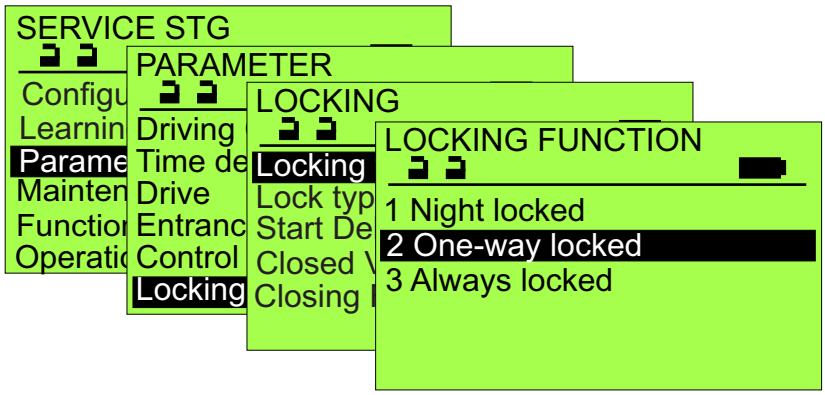




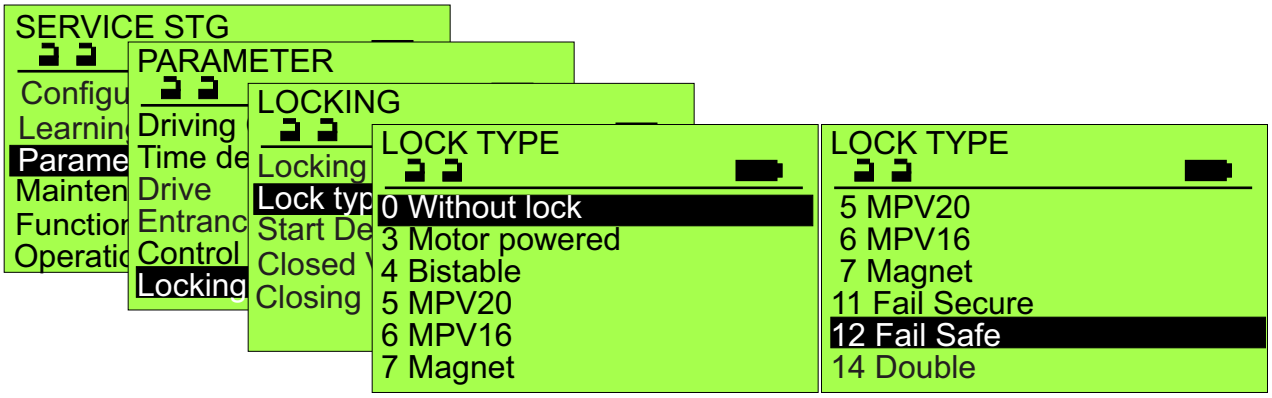
When set to "0", the backlight is always off; 1-39 = seconds "on" time; 40 = backlight always "on".



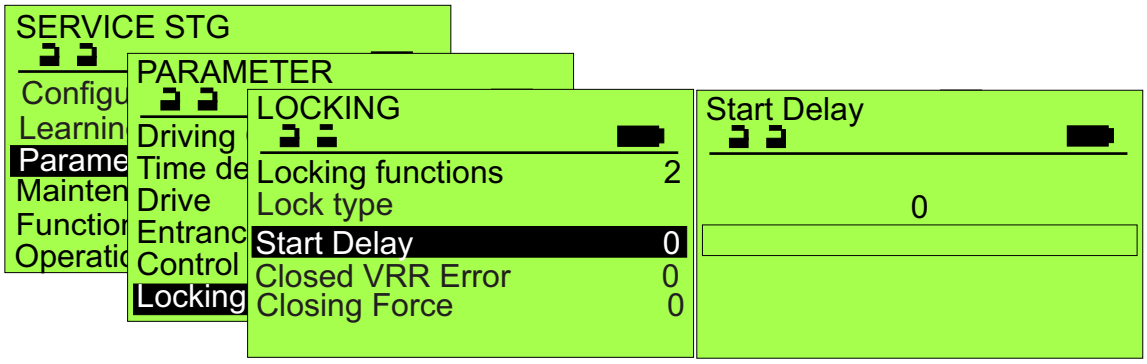
Determines the operating mode when there is no Display module connected or a Mechanical Panel configured.



"Night locked" is for use with "Fail-safe" autolocks, and door is to be locked when the door is "Locked". Also see Control Panel / Display Panel / Keyboard parameter.

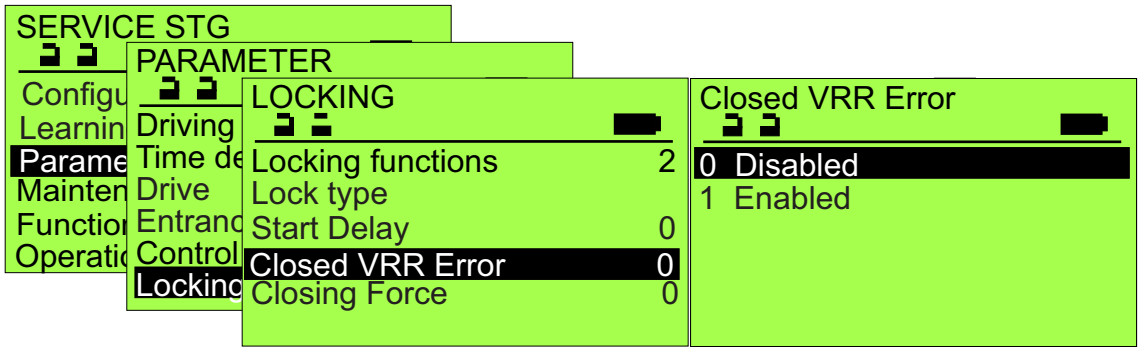


Typically select "Without lock", "Fail secure", or "Fail safe" for North American applications. Consult factory before connecting third party electric locks to the lock output of the door control.

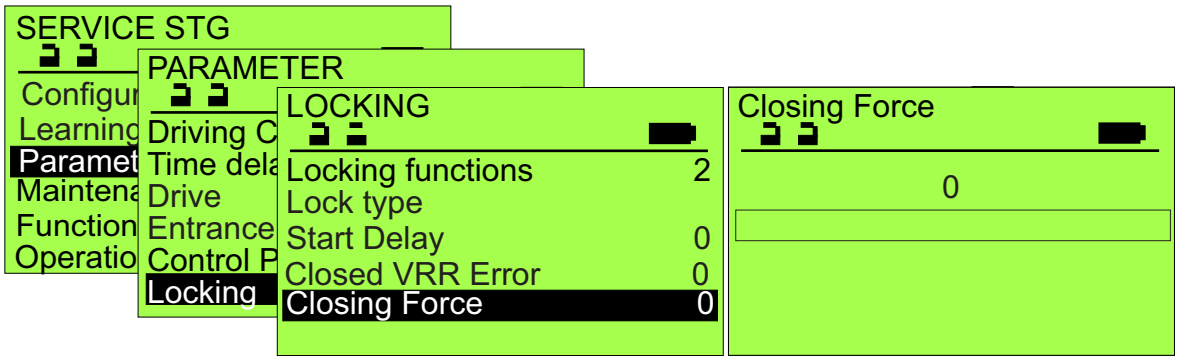


Delay time until door opens after unlocking 0=no delay 40=8 second delay.

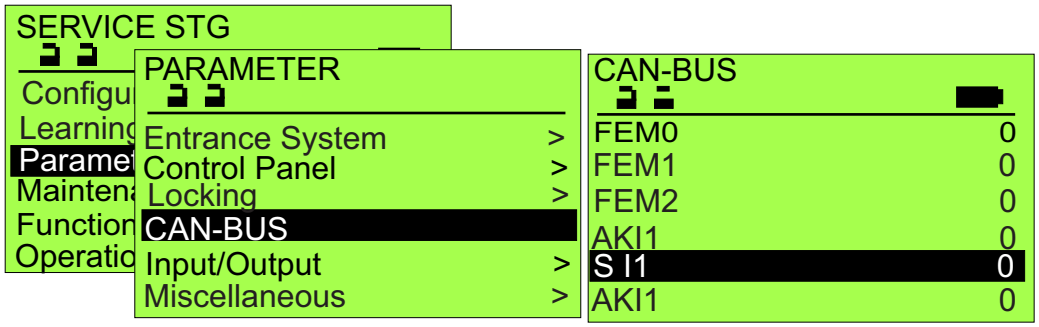
When electric locking is enabled, actuation of the control will cause the lock output to immediately change state, followed by the Start Delay, then the door begins to open. 0=1/2second; 1 thru 40 increases in 0,2 second increments (20 = 4.5 seconds).



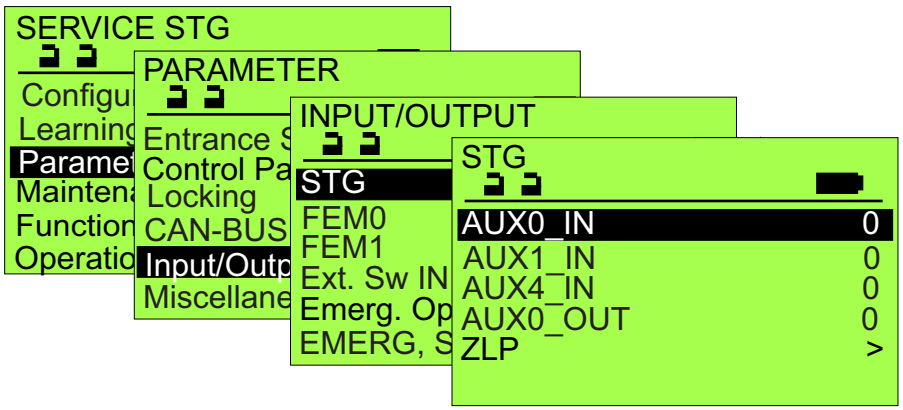
If enabled, after a restart or locking problem, control checks locking with short movement.



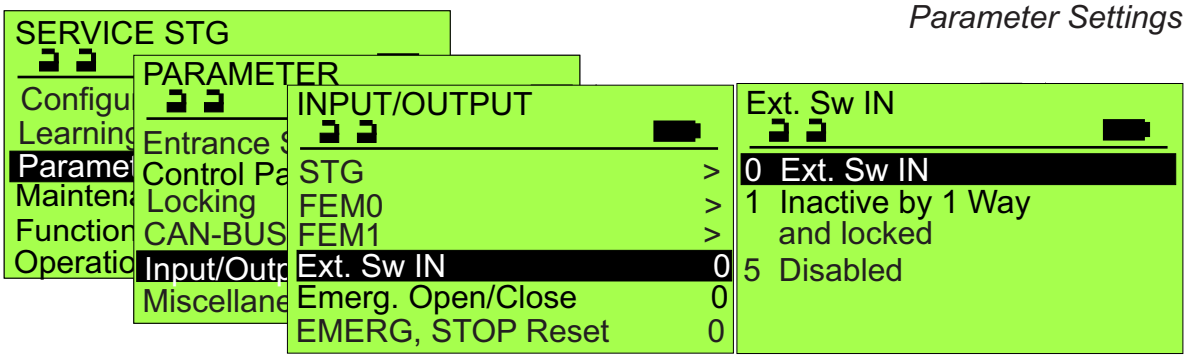
Briefly increases closing force to relieve locking bolt. 0=low force 40=high force During Start Delay, door is powered in closing direction to relieve any binding on electric lock.



Any Can-Bus module or sensor connected is automatically identified & displayed with a "1". Disconnected units are displayed with "?" and must be removed manually with FPC902. Not available units are displayed with a "0".

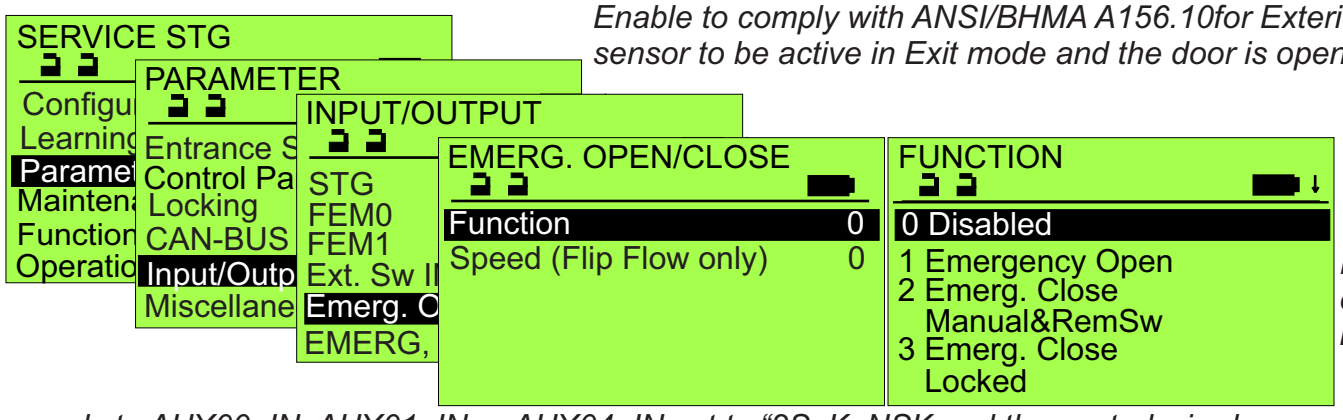


Configurable Input Terminals 4,6,and 18 on STG Control. Note: With parameters identified as "Safety", a closed contact is required for normal door operation.
AUX0_OUT: Dry contacts on STG to Terminals 8(NO), 9(COM), 10(NC) Rated @ 1 Amp 30VDC.
ZLP1: Additional Circuit Board to connect threshold Safety Beams. Set ELS to be active. See S5100 Parameter Settings record sheet.



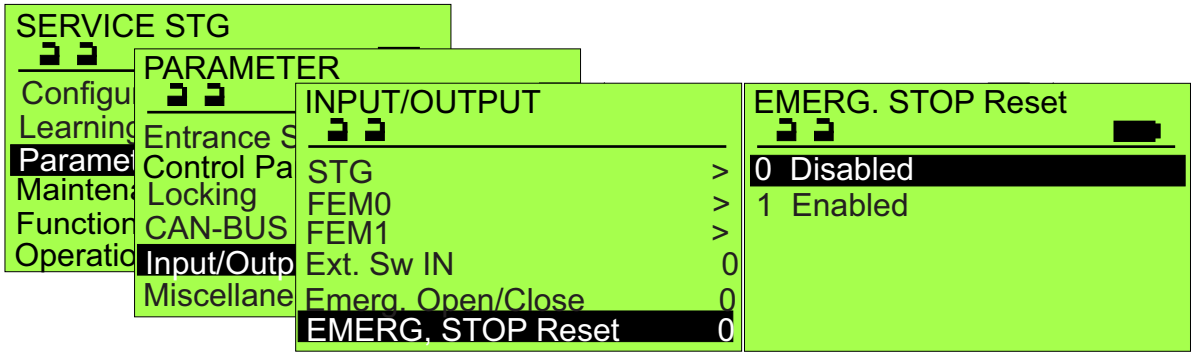
FEM0,FEM1 contain settings for input/outputs for Expansion Modules.
Ext. Sw IN;

Enable to comply with ANSI/BHMA A156.10for Exterior sensor to be active in Exit mode and the door is open.

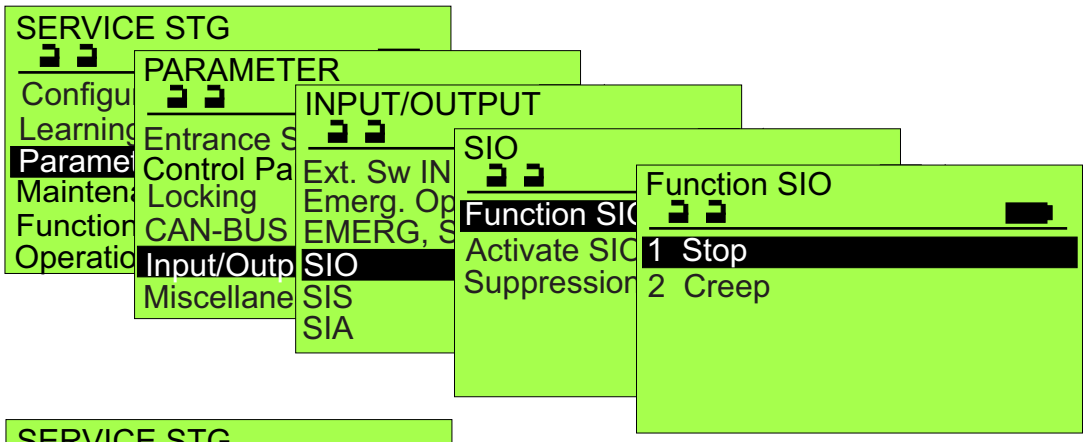


Five options listed.

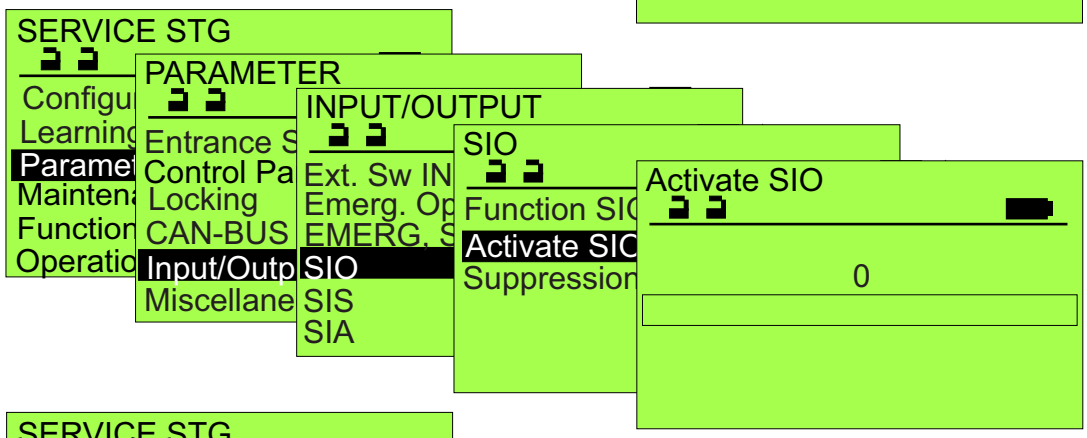
Responds to AUX00_IN, AUX01_IN or AUX04_IN set to "2SoK_NSK and the control wired appropriately.



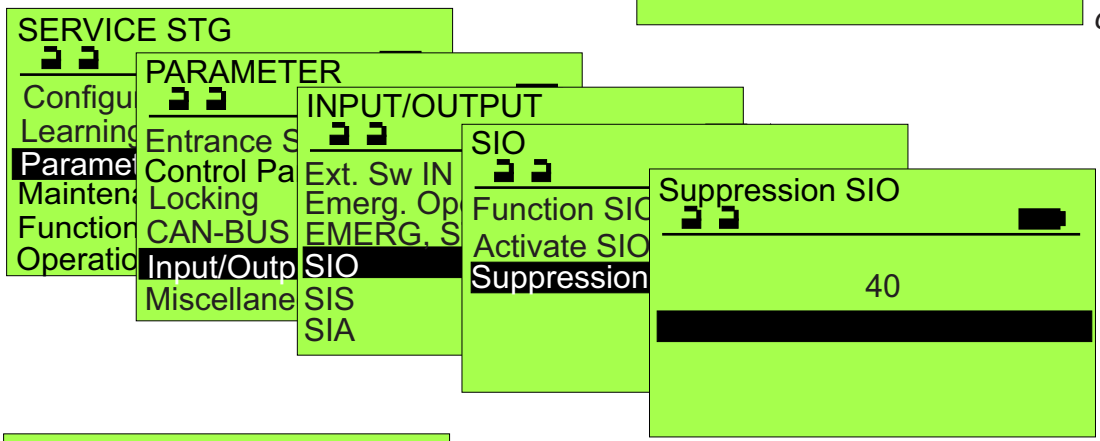
Enabled: Emerg Open, Emerg. Close Manual & RemSw, Emerg. Close Locked, Emerg. Close Locked & RemSw, Emerg. close & Manual Overide.



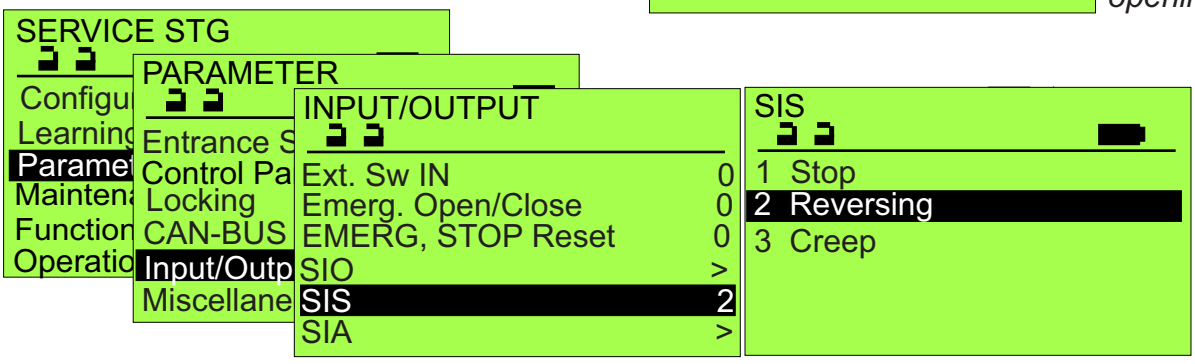
Side Screen Sensor Function of door opening travel with SIO signal enabled on one of the AUX_IN terminals (NC contact required), side approach.



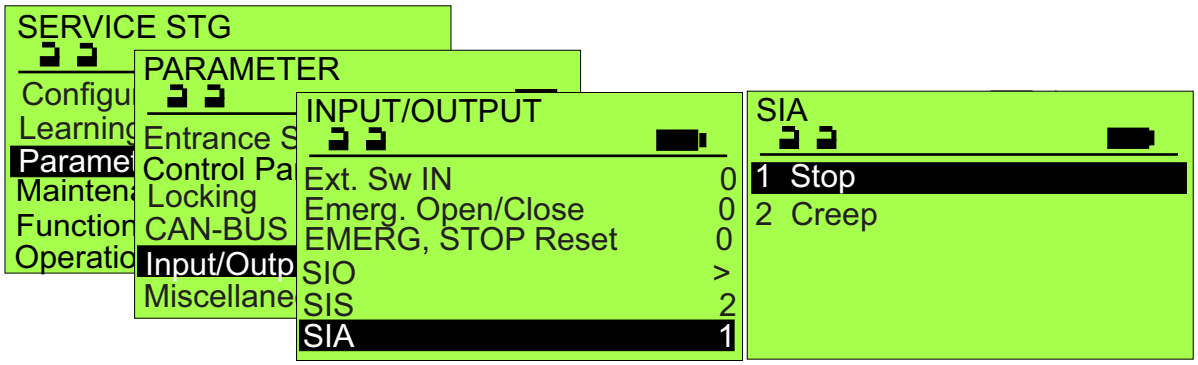
Door position from which SIO Signal becomes active.
0=active @ closed
1=inactive last 2.5% of opening
40=inactive entire opening width



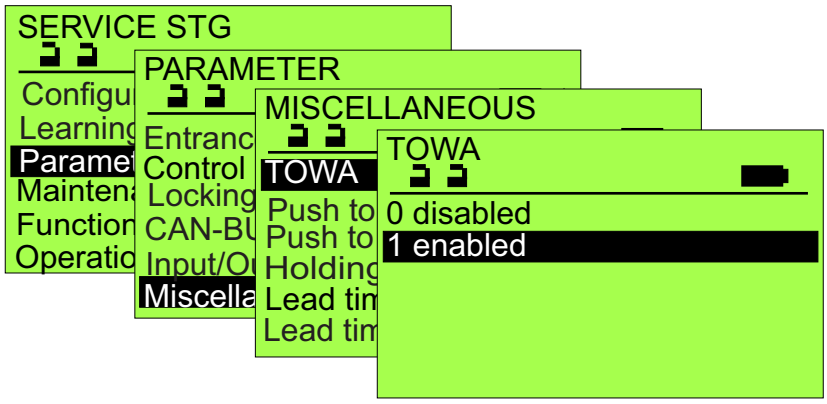
Door position from which SIO Signal is inactive..
0=inactive @ closed
39=inactive last 2.5% of opening
40=active entire opening width



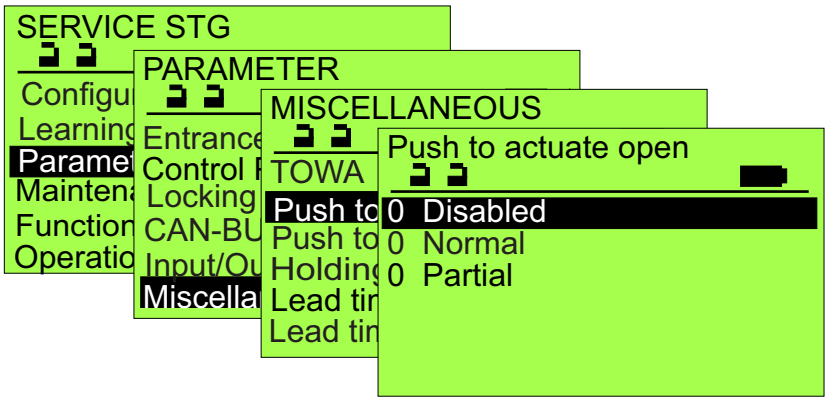
Threshold Safety Function of door in closing direction with safety signal enabled on one of the AUX_IN terminals(NC contacts required).



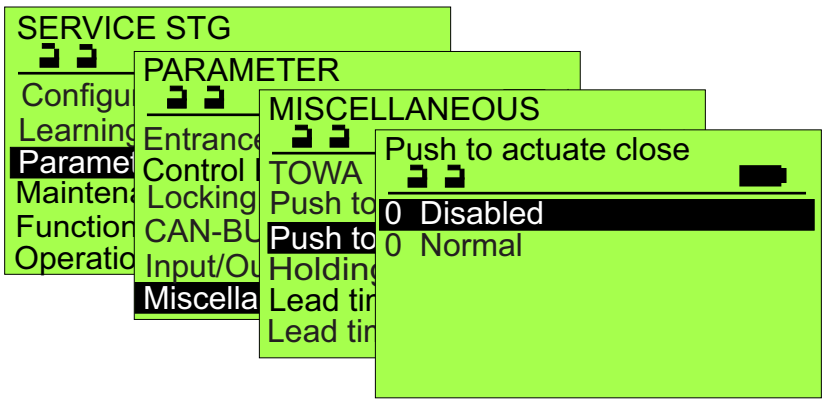
SIA=Function of door with safety signal across door opening while closed, typically folding door.
SIO=Function of door with safety input during opening cycle.



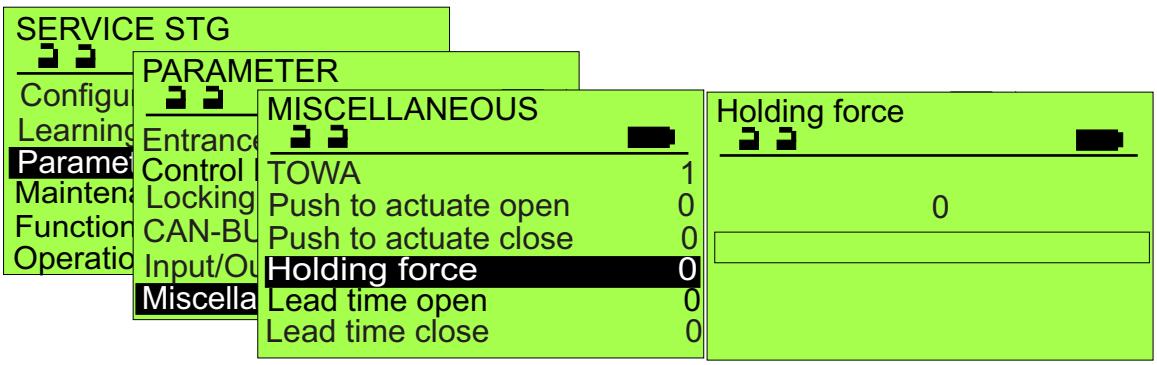
If the door is in "Partial Open" mode, enabling TOWA will provide full door opening if traffic approaches on both sides, or occurs for more than 10 sec.



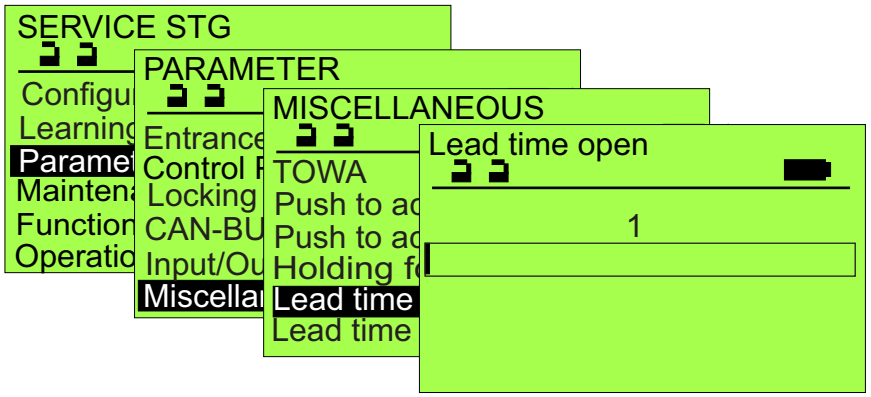
Default: Disabled
Normal: If enabled, will automatically open after pushed 3mm from closed position
Partial: Opens to reduced width.



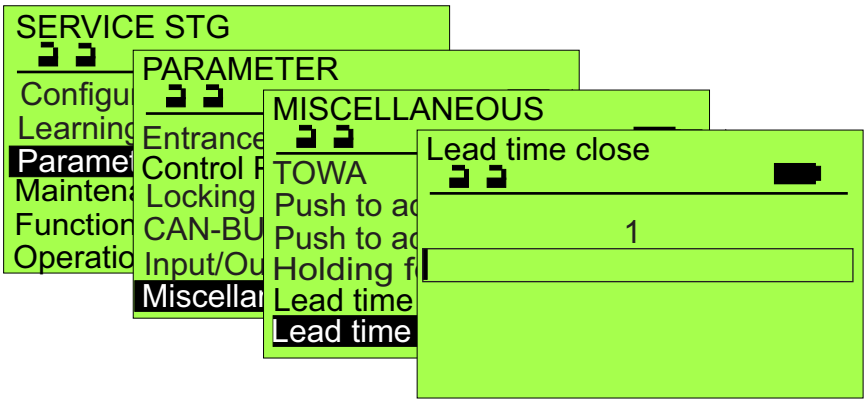
Default: Disabled
Normal: If enabled, will automatically close after pushed 30mm from closed position
Holding force can be used.
Hold open time has no influence.



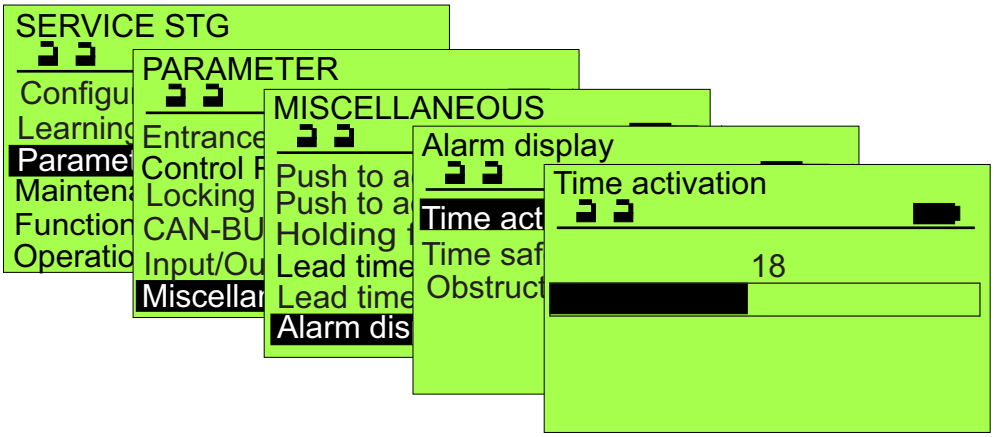
Force required to activate "Push to actuate" function in opening and close.



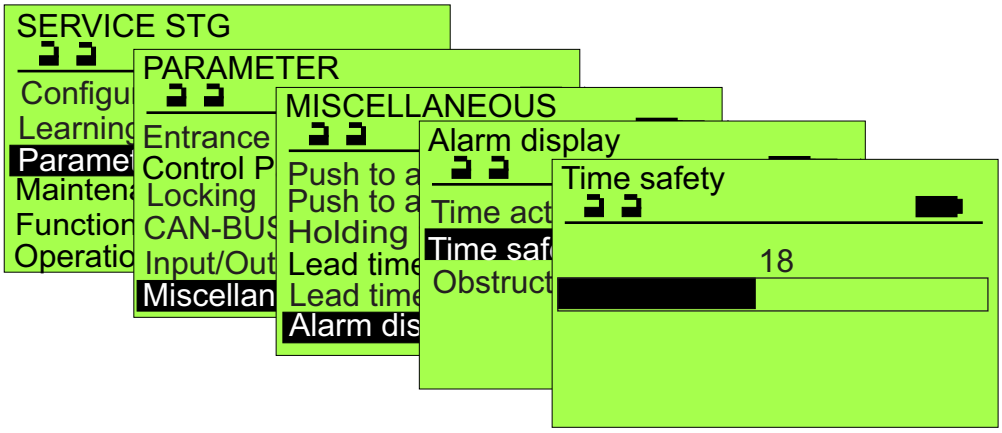
Pre-warning time after the open signal, before the door actually moves, and warning continues while the door is in motion.
Note: 0 = No pre-warning and no warning while in motion
1 = 0.2 seconds pre-warning + warning
40 = 8 seconds pre-warning + warning (opening delayed 8 sec.)
The push to open function will interrupt the pre-warning delay.
AUX00_OUT must be set to “9 Warning”.



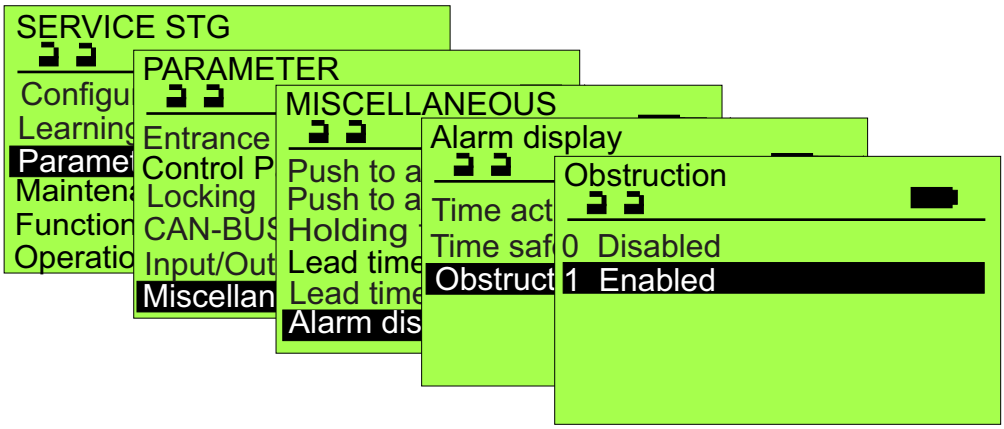
Pre-warning after the open time expires, before the door begins closing, and warning continues during the door is in motion.
Note: 0 = No pre-warning and no warning while in motion
1 = 0.2 seconds pre-warning + warning
40 = 8 seconds pre-warning + warning (closing delayed 8 sec.)
The push to close function will interrupt the pre-warning delay.
AUX00_OUT must be set to “9 Warning”



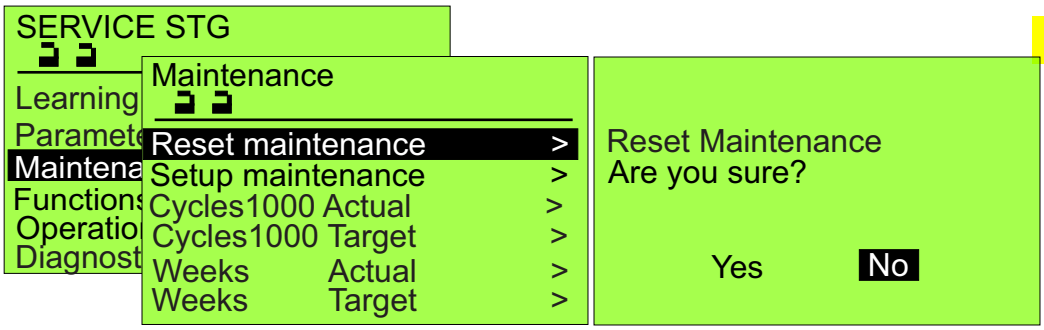
Effective for inputs for Interior Sensor, Exterior Sensor and Special Activation (SSK).
Display for AKI/AKA/SSK or SIO/SIS/ELS If the alarm output is configured, it will be disabled after the preset time.
Adjusts in 6 second increments.
0=Disabled
1=6 seconds before alarm
12=72 seconds before alarm
40=240 seconds before alarm



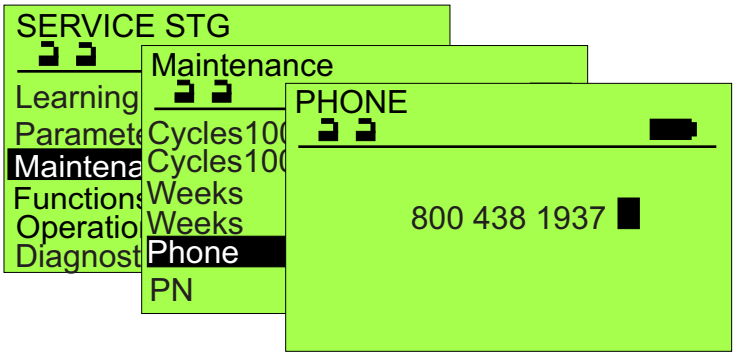
Effective for inputs for Interior Sensor, Exterior Sensor and Special Activation (SSK).
Similar to Time release above.
Adjusts in 6 second increments.
0=Disabled
1=6seconds before alarm
12=72 seconds before alarm
40=240 seconds before alarm



Disabled= Display module will not show Obstruction error.
Enabled= Display module will show Obstruction error.

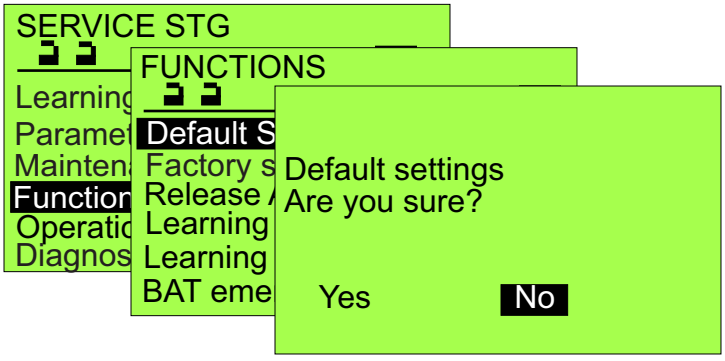


The listed parameters in the center screen are for setting up a maintenance program for the unit and resetting it after target is met.

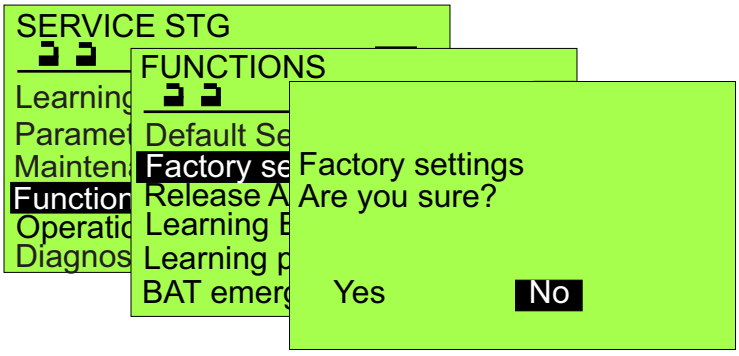


This parameter is used to replace the factory telephone number with a custom telephone number. This number will be momentarily displayed when the unit is switched from "OFF" mode, and will periodically flash when an Alarm screen is displaying. Removal of a custom number will reinstate the factory 800 number.

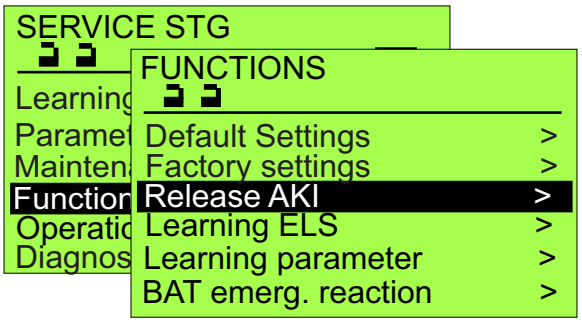
The following screen sequences are not used to modify parameters, but are used to reset various door functions as described.



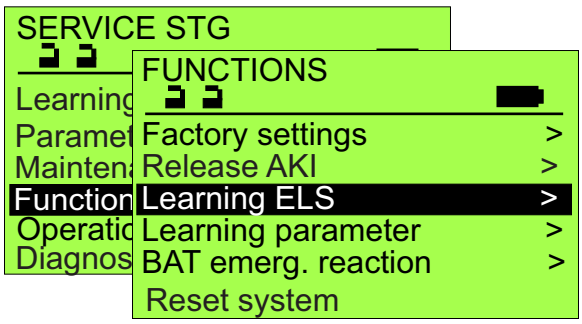
Resets Parameters to "Default settings" and requires a new Calibration run.



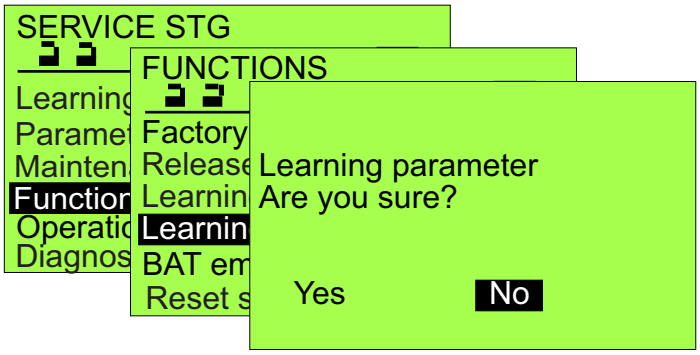
Resets Parameters to "Factory settings" without requiring a new Calibration run.



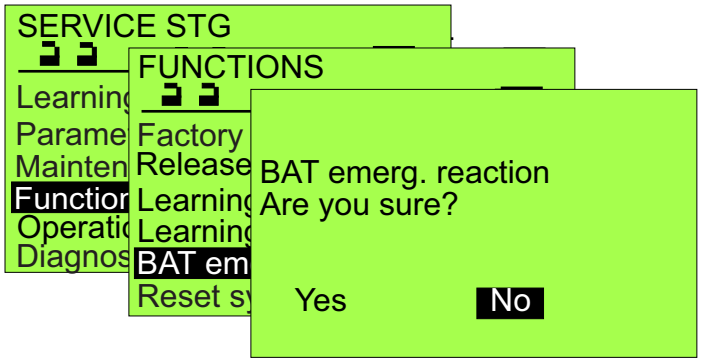
Selecting “Release AKI” and pressing “OK” will simulate an actuation from the Interior Sensor.



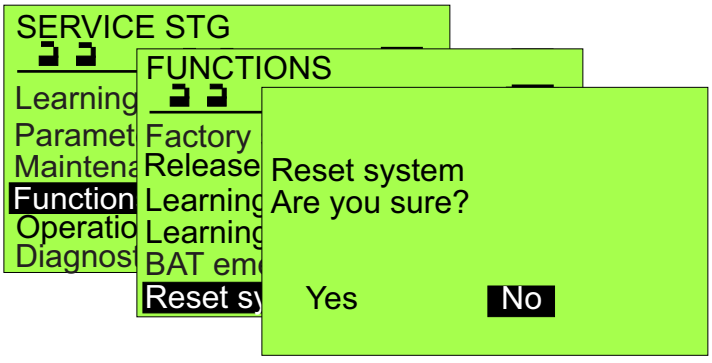
Initiates an aquisition of safety beam characteristics.



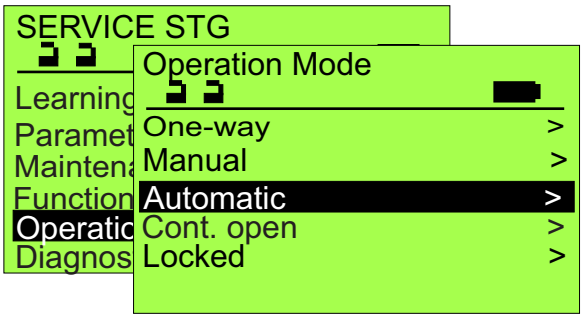
For use when initially commissioning a door, or significantly altering the mechanical characteristics of the door.



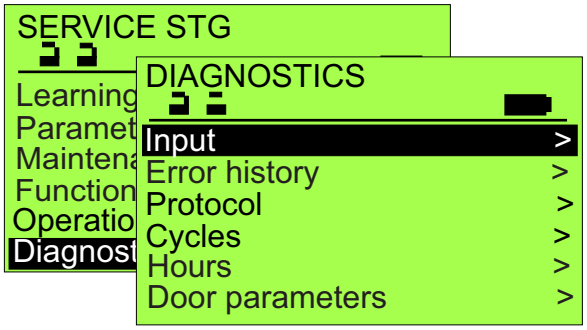
Used to test an optional battery backup.



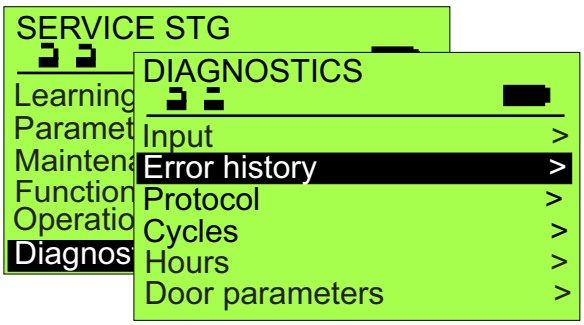
Minor reset to clear faults without requiring a calibration cycle.



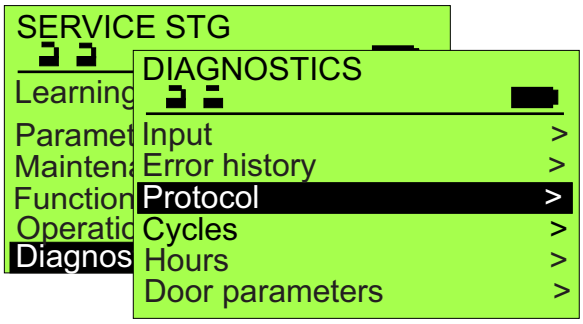
Indicates the current operational mode of the door. Note this screen does not dynamically update in response to changes to the control panel.
*The Status screen, **accessible** anytime the terminal is servicing the unit (STG), will dynamically update in response to changes to the control panel(s).*
By selecting Status Key, bottom row FPC902 keyboard)



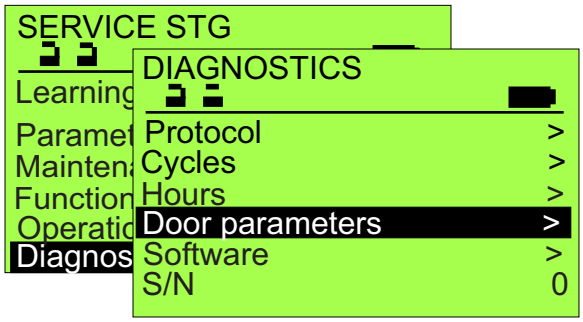
Will illustrate active inputs



List of current Errors and ability to delete for a fresh future listing.

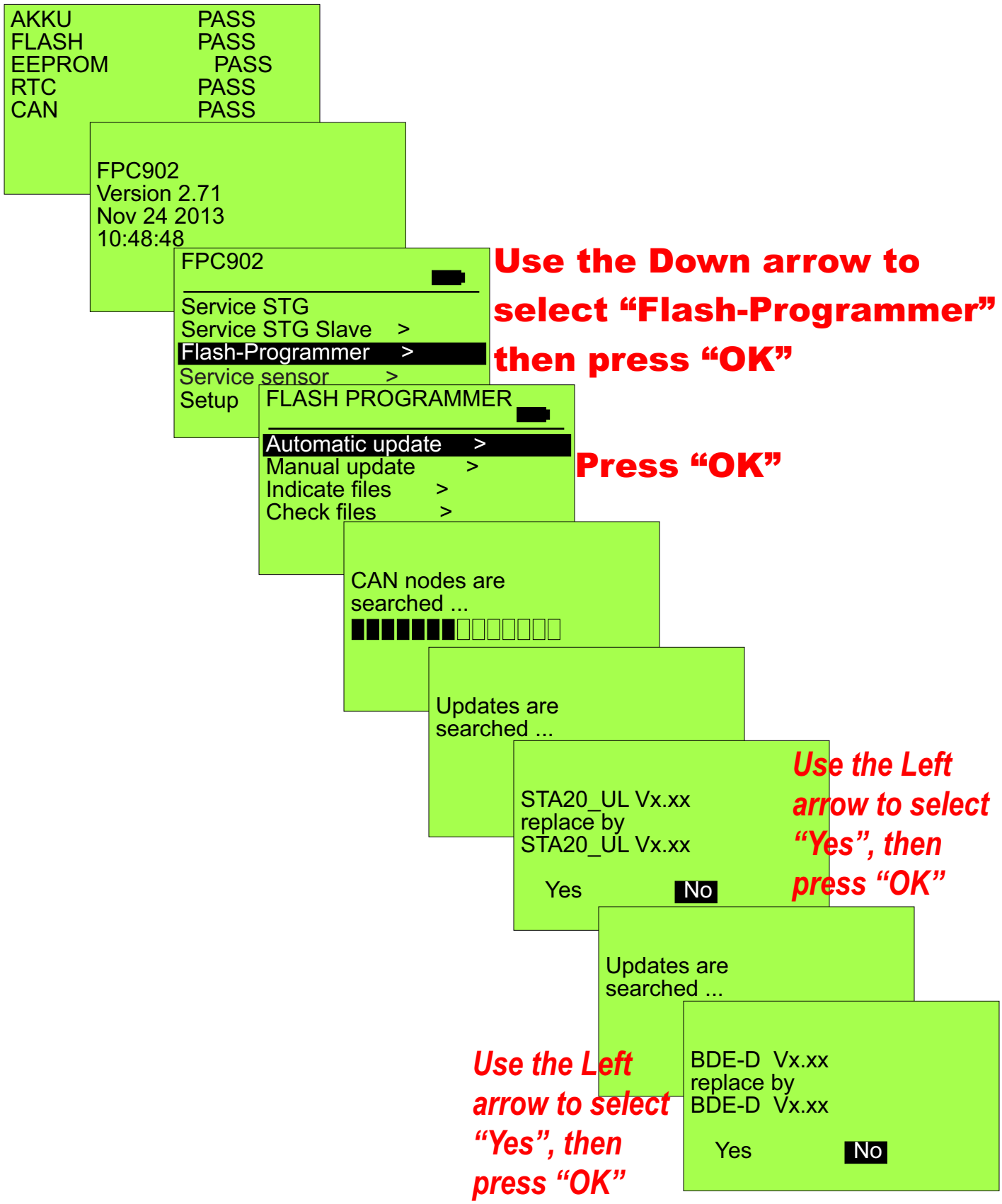


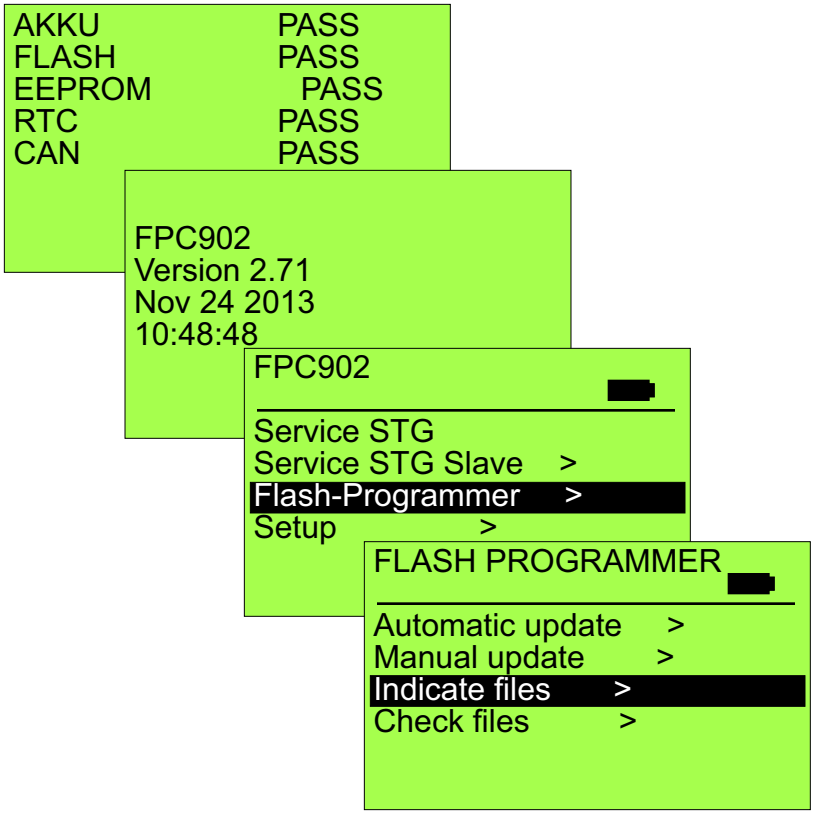
List the status of settings and parameters.
Cycle count and hours of operation readouts for maintenance use.
Chronological list of the changes to Parameters & Settings with a software-based time stamp.



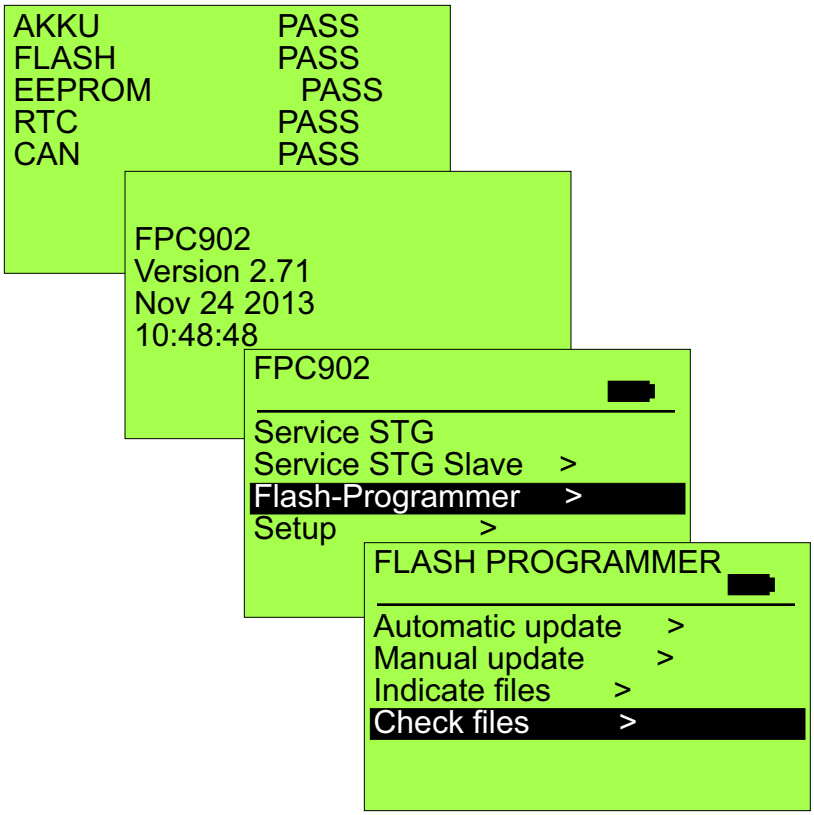
For factory reference.

The following sequence of screens are to be followed when updating door and display software.

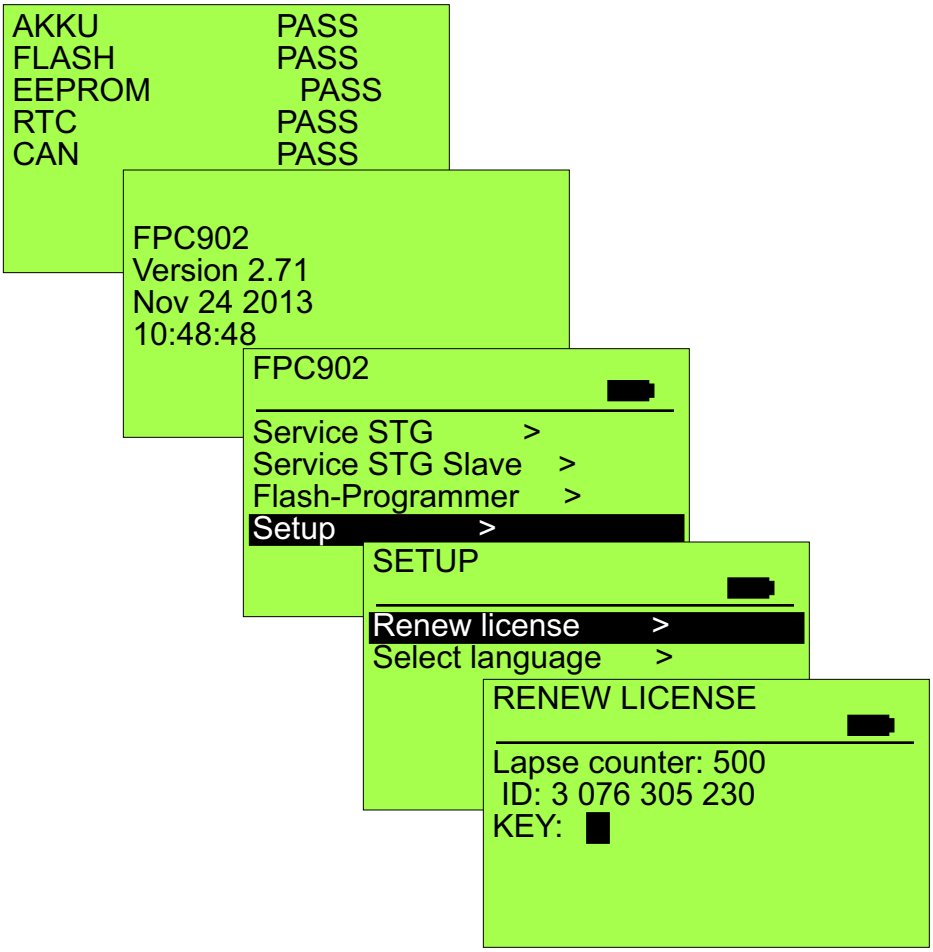




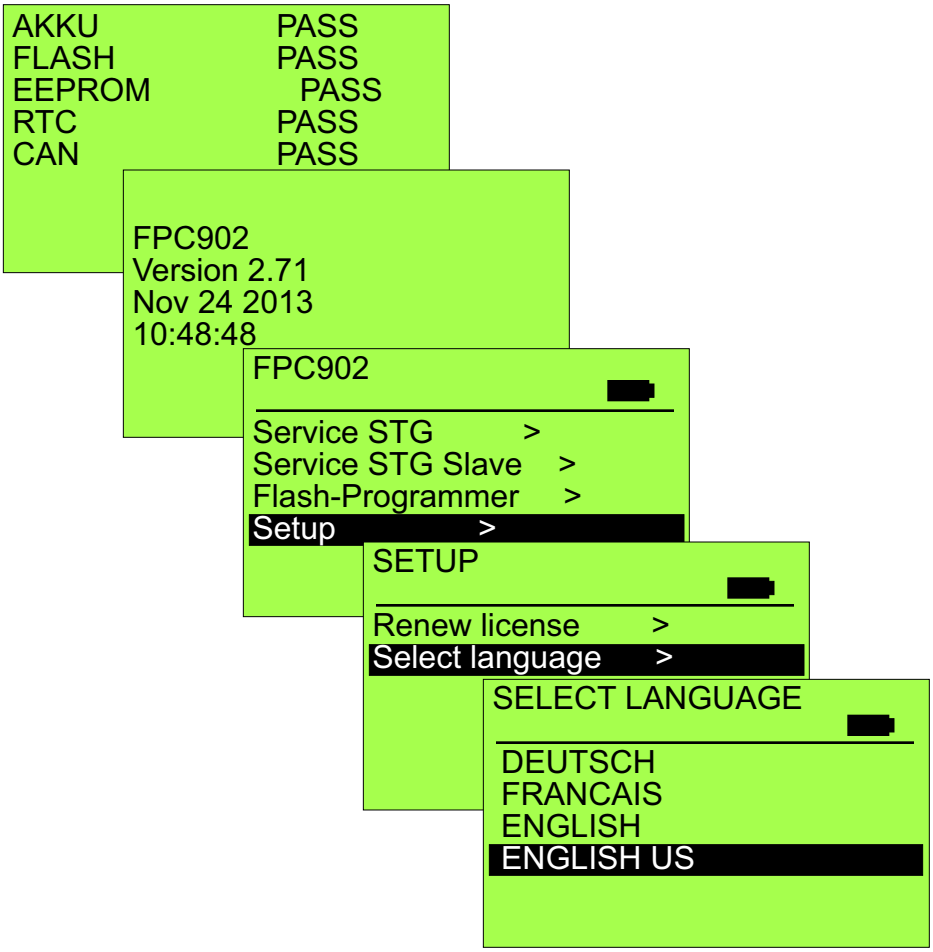
Lists the software stored on the SD card in the FPC902



Checks the software stored on the SD card in the FPC902.



Not used in North America



11 Abbreviations

A	A	Width of passage
	AKA	Actuating contact „outside“
	AKI	Actuating contact „inside“
	AMP	Lamp
	APA	actuating switch for pharmacies
	APD	Pushbutton for pharmacies
	APR	locking bar for pharmacies
	APS	safety device for pharmacies
	AS	Connection or general schematic diagram
	ATE	Drive unit
	ATM	Drive module
B	BAT	Battery-pack
	BDE	Control unit
	BDE-E	Control unit electronic
	BDE-M	Control unit mechanical
	BDE-R	Control unit redundant
	BS	BDE with lock
C	CAN-H	Serial interface
	CAN-L	Serial interface
	CO48	special standard in France
	CPU	microprocessor
D	D-STA	Double sliding door drive
	DUO	heavy door operator
E	EEPROM	parameter storage
	ELS	Light barrier
	EMK	Receiver head
	EPROM	program storage
	ES	Electrical connection diagram
	E-STA	Single sliding door drive
	E-STA-L	Single sliding door drive left
	E-STA-R	Single sliding door drive right
F	F	Length of header
	FEM	Extended functions module
	FIRST	redundant operator
G	G	Height of passage
	GTR	Gearbox
H	HEA	Manual unlocking „from outside“
	HEI	Manual unlocking „from inside“
	HES	Manual unlocking switch
K	KA	Cable exit
L	LED	Light-emitting diode
	LS	Wiring diagram
M	MOT	Motor
	MP	General installation plan
N	NET	Power supply
	NSK	Emergency fail close contact
O	OUT	Output
	OVA	Optical lock indicator
R	RAD-A	Radar „outside“
	RAD-I	Radar „inside“
	RED	Redundant module
S	SAA	interlock control “exit actuation blocked”
	SAG	Control unit
	S-AUS	Interlock control
	SEA	Interlock control “entrance actuation blocked”
	SEK	Transmitter head
	SHE	Safety element, external
	SÖK	Emergency opening contact
	SPS	Stored program control SPC
	SSA	Slidebar operator
	SSK	Key-operated contact
	STA	Sliding door drive
	STD	Socket
	STG	Control unit
	STM	Control module
	STP	Control p.c.b.
	SUR-A	Time switch contact “exit mode”
	SUR-V	Time switch contact “locking mode”
T	THS	Thermostatic switch
	TOS	Break-out system
	TOZ	Door hold-open time
	TSA	Telescopic sliding door operator
	TÜV	Industrial inspectorate
U	UMR	Guide pulley
	µP	Microprocessor
V	VAK	Lock indicating contact
	VAL	Locking alarm
	VL	Wiring list
	VRR	Locking device
Z	ZLP	Supplementary printed circuit board

ALARM CODES AND ERROR MESSAGES

No.	Display text	Type	Res	Comments and possible troubleshooting
3	AKI > 60 sec. active			Inside radar longer than 60 sec. active and door remains open. Check that no moving objects are activating the radar.
5	AKA > 60 sec. active			Outside radar longer than 60 sec. active and door remains open. Check that no moving objects are activating the radar.
6	Unlocking error		X	Unlocking error: it is impossible to unlock the door. Repeat unlocking attempt after changing the BDE operating mode.
7	No redundancy test	RED	X	When no „redundancy" test could happen within the last 24 h or the „redundancy" test was not correctly performed on a door not locked. Reset. Control settings.
9	Battery fuse open		X	Battery fuse is disconnected or battery is not plugged in.
9	Open. unsuccessful			Door does not open or only slowly. SIO might possibly be active or motion be mechanically hindered (e.g. dirt in floor track).
10	Locking error			Locking error and door remains approx. 10 cm open → depending on parameterising door remains closed. Door might possibly be hindered or locking device might need to be adjusted.
11	Difference AKI	RED	X	Error in the interpretation of the inside radar signal. Check inside radar.
12	Low BAT voltage		X	Battery is missing or is not plugged in. Door works if mains voltage is provided.
12	BAT capacity		X	Battery no longer meets minimum power requirements. Replace Battery.
14	VAK defective		X	Locking device hampered. Adjust door leaves and locking device.
15	EMERG. OPEN.	RED		On RED installations emergency opening switch has been actuated.
17	Timeout open. time	RED	X	80% of escape route opening not reached within 3 sec. Control with FPC, adjust opening speed. Under „Status", opening time + 400 ms.
18	VAK closed automatic		X	Adjust locking device. Make contact (NOC) of locking device is active with Automatic. Locking is set on „wrong" position. Change operating mode on BDE-D to Locked and again to Automatic. Actuate manual unlocking, or rather completely reset it.
29	TOS not locked	TOS with DV		TOS not locked (rotary switches) on Locked. Turn rotary switches onto Locked position (above).
30	TOS locked	TOS with DV		Automatic mode, TOS locked, but door stays in manual mode.
31	EMERGENCY STOP			Emergency stop key has been pressed or manual unlocking has been actuated.
33	Error ELS1		X	Light barrier signal is not identified. Inform after-sales service. Calibrate ELS with 2 light pulses.
36	VOK closed l.		X	Locking device does not work properly. On BDE-D change operating mode to Automatic and again to Locked. Wrong locked position or VRR faulty.
37	Motor current		X	Possibly wrong motor type parameterised or motor is overloaded.
38	Motor 1 overheat		X	Motor 1 is too warm. Door works sluggishly.
39	Overload 24V		X	24 volts supply for peripheral units is overloaded. Check wiring.
41	Temp. sensor 1		X	With motor 1: temperature sensor is faulty or motor cable is disconnected.
42	Temp. sensor 2		X	With motor 2: temperature sensor is faulty or motor cable is disconnected.
43	Encoder fault		X	Encoder or cable is faulty or not plugged in. Reset.
44 W	T. motor high			Warning message; Time Delays will be extended. Door might work sluggishly. Check for presence of mechanical hindrance.
46	STG defective		X	Control unit is defective. Reset. If no success, then replace control unit.
47	SIO > 60 sec active		X	Door does not open or slides at reduced speed. Check Safety Sensor SIO.
48	NSK or SOK activated			Remote Alarm has just received. Control safety alarm. Control external signal.
50	Watchdog fault			Replace control unit.
51	VOK op n unl.		X	Repeat locking and unlocking procedures. Connection cable might be missing or is not properly plugged in. Check locking settings.
52	No run param.		X	Door must be calibrated (perform teach-in run).
53	Interrupt. mot. 1		X	Motor is not plugged in. Motor is faulty.
54 W	Calibrating run		X	Warning message: Calibration run is perfomed.
55	Power failure			No mains supply. Door works in battery service provided that there is a battery and not "Basic escape route" has been configured.
57	Interrupt. mot. 2		X	2nd motor is not plugged in. Motor is faulty.
59	ELS > 60 sec. active			Light barriers interrupted or disconnected and door remains open. Check that safety barriers are not covered or extremely dirty.
59	SIS > 60 sec. active		X	Door does not close. Check Safety Sensor SIS.
60	EEPROM defective		X	Load factory settings. 9 light pulses with MFT and reset within 10 seconds. Afterwards language selection has to be displayed on BDE-D. Attention! All programmings are reset. Reconfigure door. Replace control unit if door still fails to function.
61	SSK > 60 sec. active			Key-operated contact stays active. Door remains open. Check Remote Switch (SSK) wiring, connections, and switch.
62	BDE no priority			BDE is locked e.g. by a clock timer on input SURV/SURA accordingly configured.
92	STG relay defect.		X	Change control unit.
93	Overvoltage 24V		X	Wiring error. Check connections.
96	EEPROM void		X	Load factory settings. See error 60.
97 W	Maintenance time exceeded		X	Warning message: Acknowledge message. Alarm is reset for 13 days. Actual value = 105% of target value of cycles or operating hours. Inform after-sales service and have installation serviced. Set Targets to 0 to avoid alert.
98 W	Maintenance due		X	Warning message: Acknowledge message. Alarm is reset for a short time. Repeats at 100% Actual value = 95% of target value of cycles or operating hours. Inform after-sales service and have installation serviced. Set Targets to 0 to avoid alert
112	Batt. not charged complet.			Battery is not fully charged. Message disappears from display in case of full charge.
2132	FPC Can blocked ********** BDE Can blocked ********** ERROR by saving in the STG			On a locked door the CAN-Bus will be blocked for devices like the BDE-D(Display) or FPC if they were not connected BEFORE the door was locked. When reading either of the 3 messages from the left column, to unblock, the door needs to be unlocked or the emergency switch has to be activated or the multi-function switch on the control has to be pressed for 1 flash.