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1. GENERAL SAFETY PRECAUTIONS

 This installation manual is intended for professionally competent personnel only. Installation, electrical connections and adjustments must be performed in accordance with Good Working Methods and in compliance with the current standards.

Read the instructions carefully before installing the product. Incorrect installation could be dangerous. The packaging materials (plastic, polystyrene, etc.) should not be discarded in the environment or left within reach of children, as they are a potential source of danger.

Before installing the product, make sure it is in perfect condition. Do not install the product in explosive areas and atmospheres: the presence of inflammable gas or fumes represents a serious safety hazard. Before installing the door, make all the structural modifications necessary in order to create safety clearance and to guard or isolate all the crushing, shearing, trapping and general danger areas.

Make sure the existing structure is up to standard in terms of strength and stability. The safety devices (photocells, safety edges, emergency stops, etc.) must be installed taking into account current laws and directives, Good Working Methods, the installation environment, the system operating logic and the forces developed by the motorised door or gate.

The safety devices must protect any crushing, shearing, trapping and general hazardous areas of the door. Display the signs required by law to identify hazardous areas.

Each installation must clearly indicate the door identification data.

 Before connecting the power supply, make sure the plate data correspond to those of the mains power supply. An omnipolar disconnection switch with a contact opening distance of at least 3mm must be fitted on the mains supply.

Check there is an adequate residual current circuit breaker and overcurrent cutout upstream of the electrical system. Connect the door to an efficient earthing system that complies with current safety standards. The door manufacturer declines all responsibility if components not compatible with safety and good functioning are installed, or modifications of any kind are made that have not been specifically authorised by the manufacturer. Use only original Ditec spare parts when repairing or replacing products. The installer must supply all information concerning the automatic, manual and emergency operation of the motorised door or gate, and must provide the user with the operating instructions.

 **Optional accessory**

 **Comfort Safety**

 **Top Safety**

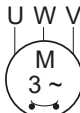
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The data given have been compiled and checked with the greatest care. We cannot, however, assume any responsibility for any errors, omissions or approximations due to technical or graphical requirements.

52E 1. 52E CONTROL PANEL (INVERTER) - Connections

INPUTS				
Command		Function	Description	
1		2 NC	STOP	If on the programming menu (page 15 point 16) With contact 1-2 enabled, the opening of the contact STOPS the door
1		3 NO	Opening	The closure of the contact activates the opening operation.
1		4 NO	Closure	The closure of the contact activates the closing operation.
41		40 NC	Reversal safety contact	The opening of the safety contact triggers a reversal of the movement (reopening) during the closing operation.
1		8 NC	Reversal safety contact	The opening of the safety contact triggers a reversal of the movement (reopening) during the closing operation.
1		20 NO	Partial opening	The closure of the contact activates a partial opening operation of the duration set with the advanced menu.
1		11 NC	Closing limit switch	The opening of the contact stops the closing operation.
1		13 NC	Opening limit switch	The opening of the contact stops the opening operation.
1		12 NC	Deceleration limit switch	The opening of the contact activates deceleration during opening.
1		9 NO	Closure enabling with SLEC	In the case of doors with SLEC, the opening of the contact allows the door to work only when someone is present.

CONTROL PANEL CONNECTORS			
M2	Safety device / Commands		
M3	Position signal		
M4	Interlock		
M4A	Back		
M5	Motor / brake motor		
J4	Brake resistance		
OPEN	Auxiliary panel card		
SAFETY	Auxiliary safety card		

OUTPUTS		
Output	Value	Description
1  + 0 	24V = / 0.5A	Power supply to accessories. Power supply output for external accessories, including automation status lamps.
 LAMP	230 V~	Flashing light (FLM). Non-flashing signal (jumper ON on FML). Activated during opening and closing operations.
-F  +F	200V= / 0.2A or 24V = / 0.5A	Electric motor brake. Automatically set with the choice of door model in the programming menu. The output is active for the duration of both the opening and closing operations.
	230V~ / 6A	Three-phase motor.

Trimmer	Description
P1 	Opening speed
P2 	Closing speed
P3 	Deceleration during opening
P4 	Adjustment of deceleration during closure
P5 	Adjustment of display contrast.

Dip-switches	Description	OFF	ON
DIP 1	Future use	—	—
DIP 2	Access to advanced menu	Disabled	Enabled
DIP 3	Trimmer enabling	Disabled	Enabled
DIP 4	Counter TOT: Number of operations SVC: Number of operations left until service	Disabled	Enabled
DIP 5	Access to service menu	Disabled	Enabled
DIP 6	Door operating data display (F working, I Bus, I peak, V Bus)	Disabled	Enabled
DIP 7	Future use	—	—
DIP 8	Cyclic operation menu	Disabled	Enabled

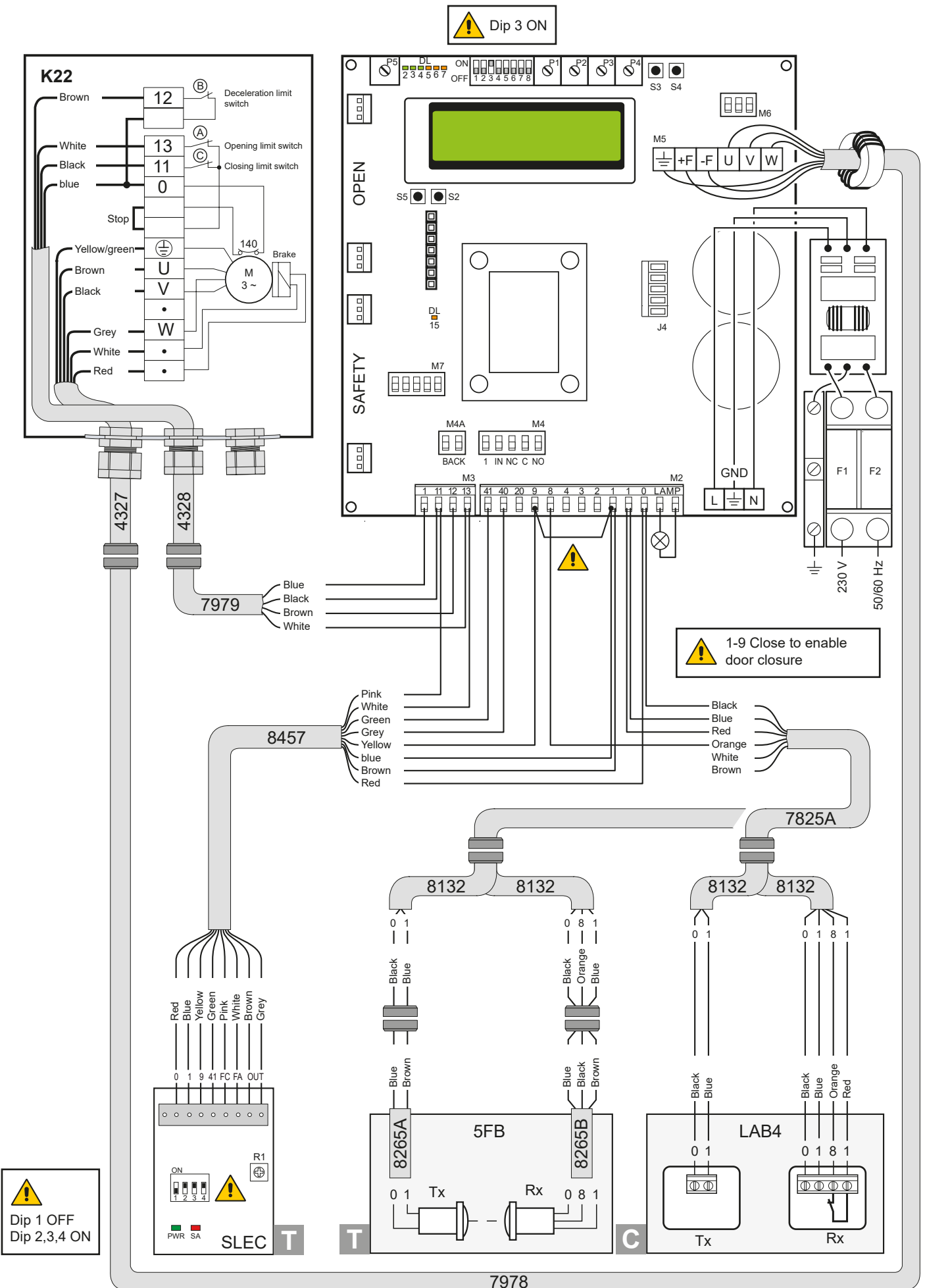
LED	On
DL2	Closing position
DL3	Deceleration
DL6	Partial opening
DL7	Opening position
DL15	Autostart

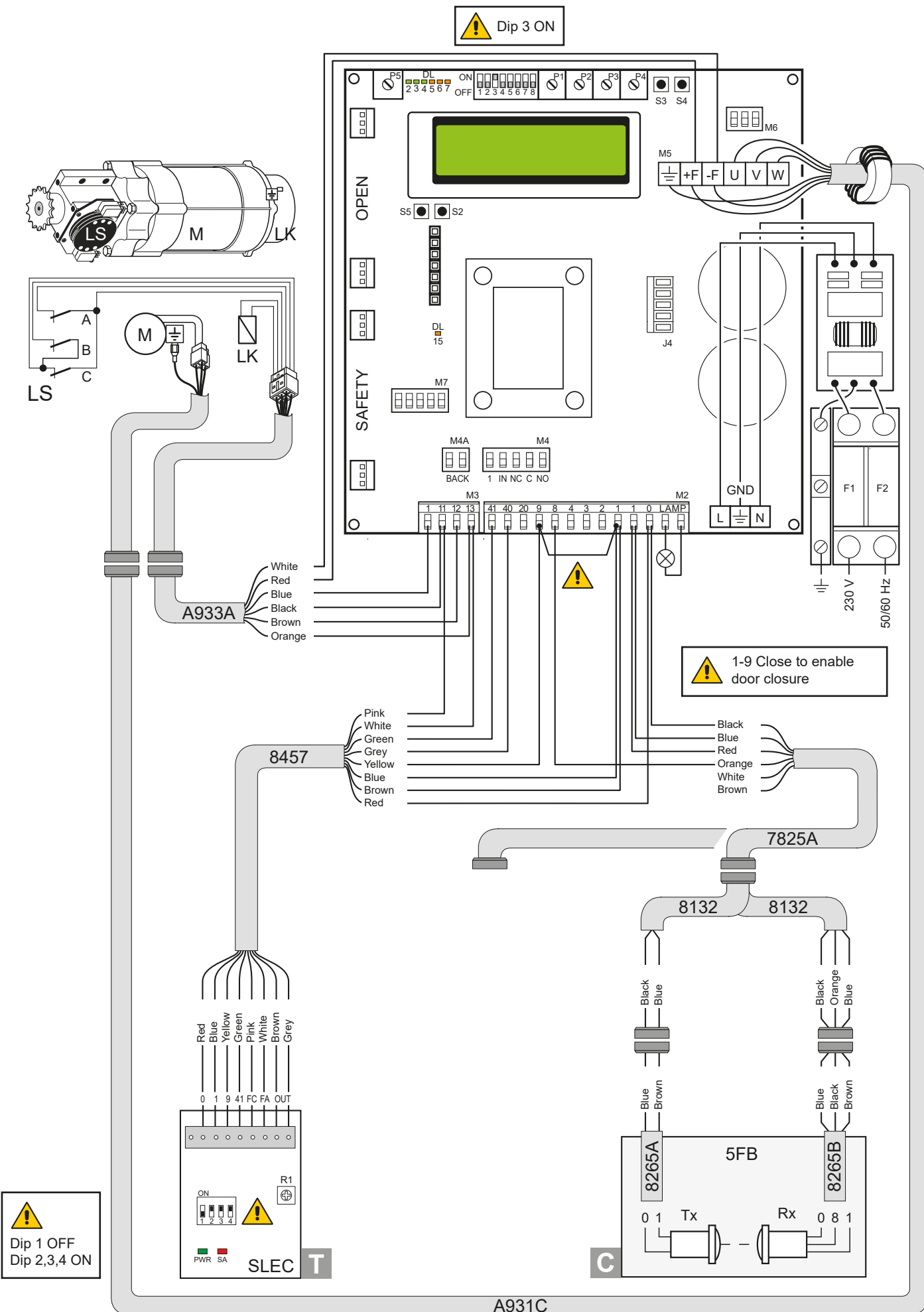
Buttons	Description
S2	USED FOR PROGRAMMING
S3	NOT USED
S4	NOT USED
S5	USED FOR PROGRAMMING

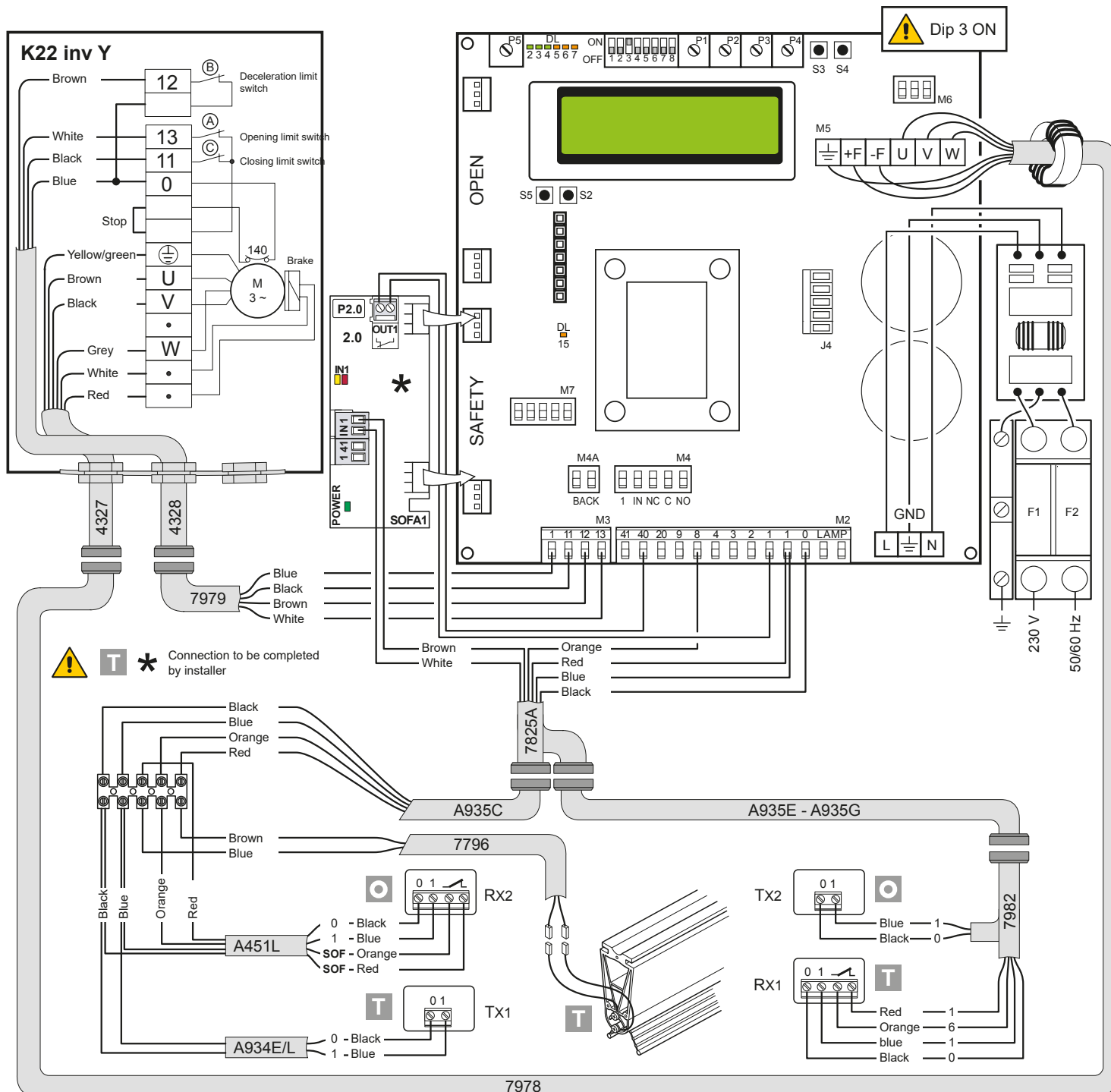
	Operating mode		Programming
	Standard		Operating
Button	LED		Button
Starts the opening operation.	- The green LED on indicates the presence of the 24 V= power supply.		Menu scrolling
Starts the partial opening operation.			Confirm
Starts and stops the STOP operation.	- The red LED on indicates that the STOP has been activated. - The flashing red LED indicates that the safety devices have been activated. - The quick flashing red LED indicates that the service threshold has been reached		
Starts the closing operation.			Menu scrolling



SMART RESET

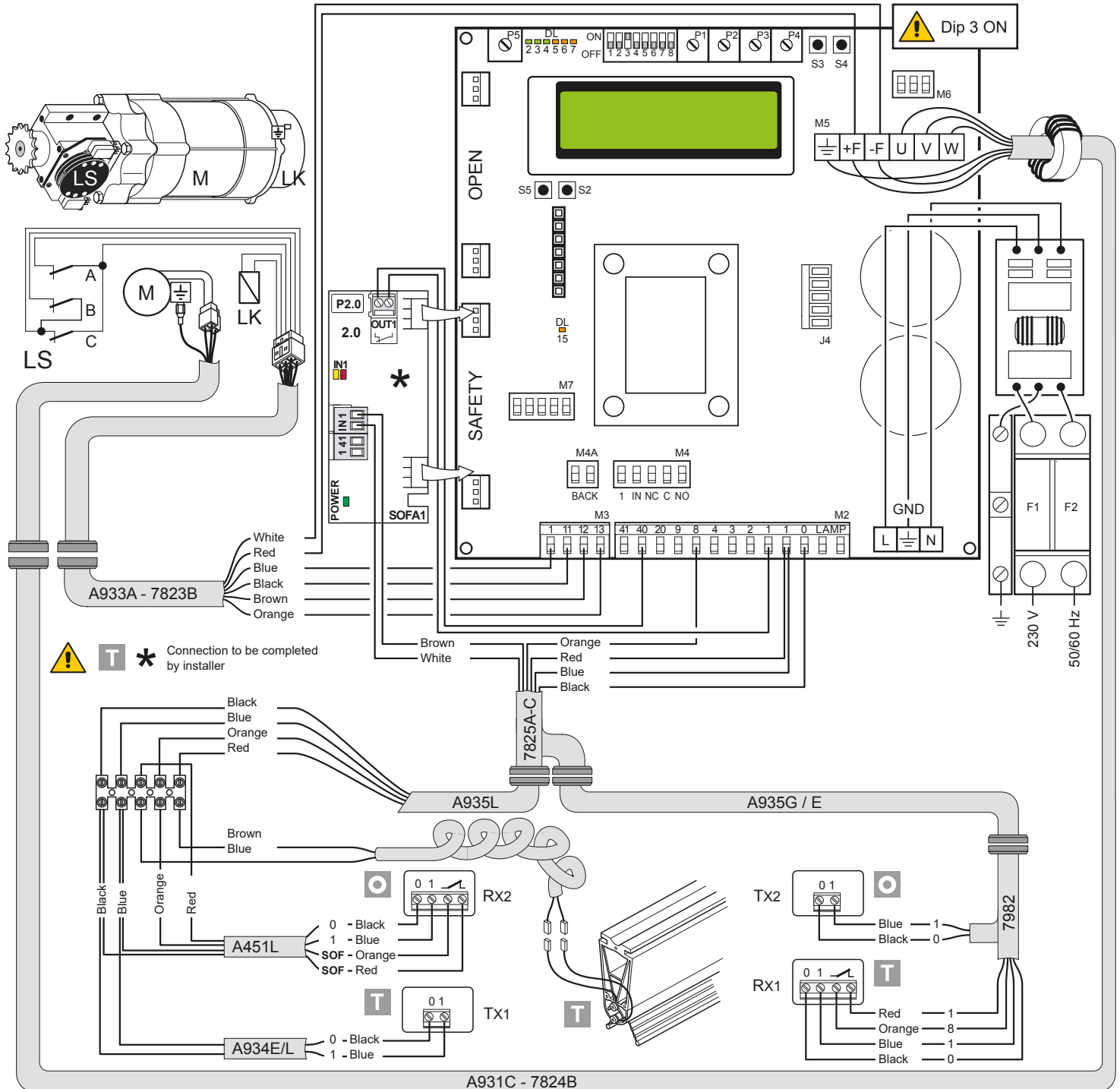






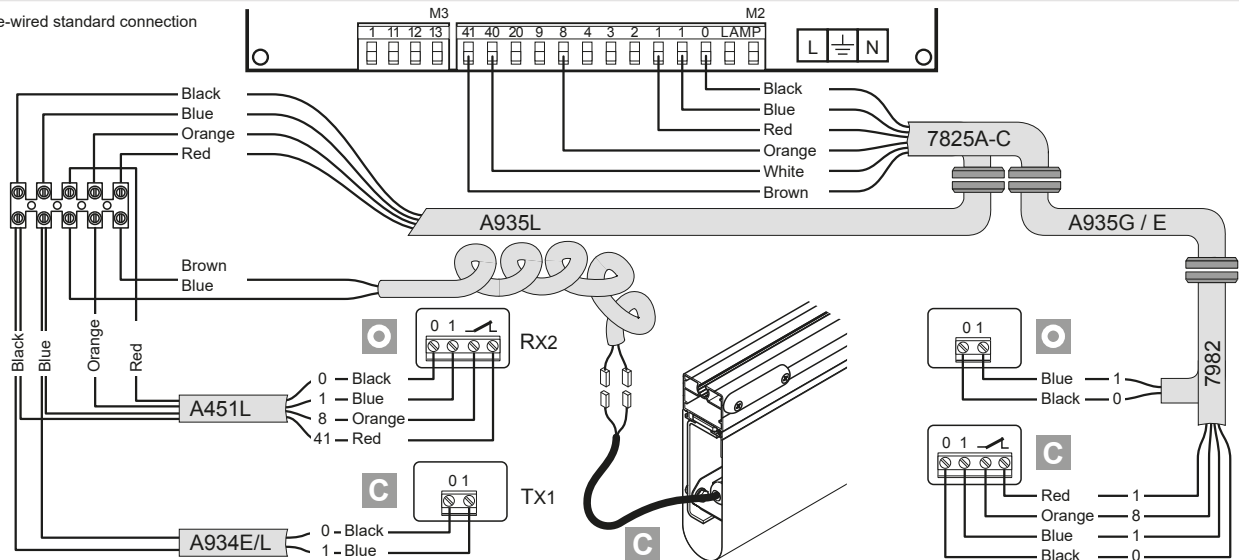


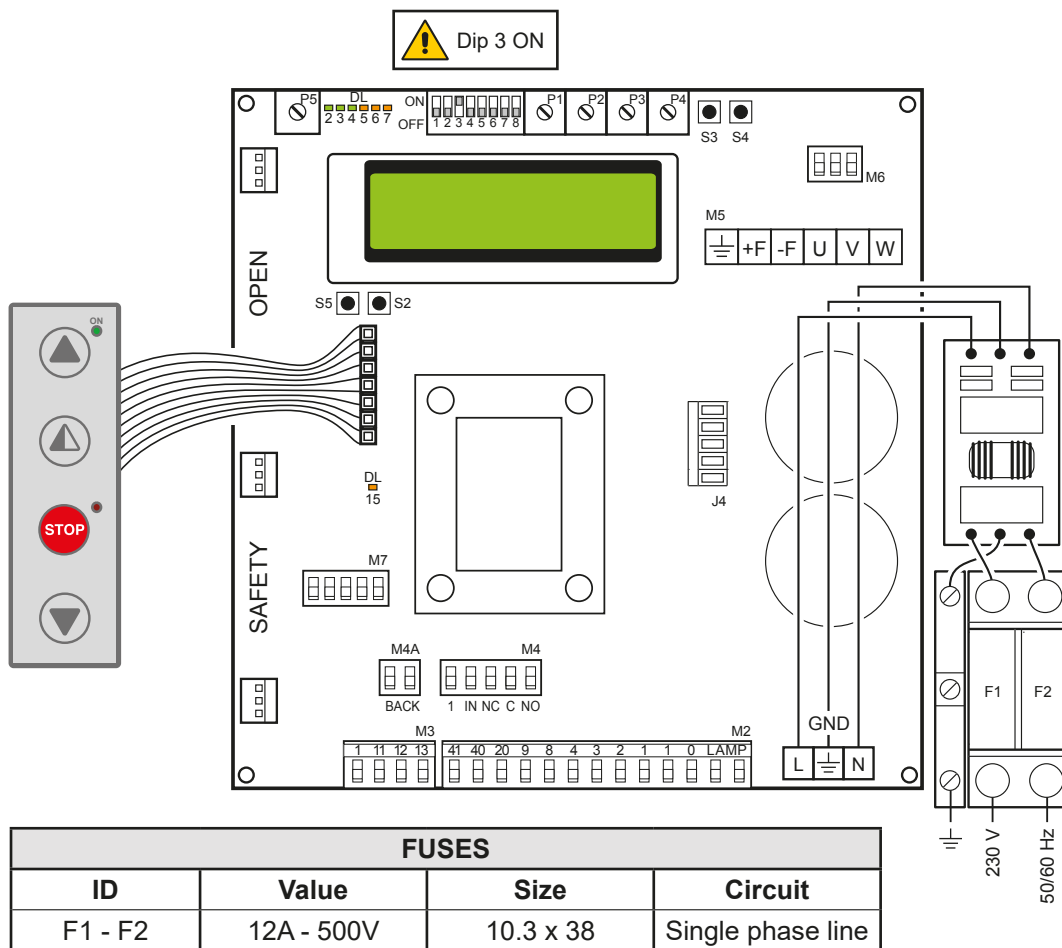
TRAFFIC C



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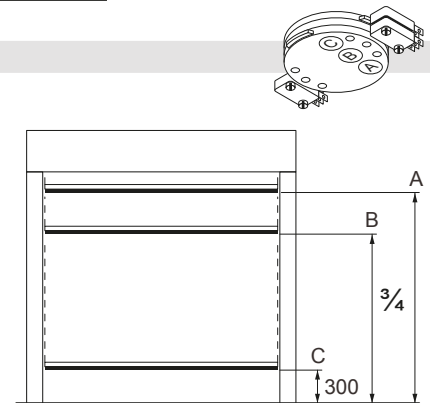
C Pre-wired standard connection





4. LIMIT SWITCH ADJUSTMENT

1. Set the deceleration ramps at zero (P3 - P4)
2. Set the limit switch (C) on the gearmotor so that the door stops about 200/300mm from its closure point.
3. Set the opening limit switch (A) at the opening point.
4. Set the deceleration limit switch (B) so it is triggered at about $\frac{3}{4}$ of the opening stroke.
5. Set the opening and closure speeds using trimmers (P1) and (P2) respectively.
6. Set the trimmers of the deceleration ramps - (P3) for opening and (P4) for closure - to ensure the door stops at its actual "open" and "closed" positions.



5. TROUBLESHOOTING

Display message	Problem	Check
Current limit exceeded	Requested motor torque exceeds available torque.	• Reduce opening speed. • Check power supply. • Check power supply wiring.
Insert brake resistance	Voltage on BUS exceeds threshold	• For Sector Reset doors, connect the brake resistance and set the item on the advanced menu to "YES". • Switch off the control panel, wait 3 minutes and reconnect the power supply. • If the error reoccurs, check that the voltage on the BUS is lower than 360 V.
Max. BUS voltage	BUS voltage exceeds threshold	• Switch off the control panel, wait 3 minutes and reconnect the power supply. • Check the control panel power supply voltage.
Stand by Encoder	Installation of a new control/ replacement control already programmed previously Absolute Encoder not connected.	To reset the control panel follow the procedure: • DIP2 in ON • push STOP (the control panel goes in the "programmin menu" showing the data already set) • scroll the menù till the step "COMMAND MODE" and set LIMIT SWITCHES • DIP2 in OFF

6. PROGRAMMING

6.1 INSTALLATION MENU

When the control panel is switched on, after showing the messages DITEC and microprocessor and card FW VERSION, the device automatically enters the installation menu and displays the message SELECT LANGUAGE.

Confirm with



 **Remove cables from PIN 3, 4, 20 during programming**

STEP	1 st level options	2 nd level options	Menu scrolling	Notes
1	Select language		 	Confirm with: 
	Confirm with:	ENGLISH		
		ITALIAN		
		FRANÇAIS		
		DEUTCH		
		ESPAÑOL - POLSKA CESKY - MAGYAR		
2	Door model		 	Confirm with: 
	Confirm with:	SOFT RESET		
		SECTOR RESET		
		SMART PLUS		
		SECTOR PLUS		
		TRAFFIC C SMART RESET		
3	Position control		 	Confirm the Limit Switch option with: 
	Confirm with:	LIMIT SWITCH		
		ENCODER		
4	Calibrating positions		 	The door will move to the required position in operator present mode and at low speed. Confirm the Limit Switch position after setting 
	Confirm with:	CLOSED POSITION		
		PARTIAL POSITION (indicates the deceleration start position)		
		OPEN POSITION		
5	Command mode		 	Confirm with:  Selecting 1-9: if 1-9 is closed, the command mode will be impulsive, if 1-9 is open the command mode will be "dead man"
	Confirm with:	IMPULSIVE		
		MAN PRESENT		
		INPUT 1-9		
6	CONFIRM DATA			Confirm with: 

PROGRAMMING COMPLETED

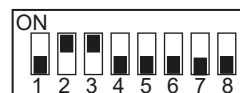
The door is now programmed and operating with the set default speed values.
With the door MOVING, the voltage and current values will be displayed on the BUS.

6.2 ADVANCED MENU

The advanced menu allows you to modify the position of the limit switches which have previously been set and modify the set default parameters.

To access the Advanced Menu:

- **STOP the door**
- **Set DIP 2 to ON**



"LIM. SWITCH CAL.", the first item in the advanced menu, will appear on the display.

 **ONCE PROGRAMMING HAS ENDED, SET DIP2 TO OFF**

 **Remove cables from PIN 3, 4, 20 during programming**

STEP	1 st level options	Scrolling	Confirm	2 nd level options		Notes
1	Encoder Calibration	 		Closed position	 	The door will move to the desired position in man present mode and at low speed. All the positions (closing, partial opening, opening) must be set.
2	Photocell excluded (step present only for Reset doors)	 		Change value (1 unit $\cong$ 3mm)	 	By increasing the value, the position of the photocell by-pass is raised
3	Primary safety device excluded	 		Change value (1 unit $\cong$ 3mm)	 	By increasing the value, the position of the primary safety by-pass is raised
4	Automatic closing (default SI with T= 5 s)	 		YES	 	
				NO		
5	Automatic closing time	 		Time variant	 	Option available only if YES has been selected for point 4). Value ranging from 0 to 100 sec.
6	Command mode	 		Impulsive	 	Selecting 1-9: if 1-9 is closed, the command mode will be impulsive, if 1-9 is open the command mode will be "dead man"
				Man present		
				INPUT 1-9		
7	Opening safety device	 		YES	 	If set to YES, the closed door that receives an opening command does not open if the photocell is activated.
				NO		
8	Interlock	 		NO INTERLOCK	 	<u>AIRLOCK</u> : door 2 opens with external command only if door 1 is closed. <u>INTERLOCK</u> : door 2 opens automatically when door 1 has closed
				AIRLOCK		
				INTERLOCK		
9	Pre-flashing when opening (default no)	 		YES	 	Pre-flashing has a set time of 3 sec.
				NO		
10	Opening ramp advance	 		CHANGE VALUE (1 unit $\cong$ 3mm)	 	When the value increases, the deceleration distance when opening increases.
11	Opening speed in (Hz)	 		CHANGE VALUE	 	The setting of values that are higher than the default ones must be assessed according to door dimensions and operating conditions.

STEP	1 st level options	Scrolling	Confirm	2 nd level options		Notes
12	Closing speed in (Hz)	 		CHANGE VALUE	 	The setting of higher values must be assessed according to door dimensions and operating conditions.
13	Service Alarm	 		YES	 	
				NO		
				RESET?		Restart the service count down
14	Service thresh	 		CHANGE VALUE	 	Option available only if YES has been selected for point 13). Set value to steps of 1000 cycles Max 200,000 cycles
15	Enable stop 1-2	 		YES	 	If set to YES, opening of the contact 1-2 STOPS the door.
				NO		
16	Brake resistance (default NO)	 		YES	 	Set to YES when the door is supplied with brake resistance.
				NO		
17	PARAMETER RESET	 		CONFIRM	 	Confirm to go back to the installation menu.



ONCE PROGRAMMING HAS ENDED, SET DIP2 TO OFF

6.3 Timed opening menu

With door in STOP position and DIP 8 ON you enter the menu CYCLIC MODE. By activating this mode it is possible to set a timed opening at regular time intervals. Once the mode is set put DIP 8 OFF.

STEP	1 st level options	Scrolling	Confirm	2 nd level options		Notes
1	CYCLIC MODE	 		TIMER OFF	 	Timer not active
				TIMER ON		Timer active
2	TIME UNIT	 		MIN.	 	Timer by minuts
				SEC.		Timer by seconds
3	OPENING TIME	 		1 ...200	 	Set the regular time intervals
4	AUTO CLOS.TIME	 		1....200	 	Set the time during which the door remains open
5	TOT	 		VALUE	 	Cycle counter
6	RESET CYCLES	 		RESET?	 	Cycle counter reset

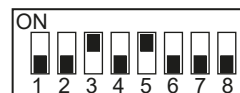
When CYCLIC MODE is active, the display shows every 2 sec:

TOT cycle - count down to next open/OPENING TIME

6.4 Service menu (password required)

To access the Service menu:

- STOP the door
- Set DIP5 to ON
- Enter the PW: button sequence OPEN- OPEN- CLOSE- PARTIAL OPENING



! Remove cables from PIN 3, 4, 20 during programming

STEP	1 st level options	Notes
1	MIN BRAKING VOLT. Default 340Vdc	Threshold for partial intervention of braking resistance
2	MAX BRAKING VOLT. Default 380Vdc	Threshold for total intervention of braking resistance
3	OVERCURRENT LIMIT Default 10A	If the current on the BUS exceeds the set threshold, the door opens at half the speed to reduce absorption.
4	RAMP SLOPE DURING OPENING	Changes the slope of the deceleration ramp when opening. Default 15. (If the value is increased, the ramp distance is reduced).
5	BATTERY LEVEL	Visualizes the encoder battery charge level from 0% to 100%
6	ALARM LIST	The last 50 alarms are displayed: Overcurrent; bus voltage exceeds limit, Intervention of brake resistance, inverter overtemperature, faulty motor driver (encoder). To exit, press partial opening

! ONCE PROGRAMMING HAS ENDED, SET DIP5 TO OFF

7. ALARMS

MESSAGE	SITUATION	NOTES
Ditec	door closed waiting for command	
Opening of VBUS IBUS	door opening	
Door open - automatic closing time	Door open	
Closing of VBUS IBUS	door closing	
Input 40 closed; input 8 open	intervention of photocell	When door is moving
input 40 open; input 8 closed	Primary safety device intervention (SLEC / SAFETY EDGE)	When door is moving
Limit switches open	Intervention of safety microswitch on manual opening device / intervention of thermal protection on motor / opening (A) and closure (C) limit switches simultaneously active.	
Opening safety device activated	photocell engaged when door is closed and door does not open	Message that only appears if the "safety in open" function is set to YES on the advanced menu (step 7).
Door stopped	stop command activated	
Stand by encoder	New control panel power on / replacing control panel power on Absolute Encoder not connected.	Control panel already programmed to work with motor having absolute encoder. To reset see troubleshooting chapter.

8. INTERLOCK

