SCD MINI WITH GRAPHICS DISPLAY

UNIVERSAL DOOR CONTROLLER

SCD mini V7 Standard Manual V1.1.2

EXTENDED MANUAL

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Introduction

Description

The Speed Commander mini control panel has been specifically designed for industrial doors and gates. The panel provides inverter speed adjustment and control as well as monitoring and responding to external inputs.
The Speed Commander mini incorporates a comprehensive range of configurable parameters that allows the door/gate manufacturer and installer to configure for optimal performance. In addition, live fault diagnosis is provided for the installer and end user allowing for quick resolve of any issues the door so that the door or gate can continue operation with a minimum of delay.

Disclaimer

Whilst every effort has been made to ensure that the details in this manual are correct and up to date. Speed Tech A/S cannot be held liable for any equipment damage or personal injury due to any error or omission.

Who is this manual intended for ?

This manual is intended for installers and door and gate manufacturers. It is not intended for the end user. A separate document should be supplied for the end user.

Safety Notice

It is necessary to follow these regulations when installing this device:

- EN12453 - Safety in use of power operated doors - Requirements
- EN12445 - Safety in use of power operated doors - Test methods

Safety warnings

Use of the device:

- The door controller is to be kept in sound condition in regard to safety and health related matters.
- The door controller must be used exclusively for the purpose of opening and closing of industrial doors.
- External devices may only be connected to the terminals intended for those specific devices.
- The door controller must not be used unless all safety components are undamaged/in working order.
- The door controller must not be used if there exist any doubts about that it's responsible to do so.
- The door controller must not be used if there's damage to any wires connected to the device.
- Only operate with appropriate coverings and protective devices. Ensure that gaskets are fitted correctly and that all cable glands are tightened. Use external buttons to control menu / setup. See section EXTERNAL BUTTON - MENU CONTROL
- Children are not allowed to play with the controller.
- The controller must not be used by person with reduced physical, sensory or mental capabilities or other untrained persons, unless they have been given instruction or is supervised.

Installation:

- During installation the mains switch must be disconnected.
- Installation must be performed only by qualified/educated technicians with solid knowledge about electricity and the relevant standards.
- Connection of the mains must only be performed by an authorized electrician.
- The installation must be performed in regard to the relevant personal protection applicable to the nature of the work.
- The installation must not be performed unless the relevant sections in this manual has been read and understood by the installer.
- It is not permitted to operate the controller without a connected protection earth. The absence of a protection earth will result in hazardous voltages inside the controller housing.
- During configuration of the parameters all personnel must stay clear of the door and away from the path of its travel.
- The door controller must be installed in an appropriate enclosure intended for the environment of the installation.
- Do not install the door controller on moving parts. Non-vibrating and not moving only.
- The door controller must not be installed in direct or directly reflected sunlight.
- A proper shielded cable must be used to connect the door controller to the motor as shown in manual.
- The controller must never be operated without the CEE-plug or an all pole disconnector for the mains supply.
- The mains switch or the CEE-plug must be within easy reach.
- The control panel will not operate if the internal +24V power supply is short-circuited. The display shows an error message and an alarm will sound.
- Do not operate or turn on the controller if condensation is present.

Cleaning & service:

- During service, cleaning and repair of the installation the mains power must have been disconnected for at least 5 minutes prior to servicing the unit in any way.
- The door controller must not be subjected to any steam or humidity while cleaning, if necessary use a cloth damp with soapy water or rubbing alcohol to wipe the exterior.

Maintenance, inspection & repair:

- Repairs must only be performed by qualified and skilled technicians with in-depth knowledge about the system.
- The door controller is to be kept in sound condition in regard to safety and health related matters.
- Use only original spare parts for repair of the installation.
- If the connecting lead is damaged, it must be changed by the manufacturer or qualified person.
- During repair and service of the installation the mains must be disconnected.
- The terminals can provide lethal voltages up to 5 minutes after the mains has been disconnected.

Environmental:

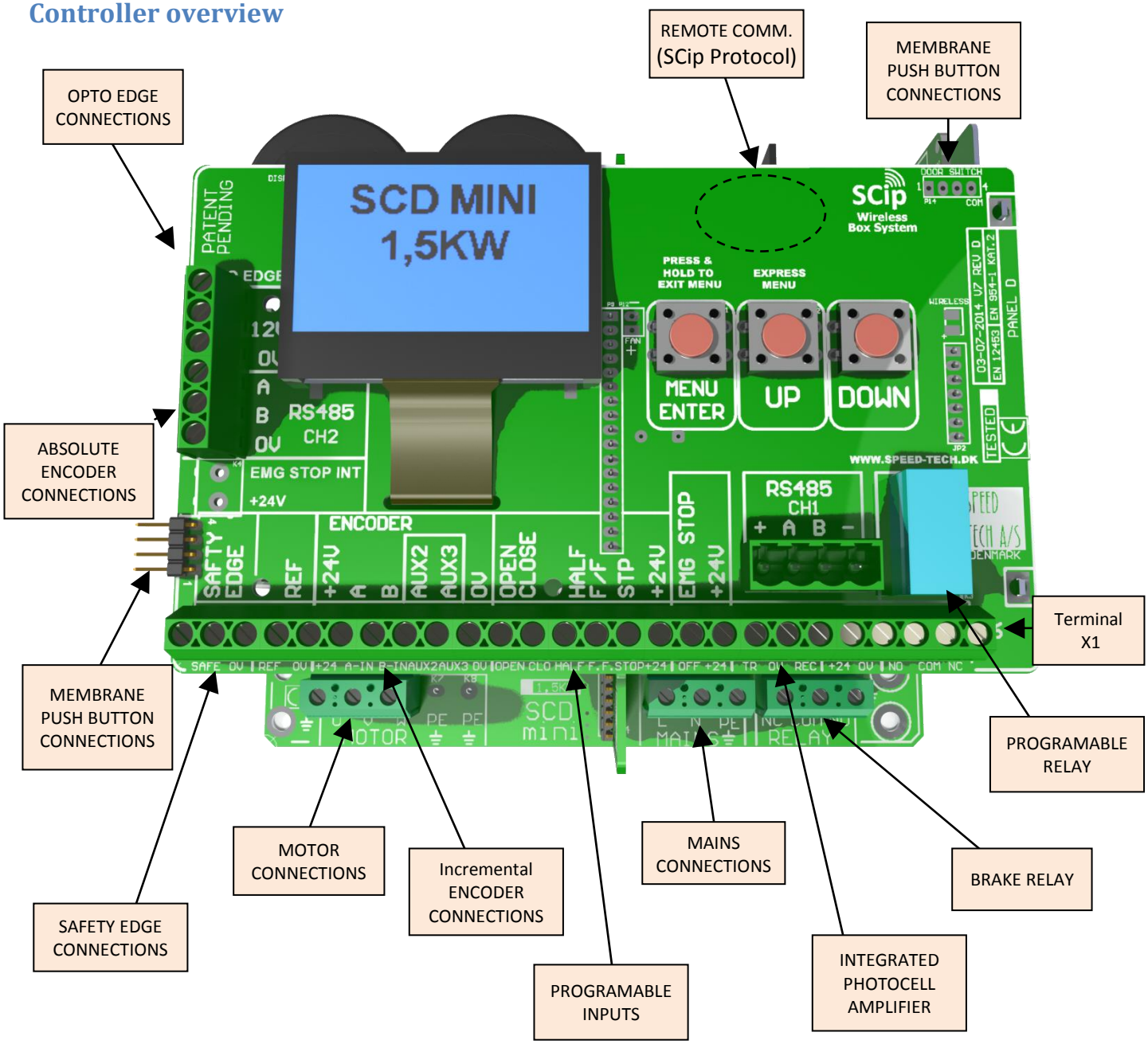
- The door controller must not be installed in an enclosure that meets IP class 65 or higher.
- The door controller must not be installed outdoor.
- The door controller must not be installed in explosion hazardous areas.
- The door controller must be kept clean and clear of any dust and dirt.

Other:

- Any technical modifications to the door controller are not allowed.
- The door controller must not be used before the entire installation is declared in accordance with the relevant directives, including 2006/42 / EC Machinery Directive
- The installer has the responsibility for the CE marking of the door/gate. The installer must inform / advise the end user on how to use the door/gate.

This is the originally manual, written in English, all others copies are translated from this.

Controller overview



Basic wiring

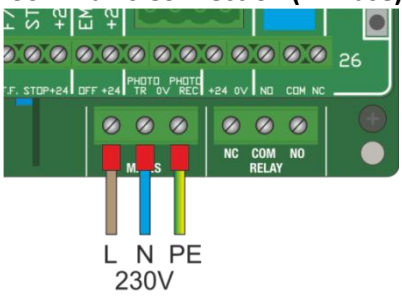
WARNING! ELECTRICAL HAZARD:

Always disconnect mains supply and wait for 5 minutes before servicing the high voltage connections of the installation or the door controller.

Mains connection

Mains supply must be fitted with a CE plug otherwise there must be an all pole disconnector (overvoltage category III.) fitted within easy reach of the controller.

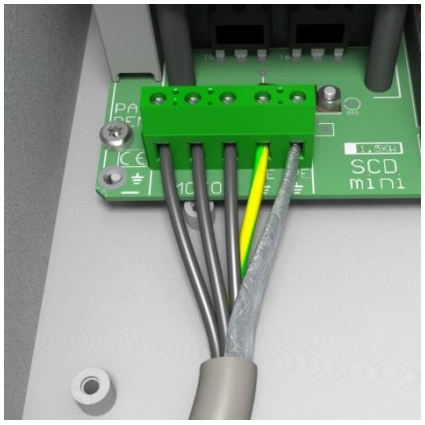
230V Mains Connection (1 Phase)



Motor connection

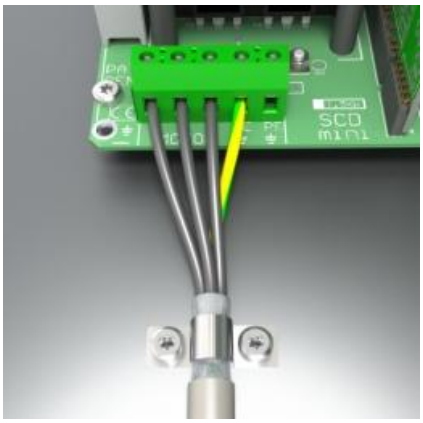
Controller side

Mounted in plastics enclosure



Shield connected to earth terminal.

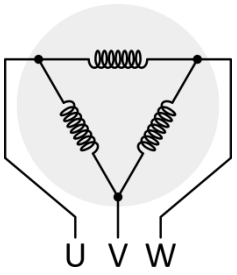
Installed in earthed metal chassis



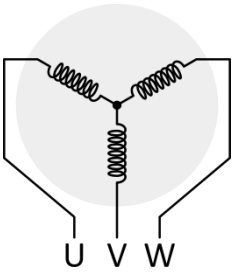
Shield clamped to chassis earth.

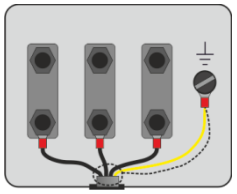
Motor side

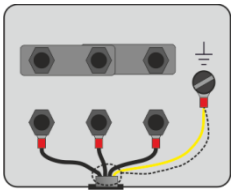
Delta connection
230VAC (100-400V)



Star connection
400V (690V)





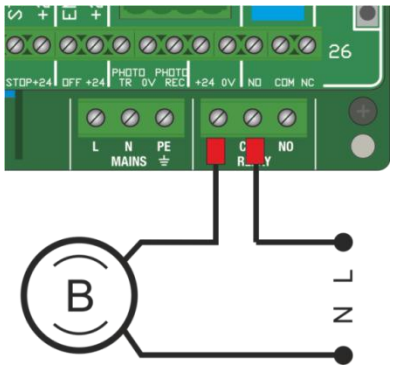


IMPORTANT:
Proper grounding practice is mandatory when installing frequency converter drives. Not only because of personal safety, but also to ensure reliable operation.

- *Always terminate both motor earth and motor chassis to a common earth point using lowest possible impedance option available.*
- *Always use shielded, correctly rated cable.*
- *Do **never** route the motor cable in parallel with the encoder cable.*
- *Ensure that the shielding on the motor cable is properly connected in both controller and motor end.*
- *Do not separate or damage the cable in any way. The cable must be in one piece throughout the entire length, and all connections unbroken.*

Motor brake

Some door applications requires that the motor is mounted with an electromechanical brake that restrains the motor while not running
The example shown uses the power relay to control a 230V AC motor brake.
Set System Config ▸ Outputs ▸ Power Relay = 1
This makes the power relay activate when the output frequency is > 0



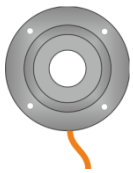
Encoder

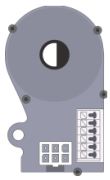
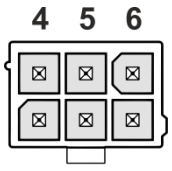
It is possible to use various types of position sensors with this controller;

Set the type of pulse sensor under Menu ▸ System Config ▸ Position Sensor ▸ Type

The system performance depends on the feedback signal from the motor. Absolute encoders without pulse output do not react as fast as incremental encoders.

SC Encoder **MIG** **PMC** **Kostal / GFA / MFZ**

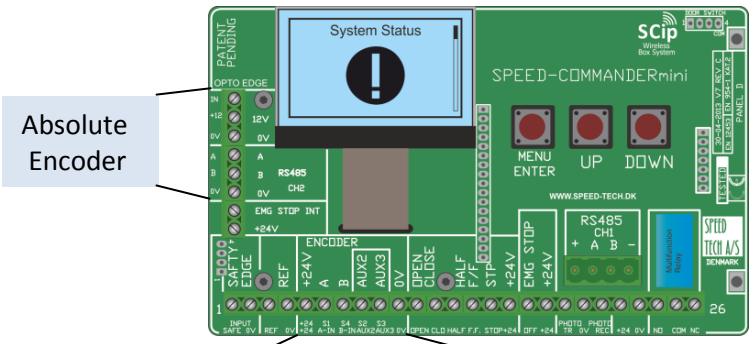



Encoder layout

Connection table for encoders:

Do not run encoder signals in same cable as the motor. Shielded encoder cable can be necessary in some installations.



Encoder type:

Name:	Type:	5 (+24V)	6(A)	7(B)	10(0V)	28(+12V)	30(A)	31(B)	32(0V)
SC Encoder	Incremental*	Brown	Yellow	Green	White				
SCE XX Q	Incremental*	Brown	Yellow	Green	White				
SKF Sensor	Incremental*	Red	White	Blue	Black				
MIG	Incremental*	Brown	Yellow	Green	White				
BTR Encoder	Absolute			Brown		Red	Green	White	Black
Kostal / MFZ / GFA / DALL /	Absolute					+12V Pin 6	RS485 A Pin 4	RS485 B Pin 2	0V Pin 3
SCE-RS485	Absolute					Brown	Yellow	Green	White

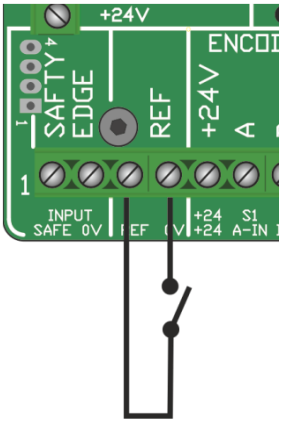
WIRE COLORS / PIN NUMBER

* Reference run necessary – see section Reference

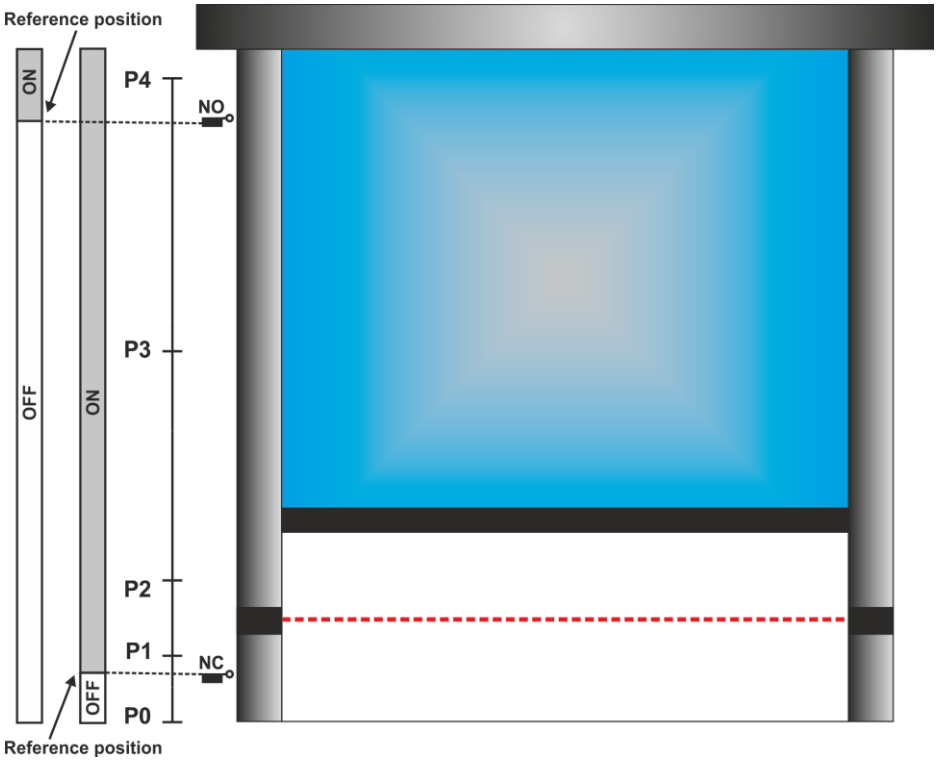
Reference limit

It is necessary to have a reference switch / point when using Incremental encoders. The door controller does not know where the door is positioned when power is applied. Therefore it will start looking after its reference position (Position value 0). This is done in slow speed until the door activates the switch.
Note that the switch must only change one time during the complete travel of the door. If it is mounted in open position of the door it needs to be a normally open switch, if it is mounted the close position it needs to be a normally closed switch. This way the controller always knows which way to travel to reach the reference point.

Remember to set up the correct function for the desired reference under: ***System Config ▸ Reference***



Reference limit switch connection



Limit switches

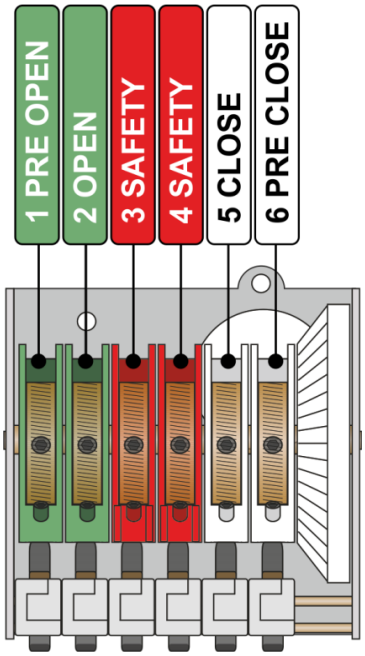
The SCD mini controller supports mechanical limit switches. The minimum requirement is two switches, four is preferable.

If two switches are used then they should be "open" and "pre close". In this application the "pre close" switch/position will be used as reference.

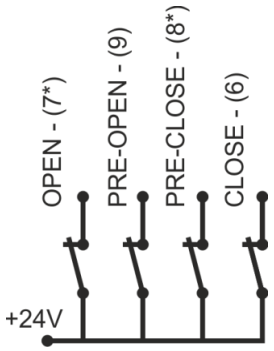
The "pre close" limit should be set so that it activates before the "close" position, and remains active all the way to "close" position. All limit switches must be N/C (Normally Closed) type, i.e. when not activated connection is made.

To set up operation with mechanical limit switches go to ***Set Menu ▸ System Config ▸ Position Sensor ▸ Type = Limit Switches***.

In the Quick Setup menu there is a function to test the switches and visualize that it is operating correctly.
This is done after checking the motor travel direction.



Switch no.:		SCD mini terminal:	Function:
1	▸	9	Pre Open limit switch
2	▸	6	Close limit switch
3	▸		Not used
4	▸		Not used
5	▸	7	Open limit switch
6	▸	8	Pre close limit switch (Reference)
COM	▸	5	+24V



Green marks the switches which are the absolute minimum required.

Safety edges

IMPORTANT

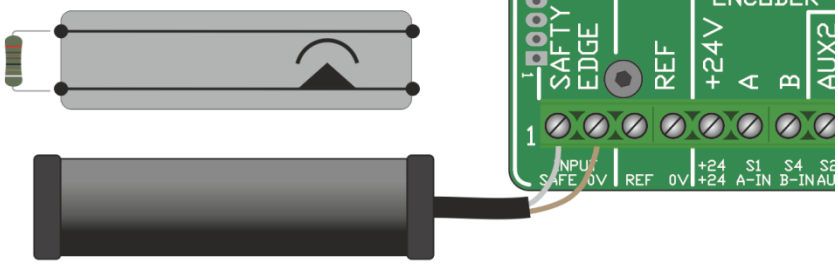
It is essential that safety edges are used in conjunction with the SCD mini.
The safety edge should comply with EN 12978.
Use only the dedicated safety edge inputs on terminals 1 and 27.

Conductive 8K2

Connect front edge to terminal 1 and 2. The terminating resistor must be 8K2 Ohms.
If no safety edge is connected, the door can only be operated in dead man mode.

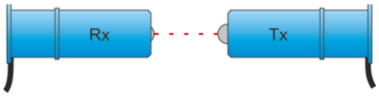
Set the type of connected safety edge under:
System Config ▸ Safety edges

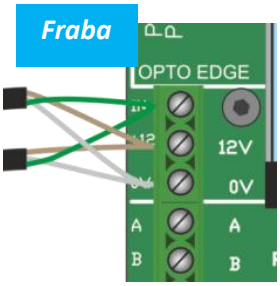
While the door is closing, the safety edge is disabled from the "safety edge disable" position to the "fully closed" position.



O.S.E./ Opto type 3 wire system

When a system comes with electrically separated transmitter and receiver units, these must be connected in parallel as illustrated below. *Note that the wire colors displayed here is for the Fraba system.*

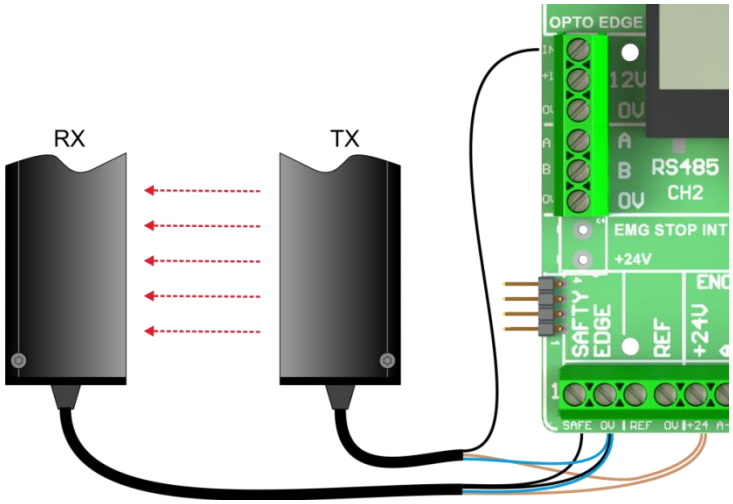




Type:	Terminal No.:			
	(0V) 29	(Signal) 27	(+12V) 28	(+24V) 5,16,18 or 22
Fraba System	**White**	**Green**	**Brown**	
Telco SG15-OSE	**Blue**	**Black**	**Brown**	

Light curtains

Telco Light Curtain SG14:



Receiver:

SCD mini terminal:	Color:	Signal:	
5	**Brown**	+24V	Supply
2	**Blue**	0V	Ground
27	**Black**	TR1	Test Input

Transmitter:

SCD mini terminal:	Color:	Signal:	
5	**Brown**	+24V	Supply
2	**Blue**	0V	Ground
1	**Black**	R1	SGR Output
2	**Black**	0V	SGR Output
2	**White**	0V	Blanking Control (0V if used)

To meet safety level Cat 2. / P.L. D - NPN2 is used for performing self test of the light curtain before each close cycle.

Cedes Gridscan/Mini:

Important!

The output type must be O.S.E.: GRS/Mini-xx-xxxx-xx,xx,FS,x,x

SCD mini terminal:	Color:	Signal:	
5	**Brown**	+24V	Supply
5 or 2	**White**	+24V or 0V*	Test input
27	**Black**	FSS	Output
32	**Blue**	0V	GND
Not used	**Gray**		
Not used	**Green**		

*If the test input is active "low" (Type: GRS/Mini-xx-xxxx-xx,xx,x,**L**,x) connect this to +24V.

If the test input is active "HIGH" (Type: GRS/Mini-xx-xxxx-xx,xx,x,**H**,x) connect this to 0V/GND.

Photocells

The photocell input of the controller is able to interface with different types of photocells, the terminals 19 thru 22 are used for connecting either NPN, N/C switch, D.O.T. or Telco LS100 series photocells.
For safety critical operation, integrity check of the photocell system is required and therefore the photocell system must be connected to terminals 27 thru 29.

WARNING

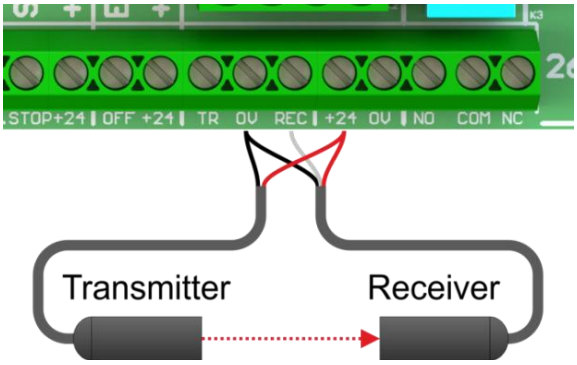
To avoid damage to the system, set up the correct photocell type to avoid damage to transmitter under:
System Config ▸ Safety Devices ▸ Photocell

NPN or NC switch type

See photocell menu section for configuration.

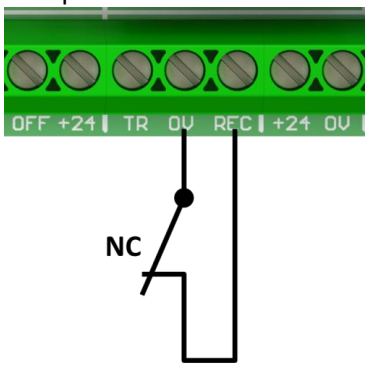
NPN NC type:

The photocell input is compatible with a standard NPN NC type photocell output. This must be connected as illustrated below to 0V, REC (input) and +24V.



NC Switch type:

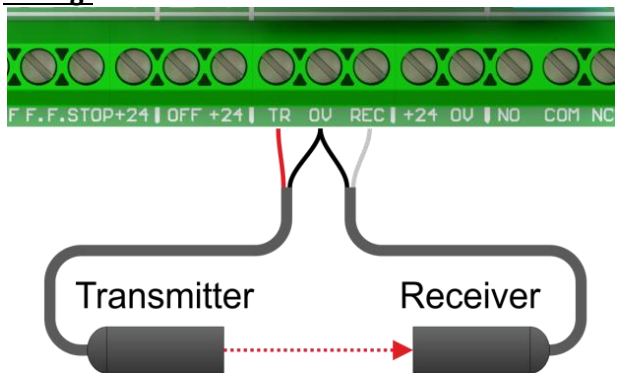
The photocell input is compatible with a standard NC switch type output, such as a relay contact. This must be connected between 0V and the REC input as illustrated below.



D.O.T. system

See photocell menu section for configuration.

Wiring:



Photocells can be ignored during travel at a user definable position using the "Photocell disable position". See section Limit setup.

Installation

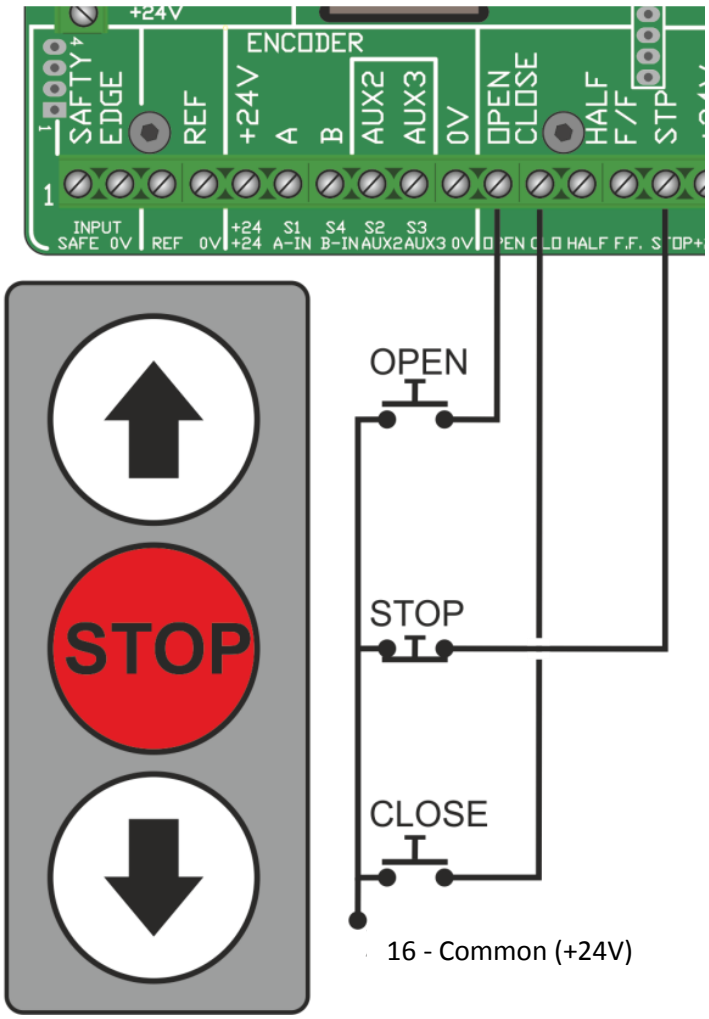
Switch off the supply to the control panel and connect as shown above.
If two sets of photocells are to be used connect and install one set at a time

Always install the receiver part (with white cable) closest to the door controller:
This provides the best noise immunity. Mount the transmitter at approximately the same height on the opposite side of the door. The exact position can be adjusted for the best alignment using the control panel as described below.

Alignment

The received signal strength is displayed as a number.
Move the transmitter until the highest possible value can be achieved.
The minimum value is 3 for the system to work.
Go to ***Menu ▸ System Status ▸ Photocells*** to see the signal strength.
Try activating the photocells while the door is closing to ensure correct operation of the system.

Control signals



The **function** and **level** of each input can set up by parameter.
This way the control interface can be programmed only to have the necessary inputs for the specific application.
All inputs are 12-24V DC compatible.
***Function** and **level** (NO / NC) are programmable.*

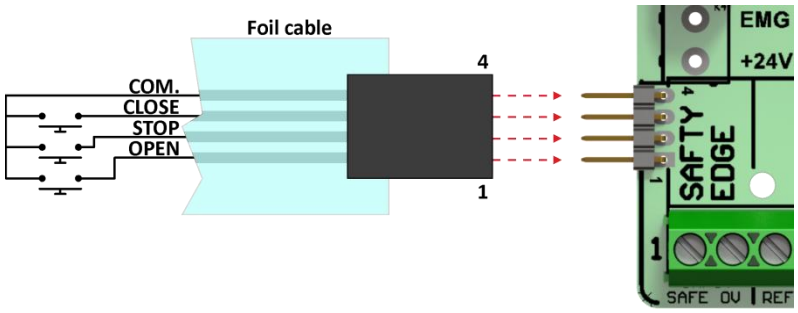
List of configurable inputs:

Terminal:	Default function:
6*	Encoder input A
7*	Encoder input B
8*	AUX 2
9*	AUX 3
11	Open
12	Close
13	Half
14	Flip / Flop
15	Stop
16	Common (+24V)

**Reserved when using some encoder types.*

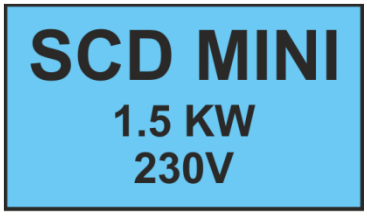
For setting up control signals parameters please see System Config ▸ Inputs

Foil buttons



Power up sequence

When power is switched on, the display will show the model information i.e. power, voltage rating, serial number, software version and active profile.



Type / Power range / Mains supply

If wireless modules are installed then these will be detected and shown during the start up sequence.

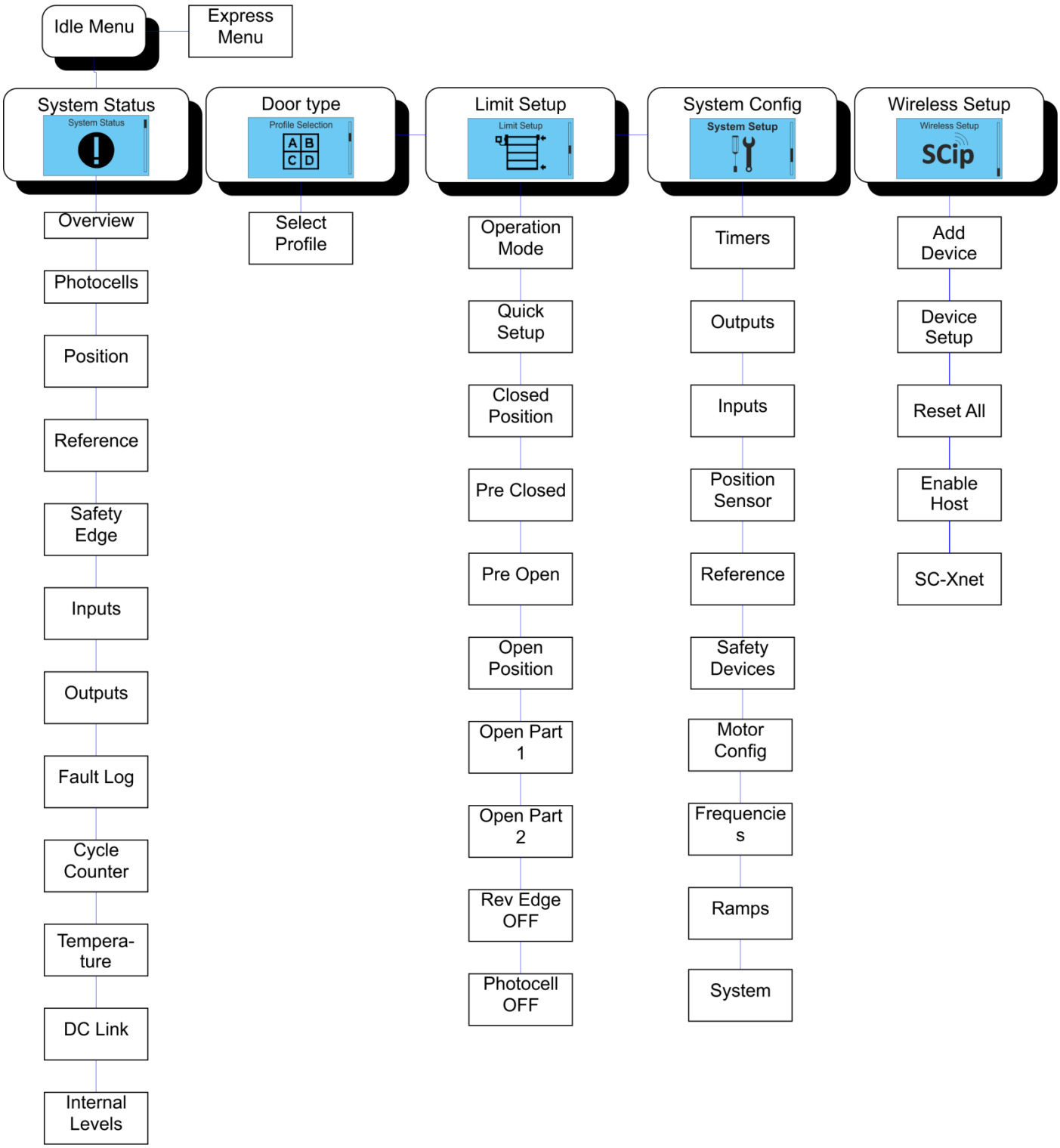
Product serial number

Firmware version

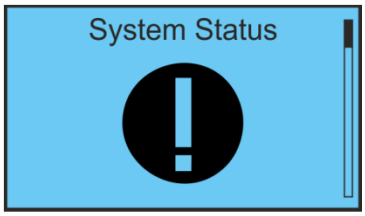
Active door profile

Menu system

Menu tree



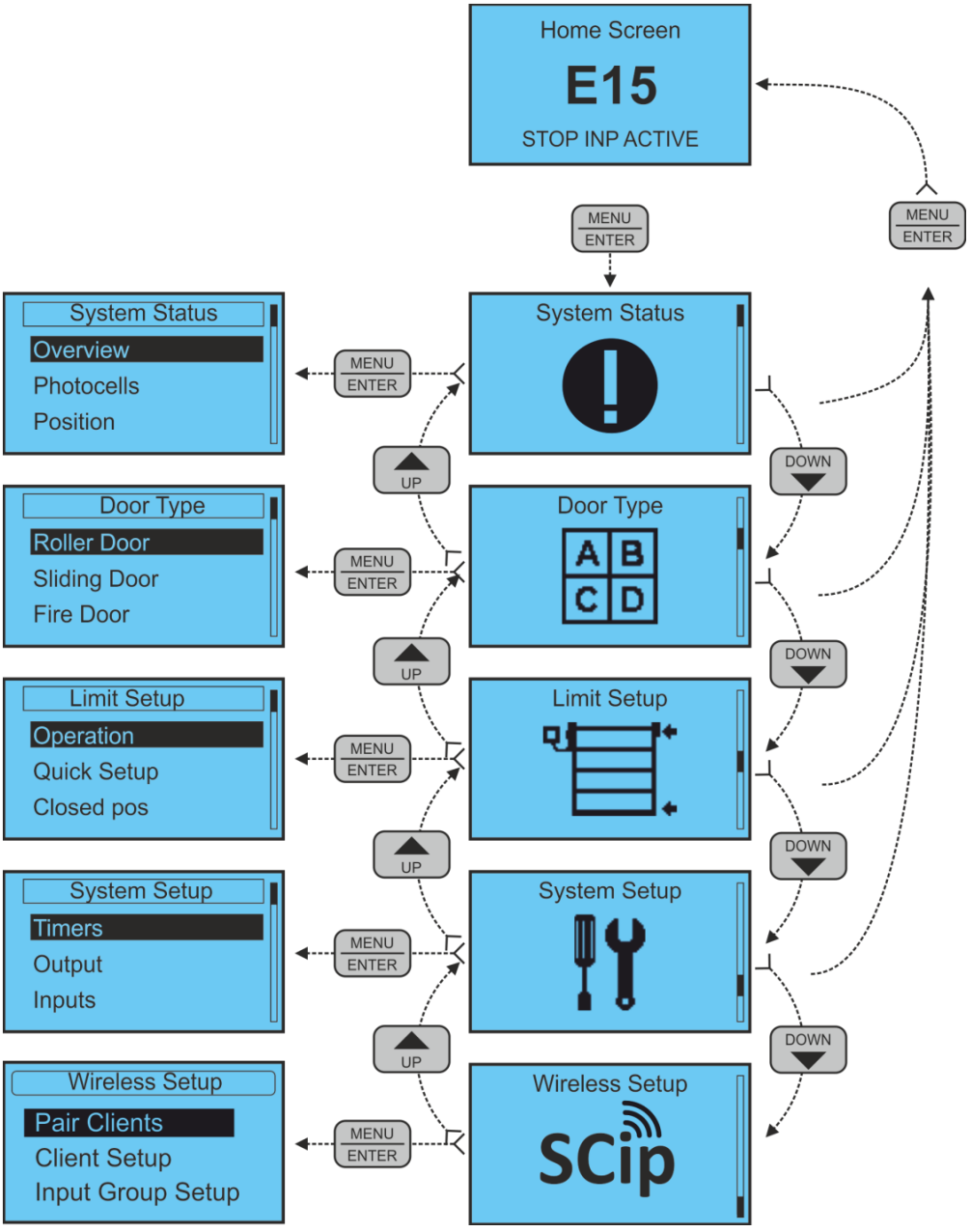
Main menu



The main menu is displayed as graphic icons on the display.
Enter the menu by pressing a short press at the MENU/ENTER button.
Now navigate in the menu using the UP/DOWN buttons.
Make a short press at MENU/ENTER to enter the selected submenu.

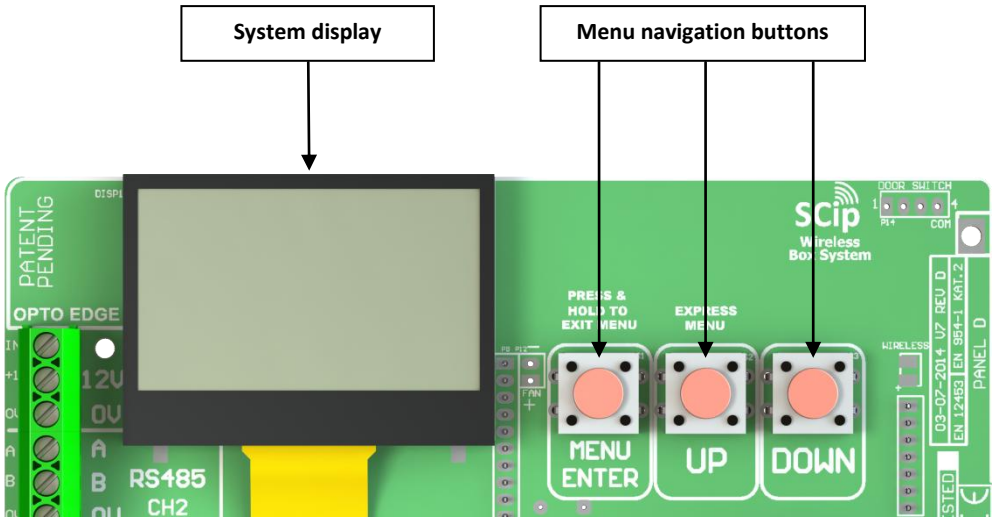
Sub menus

The sub menus below the main menu is “text listed” menus.
Use the UP/DOWN buttons to scroll the menus.
The current select submenu is displayed as an inverted bar.
Enter the sub menu by pressing MENU/ENTER button.
At any time you can exit a menu by press and holding MENU/ENTER



Navigation

The door controller has a graphics display and 3 buttons for setting up the controller to the desired functions.



Button functionality

Button:	Short press Function	Long Press Function (> 2 seconds)
MENU / ENTER	Enter selected menu	Exit Select menu / Repeat exit after 2 seconds
UP	Navigate one step UP	Scroll UP
DOWN	Navigate one step DOWN	Scroll DOWN

Access level

Please note that some menus require a code to be entered in order to gain access.
This is used to prevent unauthorized changes to the controller that could result in be potentially dangerous situations. When a menu is protected by access code a request is prompted.
Enter the correct code to get access o menu.

Contact supplier for access code

External button - menu control

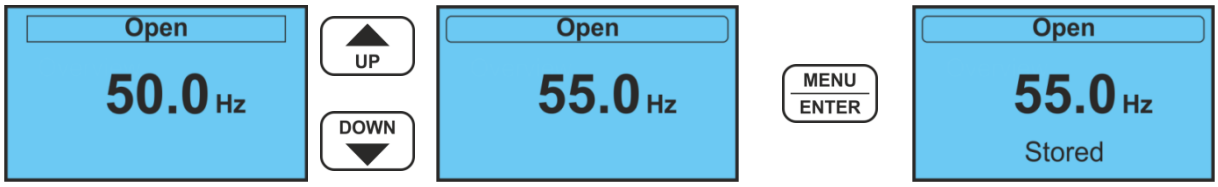
Press and hold the 3 buttons in the front of the controller and a bar will show up in the lower segment of the screen. Press and hold until the progress bar is filled. A message on screen will tell that menu is operated from external buttons.
Now stop is equal to MENU/ENTER and UP is UP and DOWN is DOWN.

If not used for 30 sec then it automatically goes back to normal button operation.
Idle display will show that menu is controlled by external buttons.

Values and functions

Changing values:

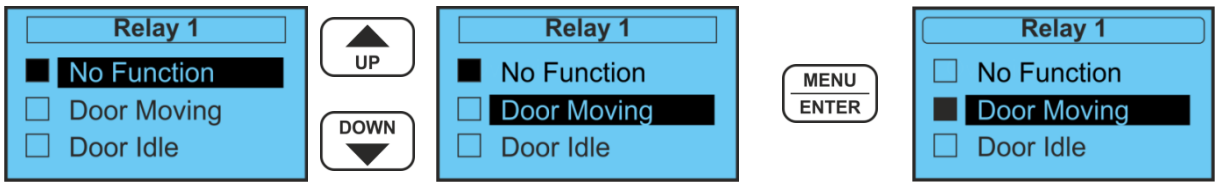
When configuring the controller parameters such as speed positions and values in % will be encountered, below is an example of speed displayed in Hz.
Use the UP or DOWN buttons to change the value.



Store the changed value by a pressing MENU/ENTER.
The display shows “Stored” in the bottom line.
To exit without storing the changed value press and hold MENU/ENTER.

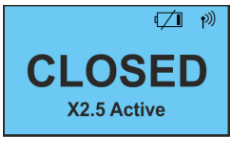
Selecting function:

If you enter a menu with different options, such as the settings for a relay output, you will see a text list based menu.
Use the UP or DOWN buttons to change the selection.
Then store the value by a short press at MENU/ENTER.
The inverted text illustrates the current selection, and if MENU/ENTER is pressed the box next to this is checked, marking the change.



Menu description

Home screen



The "home screen" is displayed during normal operation and if no menu is accessed.
The display is divided into the 3 following sections:

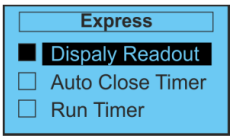
Top	**Icons:** Displays status information about peripherals such as battery status and wireless operation.
Middle	**Controller status:** Displays information about the current status of the controller, if an error is present the error code will be shown here. See section Troubleshooting for description of faults. If door is operating normal it will display one of the messages shown in table below.
Bottom	**Event messages:** when an external event occurs the source will be shown here for a short period or the duration of the event. I.e. if a stop input is active it will be displayed “Stop Active”.

Operation messages

Display:	Description
OFF	Door controller is off.
MID T.	Door is outside "fully open / closed" position.
FIND REF	Door must make a reference run in order to find its "0" position
LOCKED	Door is locked. Door cannot move before lock signal removed.
MAUNAL	Door is in manual operating mode. Door can only run in dead man mode.
CLOSED	Door is in its "fully closed" position.
CLOSING	Door is closing.
OPEN	Door is in it "fully open" position.
OPENING	Door is opening.
PART 1	Door is open at "Part open position 1"
PART 2	Door is open at "Part open position 2"
BREAK	Door is in breakout mode. Reset breakout to return to normal operation.

Enter the express menu by pressing UP button while the controller is in "idle mode".
The Express menu provides a quick method for a user to edit commonly used parameters.
Enter the menu by pressing the UP button from the idle menu.
Navigate the menu with the UP or DOWN buttons.
To exit press and hold the MENU/EXIT button.

Express Menu



		Description:
Auto Setup		Starts automatic setup of the open/closed position of the door. See section Auto setup for detailed description. Press Menu/Enter to start setup.
Display Readout	**Normal**	Displays the actual status of door in text. Open/Close and displays if an error is present.
	Motor Current	Displays actual motor current measured by the controller. This can be a useful tool for troubleshooting motor configuration.
	DC Link	Displays the internal DC Link voltage.
	Motor Slip	Displays the difference between the frequency put out to the motor and the frequency read from the encoder.
	Measured Frequency	Displays the measured frequency calculated from the encoder signal.
	Output Frequency	This is the frequency output to the motor from the controller.
	Safety Edge 1	The analog input value of the Safety Edge Input 1 (terminal 1).
	Safety Edge 2	The analog input value of the Safety Edge Input 2 (terminal 27).
	Position mm	Current position in mm.
Auto Close F.		The time delay after which the door will close automatically from the position "fully open".
Auto Close P.		The time delay after which the door will close automatically from the position Part open.
Auto Close O.		The time delay after which the door will close automatically from position other than Part open or "fully open"
Run Timer		The maximum time a door travel can take before a timeout error is set. The value should be 5 seconds longer than the time required to close the door/gate. During a 'reference run' the value is 3 times the normal run time used.
Dead man Move		While in this menu the controller will operate in dead man mode controllable with the UP and DOWN buttons. Any connected safety inputs will be ignored to allow unrestricted movement of the door.
Reset		This menu is used to reset the controller. Controller will act as if the mains power was cycled.
Update Firmw.		Used to set the controller in “Boot” mode for updating the firmware. (same as press and holding UP button while power is applied)

The main menu is entered by pressing the Menu/Enter button from the Idle menu

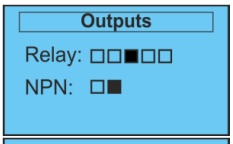
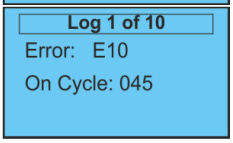
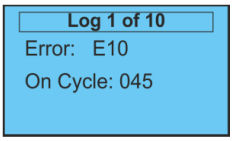
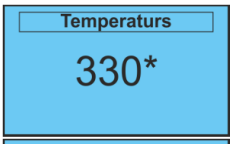
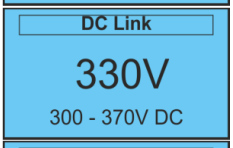
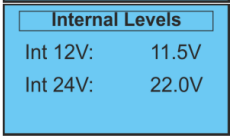
Main menu

Main menus:	Description:
System Status	Overview of controller input, outputs and internal information
Door Type	Select which profile to load to the active parameters. This will reset to default settings of the selected door type.
Limit Setup	Set up the door positions. Adjust positions already set.
System Config	Change the door controller settings for motor, peripherals, speed / ramps etc.
Wireless Setup	Connect/add and configure wireless devices.

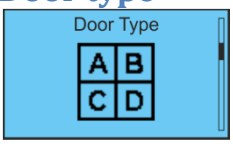
System status

	Description:
Overview Photocell 1: OK Safety Edge 1: OK Position: 123	**Overview**	See the status of the photocells, safety edges and the current position. Change between photocell 2 / safety edge 2 by pressing the UP button.
Photocells Photocell 1: 15 Photocell 2: OFF 1:	**Photocells**	Displays the analog value of the received signal strength and graphic illustration of the actual photocell status. Change view to channel 2 by pressing the UP button. Use this function when aligning photocells. Adjust to maximum value for best performance.
Position Position: 123 Ref Status: Ref Found	**Position**	Displays the internal door position count. If an incremental encoder is used information about the reference status is also shown here.
Reference Ref Status: Ref Found Above Ref	**Reference**	Displays information about the current reference status. If reference position found or not. Reference switch connection error. If door is Above or below reference switch.
Safety Edge SE1: Idle SE2: OFF	**Safety Edge**	Displays the current status of the safety edges
Inputs X2: □■□□□ X4: □□□□□□□□□□	**Inputs**	Quick overview of the controllers digital inputs. Box is marked if input is active. Useful tool for diagnosing external connection faults.

SYSTEM STATUS (CONTINUED)

		Description:
	**Outputs**	Quick overview of the controllers outputs. Box is marked if output is active**.**
	**Fault Log**	Log showing the last 10 faults. Displays the Error code and the door operation cycle it occurred on. Use the UP or DOWN buttons to navigate through the present errors
	**Input Log**	Log showing the last 10 activated inputs. Displays the Input and the door operation cycle it occurred on. Use the UP or DOWN buttons to navigate through the log. Press UP + DOWN for 3 seconds to clear
	**Cycle Counter**	Displays the number of operating cycles the door has preformed. Open / Close = 1 Cycle. The display will cycle between Total no. of cycles (cannot be reset) and the no. of cycles since last service.
	**Temperature**	Displays the internal temperature of the controller. Note this is a raw analog value from inside of the controller, **not shown as °C / °F.**
	**DC Link**	Displays the current internal DC Link voltage and the range it should be within.
	**Internal Levels**	Displays the internal controls supply voltages. Should display around 12V - +/- 1V for internal 12V and around 20-24 for internal 24V.
	Input Diagnostic	Plays a sound and shows in display when an input is activated.

Door type



Description:

Because of the vast amount of customizable parameters the new SCD mini V7 now offers a method of defining profiles containing a pre-defined setup of the controller.
The profiles allows the installer to choose a set of parameters well suited for a specific door type, providing a quick initial basis for the setup.

The pre-defined parameters in the profiles can only be changed by the manufacturer by updating the firmware.
All parameters are changeable as usual after a profile has been loaded.

WARNING

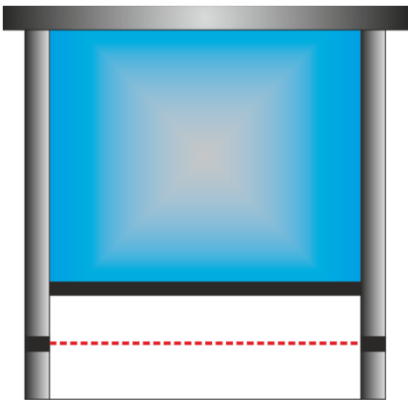
When loading a profile all related parameters will be overwritten with the defaults of the loaded profile!

Door positions

The door controller use position counts generated by the external encoder connected.
This is used to locate the door and thus navigate it to the various positions.
Depending on the encoder type it can be necessary to have a reference switch/point so that the door controller knows where the door is located after power up.

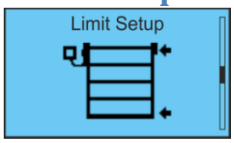
The example on the right shows a rolling gate with the different door positions located within the door travel.

Rolling door positions example:



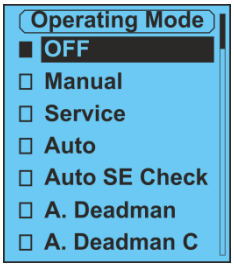
- **"fully open" position**
- **Pre open**
- **Part open 1**
- **Part open 2**
- **Photocell OFF**
- **Safety edge OFF**
- **Pre closed**
- **Fully closed position**

Limit setup



	Description:
Operation Mode	Select the operating mode. See section Operating Mode for description.
Quick Setup	Initiates the "Quick Setup". Using the quick setup you can easily set up limit positions, travel direction etc. Please see the section Quick Setup for further details.
Closed **Pre Closed** **Pre Open** **Open** **Open Part 1** **Open Part 2** **Rev Edge OFF** **Photocell OFF**	Manually set the door positions. Move the door with the UP/DOWN button and store or the external foil buttons. Store position by pressing MENU/ENTER button when finished. Display will show "stored" and return to the previous menu.
High Torque	This function is provided for sliding doors, gates where high torque is needed in the first and final part of the opening and closing. This enables the “High boost” value from "fully closed" position plus the set “position distance” in this parameter and also in the "fully open" position minus the distance in this parameter. Set to 0 to disable.

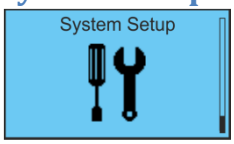
Operating modes



By default operating mode is set to **Auto** after quick setup is performed.

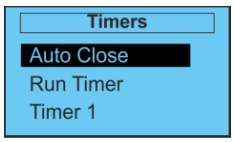
	Description:
☐ **OFF**	OFF - no output the motor.
☐ **Manual**	It is possible to run the motor in dead man operation with no limits. This is done at dead man speed. (New product not setup)
☐ **Service**	N/A
☐ **Auto (default)**	Automatic operations – the door runs in full speed to the programmed positions. The safety edge is checked before each close and is
☐ **Auto SE Check**	Similar to "Auto" mode but requires that the safety edge is activated during each "fully closed" event. Used mainly with pneumatic safety edges).
☐ **A. Dead man**	Runs within limits with the same ramps and speeds as in "Auto" mode. But operable in dead man mode. Automatic open / dead man close.
☐ **A. Dead man C.**	Door travels within limits at the same ramps and speeds as in "Auto" mode

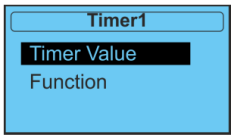
System setup



	Description:
Timers	Set up the door control timers
Outputs	Set up the door control outputs
Inputs	Set up the door control inputs
Position Sensor	Set up the door control position sensor
Reference	Select the reference for the door positioning
Safety Devices	Set up Safety edges / Photocells / light curtain
Motor Config	Set up motor related settings
Door Speeds	Set up door speeds in the different states
Ramps	Set up door ramps – Acceleration / Deceleration
Specials	Special Custom functions – Move assist / Delta Slip
System	System settings

Timers





Description:

Auto Close F. Set the value for the Auto close timer that is used when the door is in the "fully open" position.

Auto Close P. Set the value for the Auto close timer that is used when the door is in the "part open" position.

Auto Close O. Set the value for the Auto close timer that is used when the door is not in the "fully open" or "part open" position.

Run Timer The maximum time a door travel can take before a timeout error occurs. The value should be set to 5 seconds longer than the time required to close the door/gate. During a "reference run" the time is 3 times the normal run time used.

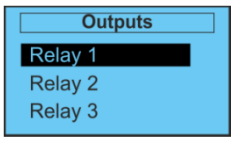
Timer 1
Timer 2
Timer 3

Timer Value:
Set the time value for the following timers.
Time base is 1/10 seconds.

Timer Functions: Set the function for the timer see table below;

Timer Functions	Description:
No Function	Timer has no function
Auto Close Timer Part1	Auto close from part open 1
Auto Close Timer Part2	Auto close from part open 2
Safety Close	If safety edge or photocell has been activated the auto close time is changed to this Safety Close time instead.
Pre Warn Time	Used in combination with output function. Timer starts when the auto close timer reaches the set pre-warn time.
Air curtain	Delayed open. The door open is delayed by the timer. Relay function Air curtain is active when the timer starts.
Delay To Close	Open command is delayed with the set time before the door closes
Auto Ref. Timer	The door will start an automatic reference run after power up after the timer runs out.
Open Alarm	Activates output function when door has been open longer than the time set. Timer start when door position > fully closed
Delayed Door Closed	Starts when door is fully closed – Activates output function Delayed Door Closed when it runs out.
Auto Open Timer	Opens door automatically when door is fully closed and timer runs out. Used for Cycle test.

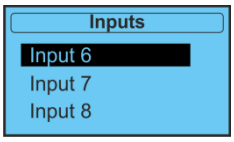
Outputs



	Description:
Relay 1	Relay outputs max. 1A @ 24V DC 0.5A @ 120V AC Resistive loads only.
Power Relay	Power relay output max. 5A @ 240V AC - Resistive loads only.
NPN 1 **NPN 2**	Open collector max. 30V DC, 50mA non-inductive.

Output functions	**Description:**
☐ **No Function**	Relay not active.
☐ **Door Moving**	Active when output frequency is > 0,5Hz.
☐ **Door idle**	Active when output frequency is < 0,5Hz.
☐ **Door Open**	Active when door is above "fully open" position.
☐ **Door Closed**	Active when door is below "fully closed" position.
☐ **Door Not Closed**	Active when door is above "fully closed" position.
☐ **Open Partial**	Active if door is opened to "part open 1" position.
☐ **Door Opening**	Active while door opening.
☐ **Door Closing**	Active while door closing.
☐ **Delay To Close**	Active while delay to close timer is > 0
☐ **Air Curtain**	Active when the air curtain timer starts and is not active when the door reaches the "fully closed" position. Used for air curtains.
☐ **Auto Close Active**	Active while Auto close timer is > 0.
☐ **System Error**	Active if there is an error present.
☐ **Pre-Warn**	Active if pre-warn time is > Auto close timer.
☐ **Open Alarm**	Active if door has been open longer than the open alarm timer.
☐ **Service Counter**	Active if "Operation Counter" has exceeded the "Service Counter" value.
☐ **Brake After Run**	Active at half the timeout of After Run Pressure – For mechanical brake. (For sliding doors with seals).
☐ **Delayed Door Closed**	Activates when the door is fully closed and the timer runs out. Timer is started when door is "fully closed". Used for mechanical lock.
☐ **System OK**	Function optimized for door open light signal.
☐ **Closed Light**	Function optimized for door "fully closed" light signal.
☐ **Part open Light**	Function optimized for door "Part Open 1" light signal.
☐ **Door Locked**	Active when door is locked from Lock input.
☐ **1 sec pulse Opn**	Active 1 seconds when the door is "fully open".
☐ **1 sec pulse Clo**	Active 1 seconds when the door is "fully closed".
☐ **1 sec Active**	Active for 1 seconds when an open input is activated.

Inputs



Terminal:

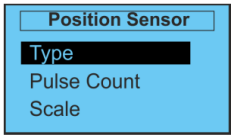
6 to 9

11 to 15 & 17

Sub menus:	Description:
Input	Select which input to configure.
Function	Select function for the input. See table below for descriptions of input functions.
Name	Select text associated with input.
Logic	Select the logic function for the input NO / NC.

Input functions	Description:
☐ **No Function**	If input is unused select this.
☐ **Flip Flop**	Toggle to open or close the door – Starts auto close timer 2.
☐ **Open Fully**	Open door to "fully open" position.
☐ **Open Fully with auto close**	Open door to "fully open" position and starts auto close timer 1
☐ **Stop**	Stops the door with stop ramps.
☐ **Close**	Closes the door.
☐ **Emergency Stop**	Stops the door with emergency ramps – To comply with Cat 2 / P.L. D this input must be connected to X5.6 –X5.10 for testing in each door cycle.
☐ **Open/Close**	Opens Door to "fully open" position. Closes door if open. Override safety devices if pressed more than 2 sec and error present. Starts reference run if power has been off.
☐ **Photocell**	Stops and opens the door.
☐ **Lock Open**	Locks the door in open position.
☐ **Lock Close**	Locks the door in closed position.
☐ **Open Dead man**	Opens door while input is active else door is stopped.
☐ **Close Dead man**	Closes door while input is active else door is stopped.
☐ **Breakout**	Stops the door and enables dead man operation.
☐ **Open Part 1**	Open door to port "Part Open 1" position.
☐ **Open part 2**	Open door to port "Part Open 2" position.
☐ **Open Part 1 with auto close**	As “Open Part 1” but with auto close timer active.
☐ **Open part 2 with auto close**	As “Open Part 2” but with auto close timer active.
☐ **Flip Flop Open Reverse**	Flip / Flop with reverse function.
☐ **Flip Flop Open Part 1**	Open to "Open Part 1" position and then "fully close".
☐ **Flip Flop Open Part 2**	Open to "Part 2" position and closes.
☐ **Opn/Clo/part**	Opens door to "part open" position, closes door if open. Override safety devices if activated for more than 2 seconds and error present. Starts reference run if power has been off.
☐ **Motor Thermo**	Special function for motor overheat protection.
☐ **Door Lock**	Stops door – Can be overridden by input code lock.
☐ **Code Lock**	Opens door even if "Door Lock" input is active. Activates auto close timer 1
☐ **Ext open**	Opens door to "fully open" position. Activates auto close timer.
☐ **Ext Close**	Closes door.
☐ **Fire Signal**	This input enables the “Fire mode” which disables operation of the door. The error code "E27" is shown and can only be reset by activating the emergency stop for more than 3 seconds.

Position sensor

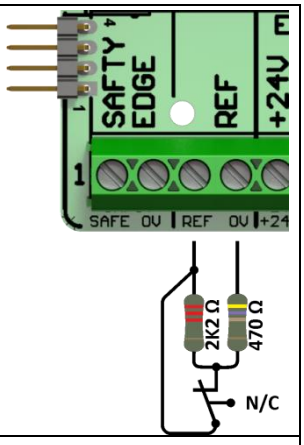


Encoder setup:		Description:
Type	☐ **2 Phase Encoder**	Quadrature A/B signal
	☐ **SKF Encoder**	Quadrature A/B signal – Enables internal pull-up resistors.
Pulse Count		**Pulses:** The **pulse** count is the number of pulses on a full motor rotation (360°). **Positions:** Because the controller triggers on both rising and falling edges of each of the pulses, the A and B signal results in a quadrupling of rotational location data, hence the name "Quadrature encoder". Thus, to find the number of pulses on a full rotation, rotate the motor shaft by 360° and then divide the number shown with **four** and vice versa.
Pos Pr Meter		Set the number of positions/meter.

Pulse Sensor Types:

Type:	Details:
2 Phase Encoder	Requires reference see section Reference.
Limit Switches	2 to 4 limit switches – No encoder feedback. No closed loop regulation.
PMC Encoder	Pulse output connect to X1.8 for closed loop regulation.
AWG absolute encoder	Absolute encoder. No closed loop feedback.
Dynaco Encoder	Absolute encoder. No closed loop feedback.
GFA absolute encoder	Absolute encoder. No closed loop feedback.
Feig TST Encoder	Absolute encoder. No closed loop feedback.
Dall Encoder	Absolute encoder. No closed loop feedback.
SCE-RS485	Absolute encoder.

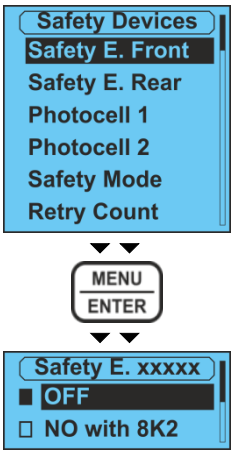
Reference

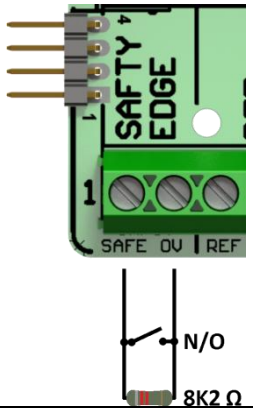
	Description:
Switch w. Res	Mechanical switch with resistor supervision. The connection of the switch is monitored through resistor network for maximum safety. Use a 470 Ohm and 2K2 ohm resistor. The switch must be a NO contact if mounted in open position or NC contact if mounted in closed position. 
Switch	Mechanical switch with no resistor safety. Switch must be a NO contact if mounted in open position or NC contact if mounted in closed position.
Opto NC	Opto amplifier. Photocells mounted in the "fully closed" position.
Opto NO	Opto amplifier. Photocells mounted in the "fully open" position.
Mec. Open	**Mechanical** stop in open position. Door travels towards the open position until it meets a mechanical end stop and saves that as "fully open" position.
Mec. Close	**Mechanical** stop in closed position. Door travels towards the closed position until it meets a mechanical end stop and saves that as "fully closed" position.
Mec. Close Fire	Mechanical stop in closed position.

Safety devices

		Description:
Safety Edge Front		Select the type of connected safety edge.
Safety Edge Rear		
Photocell 1		Select the type of connected photocells.
Photocell 2		
Safety Mode	☐ **Normal**	When activated the door stops, opens fully and then retries with normal speed.
	☐ **Slow Retry**	When activated the door stops, opens fully and then retries with dead man speed until it reaches past the point it was activated.
	☐ **Stop**	When activated the door stops.
Retry Count		Set the number of retries the door makes before it stops. **Options:** No retry / 1 / 2 / 3 / 4 / 5 / 10 / Unlimited retries

Safety Edge

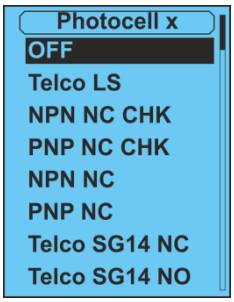


Safety edge setup:	Description:
☐ **OFF**	No safety edge connected
☐ **NO with 8K2**	Normally Open with 8K2 resistor 

WARNING

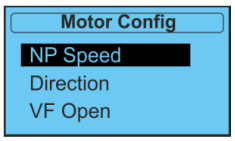
Operation without safety edge is not recommended. Please note that the installer must make sure that the system complies with the safety related standards in the specific location of installation.

Photocell types



	Description:
OFF	Photocell disabled.
D.O.T.	The integrated opto amplifier is used when system is selected. See section D.O.T. system for connection.
NPN NC	NPN NC type Photocell is used. See section NPN NC/switch type for connection.

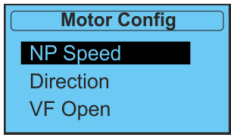
Motor config



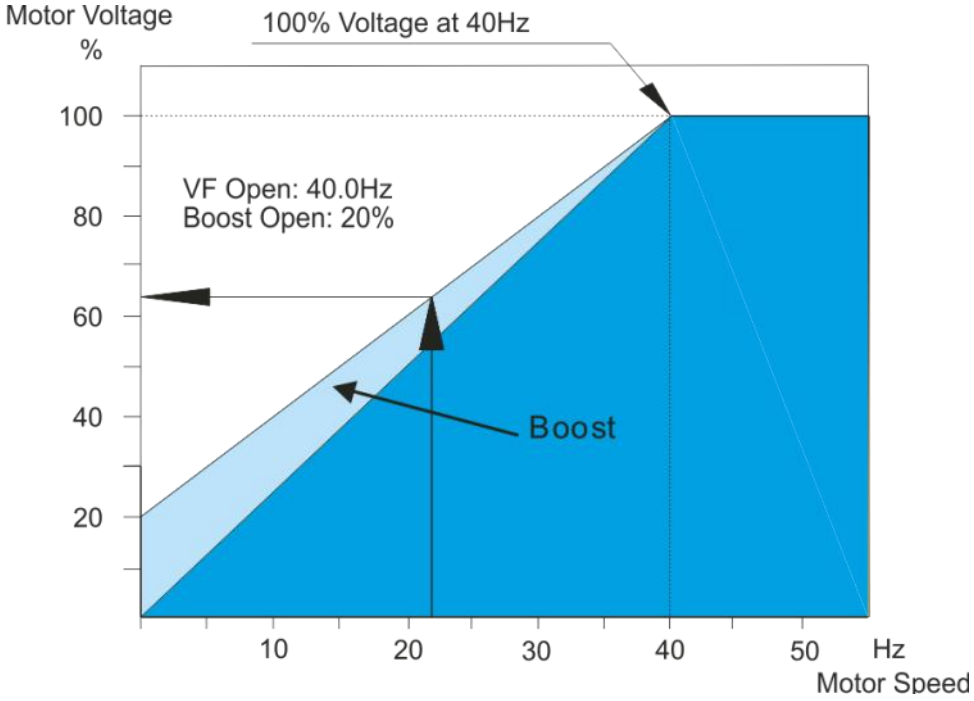
		Description:
Motor Speed		This is the normal motor speed at its given frequency i.e. 1350rpm. at 50Hz. See motor label for speed rating. This is used for the internal slip measuring.
Direction		**Motor / Encoder direction:**
	☐ **Normal**	No change
	☐ **Motor Rev**	Motor reversed
	☐ **Enc Rev.:**	Encoder reversed
	☐ **Motor & Enc Rev.**	Motor and encoder reversed
VF Open		This is the point at which the maximum voltage is delivered to the motor. **This is relevant when the door opens in automatic mode.**
VF Close		This is the point at which the maximum voltage is delivered to the motor. **This is relevant when the door closes.**
Boost Open/ Boost Close		The Torque boost increases the link voltage and thus the torque when the motor is accelerating or ramping up. If the boost is set too low the door/gate may not move, and if too high it could result in an over current event. Due to the large number of door/gate types this is individual for each installation. **This is relevant when the door opens/closes in automatic mode.**
High Boost		Changing this value enables high boost which will be used when door opens between position “Fully closed” and position “High Torque”. If parameter "high boost distance" is different from 0 the high boost feature will also activate under the conditions described in High Boost Distance. Set to 0 to disable and hence the function of High Boost distance.
Switch F. Open / Switch F. Close		Depending on the type of motor certain switch frequencies can result in unpleasant noise from the motor windings. By changing the pulse frequency in the range from 2,5 to 8,0 kHz this noise can be reduced. Recommended value: 2.5 kHz. ***Note:*** *Increasing this setting will increase the switch power loss and heat up the motor.*
Position Tol.		This sets the tolerance within which the supply can be switched off to the motor when it reaches its end of travel positions. When the door/gate reaches its position tolerance then the supply to the motor is removed and the position relays, door/gate open and door/gate closed are activated. ***Example:*** *If the "fully open" position is set at 700 and Position tolerance is set to 5 then the supply to the motor will be switched off when it reaches 695, and the door open relay will activate.*

Continued on next page...

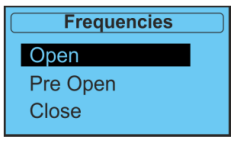
Motor config (continued)



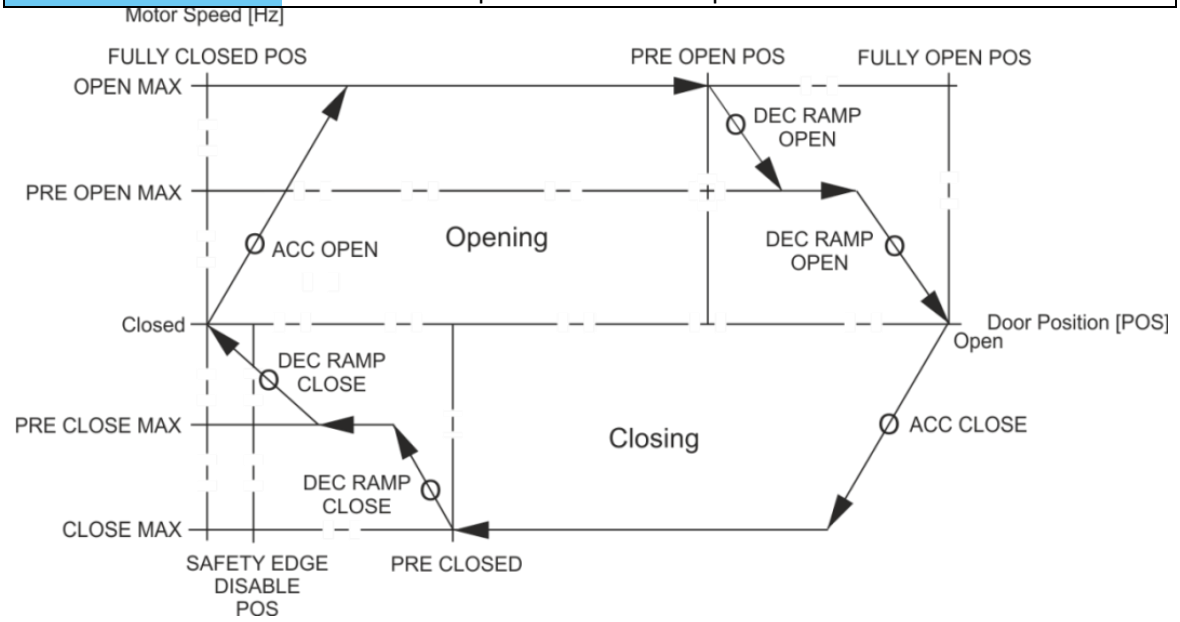
	Description:
Relay Tol.	This sets the tolerance within which the door/gate position relays remain activated. ***Example:*** If the "fully open" position is set at 700 and Position Tolerance is set to, and 5 Relay Tolerance is set to 30 then the door open relay will activate when it reaches 695. The relay will then de-activate when the door/gate closes and passes the position 670.
DC Brake Cur.	DC braking is used to inject DC current into the motor windings when the actual door/gate position is within the position tolerance at the end of travel, i.e. "fully open" or fully closed. This DC braking helps to bring the door/gate to a stop before the motor brake engages. For applications where the ambient temperature is below 0°C, DC braking can be set to prevent the drive from freezing up. "DC Brake Current" should be set to 100 so that the motor receives a constant DC current. DC Brake Time should be selected to provide the correct temperature.
DC Brake Time	
Motor Heat	Set the level of the DC heating of the motor when the door is not moving within the range of 0 to 100%. If movement is detected then the heating is turned off for 10 seconds.
F. Close	Time where the door is forced closed after the "fully closed" position is reached.
F. Open	Time where the door is forced open after the "fully open" position is reached.



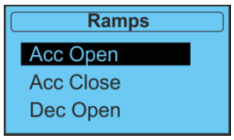
Frequencies



Event:	Description:
Open	Max speed used between closed and pre-open position.
Pre Open	Max speed used between pre-open and the "fully open" position.
Close	Max speed used between open and pre-closed position.
Pre Close	Max speed used between pre-closed and the fully closed position.
Dead man	This parameter sets the speed that the door/gate operates when it is operating under "dead man operation" or during a reference run. (dead man speed)
Minimum	Set this value equal to the motor slip.



Ramps

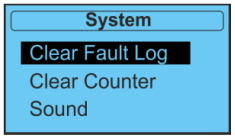


Ramp type:	Description:
Acc Open	The ramps change the rate at which the motor reaches its operating speed. The higher the value the faster the motor changes to its intended operating speed. This parameter is used when opening the door.
Acc Close	The ramps change the rate at which the motor reaches its operating speed. The higher the value the faster the motor changes to its intended operating speed. This parameter is used when closing the door.
Dec Open	Ramp down deceleration is used when the door is opening and stopping to reach the "fully open" position.
Dec Close	Ramp down deceleration is used when the door is closing and stopping to reach the "fully closed" position.
Dec Stop Open	If the door/gate is opening and the stop button is activated it will stop quickly dependant on the value set for this parameter. This parameter should be set so the door stops without excessive force on the drive mechanism.
Dec Stop Close	If the door/gate is closing and the stop button is activated it will stop quickly dependant on the value set for this parameter. This parameter should be set so the door stops without applying excessive force on the drive mechanism.
Dec Emergency	If the door/gate is closing and the safety edge is activated it will stop quickly dependant on the value set for this parameter and then reverse. This parameter should be set so the door/gate stops quickly to ensure that safe closing force is not exceeded.

Specials

		Description:
Move Assist	☐ **OFF**	Disable the "move assist" function
	☐ **OPEN**	The "move assist" function enables detection of manual movement of the door and will then react to this by opening/closing the door at dead man speed. Select direction to assist, either only open or close, or both.
	☐ **CLOSE**	
	☐ **OPEN/CLOSE**	
Move Assist Sens.		Sets the sensitivity of the "move assist".
Delta Slip		Set the sensitivity of the delta slip measuring; Set the percentage of delta slip allowed before slip error occurs.

System



	Description:
Clear Fault Log	Clear fault log. User will be prompted to acknowledge to clear log.
Clear Counter	Clear cycle counter. User will be prompted to acknowledge to clear counter to 0.
Service Limit	Set the no. of operations before the service flag is set. This value is multiplied by 100. So for instance the value of 250 equals 25000 operations.
Sound	Turn sound ON / OFF
Backlight	Turn backlight ON / OFF
Contrast	Set the display contrast
SW Update	Enter firmware update / Boot mode
System Info	Shows system information: Type / Power Size / Voltage Rating
SW Info	Displays software version
Service	Special parameter for manufacturer/service

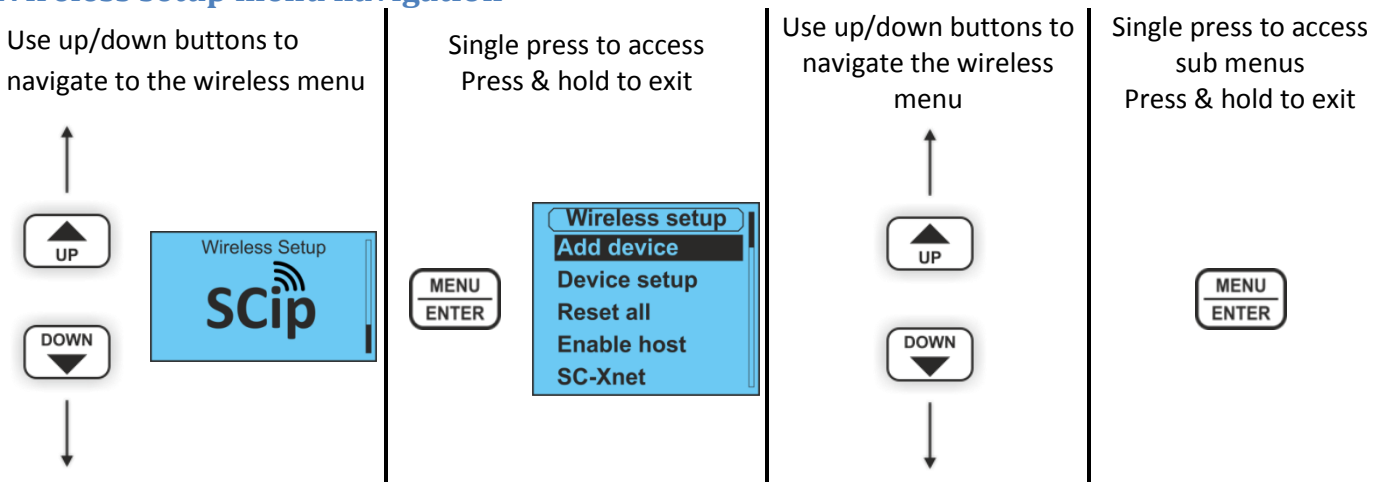
SCipBox Wireless System

The new generation of the Speed Commander Door controllers introduce the SCip wireless system, this system is designed for quick, reliable and cost-effective connection of peripherals to the system without the need for physical communication wires.

Wireless setup

The wireless setup menu includes all the necessary parameters for adding, removing and configuring SCip devices. This menu is accessed from the main menu tree by pressing the menu/enter button after selecting the system setup icon as below.
Note that some of the menus consist of additional menu levels which are accessed and navigated the same way as the first level.

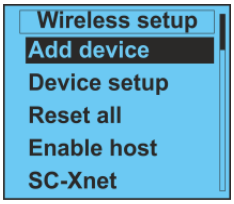
Wireless setup menu navigation



Wireless setup menu overview

Wireless setup	
Add device	This menu is for adding SCip devices
Device setup	This menu is for configuring added devices
Reset all	This menu resets all
Enable host	This menu is for enabling/disabling host antenna
SC-Xnet	This menu is for configuring SC-Xnet parameters

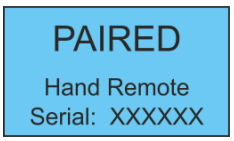
Add device



Description:

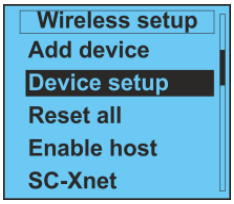
To pair an SCip device:

1. Select this menu; pairing mode is initiated. Activate SCip device(s) according to the respective manual of the device(s).
   Note: *If multiple devices must be added, activate these subsequently without exiting the pairing mode.*



2. Exit pairing mode by pressing MENU/ENTER

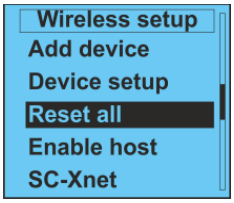
Device setup



Description:

Set up the parameters of the paired devices.
Please refer to the manual of the unit that you want to setup.

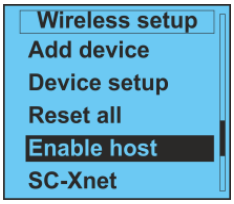
Reset all



Description:

Clears all pairing and configurations.
Reconfigures the radio channel to a random value.

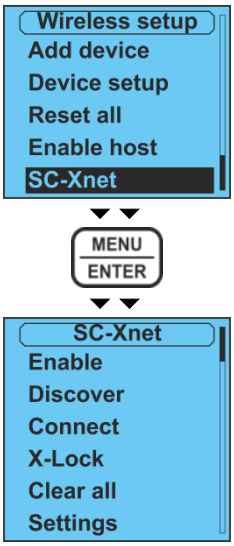
Enable host



Description:

☐ **OFF**	Check this to disable SCip host functionality
☐ **Ext**	Check this to use external SCip host device (SCip host antenna)
☐ **Internal**	Check this to use internal SCip host device (SCip host antenna)

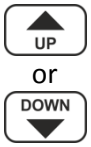
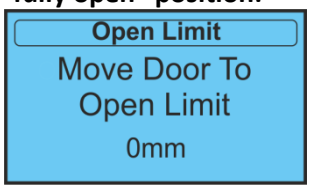
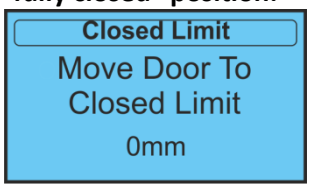
SC-Xnet



		Description:
Enable	☐ **Enable**	Enable the wireless X –net *This option requires a special hardware module connected to X2 RS485*
	☐ **Disable**	Disable the wireless X-net
Discover		Find other X-net devices in range
Connect		Allow access to other X-net devices
X-Lock		Wireless air lock for up to 5 controllers
Clear all		Reset all to Xnet settings to factory default
Settings	**Channel**	
	Network ID	

Quick setup

The quick setup makes it easy to setup the door positions, please be aware that the below procedure differs with the type of encoder used.

Step:	Display:	Action:	
1	**Check encoder direction:** 	Use **UP** button to move door in the open direction. Now check that the count is counting positive and door is moving against open position. The door stops automatically, release the button and if the direction is **OK** press **UP**, if **WRONG** press **DOWN.** Pressing **DOWN** will change the direction at this point.	
2	**"fully open" position:** 	Move the door to the "fully open" position using the **UP** or **DOWN** button. Store this position by pressing **MENU / ENTER**	
3	**"fully closed" position:** 	Now move the door to the fully closed position using the **UP** or **DOWN** button. Store the position by pressing **MENU / ENTER** **Incremental encoder:** If you are using an incremental encoder the controller will now perform a reference run to calculate the position values to be stored.	
4	**Finished:** 	Quick setup is done. The calculated are now stored. The operation mode is set to “Auto”	**Error:**  If something went wrong the error code E17 will show. Limits are reset. **Go to step 1 and try again.**

Specifications

Product label

Exterior label:

This label informs you of the model/type of the enclosed controller.

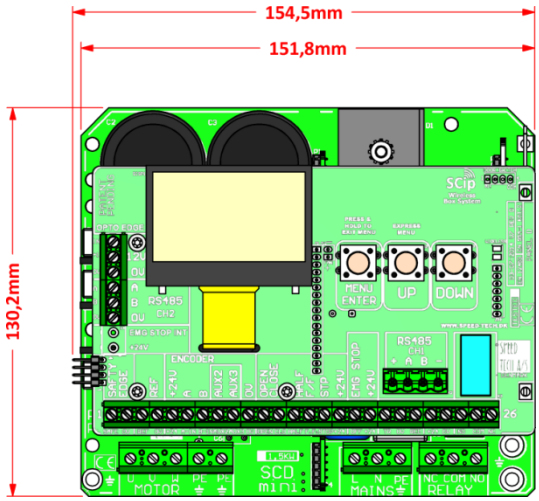
Internal PCB assembly label:

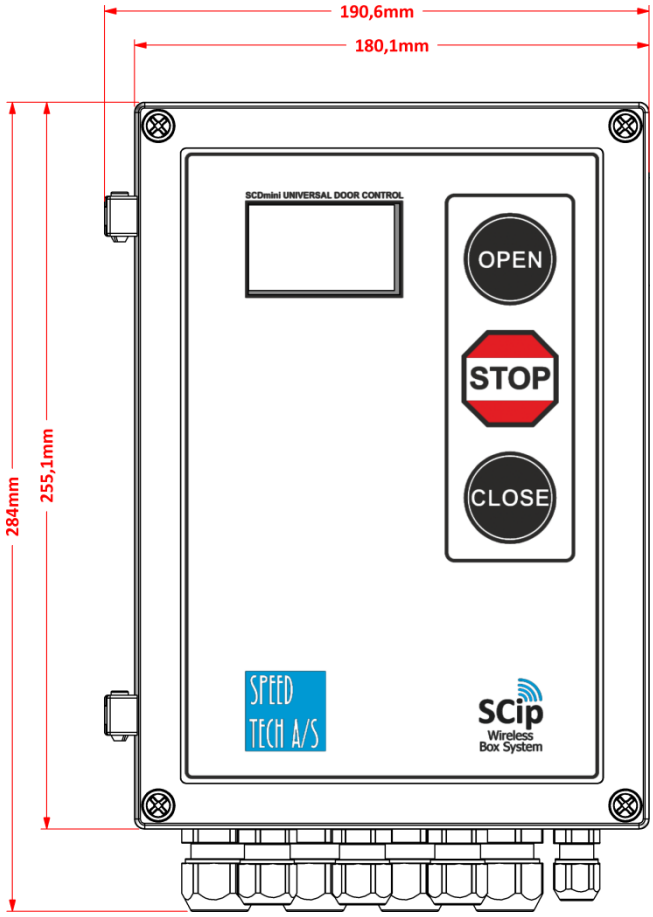
This label informs you of the controller type number, serial number, test at factory date and relevant electrical/environmental specifications.

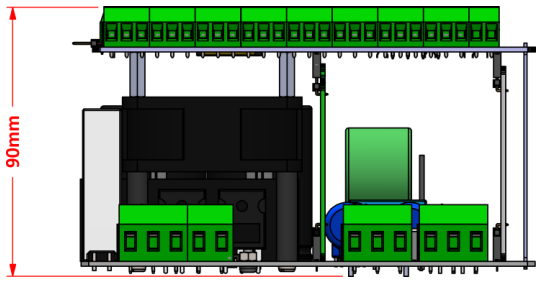
Model identification

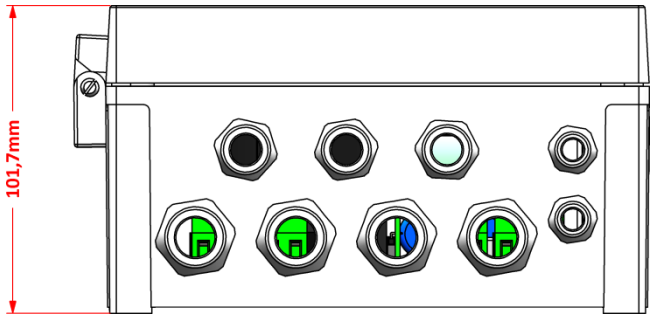
	I out		Mains input		Mains filter	Brake chopper
	3 x 4A	3 x 10A	120VAC (1 Phase)	230VAC (1 phase)		
SCD mini 750G-120	●		●		●	●
SCD mini 750G	●			●	●	
SCD mini 1500G		●		●	●	●

Mechanical dimensions









Technical specifications

IP class rating:		54	
Cooling:		Internal fan	
Altitude:		Contact supplier for installations in high altitude locations (> 1000)	
Humidity:		RH <90% (Non-condensing)	
Ambient Operating Temperature:		-10°C to +40°C	
Noise levels:		47dB (A)	
Mains power no load		5W (No load)	
Mains Input:		**110V model:** Mains voltage: 100 to 117VAC Frequency: 50/60hz Max fuse: 20A - *Curve C 6kA*	**230V model:** Mains voltage: 207 to 244VAC Frequency: 50/60hz Max fuse: *16A - Curve C 6kA* Min. wire dia. 1.5mm2 if in free space / air.
Internal power supply:		+24V – 0.5A – Fused – Monitored +12V – 0.2A – Current limited - Monitored	
Outputs:	28	12V output for O.S.E. safety edge	
	19	Exclusively used for signals to photo transmitter	
	24, 25, 26 (Relay)	Max: 1A - 24V DC / 0.5A - 120V AC	
	Power relay	Max: 5A - 240V AC	
Inputs digital:	11 to 15	12 -24V DC compatible.	
	6, 7	Quadrature inputs for encoder or standard digital inputs	
Inputs analog:	21	Exclusively used for analog signals from photo receiver	
Safety Inputs:	1, 2	Safety Edge input for 8K2 terminated edge. N.O. – Cat. 2 / P.L.d	
	27, 28, 29	O.S.E. Safety edge (opto edge terminal)	
	19, 20, 21	Photocell / Light Curtain Input – Cat 2 /P.L. d	
	17	Emergency stop	
Communications:	RS485 CH1	RS485 communications. Terminated with 120 Ohms	
	30, 31 (RS485 CH2)	RS485 communications for encoder communications. Terminated with 120 Ohms	

Appendix

Declaration of conformity

Declaration of conformity
According to EC-Machinery Directive 2006/42/EC

Manufacturer:	Speed-Tech A/S
Address:	Nybrovej 97, DK-2820 Gentofte, Denmark, www.speed-tech.dk

Herewith declare under solo responsibility that the Speed Commander Door mini controller with type markings:

Type:	SCDmini1500 V7 SCDmini750 V7
Function:	Control for opening / closing of powered industrial doors System consist of: Controller and enclosure
Applied standards:	
EN 12453	Industrial, commercial and garage doors and gates
EN 13849-1:2015	Safety of machinery -- Safety-related parts of control systems. Part 1: General principles for design
EN 60335-1	Safety of household and similar electrical appliances. Par 1: General requirements
EN 61000-6-2	Electromagnetic compatibility (EMC) – immunity.
EN 61000-6-3	Electromagnetic compatibility (EMC) – emission.

And is conformity with Low voltage directive 2006/95/EC and EMC directive 2004/108/EC.
The manufacturer furthermore declares that it is not allowed to put the equipment into service until the machinery into which it is to be incorporated, or of which it is to be a component of has been found and declared to be in conformity with the provisions of the Directive 2006/42/EC and with national implementing legislation, i.e. as whole, including the equipment referred to in this Declaration.

In response to a reasoned request by the national authorities, relevant information for this partly completed machine will be presented.

Authorized representative for the compilation of the technical documentation:
Rene Jørgensen, Speed Tech A/S, Nybrovej 97, 2820 Gentofte, Denmark

Speed-Tech A/S, DK-Gentofte, 22-09-2015

René Jørgensen, President

Troubleshooting

Error Code:	Cause:	Check:
UU	The mains voltage is too low	Check mains voltage and cabling
OV	Over voltage. Either the mains voltage is too high or the deceleration is too fast	Check mains voltage and System Config -> Ramps Deceleration. If deceleration is too fast the controller cannot dissipate the excess voltage quickly enough.
OH	Over heating inside the panel, the inverter is too hot. check ventilation.	
OC1	The drive is overloaded. The motor current exceeds the Inverter rating by 210%	Check motor connections and for mechanical obstructions.
OC2	The motor current has exceeded the inverter rating by 150% for more than 30 seconds.	Check for mechanical obstructions.
OC3	Over current whilst accelerating, the acceleration curve is too steep.	Check System Config -> Ramps
OC4	Over current event while dc brake is active.	The dc braking is too aggressive, Motor Config ->DC Brake
OC5	Severe overload, possibly permanent damage to the controller.	Check for a short, or the motor is stalled, brake not releasing, or Motor Config -> Boost too high
HE1	Low internal 12V supply.	Check I/O wiring for short or overload.
HE2	Low internal 24V supply.	Check I/O wiring for short or overload.
E01	Mechanical overload (slip monitoring) or missing signal from the encoder.	Check the encoder wiring and possible mechanical obstruction.
E02	Direction error.	Check encoder wiring. Confirm that the pulses count up while opening and down when closing the door.
E03	No signal from the encoder - (only during installation).	Check the wiring related to the encoder, and any possible mechanical obstruction.
E04	Another input than expected has been activated.	Check the position of the reference point and the reference setup.
E05	The reference switch is shorted or broken.	Check the reference switch.
E06	The reference switch input is activated at an unexpected/wrong position.	If using an incremental encoder the reference switch has activated at the wrong position, or if using limit switches, the pre-close limit switch is open circuit.
E07	Run time exceeded.	Check the run timer setting
E08	The safety edge test has failed.	Check the connections to the safety edge.
E09	Connection fault on safety edge 1.	Check the connections to safety edge 1.
E10	The safety edge 1 has been activated.	Check if there is a mechanical obstruction.
E11	Connection fault on safety edge 2.	Check the connections to safety edge 2.

Error Code:	Cause:	Check:
E12	The safety edge 2 has been activated.	Check if there is a mechanical obstruction in the door opening/closing.
E14	Communications error with the absolute limit switch	Check the wiring of the absolute limit switch.
E15	Reset limit positions failed	Redo the quick setup
E17	Fire signal present	Check input for fire signal
E18	X-net - Wireless airlock failed to authorize opening	
E19	X-net - Wireless - No response	
E21	SCip Wireless - Remote timeout	
E22	SCip Wireless - Edge timeout	
E23	SCip Wireless - Edge connection fault	
E24	SCip Wireless - Host connection fault	
E25	Safety Device test fault Ch1	Check that test signals are connected correctly
E26	Safety Device test fault Ch2	Check that test signals are connected correctly
E27	Critical input active during power up	Make sure that Inputs are not activated during power up
E28	Internal self test failed - RAM / ROM / EEPROM	Reload door profile – If problem consists contact supplier
E30	Test of safety critical inputs failed	Make sure monitored input are connected to the monitored +12V supply at terminal 28

Service

All the safety functions must be tested at least 2 times a year in accordance with the regulation. This must be done so each safety photocell, safety edge and light curtain is checked for its functionality.

Repair and disposal

WARNING! ELECTRICAL HAZARD:

Always disconnect mains supply and wait for 5 minutes before servicing the high voltage connections of the installation or the door controller.

Lethal voltages inside:
Do not take the controller apart in an attempt to repair it, this is related to serious danger and is a task for a qualified technician only.

If you need technical support or if the product is damaged please contact your supplier.

The product should be disposed and treated as WEEE (Waste Electrical and Electronic Equipment) according to national rules.

Change log

Revision:	Description:	Initials:	Date:
V1.0.0	Initial Cool-It version	ASN	31-10-2013
V1.0.1	Updated Various – New Layout with colors	ASN	09-09-2015
V1.0.2	Updated Various	ASN	09-09-2015
V1.0.3	Corrected Declaration of conformity & minor layout	ASN	22-09-2015
V1.0.4	Technical specifications section and other various updates	AEC	03-12-2015
V1.0.5	Limit switches section updated, HW revision in footer updated	AEC	08-02-2016
V1.0.6	Updated Various	AEC	10-03-2016
V1.0.7	Limit switches section updated	AEC	14-03-2016
V1.0.8	Control signal section	AEC	15-04-2016
V1.0.9	Cedes light curtain connections added	AEC	13-05-2016
V1.1.0	Cedes light curtain connections updated	AEC	07-06-2016
V1.1.1	Limit switch update	ASN	09-09-2016
V1.1.2	General Update	ASN	10-05-2017