metaflex DOORS

User Manual

(Original English Version)

Sliding-Door Automation

SDA-05 & SDA-05 PRO

Metaflex. Meet reliability.

Imprint

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Disclaimer

Service partner/dealer

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1 General

1.1 Notes on the operating instructions

These operating instructions enable you to use your device safely and efficiently.

The manual is part of the scope of delivery and must be kept accessible to the operating personnel at all times. If resold, it must be handed over to the new owner.

Due to technical development, the illustrations and descriptions used in these operating instructions may differ slightly from the delivered device.

We accept no liability for damage caused by non-observance of these operating instructions.

1.2 Symbols used

All safety instructions in these operating instructions are identified by appropriate symbols. The signs and the words at the beginning of the safety instructions express the extent of the hazard.

DANGER!
Danger of severe to fatal injuries.
▶ This combination consisting of a symbol and a signal word indicates an immediate hazardous situation, which, if not avoided, may result in death or serious injury.

WARNING!
Warning of potentially serious or fatal injuries.
▶ This combination consisting of a symbol and a signal word indicates a potentially dangerous situation that can result in death or serious injury, if not avoided.

ATTENTION!
Risk of minor injuries
▶ This combination of a symbol and a signal word indicates a dangerous situation that could result in minor or moderate injury.

Notice
Reference to possible damage to property or the environment or information in general.
▶ This combination of a symbol and a signal word stands for important information that helps to avoid damage to property or the environment.

Enumerations or listings will be depicted in the following way:

– xxx
– yyy
– zzz

Actions will be depicted in the following way:

» xxx

» yyy

» zzz

1.3 Copyright Protection

This manual and all documents supplied with the device remain copyrighted by Metaflex Doors.

Their use is recommended when using the device.

Without the express permission of Metaflex Doors, these documents may not be duplicated or made accessible to third parties, in particular to competitor companies.

1.4 Validity of the operating instructions

These operating instructions describe two versions of controllers:

– SDA-05 for standard doors and

– SDA-05 PRO for more complex doors

Software 138.xx or higher is required (displayed on PC & web interface).

2 Security

2.1 Intended use

The device is used exclusively to automate (open and close) sliding doors. The SDA-05 sliding automation is intended to be used on doors larger than 50 cm. It is intended for continuous commercial use.

Any other use or use that goes beyond this is deemed improper.

The SDA-05 is not to be used as an escape door. If an explosive atmosphere (ATEX) is to be expected, the SDA-05 must not be used.

Intended use also includes observing these operating instructions.

2.2 Basic Dangers

In principle, hazards can arise when handling electrically operated systems.

This device is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge unless they have been given supervision or instruction concerning the use of the appliance by a person responsible for their safety. Children should be supervised not to play with the device.

You should therefore observe the statutory health and safety regulations and other generally recognized safety and occupational health regulations and accident prevention regulations for power-operated work equipment.

Do not make any mechanical or electric changes to the system! The manufacturer is not liable for damage/s caused by improper modifications to the system.

For heavy doors, or doors not equipped with an opener: preferably make sure this is not the only door to the room, or in the latter case, install backup devices in case of a power failure.

Do not install additional locking devices that prevent the door from being opened in case of emergency situations.

DANGER!

The danger of crushing fingers or hands!

- ► Never place body parts in between closing door.
- ► Even if the door is equipped with safety devices, it is physically impossible to stop the door movement instantly. This danger is more present for hermetic doors. Whenever the door receives a command to reverse direction right before or in the indentation, the door will still close.

2.3 Electrical Energy Hazards

Work on electrical devices may only be carried out by qualified electricians.

During installation, observe the prescribed voltage and current values.

Check the mains connection regularly and have it replaced by qualified electricians if it is damaged.

DANGER!
Danger to life from electric current!
- ▶ Never open the SDA-05!
- ▶ Do not touch any live parts. There is an immediate danger to life from electric shock.
- ▶ Damage to the insulation or individual components can be life-threatening.

Electrical safety regulations
- Defective SDA-05 may only be repaired by Metaflex Doors or a service partner.
- Defective fuses may only be replaced by fuses of the same type.
- To connect the SDA-05 to the mains power supply, always use the included cables.
- The Mains connection cable may only be connected to a grounded outlet.
- The SDA-05 may only be used in combination with specified motors.
- Only specific combinations of Cable and motor can be used, whereby the cable may have a maximum length of 10 m.
- It is not allowed to extend the motor cable.
- For the other inputs and outputs, cables with a maximum length of 30 m may be connected. If a larger distance has to be bridged, the signal must be switched via a relay near the SDA-05.
- Modifications to the SDA-05 are not permitted, as these can impair functionality and safety.
- The settings relevant to safety may only be changed by trained personnel.
- The SDA-05 may only be used under the specified environmental conditions (see Chapter 10 Specifications). Safety cannot be guaranteed outside of these conditions.
- If the SDA-05 is being used in a situation where the environmental conditions/ atmosphere cannot be guaranteed, the SDA-05 must be placed in suitable housing (the conditions in this housing must meet the technical specifications).
- SDA-05 and the power supply must be protected against strong shocks/vibrations.
- The SDA-05 (controller and power supply) will have to be protected from frequent and rapid temperature swings.
- Safety equipment not supplied by Metaflex Doors Europe may cause damage to the SDA-05. In these cases, the warranty expires

2.4 Mechanical Hazards

The device is built according to the current state of technology, and the applicable guidelines and standards. However, residual risks may exist in the event of improper or non-intended use.

WARNING!
Warning, pinching point hazard for hands and/or fingers!
- ▶ You may only work on the drive when the door drive is fully deactivated and warning signs appropriately posted so that the door cannot be opened or closed by accident.
- ▶ Under no circumstances may you dismantle, shut down and/or bypass safety devices!

2.5 Responsibility of the operator

The operator is responsible for the:

– Installation of protective devices that detect short circuits and power failure and disconnect all the electrical phases permanently,
– Easily accessible storage of the operating instructions,
– Compliance with environmental protection regulations,
– Qualifications of the operating, maintenance and repair personnel (having gained knowledge of the operating instructions, instruction in the functioning of the system, etc.),
– carrying out a risk assessment,
– Adequate local lighting.

The manufacturer recommends that the operator have the training of the user confirmed in writing.

The responsibility for the various tasks on the system must be clearly defined and complied with so that there are no unclear competencies from a safety point of view.

Only authorized persons should have access to the operational areas of the system.

2.6 Personnel Requirements

The system may only be set up, operated and maintained by authorized, trained and instructed specialists. Their ability to react must not be impaired (e.g. due to drugs, alcohol, and medication or similar).

Only authorized persons who can:

– carry out the activities independently - safely or
– carry out the work after prior instruction under the supervision of an authorized person.

2.7 Safety Equipment

The system has various safety equipment that meets the requirement of the relevant guidelines and standards.

The system may only be put into operation if the required safety equipment, protective equipment as well as locking devices are present and working. These facilities must not be circumvented or rendered ineffective.

Safety equipment includes:

– Protective cover (cover plate) against access.
– Protective cover over the complete track with the drive system.
– Power limitation in the drive motor.
– Various safety sensors.

If the force required to close the door is too high, it causes the driver to move back at a slow speed.

2.8 Behaviour in the event of danger and accidents

Shut down the system immediately in the event of danger or accidents.

Consult a doctor immediately in the event of injury.

2.9 Warning and information signs

Depending on the system layout, the following notices and warning signs are present.

Damaged or removed notices or warning signs are to be renewed immediately.

Warning or information sign	Meaning	Location
	Type label	Power supply, controller, motor, battery pack charger
	Electrical voltage warning	Power supply, controller, battery pack

2.10 Maintenance and repair work

Authorized, trained, specialist personnel may only carry out maintenance and repair work. These personnel are authorized to carry out the required activities and can recognize thereby avoiding possible dangers. They must demonstrate knowledge of the relevant safety standards, and applicable regulations, in particular, accident prevention regulations and must have read the operating instructions.

To ensure the operational safety of the system, the recommended periods for maintenance work must be observed.

Before carrying out repair and maintenance work, secure the system against unauthorized, accidental or unexpected starting up/ switching on of the system and against dangerous movements due to stored energy.

2.11 Environmental Protection

During all maintenance and assembly work, observe the applicable environmental protection regulations, e.g.:

- the Ordinance on Hazardous Substances
- the Water Resources Act
- the Waste Management
- the Waste Documentation Ordinance

3 Layout and function

3.1 Layout

The SDA-05 is an automation for sliding doors, both hermetic and non-hermetic. The automation consists of a controller, power supply and motor.

There are two versions of the controller, namely the SDA-05 and SDA-05 PRO. The general layout is the same, but the SDA-05 PRO has more connection options and therefore more available functionalities.

As for power supply, there are two options available; a power supply with a transformer, and one with batteries.

Specific motors are selected to be used with the controller, both DC and brushless DC types.

The sliding door automation comes as a set of power supply, controller and motor.

3.1.1 SDA-05 PRO

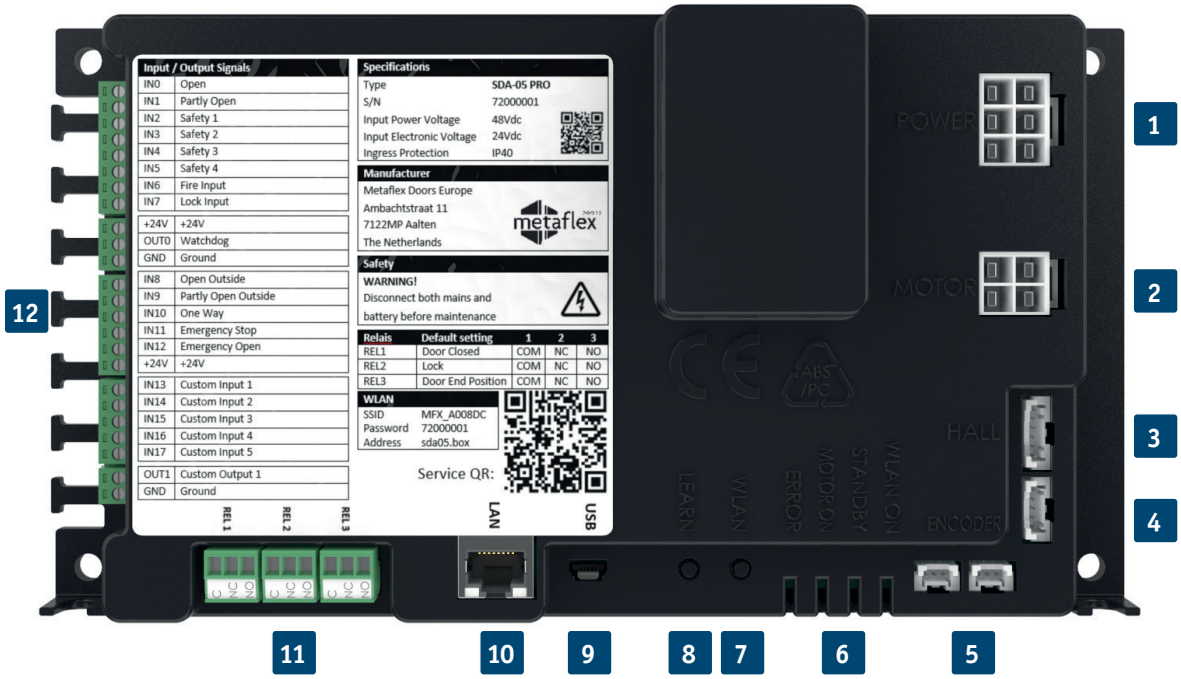


Fig. 1: Connections on the SDA-05 PRO

1 Power supply connector
2 Motor connection
3 Hall connection
4 Encoder connection
5 2x CAN connection
6 LED indicators
7 Button to activate the WLAN
8 Button to start the self-teaching function
9 Mini USB interface
10 LAN interface (BACnet)
11 Relays
12 Inputs and outputs

3.1.2 SDA-05

Fig. 2: Connections on the SDA-05 standard

1 Power supply connector
2 Motor connection
3 Hall connection
4 Encoder connection
5 CAN connection
6 LED indicators
7 Button to activate the WLAN
8 Button to start the self-teaching function
9 Inputs and outputs

3.2 LED-Indicators

The SDA-05 is equipped with four status LED lights. These are positioned at the front of the controller (6) and have the following meaning:

Red LED	Green LED	Yellow LED	Blue LED	Meaning
Flashes quickly	Flashes quickly	Flashes quickly		Door auto setup running
Flashes slowly	Flashes slowly	Flashes slowly		Door auto setup (reset and setup) running
	on			Ready, no error
	Flashes slowly			Door moving
	Flashes quickly			Door ready, but no auto setup is done
on				Error in PLC
on		on		Error in motor
			Flashes slowly	WLAN starting
			on	WLAN Active

Slowly means ± 1 x per second, Quickly means ±5 x per second

3.3 Function

The SDA-05 ensures the automatic opening and closing of a sliding door system.

All movements of the drive are electronically controlled.

Many functions and parameters are programmed by default. Some parameters can be changed by the user.

The web interface can be used for this.

3.4 Features

3.4.1 Main features

- User friendly
- High level of safety (active safety devices)
- Automatic restart and calibration after power failure
- Automatic door set-up
- Smart connectivity
- Low noise level

3.4.2 Specific Properties

- Various types of switches and sensors can be connected to the door to bring the door into pre-set positions (partly open and fully open)
- Some of the inputs of the SDA-05 are pre-set to enable functions.
- Var'ous fire protection modes
- Electromechanical locking by using motor power
- PC and web interface for easy setup and maintenance.
- Extended log and debug functions for maintenance and problem diagnosis.
- Multiple interface options: Wi-Fi, CAN, USB and LAN (BAC Net)
- Self-adjustment (auto-adaptive): When switched on, the door carries out a complete learning cycle and is automatically ready for operation again after a power failure.
- Pull & Go: Allows for easy opening of heavier doors by hand.
- Pull & Go with winter setting: Door opens fully when Pull & Go is set to fully open even when the winter setting is active.
- Self-monitoring system: the door stops safely in the event of a malfunction and displays detailed information about the nature of the error.
- Always Locked: The door is automatically locked when in the closed position, so the door can only be opened using switches.
- Winter settings: The door can only be opened partly when the „Full Open“ button is pressed once, and fully when pressed twice.
- Partly to fully: The door opens fully when the partial open switch is pressed twice.
- Additional closing force: The door can be configured in a way to use additional self-closing force, with two different modes that can be used separately or in combination:
  A: Briefly press with high force to make sure the seals are properly closed.
  B: Press continuously with little force to make sure the door stays closed.

- Safety Sensors: The door can be equipped with up to four sensors (with or without self-test) that can be individually set for opening or closing.
- Sensitive Safety: The SDA-05 recognizes automatically a blockage of the door and reacts accordingly (see Chapter 5 Installation and commissioning).
- Automatic door setup (Automatic door setup): The door starts a learning cycle to detect the end positions, the door direction, the sensitivity of the blockage detection, etc. This can be started via the interface or via the buttons on the SDA-05 itself to allow for setup without the need for an additional computer.
- Auto Rehoming: The door can be set to automatically reference when closing to avoid errors due to door wear (e.g. belt extension).
- Interlock via CAN-Bus: Easy interlock possibilities for up to 10 doors.

3.4.3 Additional Properties for the SDA-05 PRO version

- Electromechanical (inter)locking via relays
- Some of the inputs are programmable to enable various functions (programmable relays).
- Emergency stop and emergency open
- USB and LAN (BACNet) interface options

3.5 Layout of the power supply

Fig. 3: Left side-view of the power supply

1 Power connection to the SDA-05

Fig. 4: Right side-view of the power supply

1 Mains connection (appliance plug, IEC C13), with replaceable fuse*

2 Main switch

3 Extension plugs [PS-xxxVA-C only]

*Fuse type PS250A: glass fuse 20 x 5mm 250 VAC 2A medium slow
*Fuse type PS500A: glass fuse 20 x 5mm 250 VAC 4A medium slow

Two power-supplies can be connected in cascade for heavy door-systems.

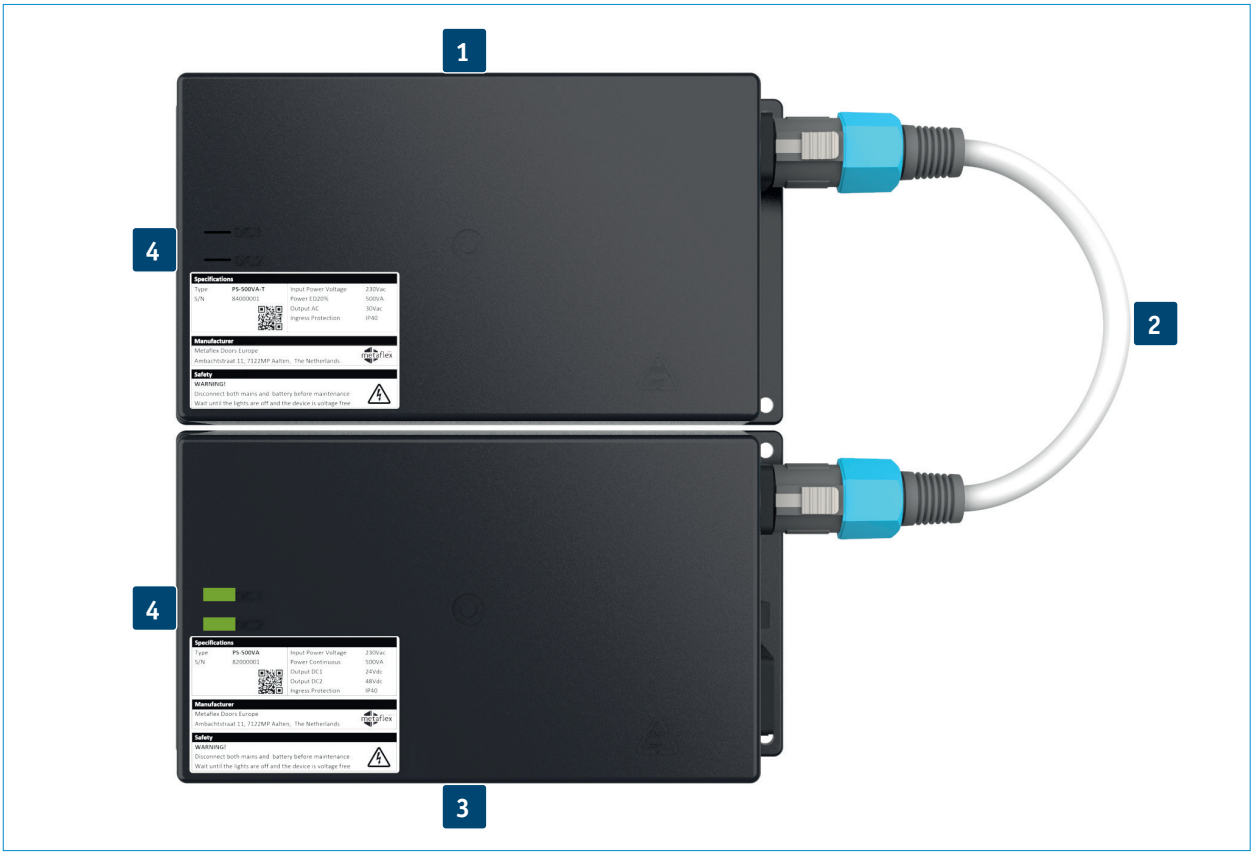


Fig. 5: Two Power supply units in cascade (for particularly heavy doors)

1 PSxxxVA-C (Master power supply with main switch and cascade connection

2 Cascade cable

3 PSxxxVA-T (additional slave power supply with connection to the master power supply

4 LED indicators DC1 and DC2 (for all power supplies)

3.6 Battery pack SDA-05

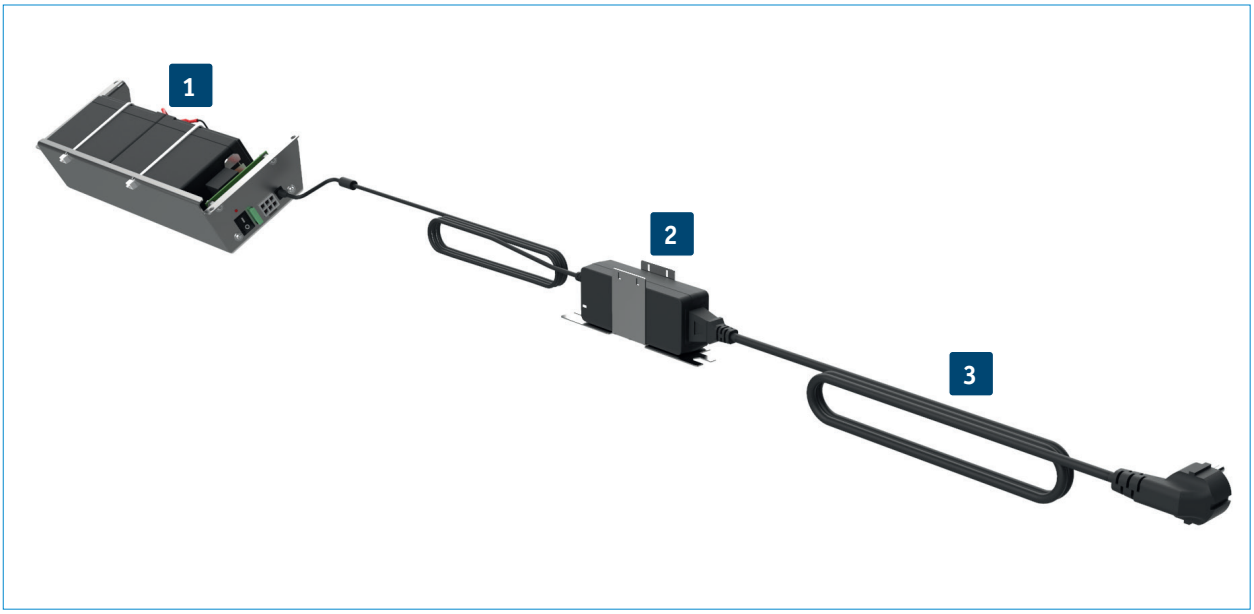


Fig. 6: System layout battery pack

1 Battery pack
2 Charger
3 Power cable

Fig. 7: Connection view battery pack

1 Charger connector
2 Power connection to the SDA-05
3 Fuse*
4 Power button with LED indicator

*Fuse type: 32 V ATO blade fuse 30 A

Remarks:

- The power button disconnects the SDA-05 but not the charger from the battery.
- Only the original Metaflex charger is to be used!
- Batteries must be replaced after 3 years at the latest or if the performance deteriorates.
- Batteries must be protected from cold environments to achieve full performance.
- When replacing the battery, it is advisable to keep the charger connected.
- Even after disconnecting the mains connection, the batteries remain under charge.

3.7 Electrical connections

In this chapter, all the electrical connections to the in- and outputs of the SDA-05 and SDA-05 PRO controller are described.

3.7.1 Input and Output

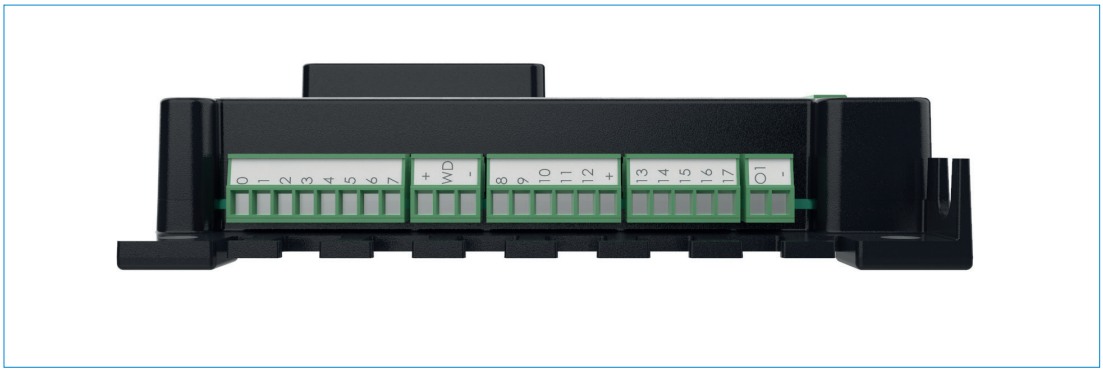


Fig. 8: Inputs and outputs (pro version)

The input and output of the SDA-05 are all designed for 24 V DC. The opening inputs (0, 1, 8 and 9) are intended for the use of buttons.

Lock, One way, unlock and stay open (6, 10, 15 and 16) are intended to be used with a switch. The lock feedback (13) is used by the mechanical lock to confirm the door has been successfully locked.

The safety inputs (2, 3, 4 and 5) and output (WD) are used for the safety sensors.

Fire input, Emergency Open and Emergency Stop (6, 11 and 12) are “Normally Closed” to ensure protection in the event of a wire break. This means they must be connected to a 24V power supply continuously when not in use, and the function is activated when the 24V is disconnected.

The custom inputs can be programmed with various functions, but are assigned default functions.

Input/output	Name
0	Open
1	Partly open
2	Safety 1
3	Safety 2
4	Safety 3
5	Safety 4
6	Fire input
7	Lock input
+	+24 V
WD	Watchdog
-	Ground

The following in- and outputs can be found on the PRO version only.

Input/output	Name
8	Open Outside
9	Partly Open Outside
10	One Way
11	Emergency stop
12	Emergency open
+	+24V
13	Custom input 1 (Lock Feedback)
14	Custom input 2 (Interlock Contact)
15	Custom input 3 (Unlock Feedback)
16	Custom input 4 (Stay Open)
17	Custom input 5 (WLAN/Learn)
01	Custom Output 1
-	Ground

3.7.2 Relays

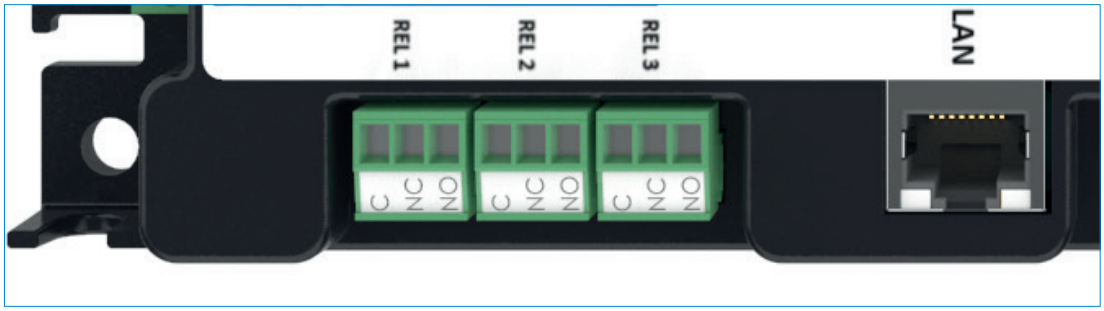


Fig. 9: Relays

The SDA-05 PRO has three relays that can each switch 24 VDC or 250 VAC at 8 amp. They can be configured by software. The relays must be protected against capacitive and inductive loads.

Relays	Name	Function (Default)
REL 1	NO	Door closed
	NC	
	C (COM)	
REL 2	NO	Door locked
	NC	
	C (COM)	
REL 3	NO	Door in end position
	NC	
	C (COM)	

4 Transport and storage

4.1 Safety instructions for transport and storage

The transportation of the door system may only be carried out by authorized, trained and instructed personnel who have the appropriate knowledge.

DANGER!
Injury through failing of protective equipment!
- ▶ When transporting the system, use the prescribed personal protective equipment e.g.
- ▶ Safety shoes
- ▶ Protective safety gloves and
- ▶ Safety helmet to protect from falling parts

Notice!
Possible damage to property.
- ▶ Do not subject the system to shock or impact
- ▶ Protect the system from moisture!

4.2 Transport

Tip
The SDA-05 can also be installed on a track or in suitable housing.

The sliding door automation is delivered professionally packaged, and the weight of the SDA-05 is approx. 0.5 kg, the power supply is approx. 3kg and the battery pack is approx. 4 kg plus packaging.

4.3 Storage

Keep the sliding door automation system under the following environmental conditions:
- – Temperature: -20 °C ... +60 °C
- – Relative humidity: max. 95 % (non-condensing).

5 Installation and commissioning

5.1 Safety instructions for assembly and commissioning

Authorized, trained and instructed personnel who have the appropriate knowledge may only carry out the assembly of all equipment and the initial commissioning of the sliding door automation.

The door controller is adjusted to the options and/or accessories agreed upon with the (end) user. The relevant options are laid down during the handover. You can add optional/accessories afterwards. Please contact Metaflex Doors or one of its dealers for this. Doors should always be delivered fully tested.

DANGER!

Danger to life from electric current!

- ▶ Never open the SDA-05 or the power supply!
- ▶ Do not touch any live parts. There is an immediate risk of death from electric shock.
- ▶ Damage to the insulation or individual components can be life threatening.

WARNING!

Crushing Warning!

- ▶ Set the safety sensors correctly and check them for function!

When a closing sensor is activated before closing the door will remain open until the sensor is deactivated before closing

When a closing sensor is activated during closing the door will stop, open again and wait until the sensor is deactivated before closing

When an opening sensor is activated before opening or during initial opening (<50 cm) the door will open 50 cm in Low Energy mode. The door will wait until the sensor is deactivated before opening further.

When an opening sensor is activated during opening (>50cm) the door will stop and wait until the sensor is deactivated before opening further.

For sensors with test signal (watchdog): the door will check if the sensor is working before opening or closing. In case of a defect sensor, the door will only move in low energy mode

Notice!

Malfunctions while operating when the ambient temperature is too high!

- ▶ Make sure that the heat generated by the controller and the power supply can be adequately dissipated.

6 Configuration

As the (end) user of an SDA-05, you have the option of changing some parameters yourself. You can use the web interface for this.

In the following, the special features will first be discussed. This is followed by a universal description of how to use the web interface.

WARNING!
Warning of incorrect settings!
► Never give the password to untrained people!

6.1 Web-Interface

6.1.1 Connection to SDA-05

Tip

After 5 min without connection, the WLAN automatically turns off

Only one device can be simultaneously connected to the SDA-05

Step 1:

To access the web interface, you must first turn on the WLAN.

» Press the button labelled “WLAN” (1), blue light should turn on.

Fig. 10: WLAN button

Step 2:

» After the WLAN is turned on, scan the service QR code (2) on the SDA-05 and press connect on your device. The connection between your device and the controller WLAN should be established automatically

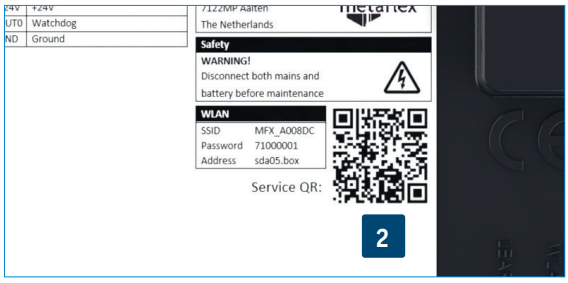


Fig. 11: QR-code WLAN

Alternatively, you can connect your device to the SDA-05‘s network by entering the network standard name (starting with „MFX_“) and the door-specific password. Both can be found on the sticker of the SDA-05 next to the QR code.

6.1.2 Navigating Web-Interface

» » If you are connected to the WLAN of the SDA-05, go into your internet browser and type the address „sda05.box“. Alternatively, the address “192.168.1.1” can be used if „sda05.box“ does not work.

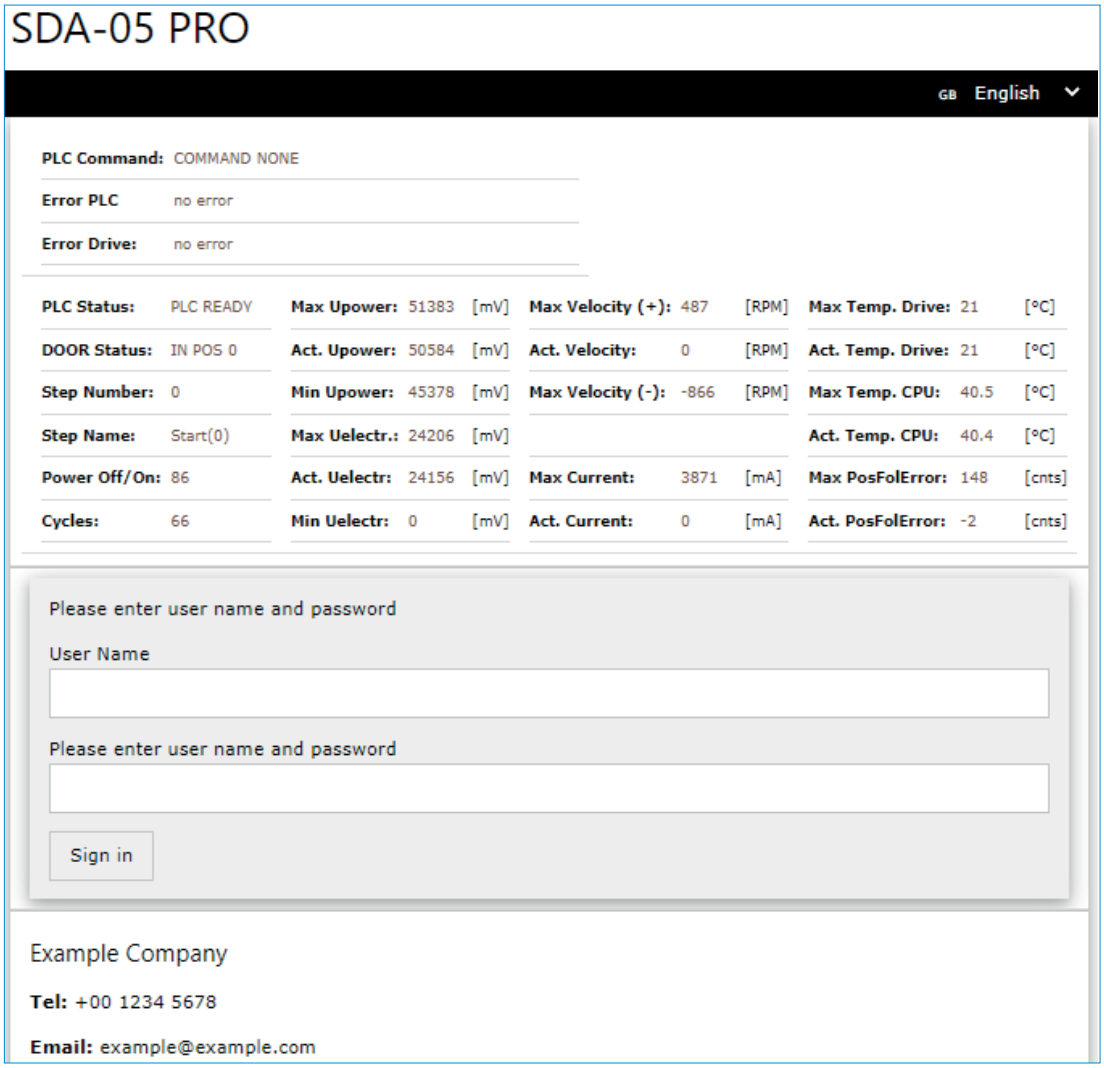


Fig. 12: Home SDA-05 (PRO)

On the home page of your SDA-05, you can already read out important information for a correct error description.

You will find the currently pending drive command and, if applicable, the error codes. Underneath are other useful data about the door. In the lower area, you will find the login fields to access the settings. At the bottom, you may find information on how to contact your service partner.

For the end user, the following login details can be used:

User name: user

Password: user

Note:

The SDA-05 can be accessed from any WLAN-compatible device. It is recommended to use a device with a display of 8“ or larger, in landscape orientation for easier access.

Tip

There is no internet connection once connected to the SDA-05.

If the network is connected, but the page does not want to load, try shutting down the mobile network on your device, and/or a different browser.

6.1.3 Changing language Web-interface

The user has the option to choose one of four languages

– English (default),
– Nederlands (Dutch),
– Deutsch (German) and
– Français (French).

This option is only available after logging in and is accessible on the top right of the home page.

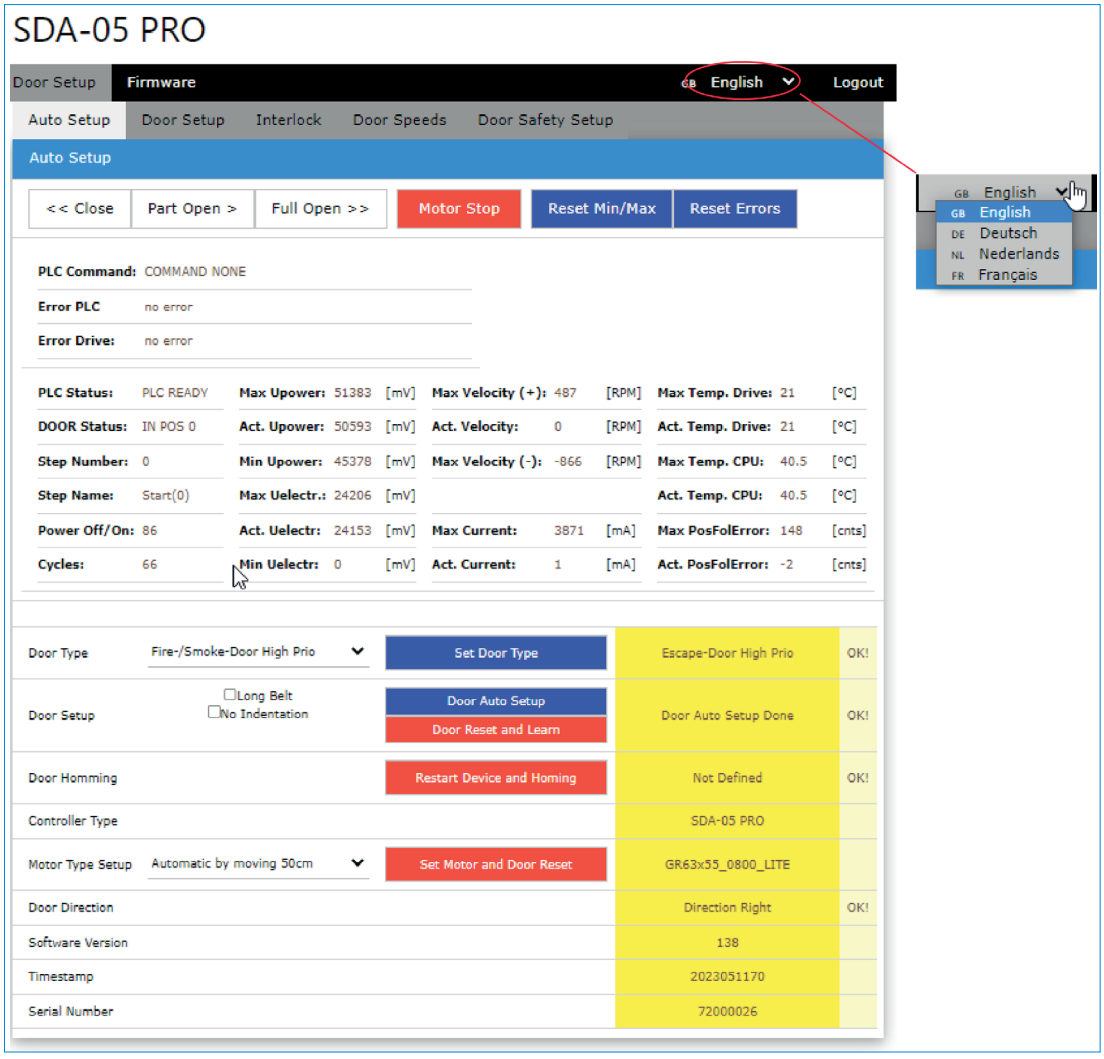


Fig. 13: Language change – Web interface

6.2 Operation

6.2.1 Auto-Setup

Path:
- ▶ *Door Setup*
- ▶ *Auto Setup*

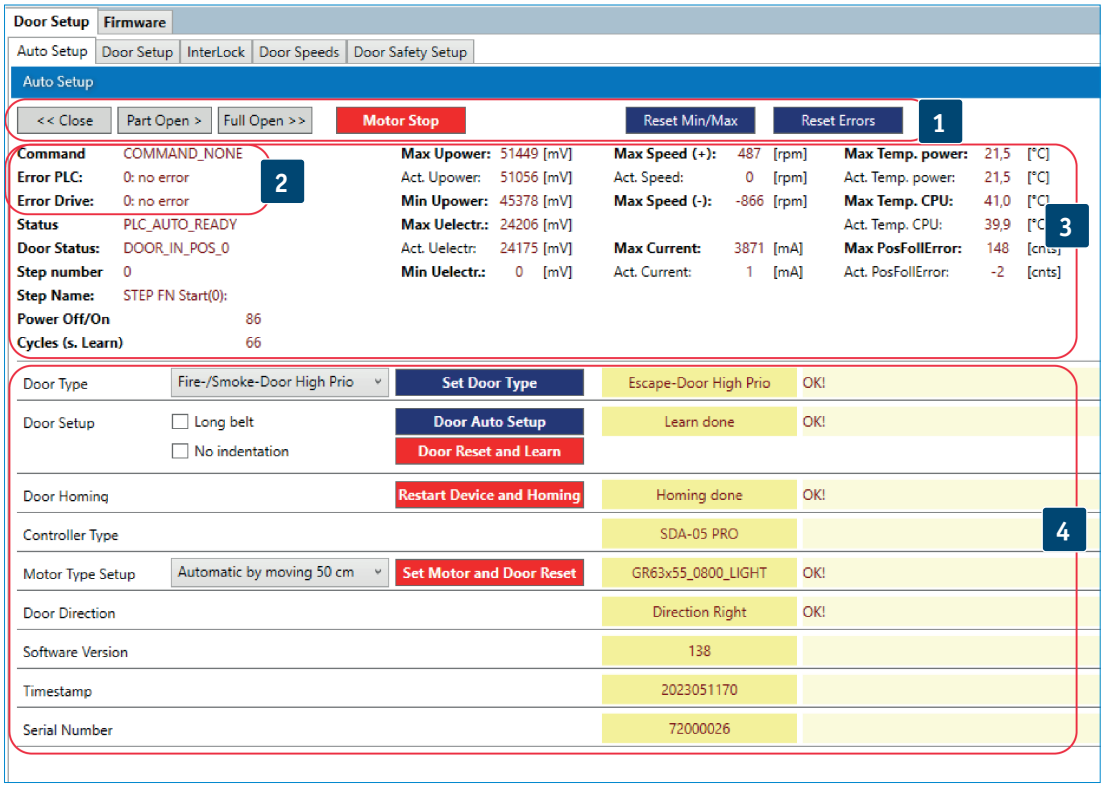


Fig. 14: "Auto-setup" view

Tip

If you use the software keys to open or close, some functions may be overridden!

Control buttons (1)

The „Close", „Part Open" and „Full Open" buttons are operating buttons for the door. When clicked, the door executes the corresponding command. The buttons only work after the door setup procedure has been executed.

The „Motor Stop" button interrupts the current movement and may also only be used for test purposes.

Buttons may only be used for test purposes. You must be in close proximity to the door and have a clear view of the door.

The „Reset Min/Max" button refers to the underlying statistics (5) and resets them.

The „Reset Error" button is used to acknowledge serious or safety-relevant errors. All other errors are automatically acknowledged when the next command to move is given.

DANGER!

The danger of crushing can cause fatal injuries!

- ▶ There must be no persons in the door area!
- ▶ When using the software buttons for opening or closing some functions can be overridden.

Active command and error (2)

The active command is shown and any active errors are present. If there are any errors, they can be reset using the control buttons above, reset errors (1).

Statistics (3)

Beneath the controls are helpful statistics and values. These are updated cyclically.

Similar to errors, these values can be reset using the above button, Reset Min/Max (1).

Tip

On the left is the setting, and on the right (yellow) is the status.

Controls for automatic door setup (4)

„Door Auto Setup“

To make the setup process easier, the auto setup feature will be used. The door self-learns the relevant parameters required for its operation. These include, but are not limited to, parameter set current, positions etc. This can be enabled by the Start door auto setup button::

– Start door auto setup:
  If the „Start Door Auto Setup“ (or „LEARN“ button on the SDA-05 controller for 5 seconds) is pressed, the door starts a learning cycle without resetting previous settings. Only the end positions, the currents and the following error are verified here.

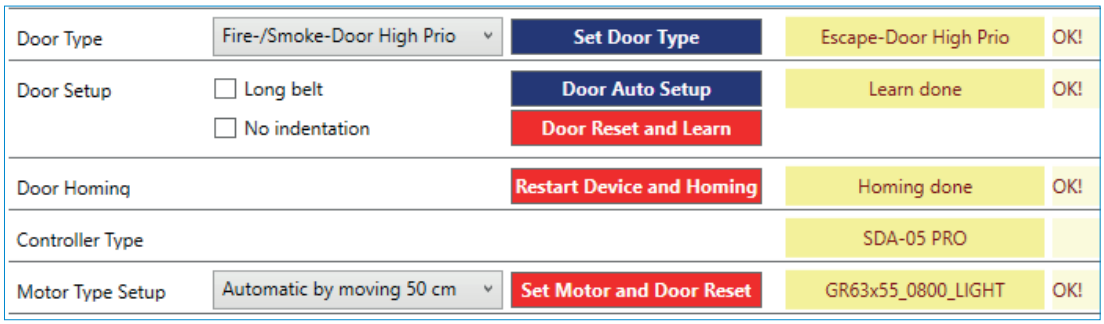


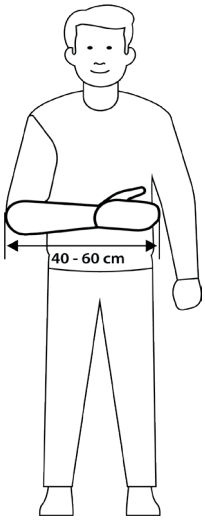
Fig. 15: Door Auto Setup view

Before starting the learning cycle, the door must be in a position on the track, where it can be moved 40-60 cm in the opening direction. For doors without an opener or heavy doors with bowl handles, it is recommended not to close the door all the way.

DANGER!

The danger of crushing can cause fatal injuries!

- ▶ Make sure to clear the whole passage area before starting and during the learning cycle!
- ▶ Never leave the learning cycle unattended till its completion (no safety features are working at this point)!
- ▶ Moving the door too far, or not far enough might cause a different motor to be detected, which can cause unexpected behaviour!



The door must be opened manually to start the learning cycle:

» Press the appropriate button on the software (1) or press and hold the “LEARN” (2) button on the controller for at least 5 sec, until the LEDs start blinking..

» Manually move the door smoothly in the open direction approximately 40-60 cm. Make sure this step is done within 20 sec after the LEDs start blinking.

If the above action is not completed within the 20-sec interval, the learning cycle stops

» Wait 3 seconds and start again. The door will now automatically starts the learning cycle.

Tip

In general, the length from the tip of the fingers to the elbow is between 40-60 cm

"Door homing"

Reset Device and Homing - > SDA-05 perform a restart and then a reference run to find its end position.

"Controller Type"

This field displays the auto-detected type of controller.

„Door Direction“

This displays the direction in which the door will move from its closed position.

„Software Version“

This displays the latest software version installed on the controller.

„Timestamp“

This is the software version date, and the last two digits represent the software sub version(in this case 70).

„Serial Number“

This is a unique number each controller is assigned.

Path:
- ▶ *Door Setup*
- ▶ *Door Setup*

6.2.2 Door-Setup

Parameters for the door behaviour are set here. The parameter table structure always follows the same logic:

– Name of the parameter (1)
– Current value (grey) (2)
– “SET” (3) button which sets the new value in the controller
– Text field (4) for the new value
– Short description (5) of what the value means.

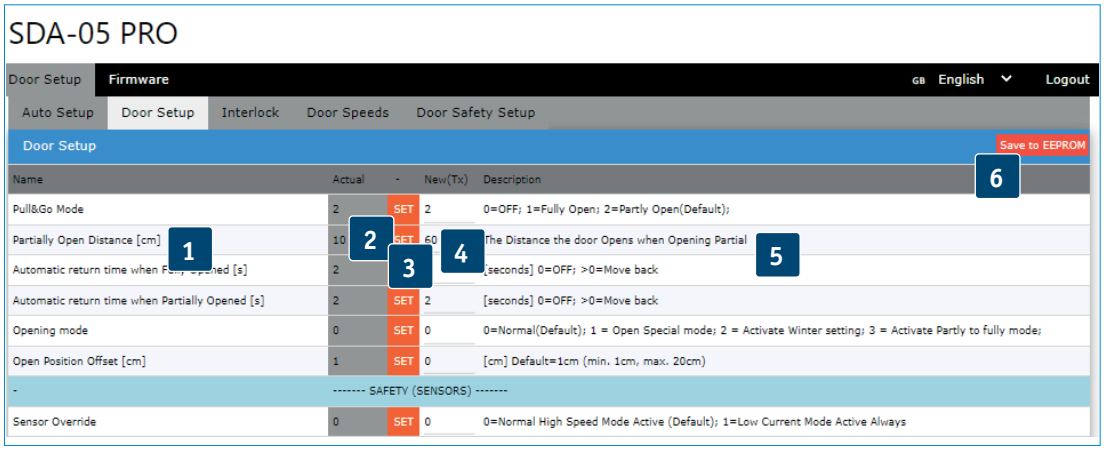


Fig. 16: “Door-setup“ view

Example:

– Name: “Partially Open Distance[cm]”
– Current value: „10“ -> the partially open position moves 10 cm from closed position (movement on the rail, not the actual opening)
– New, desired value: „60“ (cm) -> Partially open position of 60 cm

» Press the „SET“ button to accept the new value.

This setting is only temporary and can be used for testing.

» Press the „Save to EEPROM“ (6) button to save your current settings

This permanently stores the setting in the SDA-05.

Notice!

- Shutdown the controller and turn it back on, to check if everything is saved in EEPROM.
- Save to EEPROM only saves the current tab page, make sure to save all tab pages separately.

6.3 Special Pages Web Interface

Path:
- ▶ *Firmware*
- ▶ *Home Info*

6.3.1 Home Info

The web interface offers the option of displaying contact details on the start page see Figure 16. It is recommended to fill out the contact details of the service provider or in-house technician here.

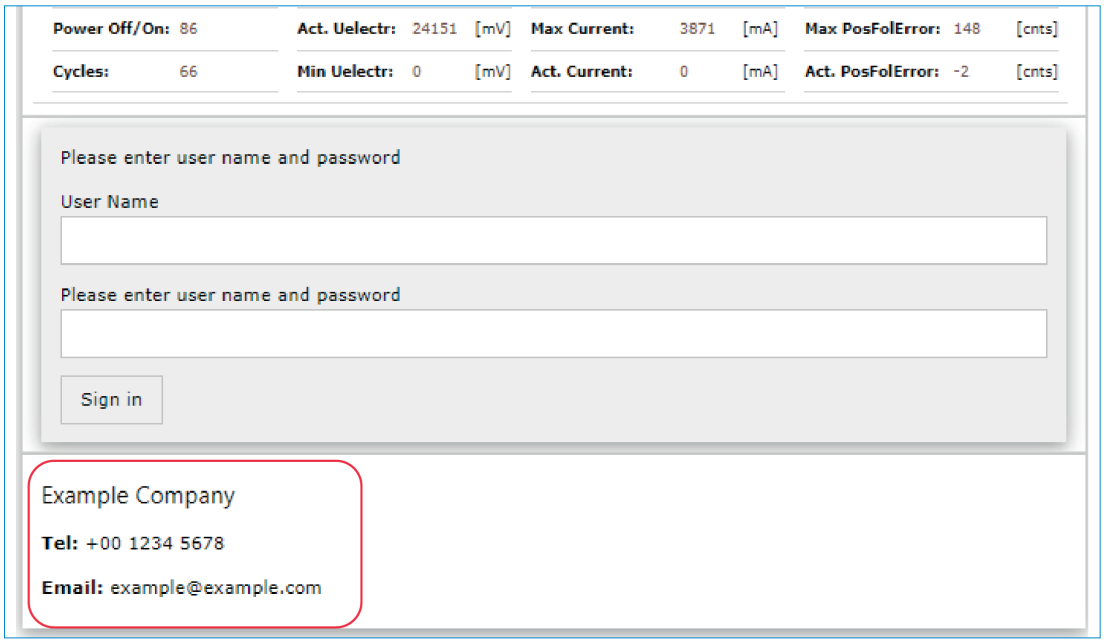


Fig. 17: „Home Info“ view (contact details entered

– To enter these details, connect and log on to the web interface as described in “6.1 Web-Interface”.
– Go to tab page firmware and subpage home info.
– In the text field “Home Info Text” the text is filled out.

The contact data is stored in HTML format, which offers you several personalization options.

In short, it works as follows: before the text, the format (and size) is written in between <> and after the text, the formatting is closed using </>.

A header has a number displaying the size, with 1 being the largest. To start the first line with for instance a header size 4 write: “<h4>” then write the text you want displayed and end with </h4>.

For every next line, start with paragraph then the text you want to be displayed and end with . Parts of the text can be formatted in bold or italics by using in front to start the bold part and to end the bold part. For italic use in front and in the end.

Example:

N<h4> *Example Company* </h4>

Tel: *+00 1234 5678*

E-Mail: *example@example.com*

» After you have made your adjustments, click on the „Save“ button (1).

» If you click on „Logout“ (2), you will return to the start page and can check your entry.

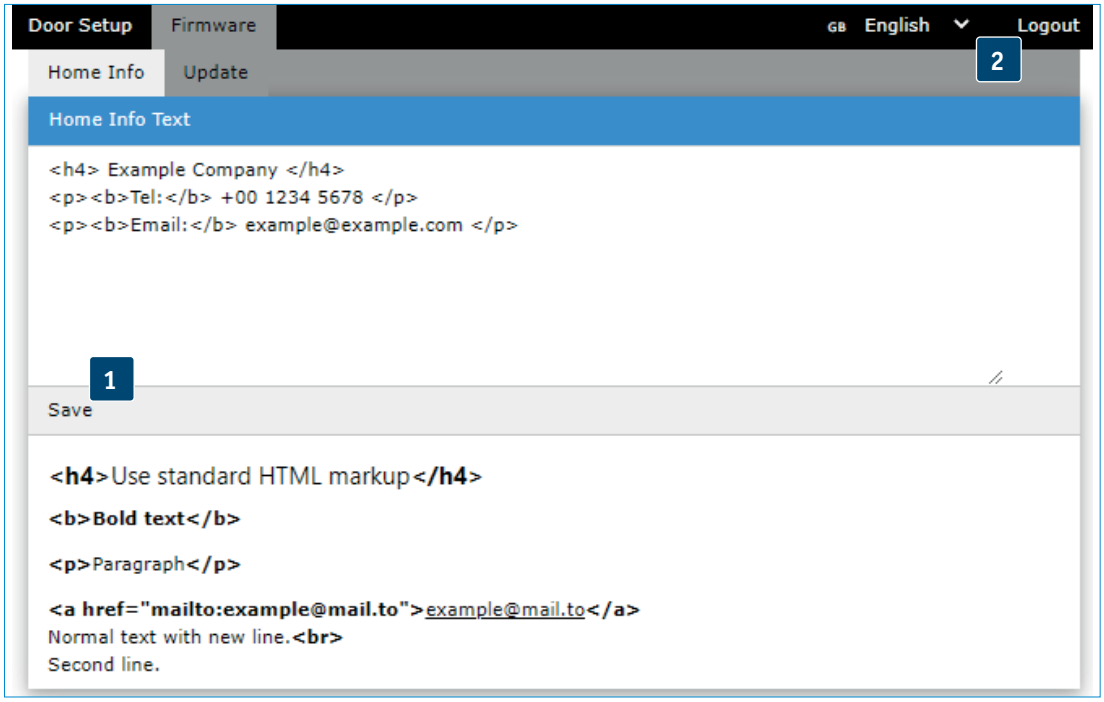


Fig. 18: “Home Info“ view

For further customisation, a hyperlink to an email address can be made using the following code:

example@mail.com .

This will display the email address in blue and underlined, example@mail.com when clicked the used device will open the email program and starts an email to the mentioned address.

The command <br> can be used behind the previous or in front of the new line, to start a new line. This will give less line spacing than a paragraph, there is no need to end this command, the next <br> can be used.

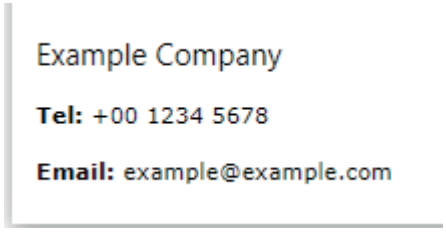


Fig. 19: Ansicht „Firmware Update“ PC-Interface

Path:

- ▶ *Door Setup*
- ▶ *Door Setup*

Tip

Some parameter settings are not available without a login code.

6.4 Parameter

The functions have been explained, in the previous chapter. This chapter gives a more detailed explanation of the various option that can be selected and their behaviour.

6.4.1 Door setup

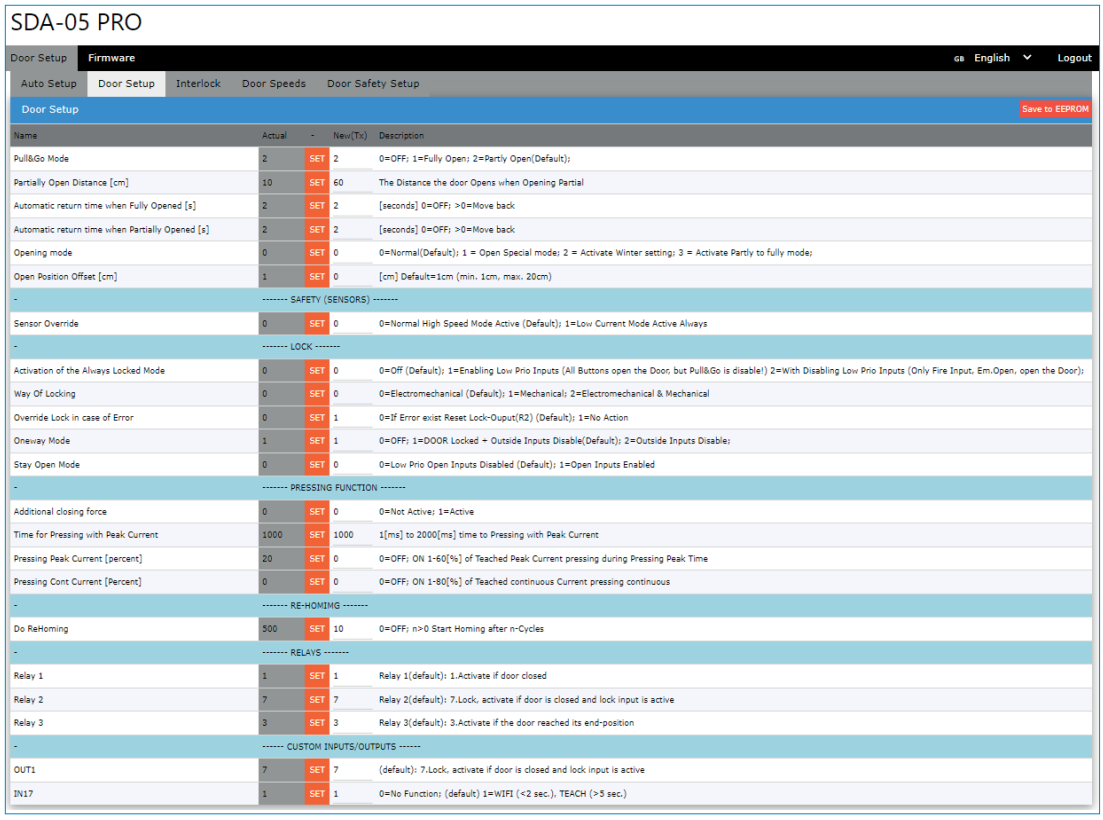


Fig. 20: Door setup view

Mode	Function
Pull&Go	If the door is opened manually and Pull&Go is active, the door will support opening. 0: OFF 1: The door is fully opened 2: The door is partially opened Notice: Pull & Go with winter setting: Door opens fully when Pull & Go is set to fully open even when the winter setting is active. Safety sensor with winter setting: When the door is closing and the safety sensor is active, the door opens fully when triggered even in the winter setting.
Partially open Distance [cm]	This parameter defines the opening width for a partial opening in cm; Maximum is the fully open position.
Automatic return time when fully opened [s]	0: After reaching the end position(fully open), the door waits for the same input to be triggered again or for another movement command. > 0: value = time in seconds after which the door is automatically closed.
Automatic return time when partial opened [s]	0: After reaching the end position(partial), the door waits for the same input to be triggered again or for another movement command. > 0: value = time in seconds after which the door is automatically closed.
Opening Mode	0: Not active 1: Open Special mode - Allow Pressing Full Open to change direction when the button is pressed again 2: Activate winter setting - The door will only partially open on a full-open command. If the command is triggered twice, the door opens fully. 3: Activate partly to fully mode - If the partially open inputs are triggered twice, the door Fully opens instead.
Open Position Offset (cm)	This offsets the door opening distance from the open end.

Tipp

The opening width is the movement distance on the track of 60 cm (+/-5 cm)

Mode	Function
Sensor override	When this mode is active, the door moves in a safe low current setting without checking the safety sensors. 0: Normal – High-speed mode active 1: Low Current Mode Active Always
Activation of locked mode	0: OFF 1: The door automatically enters “Locked” mode when closing.This mode is set via "Type of locking". The door can still be opened via the opener inputs, but not manually. 2: The door automatically enters the locked mode when closing, and can only be opened by the fire or emergency open input.

6.4.2 Behavior of the safety features

Behaviour for safety sensors should be:

– When a closing sensor is activated before closing the door will remain open until the sensor is deactivated before closing.
– When a closing sensor is activated during closing the door will stop, open again and wait until the sensor is deactivated before closing.
– When an opening sensor is activated before opening or during initial opening (<50 cm) the door will open 50cm in Low Energy mode. The door will wait until the sensor is deactivated before opening further.
– When an opening sensor is activated during opening (>50cm) the door will stop and wait until the sensor is deactivated before opening further.
– For sensors with test signal (watchdog): the door will check if the sensor is working before opening or closing. In case of a defective sensor, the door will only move in low energy mode.

WARNING!
Crushing Warning!
► Set up the safety sensors correctly and confirm the operation after initial setup and/ or adjustment of the settings.

Behaviour for emergency stop:

– The motor stops when the emergency stop is activated.
– Motor is de-energized and can be moved by hand.
– When the sliding area is cleared, the emergency stop can be deactivated.
– Then an open command (partial or fully open) will reset the door, after which the door will resume normal operation.
– When lock function is active before deactivating the emergency stop, then the door will close, without waiting for a reset input. In case a safety sensor is active, the door will close in low energy mode, if not in normal behaviour (also reacting so safety sensors).

Behaviour for Fire-/Smoke-Door High Prio:

– Closes the door in case of fire, and closes automatically if it is opened manually. If a safety sensor is active during the closing, the door will switch to low energy mode and continue closing. This is to avoid smoke or malfunctioning safety sensors from preventing the door to close.
– The opening inputs are disabled.

– When “One Way” , “Interlock” or “Lock” input is active, these will get overruled, and the door opens and closes automatically.
– Pull and go is enabled and is set to partly open.

Behaviour for Fire-/Smoke-Door Low Prio:
– Closes the door in case of fire, and closes automatically again after the door is opened. If a safety sensor is active during the closing, the door will switch to low energy mode and continue closing. This to prevent smoke or malfunctioning safety sensors from preventing the door to close.
– When “One Way” or “Interlock” or “Lock” input is active, these will get overruled, and the door opens and closes automatically.
– The opening inputs remain active, both partially open and fully open will fully open the door.
– Pull and go is enabled and is set to partly open.

Behaviour for Escape Door (setting for the fire input):
– The door will open when the input gets activated. When “One Way” or “Interlock” or “Lock” input is active, these will get overruled, and the door opens.
– When the signal is deactivated the door will remain open and waits for a reset signal from either fully open or partially open. However in case lock signal is present, the door will close first (still needs a reset signal from an open input after the lock is deactivated).

Behaviour for Emergency open:
– The door will open when the input gets activated. When “One Way” or “Interlock” or “Lock” input is active, these will get overruled, and the door remains open.
– When deactivating the “Emergency open” the door will close immediately, and does not wait for a reset signal.
– When lock function is active before deactivating the emergency open, then the door will close, without waiting for a reset input. In case a safety sensor is active, the door will close in low enegy mode, if not in normal behaviour (also reacting so safety sensors).

Behaviour for Emergency open (Deactivate Lock):
– The door will overrule all the lock inputs but does not open. It deactivated the “One Way” or “Interlock” or “Lock” input, and therefore open commands can be used again.

Behaviour for Emergency open (Timer Active):
– The door will open when the input gets activated. When “One Way” or “Interlock” or “Lock” input is active, these will get overruled, and the door opens.
– The door closes after the specified time.
– When lock function is active before deactivating the emergency open, then the door will close, without waiting for a reset input. In case a safety sensor is active, the door will close in low enegy mode, if not in normal behaviour (also reacting so safety sensors).

7 Maintenance

7.1 Safety instructions for maintenance

Maintenance and repair work on the device may only be carried out by trained specialists. The power supply is disconnected by the responsible electrician and secured against being switched on again. Be careful there can be stored energy in the system, especially with batteries.

The manufacturer‘s specialist staff is available for major repair work.

DANGER!

Danger to life from electric current!

- ► Never open the SDA-05!
- ► Do not touch any live parts. There is an immediate risk of death from electric shock.
- ► Damage to the insulation or individual components can be life-threatening

Notice!

Malfunctions due to wetness!

- ► Only clean the SDA-05 with a slightly damp cloth!

7.2 Performing Maintenance

Contact your service partner or Metaflex Doors for required maintenance work.

8 Troubleshooting

In the event of an error, first, try to restart the controller. You have two options to restart.

1. Turn off the power supply and wait until the LEDs on the controller are off. Then turn on the power again.
2. Use the web or PC interface and press the red button „Restart Device and Homing“ under *Door Setup -> Auto Setup*.

The SDA-05 restarts and the door moves to the closed position. The door then resumes normal operation.

If the door is not ready for operation, check the web or PC interface to see whether the door is in an error state.

Path:
- ▶ *Door Setup*
- ▶ *Auto Setup*

In the web interface:

On the start page, you can see the current door command and error codes at the top.

Below you will find the current values of the door. Check that the values are within the normal range, especially the power and electronics voltage.

Depending on the power supply/battery and motor, the voltage may vary. In any case, however, it must be 24 V or more.

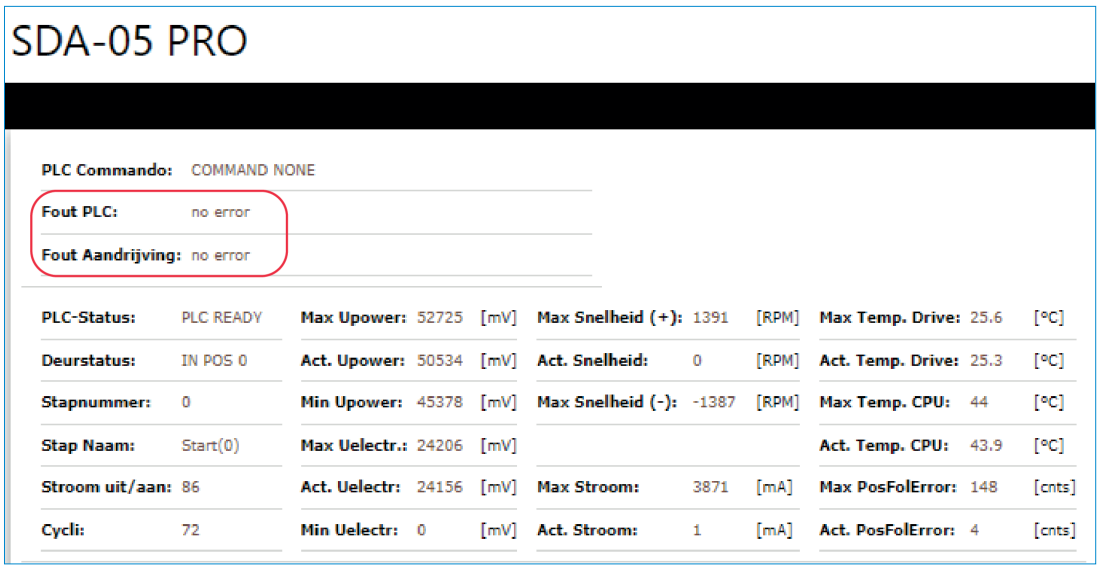


Fig. 21: Error – Web-Interface

8.1 Overview of error codes

WARNING!
Crushing Warning!
▶ Be careful when recommissioning the door!
Uncontrolled movements can occur after a fault.

Error code and Name	Cause	Elimination
-10000 overcurrent	SDA-05 or motor has been overloaded	Repeat the door learning cycle.
		Decrease acceleration ramps (make ramps smoother).
-10001 Over Voltage	SDA-05 has detected too-high voltage	Repeat the door learning cycle
		Decrease the deceleration ramp (soften the ramp) and/or decrease the target speed of the door.
		Power supply defect
-10002 Under voltage	SDA-05 has detected too low voltage	Repeat the door learning cycle.
		Check whether the power voltage is present.
		Decrease acceleration ramps (make ramps softer).
		Feel if the powersupply is hot, and let it cool down in case it is hot.
-10003 Motor over temperature	Motor is overheated	Decrease the acceleration and deceleration ramps and/or decrease the target speed of the door.
		Make sure that the motor and the SDA-05 are sufficiently ventilated
-10004 Over temperature controller	SDA-05 has overheated	Decrease acceleration and deceleration ramps and/or decrease the target speed of the door.
		Make sure that the motor and the SDA-05 is sufficiently ventilated.
-10005 following error	The door did not meet its target values	Repeat the door learning cycle.
		Decrease the acceleration and deceleration ramps and/or decrease the target speed of the door.
-10006 Hall sensor error	Feedback from the motor Hall sensor has failed or is disturbed	Check the motor cables and plugs for correct seating and cable integrity
		Contact your service partner or Metaflex
-10007 encoder error	Feedback from the motor encoder has failed or is faulty	Check the motor cables and plugs for correct seating and cable integrity
		Contact your service partner or Metaflex.
-10008 FOC Runtime	SDA-05 has a problem with the motor control	Repeat the door learning cycle.
		Contact your service partner or Metaflex.
-10009 Software error	General software error	If this error occurs again after a restart: Contact your service partner or Metaflex
-10010 Hardware error	General hardware error	If this error occurs again after a restart: Contact your service partner or Metaflex.
-10011 DC motor encoder	Only for brushed DC motors Feedback from the motor encoder has failed or is faulty	Check the motor cables and plugs for correct seating and cable integrity
		Contact your service partner or Metaflex.

Error code and Name	Cause	Elimination
-12040 / 12041 Incorrect Motor	When the wrong motor is selected	Perform reset and learn cycle, make sure to set motor type to: “automatic by moving 50cm”
		Contact your service partner or Metaflex.
-15210 Movement Timeout	Door did not reach its destination within the set timeout	If the door is particularly large: Contact your service partner or Metaflex.
		Check the condition of the mechanics (gears and belts)
		Increase the acceleration and deceleration ramps and/or increase the target speed of the door.

Observed behaviour	Cause	Elimination
Especially large door swings or moves badly/irregular	large doors have a long toothbelt which can cause swinging behaviour.	Activate the option "BG75 Long Belt" in the settings and repeat the door learning cycle.
		Contact your service partner or Metaflex.
Sensor or switch does not have the desired function	Cables may be improperly routed or incorrectly connected	Check the settings under Door Setup -> Door Setup.
		Check in the PC interface whether the signals are recognized by the controller.
		Check the control lines and plugs for correct seating and cable integrity.
Loud noise when moving	Damaged motor, damaged mechanics, wrong motor settings	Check the condition of the mechanics.
		Wrong settings are used for motor
		Contact your service partner or Metaflex
Door does not close	Wrong connection or damaged component	Check normally closed contact (IN6, IN11, IN12)
		Check safety input (IN2-IN5)
		Replace defective safety components
		Check for physical blockage or obstruction
		Contact your service partner or Metaflex
Door does not open or fully open (~50cm)	Wrong connection or damaged safety sensor for opening	Check safety input (IN2-IN5)
		Replace defective safety components
		Contact your service partner or Metaflex
Door opens/closes slowly	Wrong connection or damaged safety sensor with test input (watchdog)	Check safety input (IN2-IN5)
		Replace defective safety components
		Check overwrite parameter
	Sensor overwrite active	Contact your service partner or Metaflex
Door will try to move, but lacks power	Defect power supply	Check power supply
	Empty or defective batteries*	Check the battery pack, charger, fuse and PCB
	Power supply or motor to hot	Check software for voltage-related error
		Check if the power supply or motor is hot and let it cool down (temporarily stop usage)
	Increased friction due to mechanical wear	Check if the door can easily be moved by hand
		Contact your service partner or Metaflex

* If the batteries are empty temporarily disconnect the SDA-05 from battery pack to let batteries charge.

9 Dismantling and Disposal

9.1 Safety instructions for dismantling

DANGER!
Danger to life from electric current!
- ▶ Never open the SDA-05!
- ▶ Do not touch any live parts. There is an immediate risk of death from electric shock.
- ▶ Pay attention to batteries that have energy stored, even when disconnected.

WARNING!
Warning of crushing hands and/or fingers!
- ▶ You may only work on the drive when the door drive is deactivated and warning signs are posted so that the door cannot be opened or closed unnoticed.
- ▶ Under no circumstances may you dismantle, shut down and/or bridge safety devices!

9.2 Disassembly

Once the device has reached the end of its useful life, it must be dismantled and disposed of in an environmentally friendly manner.

» Dismantle all parts of the device.

9.3 Disposal

If no return or disposal agreement has been made, recycle the dismantled components:
- – Scrap metals
- – Hand in plastic elements for recycling
- – Dispose of electronic waste properly.
- – Dispose of batteries properly

10 Specifications

10.1 Technical data SDA-05 & SDA-05 PRO

Technical data	Unit	Value
Input power voltage	Volt DC	24 to 48
Input electronic voltage	Volt DC	24 to 30
Power consumption standby	Watt	1.5
Power consumption maximum	Watt	2
Ambient operating temperature in use	ºC	-20 ... +60
Ambient operating temperature in storage	ºC	-25 ... +60
Ingress Protection	-	IP40
Humidity	%	10-95 (Non-condensing)
Dimensions (LxWxH)	mm	242x130x41
Weight	Kg	0,5
Power supply voltage for accessories*	Volt DC	24 to 30
Power supply current for accessories (per output)	mA	Max 750
Input/output voltage signals*	Volt DC	24 to 30
Input/output current signals	mA	Max 250
Relays (only resistive loads)	Volt DC	24 (max 8 A)
	Volt AC	250 (max 8 A)
*It depends on the voltage from power supply (battery pack ~28-29 V)		

10.2 Technical specifications Power supply (250 VA/500 VA/2x500 VA

Technical data	Unit	Value
Primary (supply) voltage	Volt AC	230 ±20 %
Net frequency	Hz	45-65
Power consumption 250 VA	VA	250 (ED20 %)
Power consumption 500 VA	VA	500 (ED20 %)
Power consumption 2x500 VA	VA	2x500 (ED20 %)
Ambient operating temperature in use	ºC	-20 ... +60
Ambient operating temperature in storage	ºC	-25 ... +60
Ingress Protection	-	IP40
Humidity	%	10-95 (Non-condensing)
Dimensions (LxWxH)	mm	242x130x69
Weight	kg	3

10.3 Technical specifications Battery pack

Technical data	Unit	Value
Primary (supply) voltage	Volt AC	90-264
Net frequency	Hz	47-63
Power consumption	Watt	60
Ambient operating temperature in use	ºC	+25 ...+30
Ambient operating temperature in storage	ºC	-15 ... +40
Ingress Protection	-	-
Humidity	%	20-90 (Non-condensing)
Dimensions (LxWxH)	mm	386x135x78
Weight	kg	5
Battery type	Maintenance-free Sealed Lead-acid Battery 12V 7.0 Ah (2x)	
Battery weight (single)	kg	2,4

10.4 Dimensions

10.4.1 Dimensions SDA-05 and SDA-05 PRO

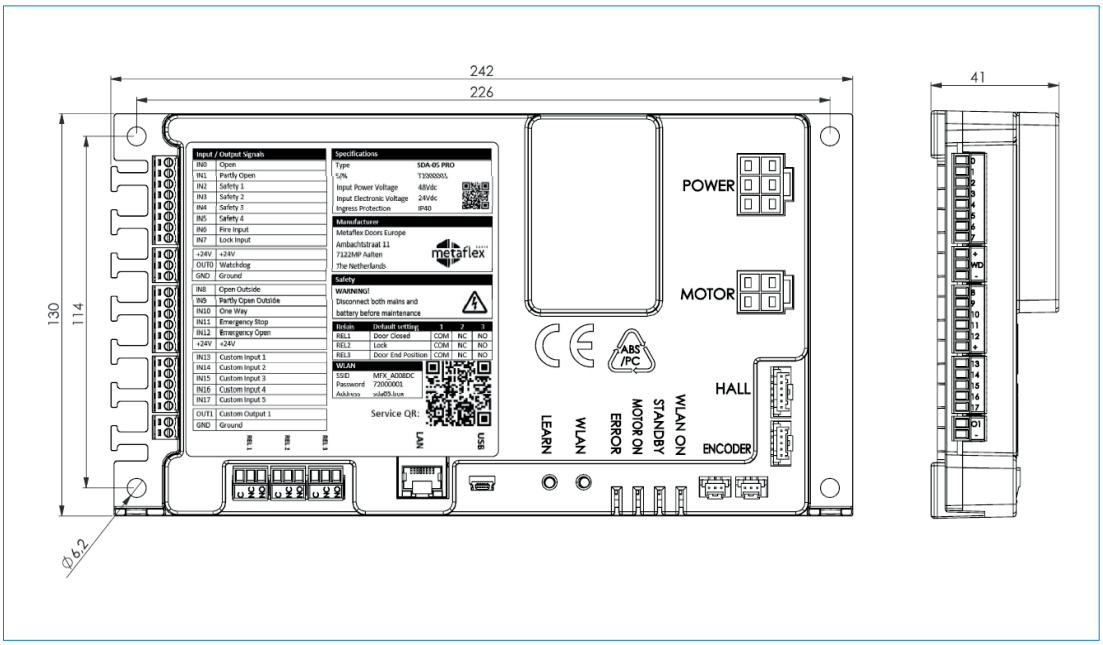


Fig. 22: Dimensions SDA-05 and SDA-05 PRO

10.4.2 Dimensions Powersupply PSxxxVA-xx

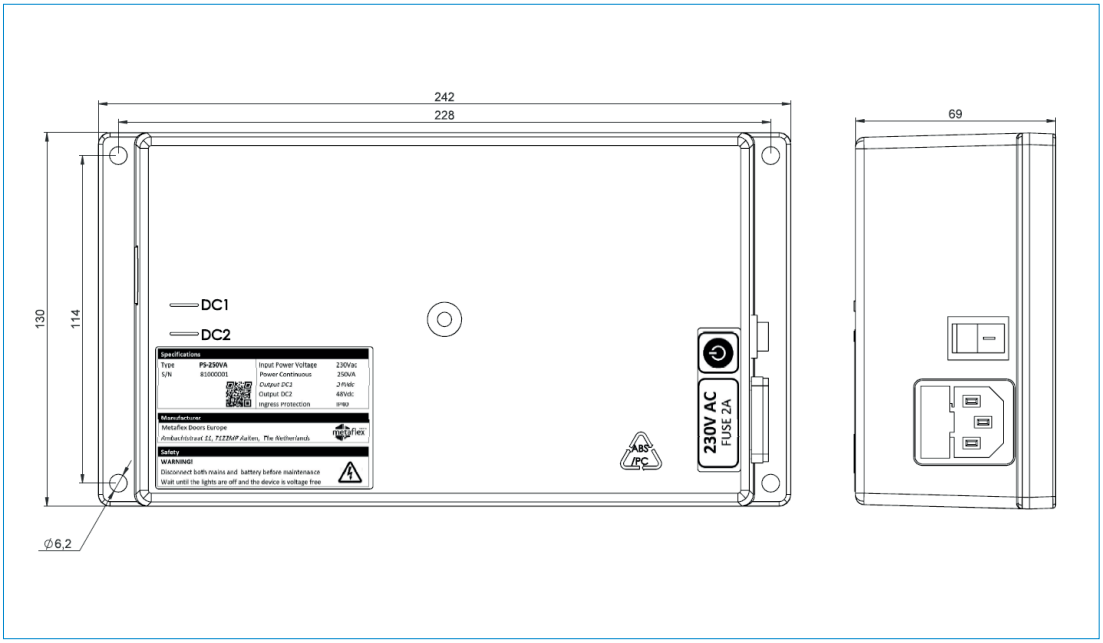


Fig. 23: Dimensions Powersupply PSxxxVA-xx

10.4.3 Dimensions Battery Pack SDA-05

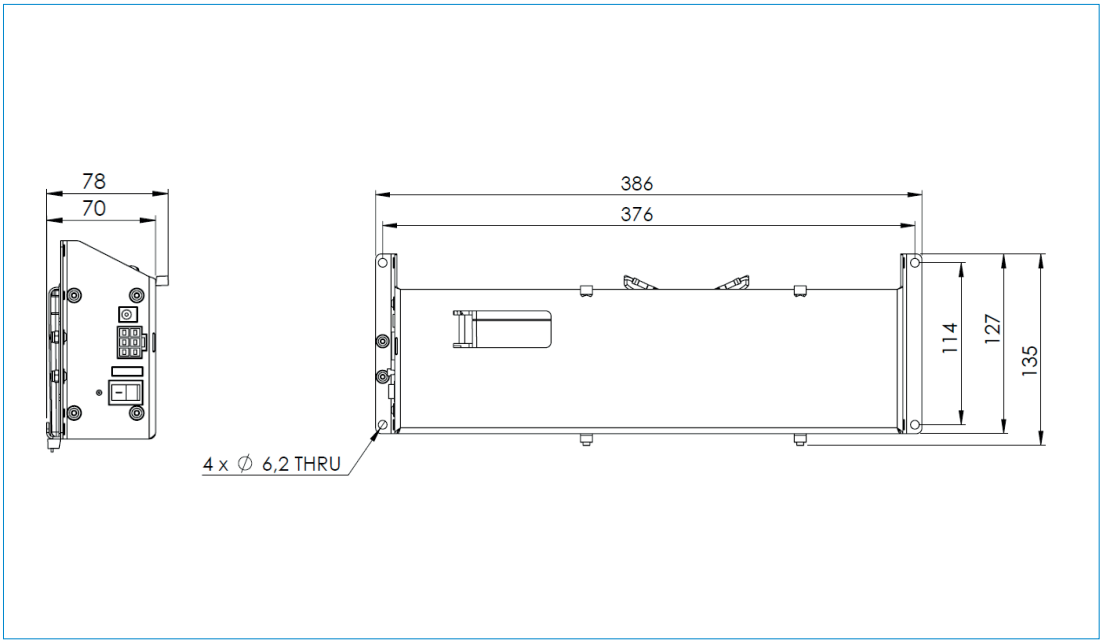


Fig. 24: Dimensions Battery Pack SDA-05

11 Appendix

11.1 Appendix A Wiring diagram