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MANUAL

SCS

Smoke Control System

REGIN

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Ever since Regin was established in 1947, we have developed and marketed products and systems that create good levels of indoor comfort. Today, we are an important player with one of the market's broadest ranges for building automation.

Our goal is to make real estates in the world more energy efficient. Regin is an international group and our products sells in over 90 countries. Thanks to our global presence with strong local representation, we are well aware of the requirements of the market, as well as of how our products and systems function under the most variable conditions. Every year, Regin makes substantial investments in the development of our systems and HVAC-products.

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1 Introduction

1.1 About this manual

Special text formats used in the manual:

Note! This box and symbol is used to show useful tips and tricks.

Caution! This type of text and symbol is used to show cautions.

Warning! This type of text and symbol is used to show warnings.

```
This box is used to show formulas and mathematical calculations
```

```
This box is used to
represent the display
window on the
controller
```

1.2 More information

- ✓ SCS-M2 Product sheet
- ✓ SCS-M2 Instruction
- ✓ SCS-S2 Product sheet
- ✓ SCS-S2 Instruction
- ✓ SCS-S2 Variable list
- ✓ SCS-S2 Cable Dimensioning tool
- ✓ SCS-PDTX Product sheet
- ✓ SCS-PDTX Instruction
- ✓ SCS-EP Product sheet
- ✓ MTID Product sheet
- ✓ MTID Instruction
- ✓ TRAFO150 Product sheet
- ✓ TRAFO75 Product sheet
- ✓ REPEAT485 Product sheet
- ✓ SDD-OE65(-RAC) Product sheet
- ✓ SDD-OE65(-RAC) Instruction
- ✓ S65-OE Product sheet
- ✓ S65-OE Instruction
- ✓ E3-DSP Product sheet
- ✓ E3-DSP Instruction

All the above documents are available for download from Regin's website, www.regincontrols.com

1.3 Abbreviations

AHU	Air Handling Unit
AFA	Automatic Fire Alarm
AGND	Analog Ground
BMS	Building Management System
DHCP	Dynamic Host Configuration Protocol
ESD	Electrostatic discharge
MSTP	Multiple Spanning Tree Protocol
PCB	Printed Circuit Board
SCS	Smoke Control System
SCS-EP	Smoke Control System-Error Panel
SCS-M2	Smoke Control System-Master
SCS-PDTX	Smoke Control System-Pressure Transmitter
SCS-S2	Smoke Control System-Damper Unit
SDD	Smoke Detection Duct
SEF	Smoke Evacuation Fan
TCP	Transmission Control Protocol
TCP/IP	Transmission Control Protocol/Internet Protocol
UI	Universal Input
UO	Universal Output

2 Information for the end user

2.1 System description

The Regin Smoke Control System, SCS, is a system that allows to feed, monitor, and test up to 60 dampers. Three fire dampers can be connected directly to the master unit SCS-M2 and with the help of the damper units SCS-S2, 57 additional fire dampers, smoke control dampers or VAV-dampers can be connected, one damper per damper unit. You can also connect and monitor smoke detectors, temperature sensors, and a thermostat (one thermostat per master unit SCS-M2). In addition, a fault panel can also be connected and monitored in the system.

The control system is configured to only feed 24 V actuators.

The system consists of:

- ✓ SCS-M2 Master unit
- ✓ SCS-S2 Damper unit (max. 57 per master unit)
- ✓ SCS-PDTX Pressure transmitter
- ✓ SCS-EP Error panel (light and sound)
- ✓ TG-KH3/PT1000 Duct temperature sensor
- ✓ MTID120HR Duct thermostat IP65
- ✓ TRAFO75/TRAFO150 Power supply unit
- ✓ REPEAT485 Signal repeater
- ✓ SDD-OE65 (or similar) Smoke duct detectors
- ✓ S65-OE (or similar) Smoke ceiling detectors
- ✓ E3-DSP External display
- ✓ Regin:GO app

2.2 System setup

See *Figure 2-1 System setup example* for a typical system setup example.

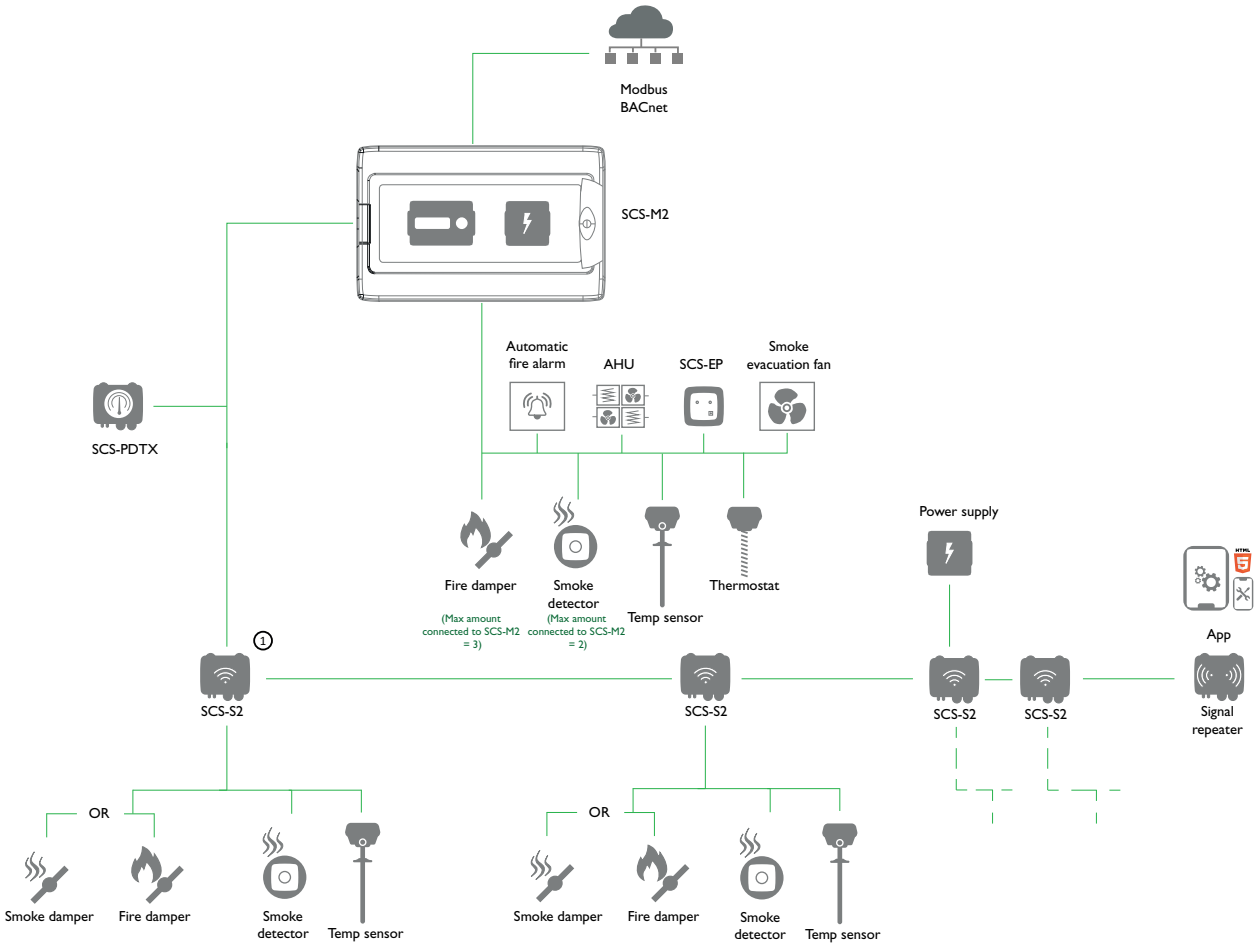


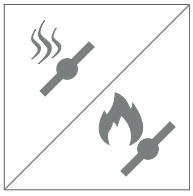
Figure 2-1 System setup example

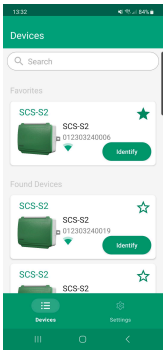
① *Max. 57 SCS-S2 damper units per SCS-M2 master unit, and max. three fire dampers locally connected to the master unit.*

2.3 Components

The components for the system is described below:

SCS-M2 Master unit	SCS-S2 Damper unit	SCS-PDTX Pressure transmitter	SCS-EP Error panel
This is the system main component, master unit. It can communicate with 57 SCS-S2 damper units, and three fire dampers. 	An SCS-S2 damper unit is needed if you use more than three dampers. It has a capacity for one damper actuator as well as smoke detector and temperature sensor. 	SCS-PDTX is a pressure transmitter equipped with one pressure sensor, and an RS485 port for Modbus communication. The transmitter operates as a Modbus slave. 	The SCS-EP error panel is connected to the SCS-M2 master unit in the Regin Smoke Control System. When an error occurs in the system the error panel indicates this with a light signal, and if needed also a sound signal. 

TG-KH3/PT1000 Duct temperature sensor	REPEAT485 Signal repeater	MTID120HR Duct thermostat IP65	Fire- and Smoke dampers
The duct temperature sensor measures the air temperature in ventilation and air handling installations. 	Signal repeater, which is needed if >30 slave dampers is connected to the system, or if the communication cable is >300 m. 	The MTID electromechanical thermostats are constructed for duct mounting. The capillary tube is a liquid-filled copper bulb with a 200 mm protection spring area and a mounting bracket. 	Circular and rectangular fire- or smoke dampers, equipped with 24 V damper units. 

S65-OE/SDD-OE65 Smoke detectors	TRAFO75/TRAFO150 Power supply unit	E3-DSP External display	Regin:GO app
Optical smoke detectors for application in all areas. ✓ Smoke detectors for ceilings, such as S65-OE Optical detector with service alarm. ✓ Smoke detectors for duct mounting, such as SDD-OE65 Optical detector with service alarm, including 600 mm Venturi tube. 	Power supply unit for SCS-S2 damper units. The transformers have a capacity to supply power to up to 10 SCS-S2 damper units (TRAFO150, up to 5 for TRAFO75), depending on cable type and length, power consumption (according to damper actuator power consumption). 	An external display E3-DSP offers full external control of the controller mounted inside the SCS-M2 cabinet. Possible distance of up to 100 m between controller and display unit. Internal and external display can be used simultaneously.  **Note!** Cable EDSP-K3 (3 m) or EDSP-K10 (10 m) is sold separately.	The **Regin:GO app** is available for Android and iOS and can be used to find a SCS-S2 damper unit, to change the Modbus address and name of a unit, and update the SCS-S2 software. The Regin:GO app can be downloaded at *App store* (iPhone and iPad) or *Google play* (Android). 

2.4 SCS-M2 Master unit

The SCS-M2 master unit is the system main unit. The master unit can communicate with up to three fire dampers, two smoke detectors and one temperature sensor, and a thermostat. You can also control the Smoke Evacuation Fan (SEF), and communicate with the Automatic Fire Alarm (AFA) and the Air Handling Unit (AHU).

2.4.1 Function

With the help of SCS-S2 damper unit, the SCS-M2 master unit can communicate with up to a total of 57 SCS-S2 damper units per SCS-M2 master unit, and three fire dampers per master unit SCS-M2. You can also connect and monitor smoke detectors, temperature sensors, and a thermostat (one thermostat per master unit SCS-M2). Setup and commissioning for the system is made in the SCS-M2 master unit.

2.4.2 Display, Status indications, and Push-buttons

Display

The display has four rows of 20 characters each. It has background illumination. The illumination is normally off, but is activated as soon as a button is pressed. The illumination will be turned off again after a period of inactivity.

There are two LEDs on the front:

- ✓ The red LED is used for alarm indication and is marked with the 🔔 symbol
- ✓ The yellow LED is used for write indication and is marked with the ✎ symbol

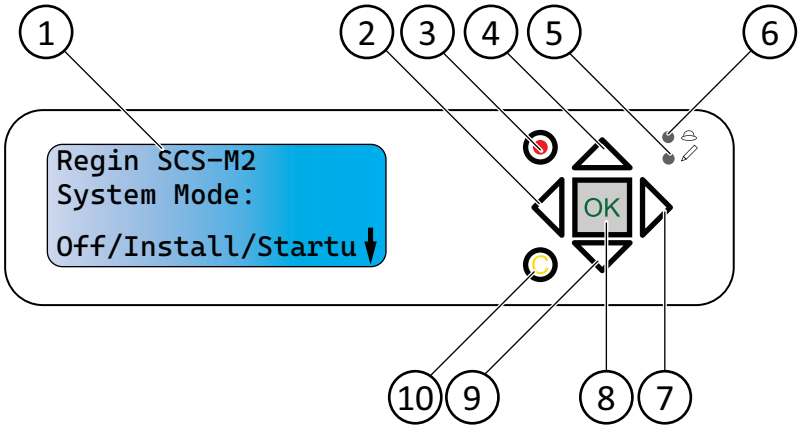


Figure 2-2 Display, status indications, and push-buttons

① *Display*
② *Back step (left)*
③ *Alarm (show)*
④ *Scroll up*
⑤ *Write indicator (yellow LED)*
⑥ *Alarm indicator (red LED)*
⑦ *Enter (right)*
⑧ *OK (confirm)*
⑨ *Scroll down*
⑩ *Exit write mode (value editing)*

The controller have a quick connection for installations requiring an external display. Both an internal and external display can be used at the same time. The maximum permitted cable length for an external display is 100 m.

Status indications

The upper left corner of the controller contains a status indication. See *Figure 2-3*. Alarm indications are shown in the display

LED	LED behaviour	Description
P1 RxTx	Yellow/ Green	**Port 1:** Receiving/transmitting P2
P2 RxTx	Yellow/ Green	**Port 2:** Receiving/transmitting
TCP/IP	Green/ Yellow	**Fixed green**: Link **Flashing green:** Traffic **Flashing yellow:** Identification
P/B	Green/ Red	Power supply/Low battery level

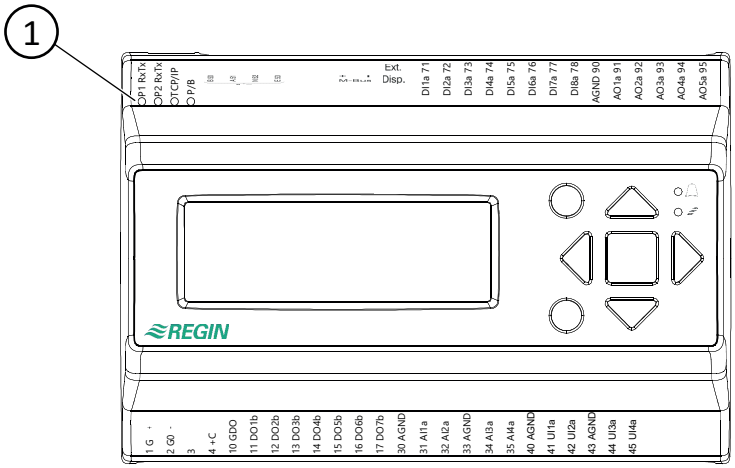


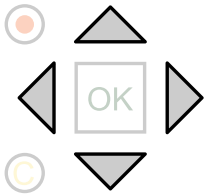
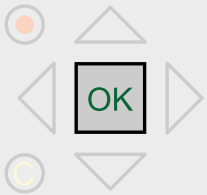
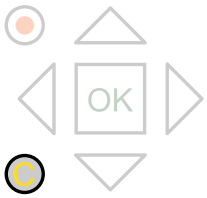
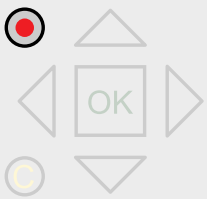
Figure 2-3 Status indication location

① *Status indication LEDs*

Push-buttons

The display menu system is handled using seven buttons as shown in *Table 2-1*.

Table 2-1 Summary of the function of the buttons

Buttons	Functions	Function in Alarm Mode
[▲][▼][►][◄] 	Navigation buttons: ▲ Navigate upwards. ▼ Navigate downwards. ► Navigate to the right. ◄ Navigate to the left. In change mode: ◄ Move cursor to the left. ► Move cursor to the right. ▲ Increase the value by 1. ▼ Decrease the value by 1. ▲ and ▼ Scroll among the texts when there are several alternatives.	▲ Navigate up in the alarm stack. ▼ Navigate down in the alarm stack. ◄ Exit alarm display mode.
[OK] 	✓ Enter change mode. ✓ Confirm a new value in change mode. An input must be confirmed with this button in order to change the value in the controller. When a value has been confirmed, the cursor will move to the next manoeuvrable value in the current box.	✓ A menu with all available manoeuvres that are available for the current alarm is displayed.
[C] 	✓ Enter change mode and erase the value in the display. ✓ Erase the sign at the cursor. ✓ When the current value is completely empty, the manoeuvre mode is cancelled and the cursor will move to the next value that will also be erased in the window. ✓ Undo (erase) the input	✓ Closes the menu containing available alarm manoeuvres without changing the state of the alarm point.
[ALARM] 	✓ Enter alarm display mode.	✓ Browse among alarms in alarm display mode.

2.4.3 Menu structure

Menu levels	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Top level	Regin SCS-M2 System Mode: Off/Install/Startu↓	Version: **N.N-N-NN build NNNN** **EXOreal: N.N-N-NN** IP: NNN.NNN.N.NNN	Language English			
1	→Status Overview	→Selected Modes	SEF:Pressure/ Support Nb. of slaves: 0			
2		→Alarm Log	Alarm events			
3		→Exercise Log	1: 202N-NN-NN 18:42 Ok 2: 202N-NN-NN 18:42 Ok ↓			
4			3: 202N-NN-NN 18:42↑ Ok 4: 202N-NN-NN 18:42 Ok ↓			
5			5: - ↑ No test 6: - No test ↓			
6			7: - ↑ No test 8: - No test ↓			
7			9: - ↑ No test 10: - No test ↓			
8			11: - ↑ No test 12: - No test ↓			
9		→Input/Output	→Digital Input	DI1:Off Damp 1 Close DI2:Off Damp 1 Open DI3:Off Damp 2 Close DI4:Off Damp 2 Open↓		
10				DI5:Off Damp 3 Open↑ DI6:Off Damp 3 Close DI7:Off Ack Alarm bu DI8:Off Funk. test		

11			→Universal Input	UI1: 0 Fire Temp UI2:Off Night mode UI3:Off SEF Alarm UI4:Err Fire Inspk.		
12			→Analog Input	AI1: 0.0 Smoke 1 -> AI2: 2.3 Smoke 2 AI3:Err AFA central AI4:Err Thermostat	Value =< 0.0 Fault Value =< 0.0 Fire Value =< 0.0 Service Value =< 0.0 Normal	
13			→Com. Input	→Pressure	Pressure: 1000 Pa	
14				→Slaves	Select Slave: 0 –>	Slave number: AI1: Abcde AI4: Abcde
15			→Digital Output	DO1:Off Damper1 DO2:Off Damper2 DO3:Off Damper3 DO4:Off AlarmBuzzer↓		
16				DO5:Off Alarm ↑ DO6:Off AHU Run DO7:Off SEF Run		
17			→Analog Output	AO1: 10.0 VDC SEF		
18		→Dampers	Select damper: 12 –> ↓	Nb# 12 Ind.Open: Off DO: Off Close: Off Status: Closing alarm		
19			Damp overview(1-60)↑ Abcde Abcde Abcde			
20		→Smoke detectors	Select Detector: 0 –>	Detector number: 0 Status: Not connected Curr. value: Abcde		
21		→SEF	SEF: Off Current setpoint: 100 Pa pressure: 110 Pa			
22		→Com alarms acknow.	Acknowledge all communication alarms Yes Status: Running			
23	→Manual/Auto	→Function test	→Full scale test	Start test: Yes Status: Testing Dampers: Testing SEF: Interrupted		
24			→Individually Damper	Select damper: 1 –>	Damper number: 10 Start test: Yes Status: Close test failed	

25			→SEF Test alone	Start test: Yes Status: Testing Pressure: 100 Pa SEF: Interrupted		
26		→SEF	SEF Mode: Manual off Manual value: 100 %			
27		→Damper	→Single damper	Select Damper: 10 –>	Damper number: 10 Mode: Manual close Status: No damper installed	
28			→All damper	All damper Mode: Manual close		
29	→Settings	→Exercise settings	→Last/next func test	Last function test 202N-NN-NN 21:20 Last function test 202N-NN-NN 21:20		
30			→Change time	New time: 202N-NN-NN 14:37 Time ok? Idle Commit time–>	Selected new time: 202N-NN-NN 14:37 Commit? Yes	
31			→Change interval	Interval type: 48h		
32			→SEF alarm times	SEF pressure alarm times Low 30 s High 30 s ↓		
33				SEF excercise max ↑ time: 180 s		
34		→Delay AHU stop	Delay AHU stop: 2 min			
35		→Date and Time	Date and Time 202N-NN-NN 14:37			
36		→Language	Language English			
37	→System Setup	→Adressing Slaves	→Add slave	Start slave number: 32 Start adding: Yes Status: Running ↓		
38				Hidden ↑	-	Slave number address: 32 Start adding: Status: Running
39			→Replace slave	Replace slave number 15 Start replace: Yes Status: Running		

40		→Remove slave	Remove slave number 15 Start remove: Yes Status: Running
41		→Reset all slaves	Reset all slaves Start: Yes Status: Running Progress: 100 %
42		→Find addressed sl.	Find addressed slave Start: Yes Status: Running Found: 12 100 %
43		→Slave serials	4: Abcde 5: Abcde 6: Abcde 7: Abcde ↓
44			8: Abcde ↑ 9: Abcde 10: Abcde 11: Abcde ↓
45			12: Abcde ↑ 13: Abcde 14: Abcde 15: Abcde ↓
46			16: Abcde ↑ 17: Abcde 18: Abcde 19: Abcde ↓
47			20: Abcde ↑ 21: Abcde 22: Abcde 23: Abcde ↓
48			24: Abcde ↑ 25: Abcde 26: Abcde 27: Abcde ↓
49			28: Abcde ↑ 29: Abcde 30: Abcde 31: Abcde ↓
50			32: Abcde ↑ 33: Abcde 34: Abcde 35: Abcde ↓
51			36: Abcde ↑ 37: Abcde 38: Abcde 39: Abcde ↓
52			40: Abcde ↑ 41: Abcde 42: Abcde 43: Abcde ↓
53			44: Abcde ↑ 45: Abcde 46: Abcde 47: Abcde ↓

54		48: Abcde ↑ 49: Abcde 50: Abcde 51: Abcde ↓	
55		52: Abcde ↑ 53: Abcde 54: Abcde 55: Abcde ↓	
56		56: Abcde ↑ 57: Abcde 58: Abcde 59: Abcde ↓	
57		60: Abcde ↑	
58	→Slave name	→View names	4: Abcde 5: Abcde 6: Abcde 7: Abcde ↓
59			8: Abcde ↑ 9: Abcde 10: Abcde 11: Abcde ↓
60			12: Abcde ↑ 13: Abcde 14: Abcde 15: Abcde ↓
61			16: Abcde ↑ 17: Abcde 18: Abcde 19: Abcde ↓
62			20: Abcde ↑ 21: Abcde 22: Abcde 23: Abcde ↓
63			24: Abcde ↑ 25: Abcde 26: Abcde 27: Abcde ↓
64			28: Abcde ↑ 29: Abcde 30: Abcde 31: Abcde ↓
65			32: Abcde ↑ 33: Abcde 34: Abcde 35: Abcde ↓
66			36: Abcde ↑ 37: Abcde 38: Abcde 39: Abcde ↓
67			40: Abcde ↑ 41: Abcde 42: Abcde 43: Abcde ↓
68			44: Abcde ↑ 45: Abcde 46: Abcde 47: Abcde ↓

69				48: Abcde ↑ 49: Abcde 50: Abcde 51: Abcde ↓
70				52: Abcde ↑ 53: Abcde 54: Abcde 55: Abcde ↓
71				56: Abcde ↑ 57: Abcde 58: Abcde 59: Abcde ↓
72				60: Abcde ↑
73			→Set names	Standard name: Abcde Set standard name on all slaves: Yes
74		→SEF	SEF Mode: Pressure/Support AFA in system Yes ↓	
75			SEF Setpoint: ↑ Fire: 80 Pa Excercise: 110 Pa Support: 50 Pa↓	
76			SEF Alarm limit: ↑ Excercise: 100 Pa ↓	
77			SEF Alarm limit: ↑ AHU survey: 30 Pa P Gain: 0.2 I Time: 20	
78		→Communication	→TCP/IP	DHCP: Yes Set static IP -> Current IP Abcde ↓	ChangeIP
79				Current subnet mask↑ Abcde Current gateway Abcde ↓	
80				Current DNS ↑ Abcde	
81			→Port 1	Port 1 Mode BACnet MSTP slave Format: 8N1 Baud: 115k2	
82			→Modbus	Modbus address 0 Modbus TCP Off	
83			→BACnet	BACnet device ID 1241	

84		→De-/Activate Damper	Select Slave/ damper 12 Deactivate/ activate Damper –>	Number: 12 Damper: Fire damper	**Note!** Selectable slave numbers on the master unit are 1-3, which are disabled (by default), or a fire damper.	**Note!** In the damper units selectable slaves are 4-60, which can be disabled (by default), fire damper, smoke control damper, or VAV (0-10 V).
85		→Detector/Temp AI1	Select slave 12 I/O settings –>	Slave number: 12 AI1 setting: Smoke detector		
86		→Pressure sensor	Pressure sensor enabled: Yes Current pressure 100 Pa			
87		→Miscellaneous	→Input/Output NC/ NO	→Digital Input	Damp 1 Close: NO Damp 1 Open: NO Damp 2 Close: NO Damp 2 Open: NO ↓	
88					Damp 3 Close: NO ↑ Damp 3 Open: NO Ack Alarm Bu: NO Func. test: NO ↓	
89					Night mode: NO ↑ SEF Alarm: NO	
90				→Digital Output	Damper 1: NO Damper 2: NO Damper 3: NO Alarm buzzer: NO ↓	
91					Alarm: NO ↑ AHU Run: NO SEF Run: NO	
92			→Damper Time	Max Open time 180 sec Max Close time 60 sec		
93			→Fire Thermostat	Fire thermostat Disabled		
94			→Temperature alarm	Master Min. limit:-20.0 °C Max. limit: 72.0 °C ↓		
95				Select slave ↑ 12 Temp settings –> ↓	Slave number 12 Temp. AI1: AI4: Min. -20 °C -20 °C Max. 72 °C 72 °C	
96				All slaves AI1 ↑ Min. -20 °C Max. 40 °C Change: Yes ↓		
97				All slaves AI4 ↑ Min. -20 °C Max. 40 °C Change: Yes		
98			→Fire Inspector	Fire Inspector Disabled		

99			→Section evacuation	Section evacuation function Yes	
100			→Section containment	Section containment function Yes ->	Number of sections for full alarm 0 Sections in use 0
101			→Section tools	→Set same section	Set same section Start: 0 Stop: 0 Section: 0 Set now: Yes
102				→Set increasing sect	Set increasing secti Start: 0 Stop: 0 Start section: 0 Set now: Yes
103		→Factory settings	Restore to factory settings: No →		
104		→System activate	Activate system: Install		
105	→Access Rights	→Log on	Log on Enter password **** Cur. level: Operator		
106		→Log off	Log off? Yes Cur. level: Operator		
107		→Change password	Change password for level: Operator New password: ****		

2.4.4 System status

The system can be in the following listed states, with the described system actions:

Note! Different attention is needed depending on which state the system is in.

System statuses	System action
Startup/Installation mode	SCS-M2 will look for SCS-S2 units via communication.
Normal mode	System running. No alarms. No tests. AHU is activated. Night mode can be activated. Dampers connected to master (fire dampers) are open and dampers connected to damper units - according to function.
Exercise mode	AHU is stopped. Damper actuator goes to end position and back to check functionality. SEF is activated and pressure test acc. to setpoint. Full monitoring and the last 12 exercises are logged. If the system is OK, it will go back to Normal mode. If any system errors, an alarm will be triggered and the system will go to Emergency mode.
Emergency mode	B-alarm is triggered. Emergency mode is activated at: Component errors, Cable errors, Communication errors, Power supply errors. AHU is stopped. Damper actuator with spring return is closed to close activated dampers. Smoke control dampers go to fire alarm position, and open dampers at the alarm triggered section. SEF is activated and run to pressure setpoint. The component which causes an alarm is not activated. When the alarm is acknowledged and closed, the system returns to Normal mode. If the error was a Damper error, it returns to Normal mode after first running an exercise.
Fire alarm mode	A-alarm is triggered. Fire alarm is triggered at: AFA, smoke detector, fire thermostat, PT1000 at high temperature (>72 °C). **Note!** The high temperature threshold can be set in the master. SEF is activated and run to pressure setpoint. If SEF not adjust the pressure, the emergency mode for SEF is activated. AHU is stopped. Fire dampers closes. Smoke control dampers go to fire alarm position. When the alarm is acknowledged and closed, the system returns to Normal mode.

2.4.5 Alarm handling

If an alarm occur during normal running mode, or during exercise mode, this will be displayed in the display. The red alarm indication will start to flash.

To see the **Alarm events** list, press the red **[Alarm indication mode]** button. The **Alarm events** list shows the alarm type, date and time, when the alarm was triggered, and the alarm category of the alarm (A, B, C). When several alarms is listed, you can scroll- with the arrow buttons **[UP]**△ or **[DOWN]**▽.

Note! Never block an alarm. New alarms of the same type will not be shown again, as long the block is active.

To acknowledge an alarm, press the **[OK]** button. The acknowledged alarm will still be shown in the alarm events list until the alarm not is active anymore. When the error is attended, you can cancel the alarm in the same way by acknowledging.

Night mode

The night shift mode can be activated when needed, and contributes to a lower energy consumption. If the digital input for *Night mode* is active from AHU, all fire and smoke dampers will be closed without a sound alarm. SEF will then also not start: In case of an external fire alarm from the master unit, the whole system will go into *Fire alarm* mode.

Night mode can be controlled via Modbus or BACnet through a Building Management System (BMS).

External alarm

In case of an external alarm the alarm will come from the central Automatic Fire Alarm (AFA). All dampers go into fire alarm position, if the SEF input is under low limit. An external alarm will be reset automatically.

Fire inspection button

The fire inspection function will test the complete system at a single press on the **[Fire inspection]** button. This function needs to be selected. All dampers will go into *Fire alarm* mode.

2.5 SCS-S2 Damper unit

The SCS-S2 is used as a damper unit for one individual damper in a smoke control system. It works together with a master unit where most of the setup of the SCS-S2 damper unit is made.

The SCS-M2 master unit from Regin is ready to connect with 57 SCS damper units. With the variable list obtained from Regin, you can also create your own master unit as an integrator.

2.5.1 Function

The damper unit has two analogue inputs, two digital inputs, one analogue output and two digital outputs. The in- and outputs are used for e.g damper control, smoke detector, temperature sensors and VAV (Variable Air Volume). It communicates via Modbus. One terminal is used as +19 V DC supply voltage for a smoke detector.

The Regin:GO app for Android and iOS can be used to identify the units and for setting a Modbus address for the unit. The Regin:GO app can also be used to upgrade the firmware. Get the Regin:GO app from the *App store* (iPhone and iPad) or *Google play* (Android).

2.5.2 LED lights

There are two LED lights in the unit with the following light colours and patterns:

LED number	Colour	Pattern	Description
1	Blue	Steady	Bluetooth® connection active
	Yellow	Steady	Service alarm
		Blinking	Unit identified
	Red	Steady	Alarm
		Blinking	Factory reset
	Green	Steady	Everything OK
	Magenta	Steady	Unit offline
	White	Steady	Unit has address 1 and is ready to be addressed in the system
		Blinking	The button has been pressed on the unit and it's waiting to be addressed
2	Yellow	Fast blinking	Communication in progress

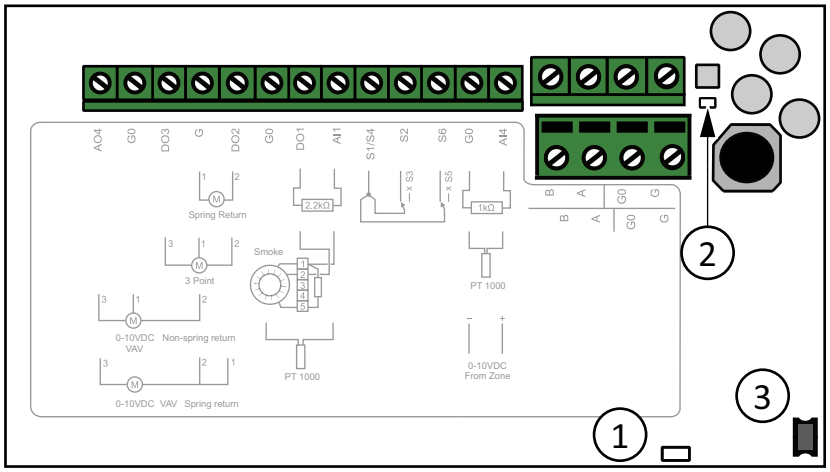


Figure 2-4 Inside the SCS-S2

① *LED light for status*

② *LED light for communication*

③ *Push-button*

2.6 SCS-PDTX Pressure transmitter

2.6.1 Function

SCS-PDTX is a pressure transmitter equipped with one pressure sensor, and an RS485 port for Modbus communication. The transmitter operates as a Modbus slave.

This pressure transmitter is especially designed for easy installation together with the Regin Smoke Control System (SCS). For more universal I/O options, please see the standard PDTX product range.

This device has the default address 100 (Hex64).

2.6.2 Settings

Communication settings can be viewed and changed either via the menu system or through Modbus communication. All other settings are accessed and modified via Modbus. The joystick is used to manoeuvre within the menu system (see *Table 2-2*).

Pressing the joystick briefly results in entering the *Viewing mode*. When in *Viewing mode* all configured universal inputs and outputs, including pressure and flow sensor values, can be viewed.

To enter the *Settings mode*, press the joystick for at least five seconds when the display is inactive.

Table 2-2 Navigate the menu system

Joystick movements	Action
○ (push in)	Accept/select Long press for settings mode (> 5 s) Short press for viewing mode
↑	Select next
↓	Select previous
←	Back / cancel

2.6.3 LED lights

There are three LED lights available to show different states. See figure *Figure 2-5* for LED light locations.

LEDs	Description
Yellow	RS485 data transmission indication
Red	Global device status. Is activated when an error is present (see the variable list for more details).
Green	1 Hz flash rate: Normal operation 5 Hz flash rate: Zero-set calibration is preformed 25 Hz flash rate: Factory reset is performed

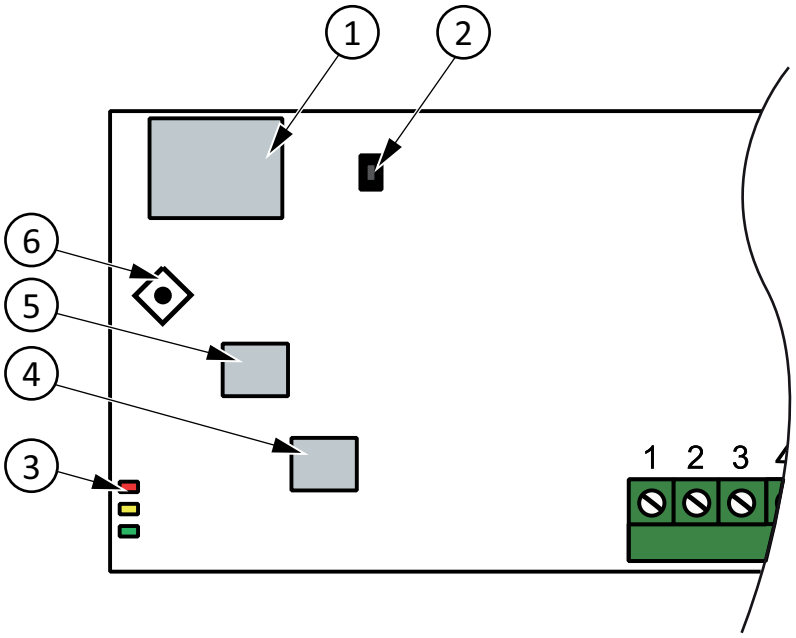


Figure 2-5 LED light and push-button locations

① *Display*
② *Push-button*
③ *Status LED lights*
④ *Sensor 2*
⑤ *Sensor 1*
⑥ *Joystick*

2.6.4 Push-button

Action	Description
Quick press	Zero-set pressure calibration The green LED will be flashing when the zero-set operation has been made.
Long press (> 10 s)	Reset to factory default settings The green LEDs will be flashing during the operation. The unit will then reset and restart.

See figure *Figure 2-5* for push-button location.

Zero-set pressure calibration

A short press on the push-button will zero-set calibrate the available pressure sensors.

Note! Be sure to disconnect the pressure tubes before doing this. Let the unit warm up for 10 minutes before attempting zero-set.

Factory reset

A long press on the push-button, more than 10 seconds, will perform a factory restore of user defined settings. *Table 2-3* displays some of the settings that will be restored.

Table 2-3 Factory settings

Description	Factory setting
Working range, pressure	0…1250 Pa
Working range, flow	0...65000 m^3/h
UI	0…10 V
UO	0…10 V
Modbus address	100 (Hex 64)
Modbus setting	8 bytes, 1 stop bit, no parity
Modbus baud rate	9600 bps
K-factor	5

Note! All changes made with Modbus will be reset when a factory reset is made.

2.7 SCS-EP Error panel

The SCS-EP error panel is used in the Regin Smoke Control System (SCS) to easily handle error messages from the system.

The SCS-EP error panel is connected to the SCS-M2 master unit in the Regin SCS. When an error occurs in the system the error panel indicates this with a light signal, and if needed also a sound signal.

2.7.1 Function

When an error occur in the system the error panel indicates this with a light and/or a sound signal. The sound signal can be muted from the error panel, but also from the connected SCS-M2 master unit.

The error panel is powered from the master unit.

3 Information for the specialist

3.1 SCS-M2 (Master unit)

3.1.1 Status

Each circuit has the following sub statuses. For more information about the different main statuses, see *2.4.4 System status*.

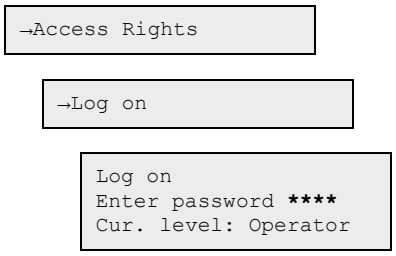
3.1.2 Manual mode

Setting parameters to manual mode is a very useful feature during commissioning or when troubleshooting.

Caution! Leaving any output in manual control means that the normal control will be suspended. Therefore, an alarm will be generated as soon as any output is set to any mode other than **Auto**.

3.1.3 Getting started

Logging in



1. Go to **Access rights** in the main menu in the master unit by using **[▾]**.
2. Press **[►]** to access **Access rights**.
3. Press **[►]** to select **Log on**.
4. Press the **[OK]** button to enter the password.
5. Press the **[▴]** and **[▾]** to select a number.
6. When a number is set, press **[►]** to set the next number, and so on.
7. Press **[OK]** to confirm.

SCS-M2 access codes

In order to access and enable particular operations and settings in the SCS-M2 master unit, a valid access code needs to be entered.

Admin - access code (standard): 1111
Access to all functions.

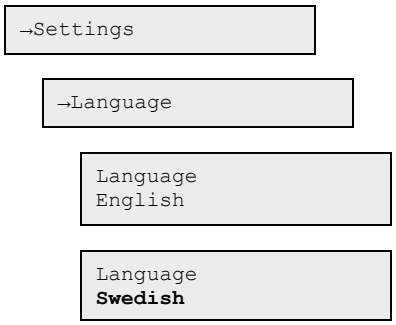
Service - access code: 2222
Access to all functions, except (reset) factory settings.

Operator - access code: 3333
Only read functions, with access to status-, settings-, and event log menu.

Current level changes the mode automatically, depending on which log-in password used.

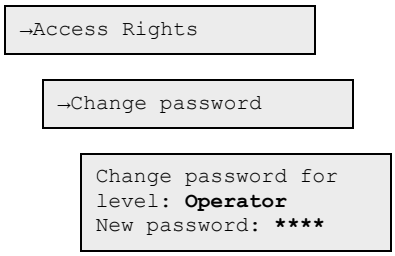
Note! Make sure to change the password after the first admin login.

Setting language



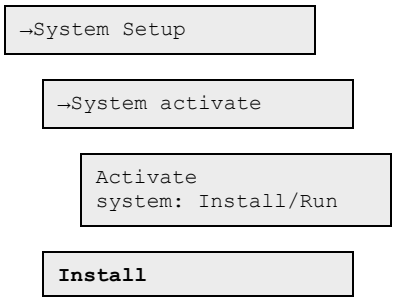
1. Go to **Settings** in the main menu in the master unit by using **[▾]**.
2. Press **[►]** to select **Settings**.
3. Press **[▾]** to go to **Language**.
4. Press **[►]** to select **Language**.
5. Press **[OK]** to edit language value.
6. Press **[▾]** to change the language.
7. Press **[OK]** to confirm.

Changing password



1. Go to **Access rights** in the main menu in the master unit by using **[▾]**.
2. Press **[►]** to access **Access rights**.
3. Press **[▾]** to go to **Change password**.
4. Press **[►]** to select **Change password**.
5. Press **[OK]** to edit.
6. Press **[▴]** or **[▾]** to set the level for password changes.
7. Press **[▾]** to go to **New password**.
8. Press **[OK]** to enter a new password.
9. Enter the password.
10. Press **[OK]** to confirm.

Activating/inactivating (system in run mode or install mode)



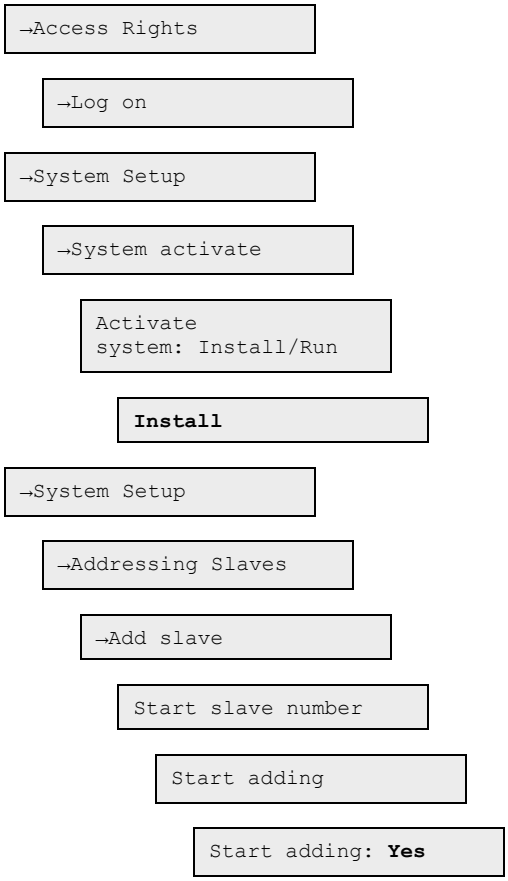
1. Go to **System setup** in the main menu in the master unit by using **[▾]**.
2. Press **[►]** to access **System setup**.
3. Press **[▾]** to go to **System activate**.
4. Press **[►]** to select **System activate**.
5. Press **[▾]** to go to **Activate system**.
6. Press **[OK]** to edit.
7. Press **[▴]** or **[▾]** to set **Run** or **Install**.
8. Press **[OK]** to confirm.

Note! To be able to use all setup options, you need to set the mode to **Install**. This applies also when setting up a system via the Regin:GO app.

Addressing with master

The addressing of the damper units with the master unit is done with the front buttons and display.

Note! New SCS-S2 units have a default Modbus address 1 and the LED is shining white to indicate that the unit is ready to be addressed.



1. Go to **Access rights** in the main menu in the master unit by using **[▾]**.
2. **Log on** using the desired access level and the corresponding password. For more information, see *SCS-M2 access codes*.
3. Make sure that you are in **Install** mode. If not - go to **System setup ▸ System activate** and change *Activate system* from **Run** to **Install**.
4. Select **System Setup** in the main menu.
5. Select **Addressing Slaves**.
6. Select **Add slave**.
7. Select **Start slave number** and press **[OK]** to edit the number.
8. Select an address between 4 and 60 by using **[▾]** and **[▴]**.
9. Press **[OK]** to confirm the address and edit **Start adding**.
10. Select **Start adding: Yes** by pressing **[▾]**.
11. Press **[OK]** to confirm. The status will be *Running*.
12. Press the push-button on the damper units, see *Figure 2-4*. The LED lights up in magenta.
    If you have several damper units the master will auto increase the address by 1, so you can continue pressing the button on each damper unit that needs to be addressed.

13. Change **Start adding** to **No** with **[▲]** when all units have been added.
14. Press **[OK]** to confirm.
    The LED light on the damper unit will be green when the unit is connected.

Replacing slave

```
→System Setup
```

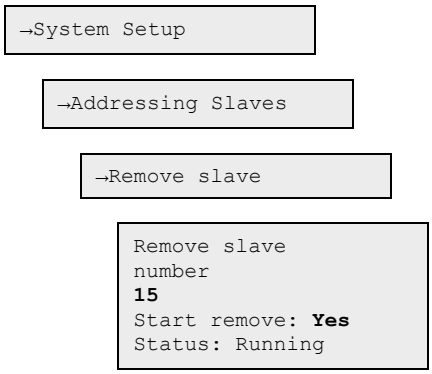
```
→Addressing Slaves
```

```
→Replace slave
```

```
Replace slave
number
15
Start replace: Yes
Status: Running
```

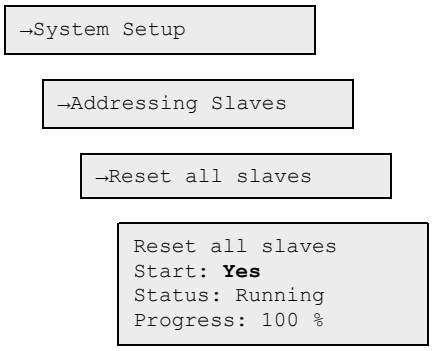
1. Go to **System setup** in the main menu in the master unit by using **[▼]**.
2. Press **[►]** to access **System setup**.
3. Press **[▼]** to go to **Addressing Slaves**.
4. Press **[►]** to access **Addressing Slaves**.
5. Press **[▼]** to go to **Replace slave**.
6. Press **[►]** to access **Replace slave**.
7. Press **[OK]** to edit the slave number value.
8. Press **[▲]**, **[▼]**, and **[►]** to set the slave number to be replaced.
9. Press **[OK]** to confirm.
10. Press **[▼]** to select **Start replace:**.
11. Press **[▼]** to set the **Start replace:** value to **Yes**.
12. Press **[OK]** to confirm.
13. The status will be shown.

Removing slave



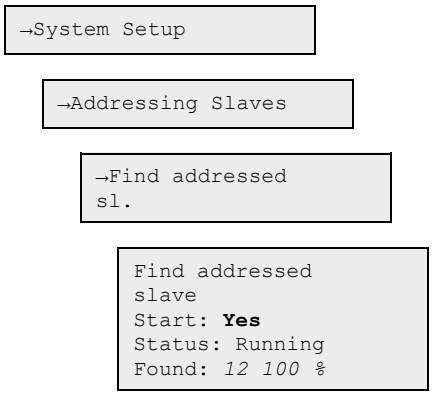
1. Go to **System setup** in the main menu in the master unit by using **[▾]**.
2. Press **[►]** to access **System setup**.
3. Press **[▾]** to go to **Addressing Slaves**.
4. Press **[►]** to access **Addressing Slaves**.
5. Press **[▾]** to go to **Remove slave**.
6. Press **[►]** to access **Remove slave**.
7. Press **[OK]** to edit the slave number.
8. Press **[▴]** or **[▾]** to set the slave number to be removed.
9. Press **[OK]** to confirm.
10. Press **[▾]** to select **Start remove:**.
11. Press **[▾]** to set the **Start remove:** value to **Yes**.
12. Press **[OK]** to confirm.
13. The status will be shown.

Resetting all slaves



1. Go to **System setup** in the main menu in the master unit by using **[▾]**.
2. Press **[►]** to access **System setup**.
3. Press **[▾]** to go to **Addressing Slaves**.
4. Press **[►]** to access **Addressing Slaves**.
5. Press **[▾]** to go to **Reset all slaves**.
6. Press **[►]** to access **Reset all slaves**.
7. Press **[OK]** to edit parameter.
8. Press **[▾]** and select **Yes** to start reset of all slaves.
9. Press **[OK]** to confirm.
10. The status will be shown.

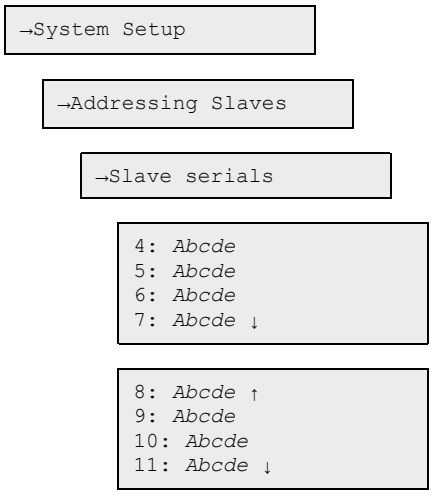
Finding addressed slave



1. Go to **System setup** in the main menu in the master unit by using **[▾]**.
2. Press **[►]** to access **System setup**.
3. Press **[▾]** to go to **Addressing Slaves**.
4. Press **[►]** to access **Addressing Slaves**.
5. Press **[▾]** to go to **Find addressed sl.**.
6. Press **[►]** to access **Find addressed sl.**.
7. Press **[OK]** to edit parameter.
8. Press **[▾]** and select **Yes** to find addressed slaves.
9. Press **[OK]** to confirm.
10. The status will be shown.

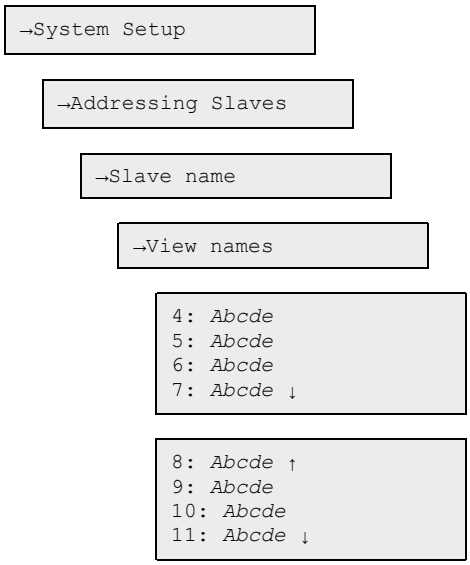
Note! The process indication in percent can take time occasionally. All addressed slaves will be represented as fire dampers when found in the search, so make sure to change the ones that are not fire dampers in the **Activate/deactivate damper** menu afterwards.

List slave serials



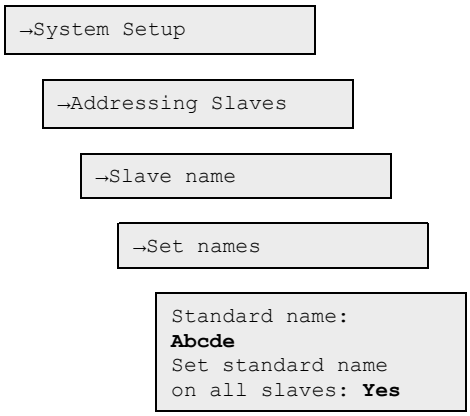
1. Go to **System setup** in the main menu in the master unit by using **[▾]**.
2. Press **[►]** to access **System setup**.
3. Press **[▾]** to go to **Addressing Slaves**.
4. Press **[►]** to access **Addressing Slaves**.
5. Press **[▾]** to go to **Slave serials**.
6. Press **[►]** to access **Slave serials**.
7. Press **[▴]** or **[▾]** to toggle the list upwards or downwards.

Viewing slave names



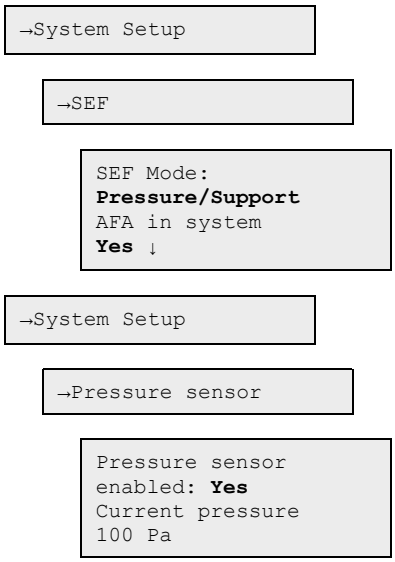
1. Go to **System setup** in the main menu in the master unit by using **[▾]**.
2. Press **[►]** to access **System setup**.
3. Press **[▾]** to go to **Addressing Slaves**.
4. Press **[►]** to access **Addressing Slaves**.
5. Press **[▾]** to go to **Slave names**.
6. Press **[►]** to access **Slave names**.
7. Press **[▾]** to go to **View names**.
8. Press **[►]** to access **View names**.
9. Press **[▲]** or **[▾]** to toggle the list upwards or downwards.

Setting slave names



1. Go to **System setup** in the main menu in the master unit by using **[▾]**.
2. Press **[►]** to access **System setup**.
3. Press **[▾]** to go to **Addressing Slaves**.
4. Press **[►]** to access **Addressing Slaves**.
5. Press **[▾]** to go to **Slave names**.
6. Press **[►]** to access **Slave names**.
7. Press **[▾]** to go to **Set names**.
8. Press **[►]** to access **Set names**.
9. Press **[OK]** to edit the **Standard name:**.
10. Press **[▴]**, **[▾]**, and **[►]** to type a standard name.
11. Press **[OK]** to confirm.
12. Press **[▾]** to access **Set standard name on all slaves:**.
13. Press **[▴]** or **[▾]** to set **Set standard name on all slaves:** value to **Yes**.
14. Press **[OK]** to confirm.

Setting SEF mode



1. Press **[▼]** to go to **System Setup**.
2. Press **[►]** to access **System Setup**.
3. Press **[▼]** to go to **SEF** (Smoke Evacuation Fan).
4. Press **[►]** to access **SEF mode**.
5. Press **[OK]** to edit **SEF mode**.
6. Use **[▲]** and **[▼]** arrows to change to desired **SEF** mode.
7. Press **[OK]** to confirm.
8. Press **[▲]** to activate **AFA in system** (Automatic Fire Alarm).
9. Press **[OK]** to confirm.
10. Press **[▼]** to set points and setups for **SEF**.
11. Press **[◄]** to go back to **System Setup**.
12. Press **[▼]** to go to **Pressure sensor**.
13. Press **[►]** to access **Pressure sensor**.
14. Press **[OK]** to edit **Pressure sensor enabled**.
15. Press **[▲]** to change status for **Pressure sensor enabled** to **Yes**.
16. Press **[OK]** to confirm.

Resetting

Note! This procedure is only available as Admin user.

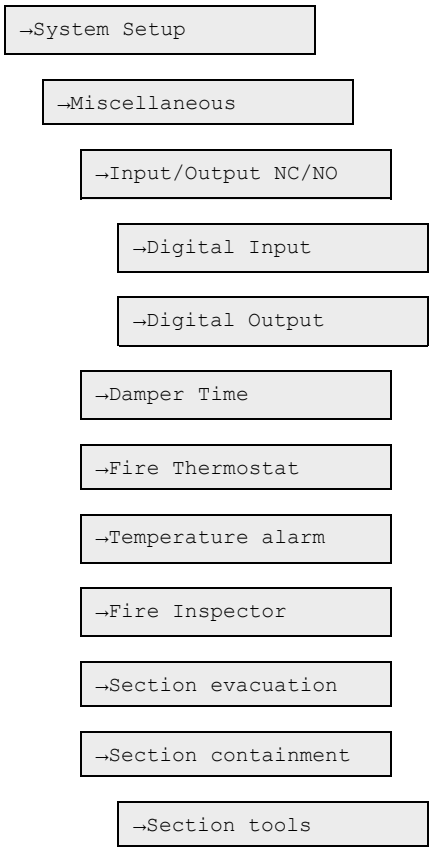
```
→System Setup
```

```
→Factory settings
```

```
Restore to
factory settings:
No
→
```

1. Go to **System setup** in the main menu in the master unit by using **[▾]**.
2. Press **[▸]** to access **System setup**.
3. . Press **[▾]** to go to **Factory settings**.
4. Press **[▸]** to access **Factory settings**.
5. Press **[OK]** to edit the value.
6. Press **[▴]** or **[▾]** to set the value to **Yes** or **No**.
7. Press **[OK]** to confirm.

Miscellaneous



Use the **[OK]**, **[►]**, **[▼]**, and **[▲]** buttons for miscellaneous system setup functions. Here you can change input and output (only view of values), damper time, fire thermostat, temperature alarm, fire inspector, section evacuation, and section containment (see *Grouping sections*).

The section functionality are listed below:

- ✓ Damper time: Max. open time/Max. close time

Note! Make sure you have set a time set slightly higher then the actuating time of your damper actuator, in both the closing and opening direction.

- ✓ Fire Thermostat: Enabled/Disabled
- ✓ Temperature alarm: Enabled/Disabled, Min. limit/Max. limit
- ✓ Fire inspection: Enabled/Disabled

Grouping sections

Dampers and smoke detectors can be grouped in sections.

Note! *Section evacuation* - Function to isolate fire cells with their own AFA in sections, like a floor for instance, and make sure to open the smoke ventilation in the section that have triggered the alarm. So that the fire does not spread to the rest of the building.

When the function opens the required dampers to evacuate smoke, the rest of the dampers will close. Typical application can be in hotels.

Note! *Section containment* - Function to have a specific number of sections needed in *Alarm mode* to set of a full system alarm. A typical application can be in a prison for instance, where tampering with smoke detectors can occur.

Only damper units with address 4-60 can be divided in sections. Several damper units can be in the same section.

```
→System Setup
```

```
→Miscellaneous
```

```
→
```

```
→Section evacuation
```

```
Section evacuation
function
Yes
```

- or use

```
→Section containment
```

```
Section
containment
function
Yes ->
```

Note! If *Section evacuation* and *Section containment* is set to **No** then *Section tools* will not be shown, since no section is present.

- then proceed with

```
→Section tools
```

```
→Set same section
```

```
Set same section
Start: 0 Stop: 0
Section: 0
Set now: Yes
```

1. Go to **System setup** in the main menu in the master unit by using **[▾]**.
2. Press **[▸]** to access **System setup**.

3. Press **[▾]** to go to **Miscellaneous**.
4. Press **[▸]** to access **Miscellaneous**.
5. Press **[▾]** to go to **Section evacuation**.
6. Press **[▸]** to access **Section evacuation**.
7. Press **[▴]** to change status of **Set now** to **Yes**.
8. Press **[OK]** to confirm.

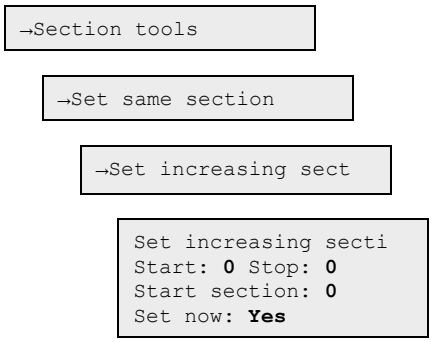
Note! You need to set *Section evacuation* or **[▴]***Section containment* to **Yes** to be able to access *Section tools*.

9. Press **[▾]** to go to **Section tools**.
10. Press **[▸]** to access **Section tools**.
11. Press **[▾]** to go to **Set same section**.
12. Press **[▸]** to access **Set same section**.
13. Press **[OK]** to edit the Modbus address for **Start**.
14. Press **[▴]** or **[▾]** to set the section start address value. The start address **0** indicates the end of the section list.
15. Press **[OK]** to confirm.
16. Press **[▴]** or **[▾]** to set the stop address value.
17. Press **[OK]** to confirm.
18. Press **[▴]** or **[▾]** to change the number of sections.
19. Press **[OK]** to confirm.
20. Press **[▴]** to change status of **Set now** to **Yes**.
21. Press **[OK]** to confirm.

Note! Repeat the steps above to set more sections for other SCS-S2 damper units (Modbus addresses) in the system.

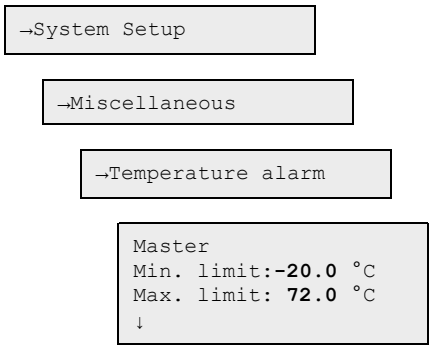
Note! When an alarm or an error is triggered in the master unit locally, the whole system will go into *Emergency run* or *Fire Alarm run*.

Setting increasing section



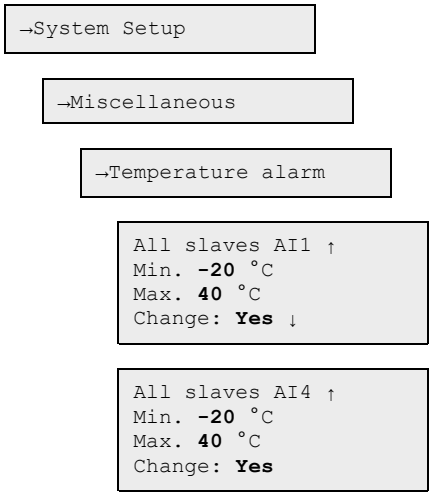
1. Press ▼ to find **Section tools**.
2. Press ► to access **Section tools**.
3. Press ► again to access **Set increasing section**.
4. Press **[OK]** to start editing Modbus adress for **Start**.
5. Use ▲ and ▼ arrows to change **Start** number of Modbus address.
6. Press **[OK]** to confirm **Start** number.
7. Use ▲ and ▼ arrows to change **Stop** number of Modbus address.
8. Press **[OK]** to confirm **Stop** number.
9. Use ▲ and ▼ arrows to change the number the first section will have.
10. Press **[OK]**" to confirm **Section**.
11. Press ▼ to changes status of **Set now** to **Yes**.
12. Press **[OK]** to confirm **Set now** status.

Setting master unit temperature alarm



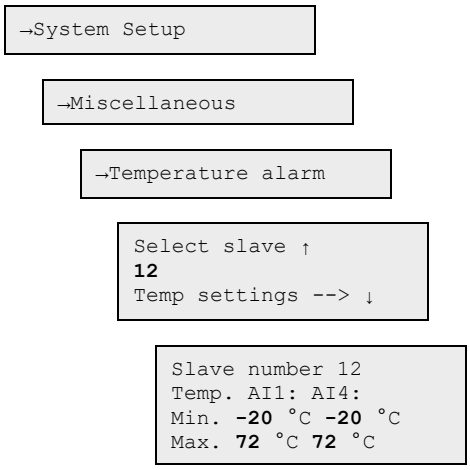
1. Go to **System setup** in the main menu in the master unit by using **[▼]**.
2. Press **[►]** to access **System setup**.
3. Press **[▼]** to go to **Miscellaneous**.
4. Press **[►]** to access **Miscellaneous**.
5. Press **[▼]** to go to **Temperature alarm**.
6. Press **[►]** to access **Temperature alarm**.
7. Press **[OK]** to edit the **Min. limit** for the master unit.
8. Press **[▲]** or **[▼]** to change value.
9. Press **[OK]** to confirm.
10. Press **[▼]** to go to **Max. limit**.
11. Press **[▲]** or **[▼]** to change value.
12. Press **[OK]** to confirm.

Setting general damper unit temperature alarm, AI1 (all) and AI4 (all)



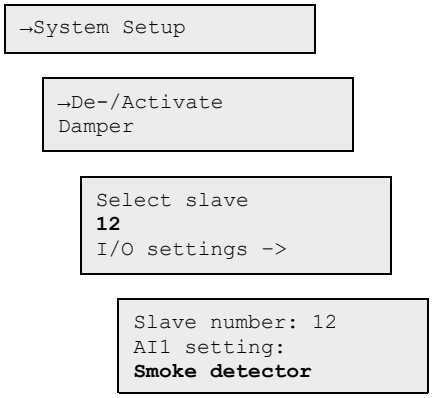
1. Go to **System setup** in the main menu in the master unit by using **[▾]**.
2. Press **[►]** to access **System setup**.
3. Press **[▾]** to go to **Miscellaneous**.
4. Press **[►]** to access **Miscellaneous**.
5. Press **[▾]** to go to **Temperature alarm**.
6. Press **[►]** to access **Temperature alarm**.
7. Press **[▾]** two times to access **All slaves AI1**.
8. Press **[OK]** to edit the **Min.** limit.
9. Press **[▴]** or **[▾]** to change the **Min.** value.
10. Press **[OK]** to confirm.
11. Press **[▴]** to change the **Change** value to **Yes.**
12. Press **[OK]** to confirm.
13. Press **[▾]** to access **All slaves AI4**.
14. Press **[▾]** to select the **Max.** limit.
15. Press **[▴]** or **[▾]** to change the **Max.** limit value.
16. Press **[OK]** to confirm.
17. Press **[▴]** to change the **Change** value to **Yes.**
18. Press **[OK]** to confirm.

Setting single damper unit temperature alarm



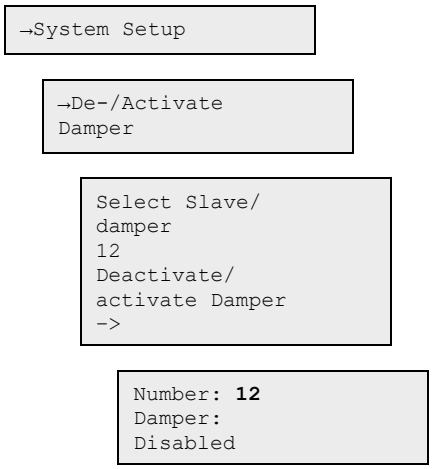
1. Go to **System setup** in the main menu in the master unit by using **[▾]**.
2. Press **[►]** to access **System setup**.
3. Press **[▾]** to go to **Miscellaneous**.
4. Press **[►]** to access **Miscellaneous**.
5. Press **[▾]** to go to **Temperature alarm**.
6. Press **[►]** to access **Temperature alarm**.
7. Press **[▾]** to access **Select slave**.
8. Press **[OK]** to select the desired slave number value.
9. Press **[▴]** or **[▾]** to change the value.
10. Press **[OK]** to confirm.
11. Press **[►]** to go to **Temp settings**.
12. Press **[OK]** to access the AI1 **Min.** value.
13. Press **[▴]** or **[▾]** to change the AI1 **Min.** value.
14. Press **[OK]** to confirm.
15. Press **[▾]** to access the AI1 **Max.** value.
16. Press **[▴]** or **[▾]** to change the AI1 **Max.** value.
17. Press **[OK]** to confirm.
18. Press **[►]** to change the AI4 **Min.** value.
19. Press **[OK]** to access the AI4 **Min.** value.
20. Press **[▴]** or **[▾]** to change the AI4 **Min.** value.
21. Press **[OK]** to confirm.
22. Press **[►]** to change the AI4 **Max.** value.
23. Press **[▾]** to access the AI4 **Max.** value.
24. Press **[▴]** or **[▾]** to change the AI4 **Max.** value.
25. Press **[OK]** to confirm.

Setting AI1 as smoke detector (default) or temperature sensor



1. Press **[▼]** to go to **System Setup**.
2. Press **[►]** to access **System Setup**.
3. Press **[▼]** to go to **Detector/Temp AI1**.
4. Press **[►]** to access **Detector/Temp AI1**.
5. Press **[OK]** to access the **Select slave** selection.
6. Press **[▼]** or **[▲]** to select the slave number.
7. Press **[OK]** to confirm.
8. Press **[►]** to access **I/O settings**.
9. Press **[▼]** or **[▲]** to select the **AI1** setting value (PT1000 or Smoke detector).
10. Press **[OK]** to confirm.

Activating/deactivating damper

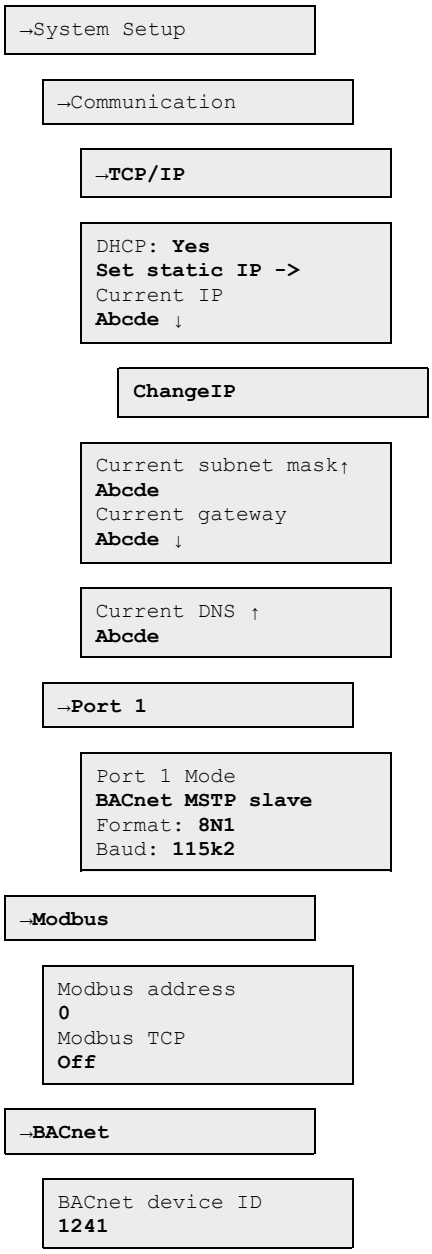


1. Press **[▼]** to go to **System Setup**.
2. Press **[►]** to access **System Setup**.
3. Press **[▼]** to go to **De-/Activate Damper**.
4. Press **[►]** to access **De-/Activate Damper**.
5. Press **[OK]** to start edit **Select slave number**.
6. Use **[▲]** and **[▲]** arrows to edit "slave" **Number**.
7. Press **[OK]** to confirm.

Note! Selectable slave (damper units) numbers on the master unit are 1-3, which are disabled (by default), or a fire damper.

In the damper units selectable slaves are 4-60, which can be disabled (by default), fire damper, smoke control damper, or VAV (0-10 V).

Setting communication

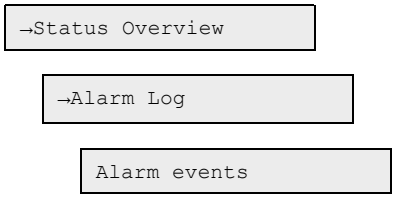


1. Go to **System Setup** in the main menu in the master unit by using **[▾]**.
2. Press **[►]** to access **System Setup**.
3. Press **[▾]** to go to **Communication**.
4. Press **[►]** to access **Communication**.
5. Press **[►]** to access **TCP/IP**.
6. Press **[►]** to edit the **Current IP** value.
7. Press the **[▴]** and **[▾]** to select a number/digit.
8. When a number is set, press **[►]** to set the next number, and so on.
9. Press **[▾]** to go to **ChangeIP**.
10. Press **[►]** to edit **ChangeIP**.
11. Press the **[▴]** and **[▾]** to select a number/digit.

12. When a number is set, press **[►]** to set the next number, and so on.

Viewing Event log

A-alarm (fire alarm) and service alarm are listed in the *Alarm events* log.



1. Go to **Status overview** in the main menu in the master unit by using **[▼]**.
2. Press **[►]** to access **Status overview**.
3. Press **[▼]** to go to **Alarm Log**.
4. Press **[►]** to access **Alarm Log**.
5. Press **[▼]** to go to **Alarm events**.
6. Press **[►]** to access **Alarm events**.

3.1.4 Controller - Changing the battery

Caution! Changing the battery, as well as dismantling and opening the unit requires knowledge of proper ESD protection. Therefore, this should be handled by skilled service personnel.

An earthed wristband must be used during this procedure.

Warning! To prevent electric shock, the controller must be disconnected from power before the battery is changed.

To change the battery:

1. Disconnect the controller from power, and then remove the terminal protection covers (if wall mounted).
2. Remove the top of the casing by pressing the two tabs on each side of the casing, and then lift up the top of the casing carefully.

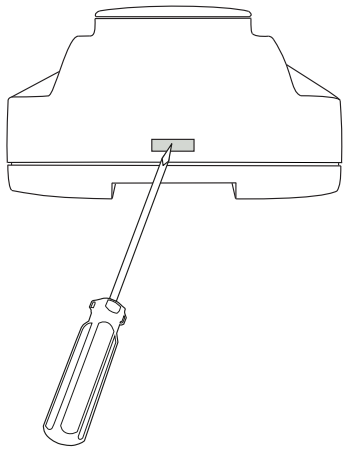


Figure 3-1 Removing the top of the casing.

3. Change the battery. A lithium CR2032 battery is used.
4. Assemble the casing carefully again.
5. Wire the controller, attach the terminal protection covers (if wall mounted), and then power up the controller.

Note! In the SCS-M2 cabinet you need to remove the controller from the DIN-rail before changing the battery. See *3.1.5 Resetting the application memory*.

3.1.5 Resetting the application memory

Warning! This procedure should only be carried out by qualified personnel, since it requires advanced knowledge. The current application will stop running and the controller will return to its default settings which may damage the system.

The controller is reset by pressing the reset button on the side of the casing by using something thin, such as a paper clip. After a reset, the controller starts up again with factory settings applied.

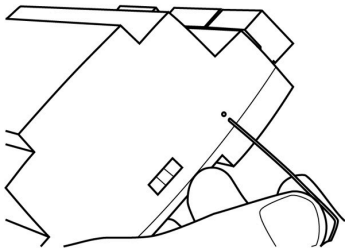


Figure 3-2 Resetting the application memory.

Note! In the SCS-M2 cabinet you need to remove the controller from the DIN-rail before resetting.

1. Pull out the fastener.
2. Remove the controller from the rail.
3. Assemble to the rail in the reverse order.

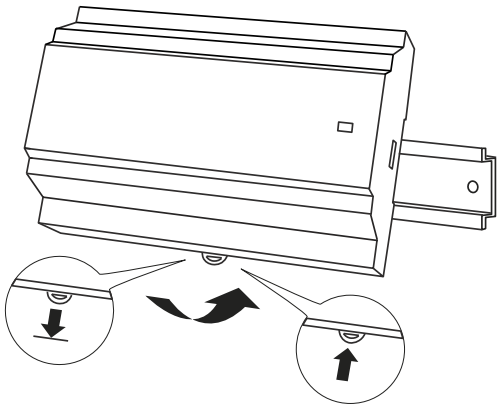


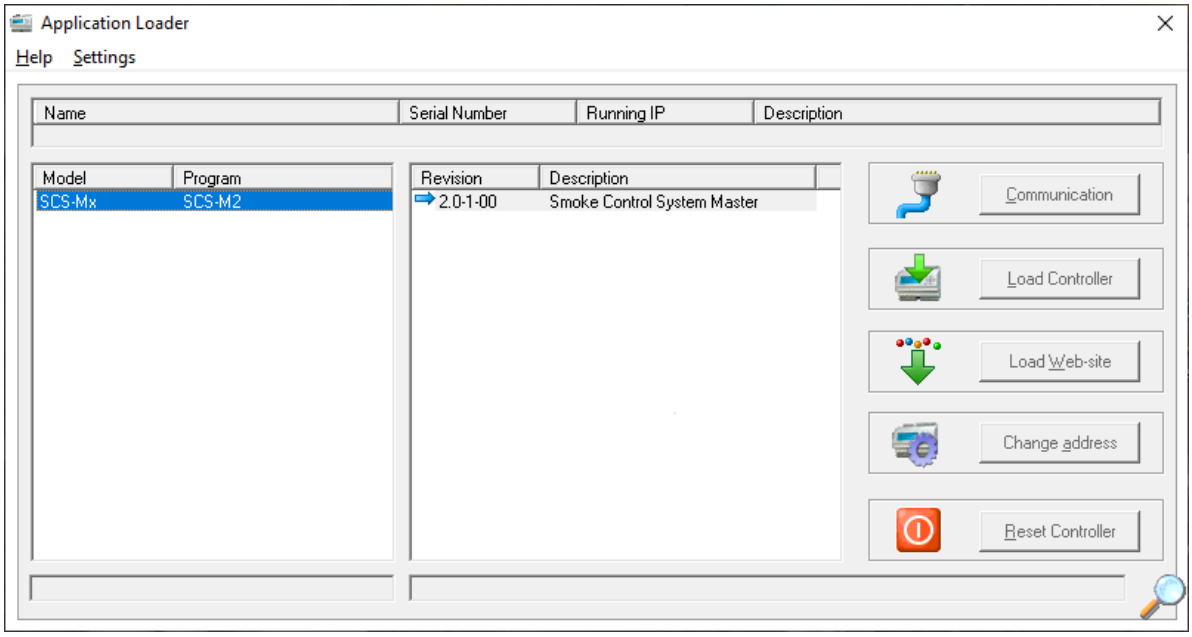
Figure 3-3 Removing the controller from the DIN rail.

3.2 Application Loader

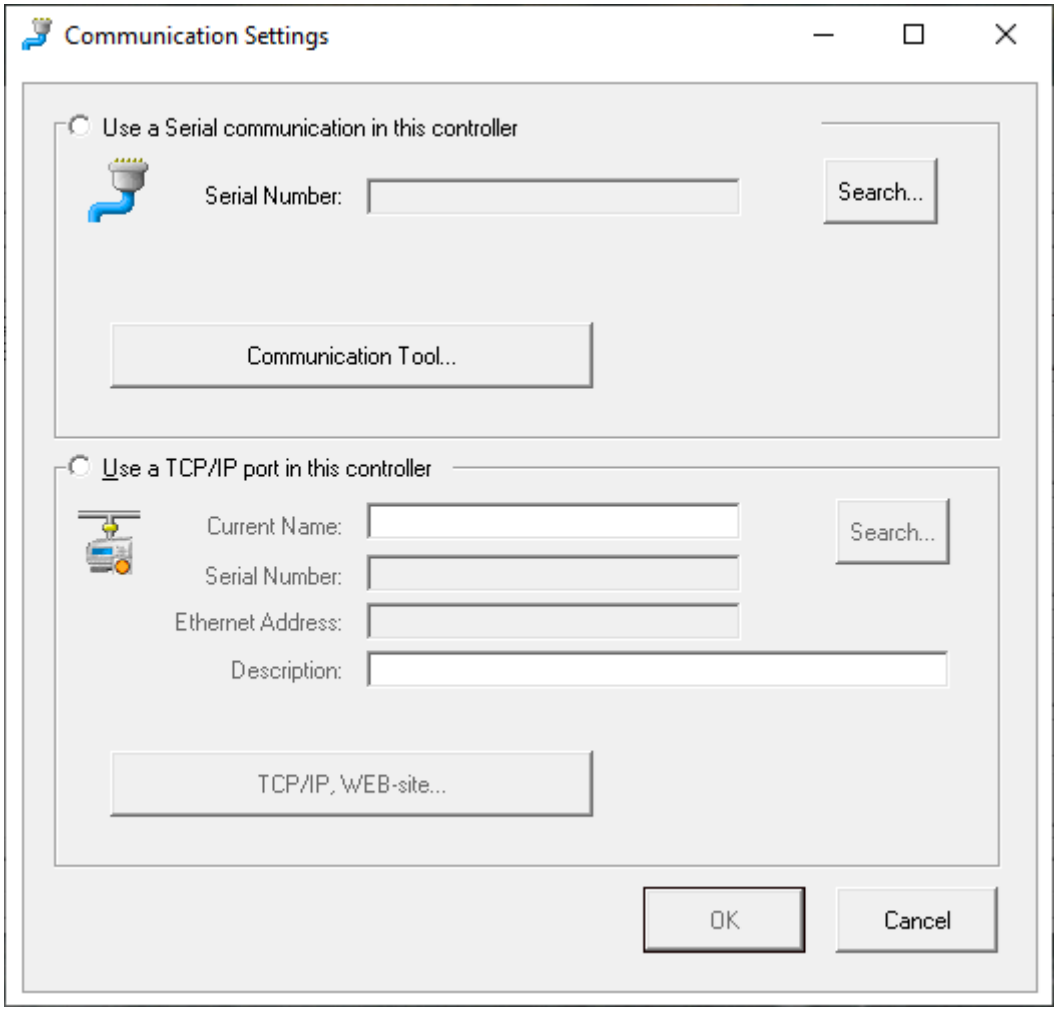
Application Loader is an application you can use for uploading a new application to the SCS-M2 master unit on the field, and make upgrades with adjustments and additions.

3.2.1 Loading an application - SCS-M2

1. Select the active revision and press the **[Communication]** button to establish a connection to the controller.

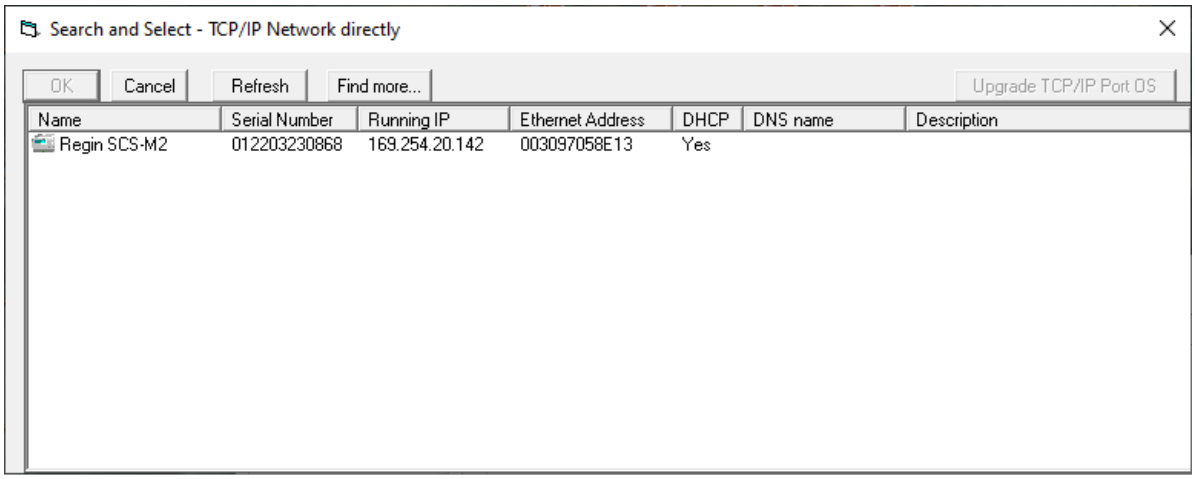


2. In the **Communication settings** dialogue, select the way of communicating. In this example we will use the TCP/IP port.

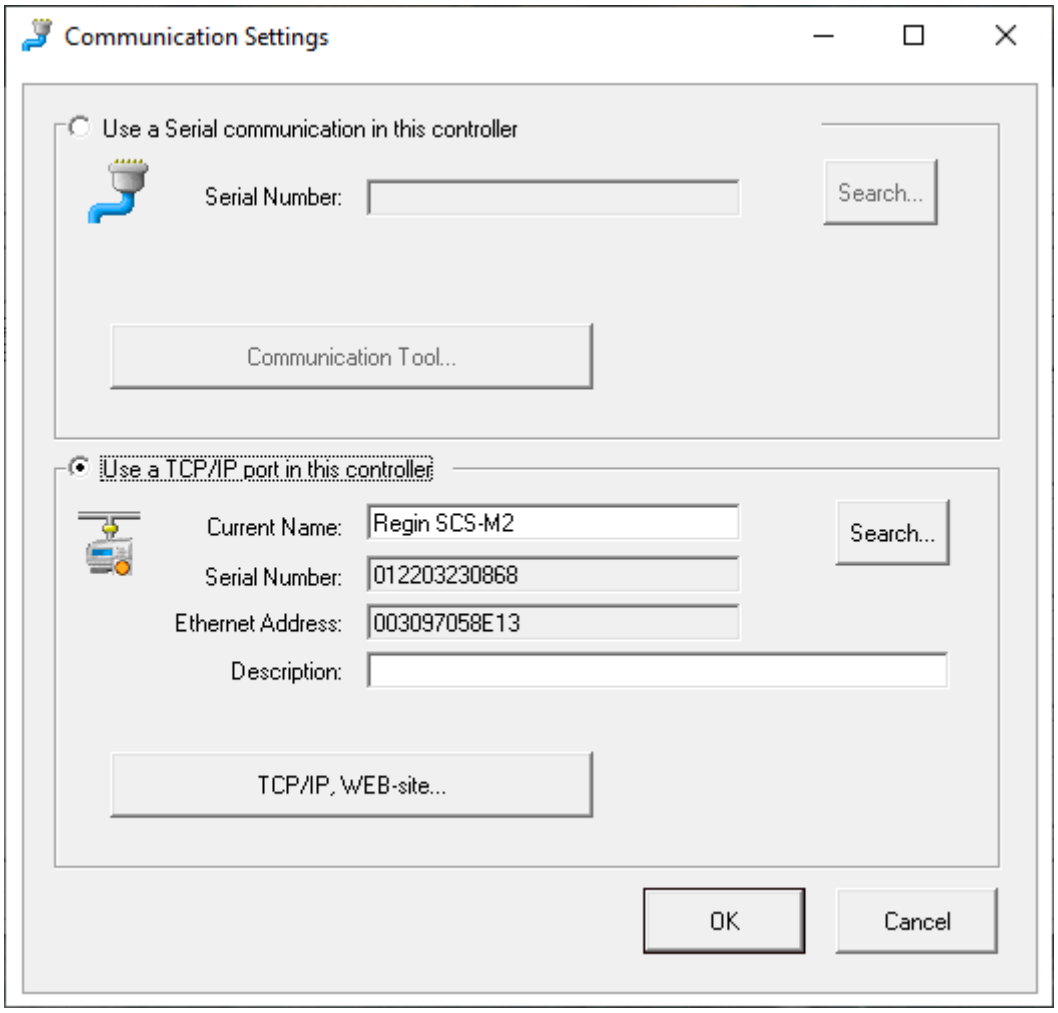


When selecting the TCP/IP option the **Search and Select** dialogue opens, where you can see the controllers connected to the network. If a standalone controller and directly connected to your computer there might only be one controller available.

3. Select the controller you want to communicate with and press **[OK]**.

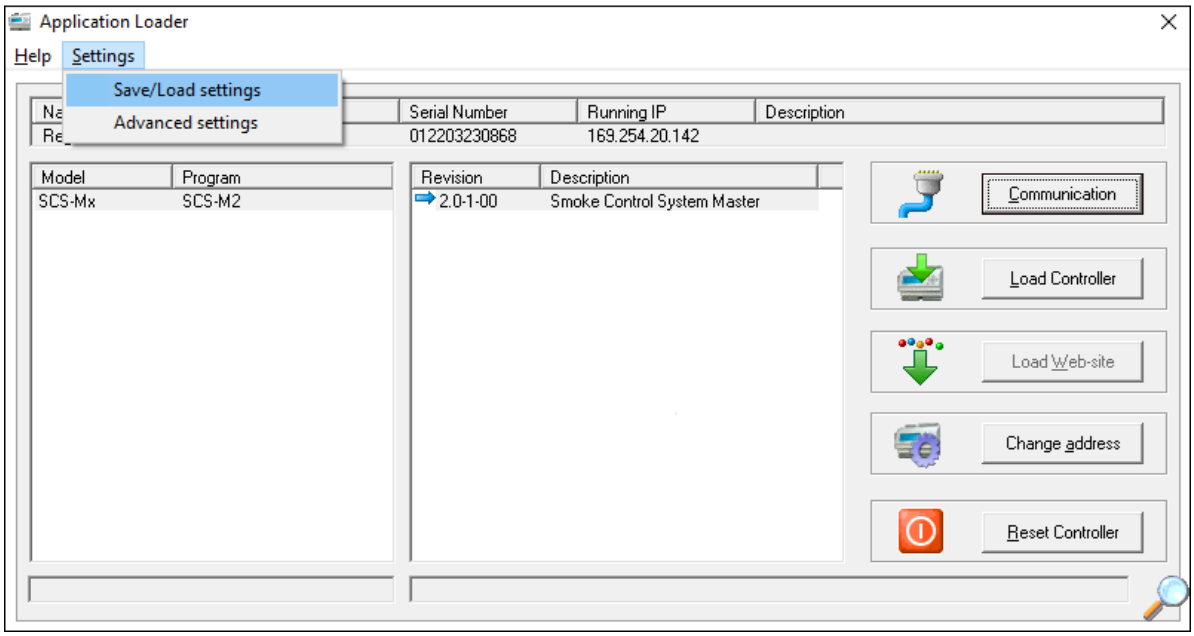


4. In the **Communication Settings** dialogue, press **[OK]**.



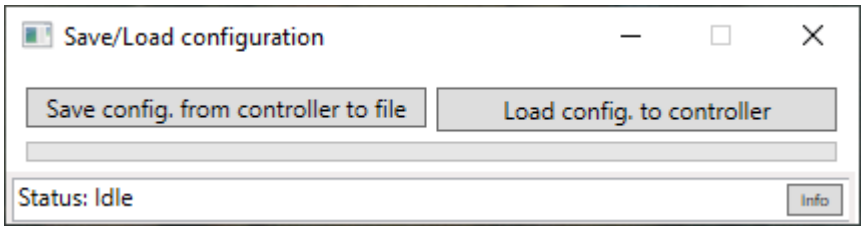
The **Application Loader** main window is now updated with the connected controller information.

5. In the **Application Loader** main window, in the **Settings** menu, click **Save/Load settings** to save and load the settings.

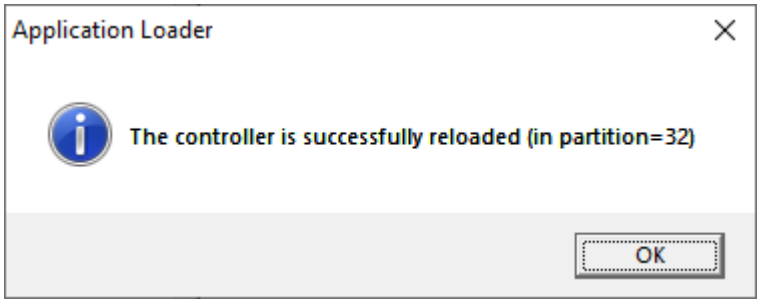


You can then either save config from the connected controller to a local file on the computer, or load an already existing file from computer to the controller.

6. In the **Save/Load configuration** dialogue, press the **[Save config. from controller to file]** button to save settings from controller.



7. A standard **Save** dialogue window will appear. Name the file and press **[Save]**. A confirmation dialogue confirms when the controller has been successfully been reloaded.



Save the file for future use in case something needs to be reinstalled or the application needs updating. The file format is .json and it can, with trained eyes, be read with notepad. This can be helpful in a trouble shooting situation.

To load a settings file to the controller we just do the opposite and press the **[Load config. to controller]** button. In the **Open file** dialogue, you select the file you want and then press **[Open]**. The file settings are then loaded into the controller, and you get a confirmation window when it's done.

3.3 SCS-S2 (Damper unit)

3.3.1 Addressing

For the unit to work in a smoke control system, it must have a Modbus address. The addressing of the damper unit is made in the master unit or with the Regin:GO phone/tablet app.

Addressing with the Regin:GO app

Addressing of damper units with the Regin:GO app can be done with units straight out of the box, or with connected units when the master is in install mode.

1. Start the Regin:GO app on your phone or tablet.
2. Choose the unit in the device list in the Regin:GO app (the serial number is in the unit list as well as on the unit).
3. Log in into the Regin:GO app as *Admin*. Use the password **Admin**.
4. Click on **Communication** in the app.
5. Insert the desired address for the unit. The address must be between 4 and 60.
6. Confirm the changes in the **Review changes** dialogue.

Note! The Modbus address must be in the range 4...60. If it is outside this range, the master will not find the damper units.

Note! In the communication settings you can also set baud rate, parity, and stop bit.

However, the default settings are needed for SCS-M2.

Addressing with master

The addressing of the damper units with the master unit is done with the front buttons and display.

1. Go to **Access rights** in the main menu in the master unit by using **[▾]**
2. **Log on** using the desired access level and the corresponding password (described in the master manual)
3. Make sure that you are in **Install** mode. If not - go to **System setup ▸ System activate** and change **Activate system** from **Run** to **Install**.
4. Select **System Setup** in the main menu
5. Select **Addressing Slaves**
6. Select **Add slave**
7. Select **Start slave number** and press **[OK]** to edit the number.
8. Select an address between 4 and 60 by using **[▾]** and **[▴]**. Press **[OK]** to confirm the address and edit **Start adding**.
9. Select **Start adding: Yes** by pressing **[▾]** and press **[OK]** to confirm.
10. Press the push-button on the damper units, see *Figure 2-4*. The LED lights up in magenta.
11. Press **[OK]** to edit **Start adding** , and press **[▴]** to change to **Yes** and add more units.
12. Press **[OK]** to confirm. The LED light on the damper unit will be green when the unit is connected.
13. Change **Start adding** to **No** with **[▴]** when all units have been added

14.Press **[OK]** to confirm.

3.3.2 Identify damper units

It is useful to be able to identify which unit is which, when they are installed in a building. The unit can be identified from the master or from the Regin:GO app.

Identifying with the Regin:GO app

1. Start the Regin:GO app. A list with all available units within range will be displayed.
2. Click the **[Identify]** button for the unit in the list that you want to identify.
3. LED light 1 in the unit will start blinking in yellow for approx. five (5) seconds, see *Figure 2-4*.

Identifying with master unit

The identification of the damper units from the master unit is done with the front buttons and display.

1. Go to **Access rights** in the main menu in the master unit.
2. **Log on** using the desired access level and the corresponding password (described in the master manual).
3. Select **System mode: Install** in the main menu.
4. Select **System Setup** in the main menu.
5. Select **Addressing Slaves**.
6. Select **Find addressed sl.**.

Identifying unit in the Regin:GO app

It is possible to identify a physical unit in the unit list in the Regin:GO app. It can be done either with an unaddressed unit (straight out of the box) or when the master is in **Install mode**.

1. Start the Regin:GO app on your phone or tablet, and find the device in the Device list page.
2. Press the button in the unit, see *Figure 2-4*.
3. The unit will be identified in the Regin:GO app by a flashing frame around the unit in the unit list.

Note! If the flashing frame around the unit doesn't appear, try and swipe down in the device list to refresh it.

3.3.3 Changing unit name in the Regin:GO app

1. Start the Regin:GO app on your phone or tablet.
2. Choose the unit in the unit list in the app (the serial number is in the unit list as well as on the unit).
3. Log in into the Regin:GO app as *Admin*. Use **Admin** as password.
4. Click on **Unit** in the Regin:GO app.
5. Change the **Name**.
6. Confirm the changes in the **Review changes** dialogue.

3.3.4 Addition of external power supplies

In a smoke control system with one master unit and a number of damper units with e.g. dampers there will be a voltage drop (ΔU) along the wire which makes it necessary to add external power supplies between the damper units. The voltage drop depends on the resistance, thickness and length of the wire and the power consumption in the damper units with connected dampers/detectors/sensors. See *Figure 4-12* for an example of a system setup.

The voltage drop (ΔU) can be maximum 10% before an external power supply must be added. To decide how many external power supplies are needed, calculations for the voltage drop (ΔU) must be made. An example is shown below.

Calculation example:

The following formulas are used:

$\Delta U = R * I$

$I = P / U$

$R = CU * L / q$

where -

- ✓ **R**, resistance in the wire (Ω)
- ✓ **I**, the total current (A)
- ✓ **U**, power supply (V AC)
- ✓ **P**, power consumption (VA)
- ✓ **CU**, Copper wire resistivity
- ✓ **L**, Length of wire
- ✓ **q**, Wire cross section area

Calculation example :

- ✓ U=24 V AC
- ✓ $P_{damper\ unit}$=2 VA
- ✓ $P_{damper\ act.}$: 7 VA
- ✓ CU=0.017 Ωmm²/m at 20 °C
- ✓ L =112 m (*2 since the cable goes back and forth)
- ✓ q =0.75 mm²

Note! Please note that the resistivity in copper is temperature dependant. In this example we have calculated with the value at 20 °C.

1. Start by calculating the current used in the damper unit and the damper by using the formula I=P/U: $\mathbf{I}_{\text{damper unit}}$ =2 / 24 = 0.0833 A, $\mathbf{I}_{\text{damper act.}}$ =7 / 24 =0.2917 A
   The total current is $\mathbf{I}_{\text{damper unit}}$ + I_{damper}= 0.3740 A

Note! In this example there is only one damper unit with one damper. If there are more units, the current for all units must be calculated and added to the total current.

2. Calculate the resistance in the wire: **R** = **C**U *(2 *L) / **q**
   R = 0.017 *(2 * 112) / 0.75 = 5.077
3. Calculate the voltage drop in V (**ΔU** = **R** * **I**). **ΔU** = 5.077* 0.3750 = 1.9038
4. Calculate the voltage drop in % (**ΔU**/**U** * 100). **ΔU** (%) = 1.9038 / 24 * 100 =7.93 %

Conclusion: No external power source is needed after one unit in this example, since the voltage drop ΔU= 7.93 % is less than 10 %.

Note! For more information, see the SCS-S2 Cable Dimensioning tool for download from Regin's website www.regincontrols.com.

3.3.5 Factory reset

It's possible to reset the device to factory settings via the button, see *Figure 2-4*.

To reset the unit:

1. Push and hold the button for 10 seconds. LED 1 (*Figure 2-4*) will turn red.
2. Release the button.
3. Push and release the button three times in 10 seconds.
4. LED 1 blinks 3 times to confirm the factory reset.

3.4 SCS-PDTX (Pressure transmitter)

The SCS-PDTX pressure transmitter operates as a Modbus slave.

3.4.1 Getting started

How to view and modify settings in the menu system:

1. Enter into viewing or setting mode by pressing and releasing the joystick (long or short press) when the display is inactive
2. Navigate through the different sub menus by moving the joystick up or down
3. Select a sub menu by pressing and releasing the joystick
4. If in setting mode, select a value to modify by pressing and releasing the joystick
5. Change the value by moving the joystick up or down
6. Confirm the setting by pressing and releasing the joystick, or move the joystick left to discard the changes
7. Move the joystick left to return to the previous menu

Note! The last configuration entered into the transmitter is always valid, regardless of whether it was performed using the menu system, or via Modbus.

3.4.2 Viewing mode menu

Sub menu	Description
P.#	Pressure value P.1 = sensor 1 / P.2 = sensor 2
F.#	Flow value F.1 = sensor 1 / F.2 = sensor 2
d.#	UI: Value in digital mode d.1 = UI1 / d.2 = UI2
u.#	UI: Value in 0-10 V mode u.1 = UI1 / u.2 = UI2
t.#	UI: Value in temperature mode (°C) t.1 = UI1 / t.2 = UI2
L.#	UO: Value in digital mode L.1 = UO1 / L.2 = UO2
U.#	UO: Value in 0-10 V mode U.1 = UO1 / U.2 = UO2

Two digits can be shown at a time in the display. Therefore, several subsequent views are used to display a longer value. *Example:* A pressure value of 2350 Pa on sensor 1 is shown with three views, i.e. *1)* P.1 *2)* 23 *3)* 50. The measuring unit for the displayed value is set via Modbus.

Note! The K-factor has to be set via Modbus to be able to view correct flow values. Information regarding flow calculation is found in the variable list.

3.4.3 Settings mode menu

Settings related to the communication can be changed in the settings mode menu via the display.

Sub menu	Description
.A	Modbus address (1-247), given as hexadecimal numbers (1-F7)
.B	Modbus baud rate (see *Table 3-1*)
.C	Modbus settings (see *Table 3-2*)

Table 3-1 Settings in the sub menu .b

Modbus baud rate	Description
12	1200 bps
24	2400 bps
96	9600 bps (factory setting)
19	19200 bps
38	38400 bps
57	57600 bps

Table 3-2 Settings in the sub menu .C

Modbus settings	Description
n1	8 bytes, 1 stop bit, no parity (factory setting)
n2	8 bytes, 2 stop bits, no parity
E1	8 bytes, 1 stop bit, even parity
E2	8 bytes, 2 stop bits, even parity
o1	8 bytes, 1 stop bit, odd parity
o2	8 bytes, 2 stop bits, odd parity

For more information, see the standard product variable list (PDTX...-C).

Note! All documentation can be downloaded from www.regincontrols.com.

3.5 REPEAT485 (Signal repeater)

REPEAT485 signal repeater can be used in the SCS-M2 system. It is used to enhance the RS-485 signal quality, and is required if more than 30 SCS-S2 damper units are connected to the system, or if the communication cable is longer than 300 meters. Separate 24 V DC power supply is needed. Both RS485 cables and the 24 V DC power supply are connected to the power supply via removable 10-pin terminal blocks.

3.6 Smoke Evacuation Fan (SEF)

A smoke evacuation fan, SEF, extracts smoke from the ventilation system in case of a fire. SEF can, but should not, be added and selected in the system. If SEF is selected, an alarm will be activated and affect the dampers open/closed positions (*Night mode* excluded) and extract the smoke.

Control of SEF and alarm thresholds can be set in the system display. All parameters are initially factory set, according to a best practice approach to cover a normal building setup. However, they can be altered in the menu, if needed. The editable value parameters are as listed below.

Setpoints for:

- ✓ Fire - 80 Pa
- ✓ Motion - 110 Pa
- ✓ Support - 50 Pa

SEF Alarm thresholds:

- ✓ Motion - 100 Pa
- ✓ AHU survey - 30 Pa
- ✓ P Gain - 0.2
- ✓ I Time - 20 s

The AHU shall be running at 30 Pa in normal mode, and be surveyed by the master unit, SCS-M2, through the pressure transmitter, SCS-PDTX in the evacuation channel. The larger amplification (P Gain), the faster regulation. The longer integral time (I Time), the slower regulation.

Exercise mode setting for SEF alarm - Factory default setting, max. 180 s.

- ✓ If pressure is measured to under 50% of setpoint, in >30 s, an alarm is triggered.
- ✓ If pressure is measured to over 50% of setpoint, in >30 s, an alarm is triggered and SEF is stopped.
- ✓ If pressure is measured to under 10% of setpoint, in >30 s, an alarm is triggered and SEF is stopped.

3.6.1 SEF settings

- ✓ 1 speed
  In case of alarm or exercise the SEF will be activated with a digital output. Survey of SEF can be activated, to ensure that the correct suction pressure is set through the AHU and the Smoke Detection Duct (SDD).
- ✓ Pressure
  The pressure transmitter read the pressure in the ventilation channel, and if the pressure is slightly over or under the set value the SEF increase or decrease the fan speed to correct the pressure. Such as, at opening or closing of smoke control dampers.
- ✓ Pressure/support
  Is used in cases with decentralized AHU systems with shared evacuation, and with one connected shared SEF.
- ✓ Not used
  If SEF is not selected.

3.6.2 SEF modes

- ✓ Emergency mode
  In case of component error in SEF or pressure transmitter, the system will be in emergency mode.
- ✓ Exercise
  In case of exercising the SEF will be activated. The setpoint will be over alarm threshold 100 Pa for at least 10 s to avoid fast and high peaks, to tell if the system is OK. If the pressure not reach over the set alarm threshold within a given time, a SEF error alarm will be activated and the system will go into emergency mode.
- ✓ Fire alarm
  In case of fire the SEF will be activated, the smoke control dampers will open in the valid system section to evacuate the smoke from the section. SEF will return to the set setpoint, for example 100 Pa, to evacuate smoke from the system.

3.7 Smoke Detector

In SCS-M2, the factory setting is for two smoke detectors. In addition, one smoke detector can be added in each SCS-S2. The smoke detector surveys if there is smoke in the ventilation system. This is done through the AHU sending air through the ventilation channel (min. 1 m/s, max. 20 m/s) through the smoke detector, which then trigger an alarm if smoke is detected.

The smoke detector send analogue signals, which can be read from the display or communicated via Modbus/BACnet, as follows:

- ✓ **Disconnected** = 0 (in case of communication error)
- ✓ **Normal** = 1
- ✓ **Service** = 2 (cleaning necessary)
- ✓ **Alarm** = 3 (fire)
- ✓ **Short** = 4 (in case of communication error)

If automatic fire alarm or thermostat is connected to SCS-S2 as a smoke detection device input, an alarm, shortening, or defect cable, will trigger an alarm as **DetectorLowLimit**, and activate an A-alarm. The sound alarm can be acknowledged at the SCS-EP error panel, and the alarm shows in the display and the alarm logging list. The alarm is active as long as the actual error is present. The smoke detection device will shortly go offline and be re-set.

3.8 Thermostat and Temperature sensor

The temperature in the ventilation system can be measured with a fire thermostat or a temperature sensor PT1000.

The thermostat can be connected to the SCS-M2 unit and temperature sensor can be connected to both SCS-M2 and SCS-S2. For the SCS-S2, two temperature sensors can be connected if no smoke detector is used and the damper not is a VAV damper.

An alarm for high temperature is triggered if the temperature exceeds a set level. This setpoint can be set individually. The factory default setting is 72 °C.

If a high temperature alarm is triggered, it can be for the following reasons:

- ✓ Alarm, high temperature (>72 °C)
- ✓ Alarm, sensor error NaN, sensor interrupted (sensor error)
- ✓ Alarm, sensor error NaN, sensor shortening

A high temperature alarm must be acknowledged manually and reset from the display or the BMS.

3.9 Communication

3.9.1 SCS-M2 Communication

BACnet, Modbus, and EXOline communication can be set up for communication from the SCS-M2 Master unit to a Building Management System (BMS) master system, in both TCP/IP and MSTP. The BACnet Device ID is configured in a head master program by authorized personnel.

Modbus is used for communication between the SCS-M2 master unit and the SCS-S2 damper units (max. 57 SCS-S2 damper units can be attached). The SCS-PDTX has the Modbus address 100.

To choose a static IP address, you must deselect the DHCP function in the Communication menu.

For Modbus setting you must select and deselect the Modbus function in the Communication menu. If you choose Modbus TCP On, the communication will be over TCP/IP. If you choose, Modbus TCP Off, the communication will be over RTU - serial communication on Port 1.

Communication with SCS-S2 (damper unit)

Daisy chain communication

A to A, B to B connection

N = Shield

Recommended cable: Shielded twisted pair

3.10 Regin:GO app

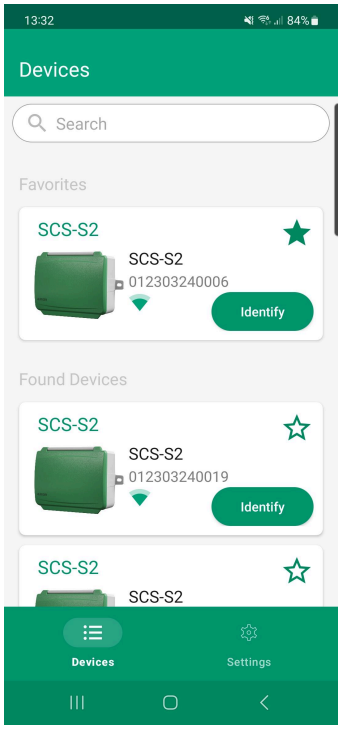
The damper unit SCS-S2 is Bluetooth® compatible, and can be connected via the **Regin:GO** application. The Regin:GO application is available on Android and iOS and can be used to identify, name, and address the damper units. The appRegin:GO can also be used to upgrade the firmware. For third party master units it is also possible to set different Modbus baud rates, parities and stop bits.

Note! When Regin master unit is used, the default baud rates, parities and stop bits values needs to used.

Get the Regin:GO app from the *App store* (iPhone and iPad) or *Google play* (Android).

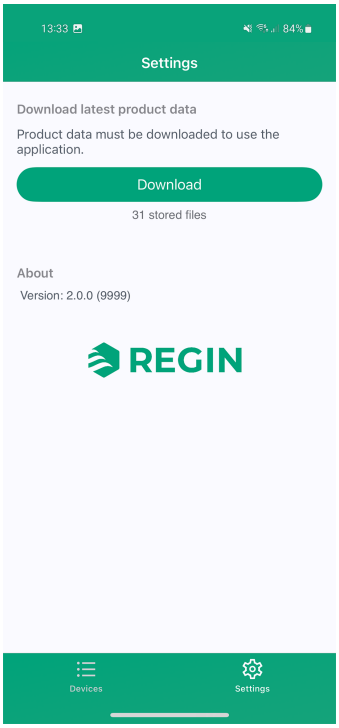
3.10.1 Introduction Regin:GO app

Below follows a short description of the functions and screen shots of the menu pages in the Regin:GO app.



Devices page

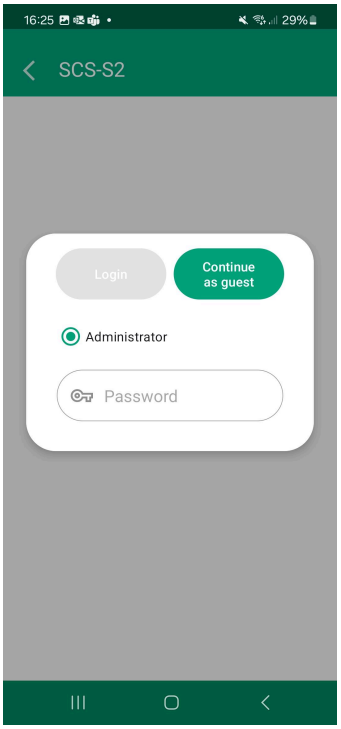
This is the first page after the logo page. The Devices page lists all units found, with possibility to identify new units and create favourites in a long list of units. The list presents a units name and serial number. When a unit is identified in the Regin:GO app, the unit connection symbol is lit in blue some seconds and then turns blinking yellow for indication of what unit it is.



Settings page

In this page it is possible to download the needed product data files. Tap **[Download]**.

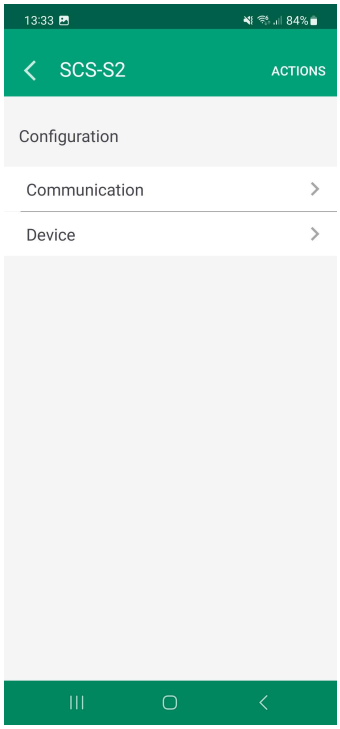
Note! The language setting is inherited from the handheld device settings.



Login pop up window

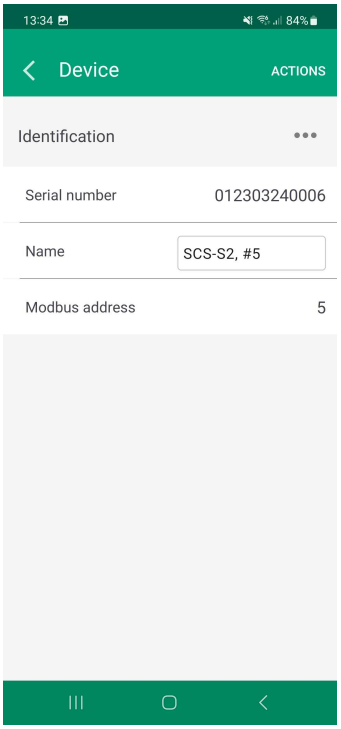
In this page you can choose the user login type, or to *Continue as guest*.

You need to be logged in as *Administrator* to change the unit name and address, communication settings, backup and restore settings, as well as doing firmware updates.



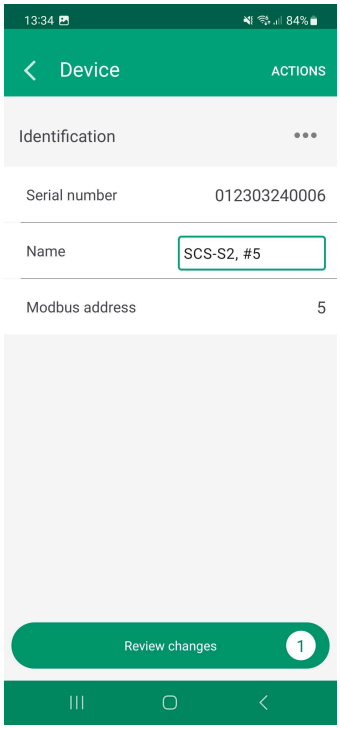
Configuration menu - Configuration, Communication, Device page

This page is a menu page to go to *Configuration*, *Communication*, and the device sub-pages.



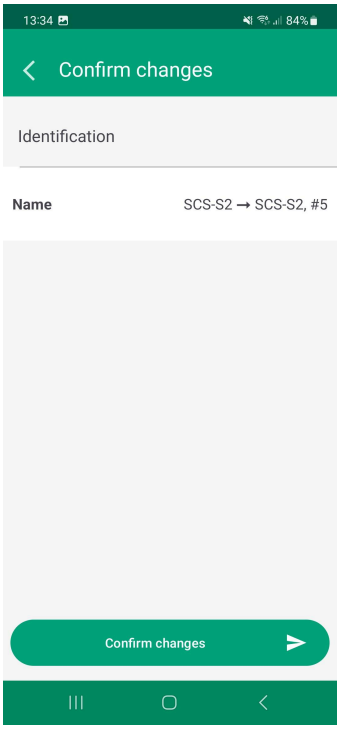
Configuration - Device page

This page enables you to set the unit configurations. Such as, device name and Modbus address.



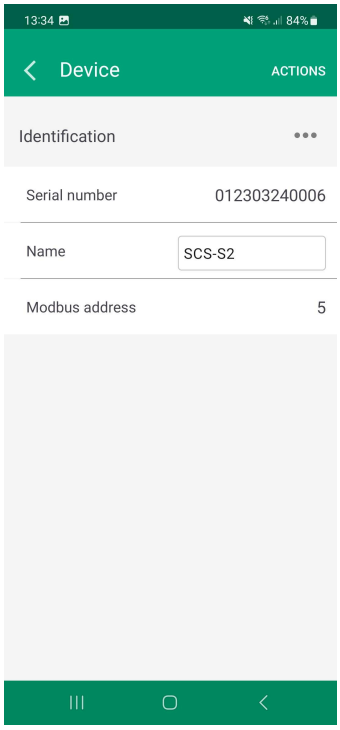
Configuration - Device - Change Name page

The page is shown when selecting the *Product name* field for change. Insert a new device name in the *Name* field, and tap **[Review changes]**.



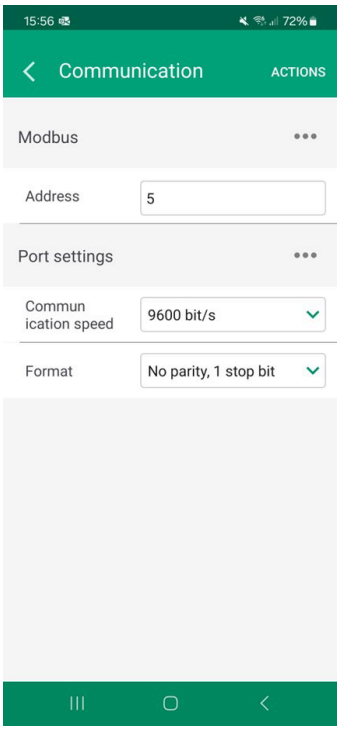
Configuration - Device - Confirmation - Name page

This confirmation page is shown when you have changed the *Name*. Tap **[Confirm changes]** to confirm the changes.



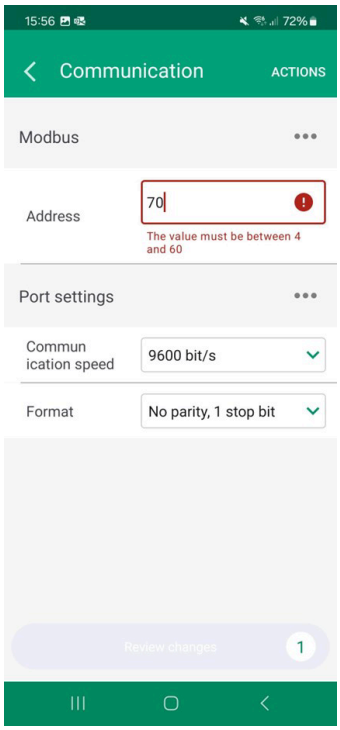
Configuration - Device - Name changed page

The page shown after you have confirmed the device *Name* change.



Communication - Modbus - Change of Modbus address page

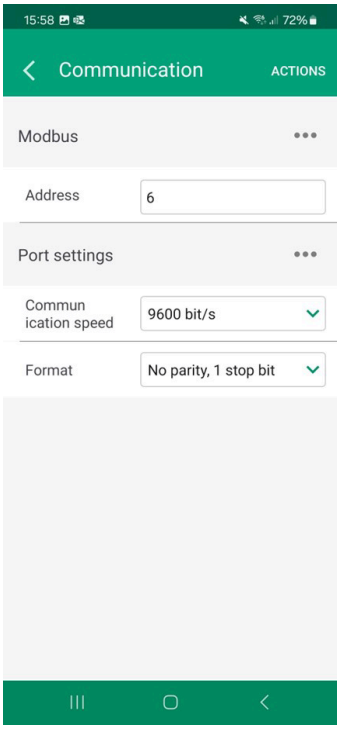
This page enables you to set the unit Modbus address.



Communication - Modbus - Inserting Modbus Address page

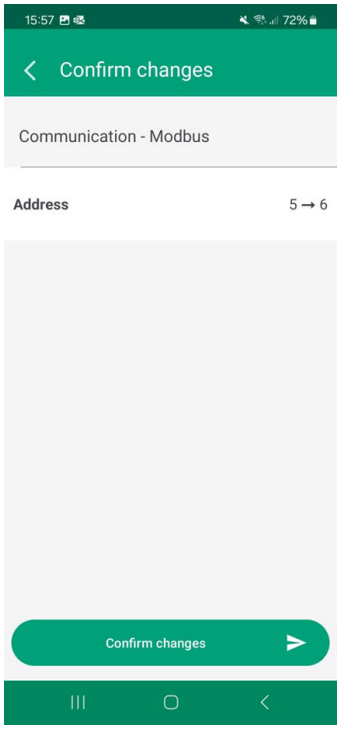
The page is shown when selecting the Modbus Address field for change. Insert a new Modbus Address in the field.

Note! Only addresses in the 4-60 range are approved.



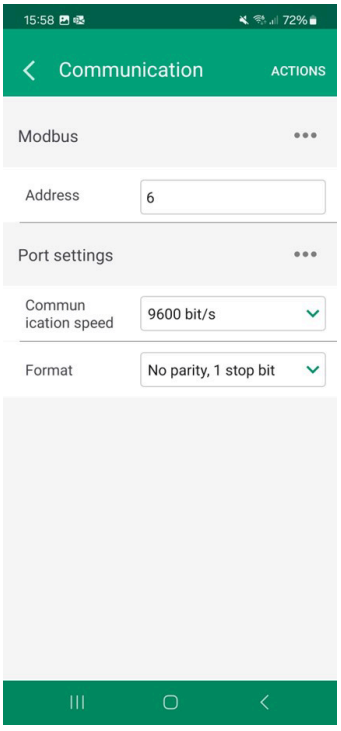
Communication - Modbus - Review Modbus communication Address changes page

The page is shown to review the Modbus address setting changes.



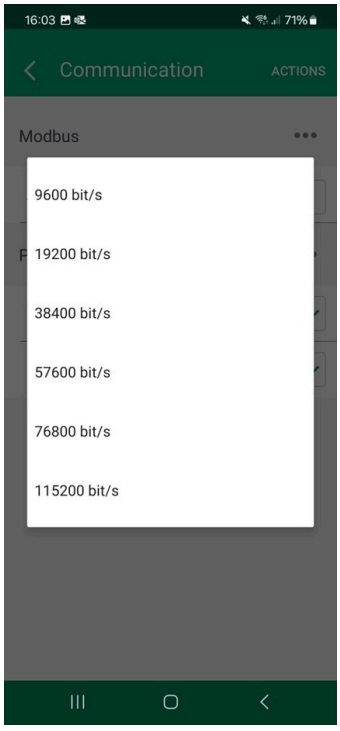
Communication - Modbus - Confirmation - Modbus Address page

The page is shown when you have reviewed changes. Tap **[Confirm changes]** to confirm the changes.



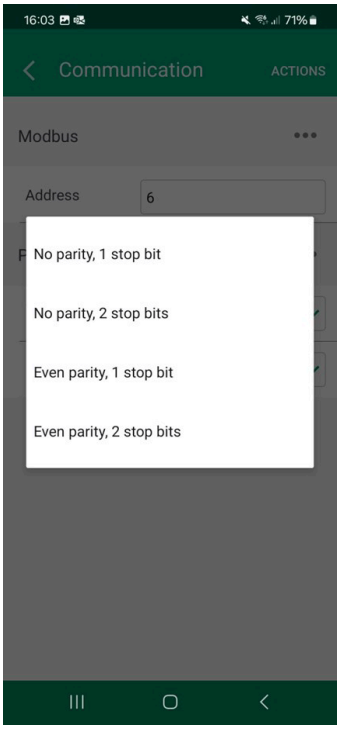
Communication – Port settings page

When using a master unit other than Regin SCS-M2, it is possible to change the communication speed and format as well. Please advice that the default settings are needed to communicate with SCS-M2.

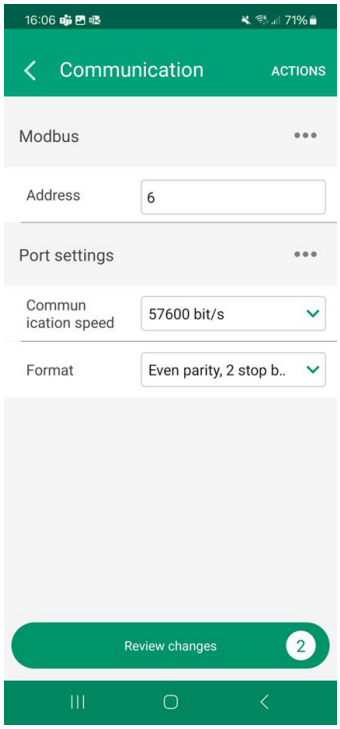


Communication – Port settings page

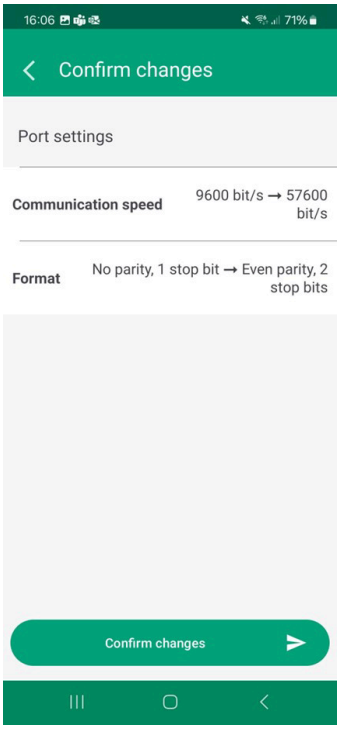
Available communication speeds.



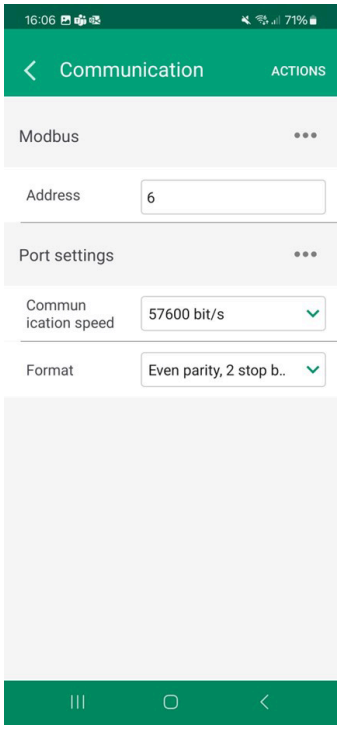
Communication – Port settings page
Available format (parity and stop bit(s)).



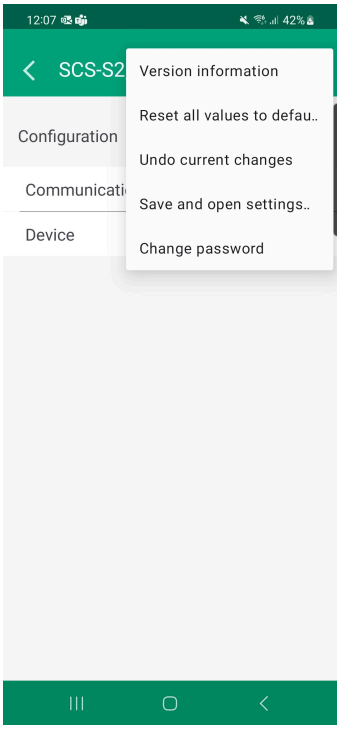
Communication – Port settings page
When changing communication speed and format, use the drop down lists and select what you want. Then you can tap the **[Review changes]** button.



Communication – Port settings page
When in review, you can see what changes will take place. Tap the **[Confirm changes]** button, if it looks OK.

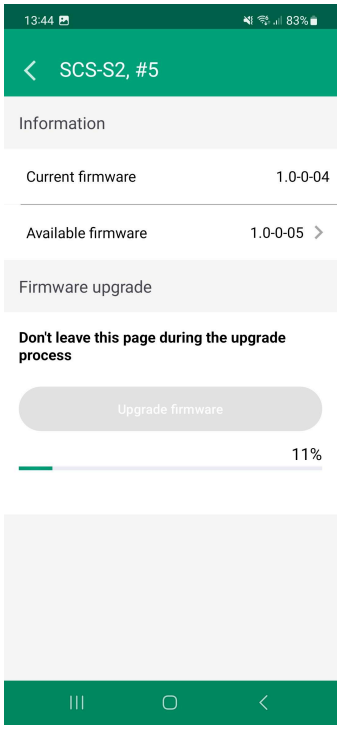


Communication – Port settings page
After confirmation of made changes, the current settings are presented as above.



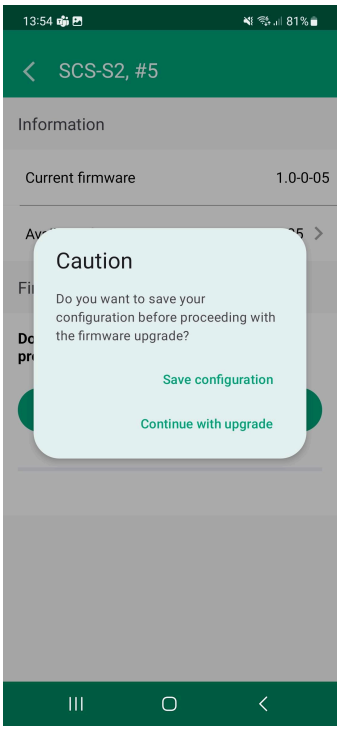
Administrator page

The page displays administrator options. *Version information, Reset all values to default, Undo current changes, Save and open settings..., Change password*



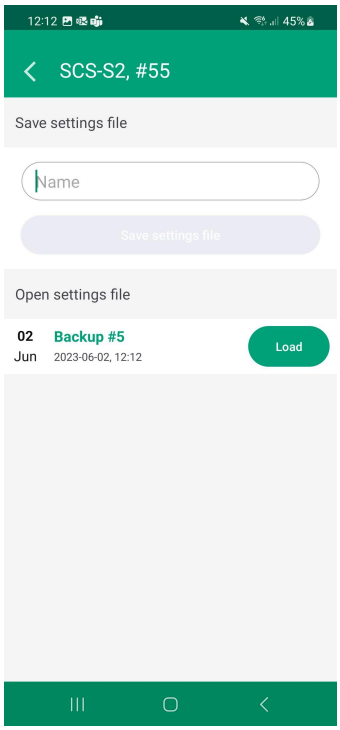
Firmware upgrade page

Shows the present firmware version, and available firmware upgrade. Tap **[Upgrade firmware]**, if needed.



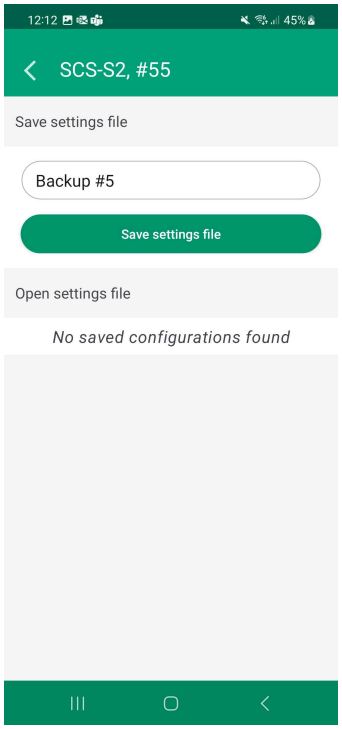
Upgrade firmware - with backup options pop up window

Tap **[Save configuration]** or **[Continue with upgrade]**.

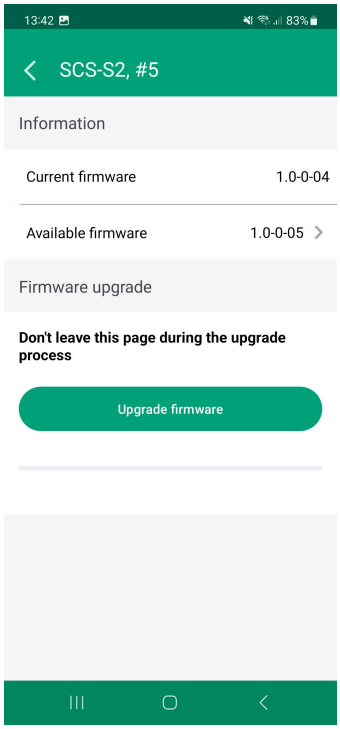


Save settings file - Name page

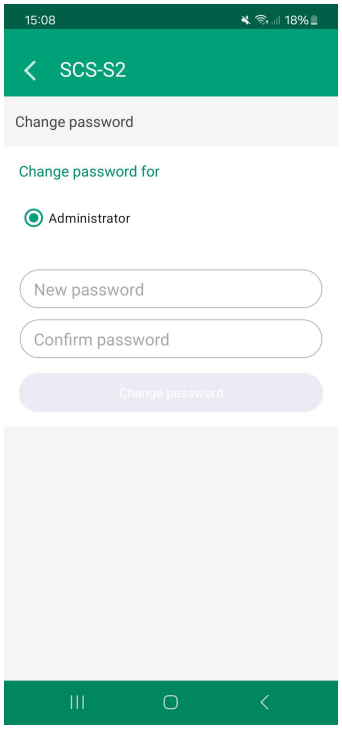
This page gives access to save a settings configuration file with a specific name.



Save settings file page
The page is shown when a settings configuration is ready to be saved.



Update in progress page
This page is shown when the upgrade progress can be started.



Change Password page
In this page you can change the user password.

3.10.2 Accessing, operation, and setting in the Regin:GO app

To access and enable operations and settings in the Regin:GO app, a valid password is required. See below list of access rights.

Administrator - password: Admin

- ✓ Update firmware
- ✓ Reset to default values
- ✓ Save and import local configuration
- ✓ Change password on all users
- ✓ Read and write values for device name and Modbus address.

Guest - password: N/A

- ✓ Read values decided by Regin:GO application

Note! Make sure to change the password after the first *Admin* login.

4 Information for the installer

4.1 Installation - General

4.1.1 Installation recommendations

Follow these guidelines regarding shielded cables:

- ✓ Only use shielded cables when the installation environment requires it.
- ✓ No need for shielded cables between modules, if installed in close proximity
- ✓ Connect shield to chassis ground at only one end of the cable.

For RS485 communication, the terminal *N* is only required between systems not sharing the same ground potential. When used, do not connect it to the cable screen. Note that it may be a single wire, but must be drawn together.

When the cable length is less than 30 m in RS485, a terminator is not required in normal cases. The use of terminators will decrease signal integrity thus try without first. When used, match the terminator value to the characteristic impedance of the cable.

Wiring examples can be found under each specific SCS model in the chapters below.

4.2 Installation - SCS-M2

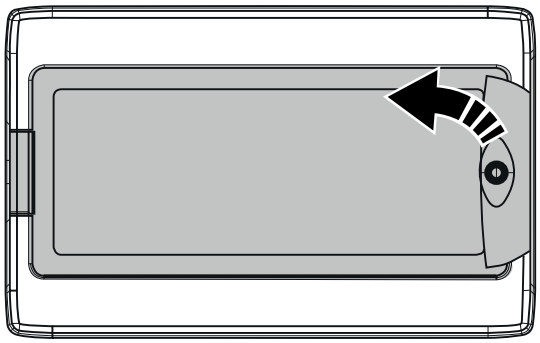
Caution! Before installation or maintenance, the power supply should first be disconnected. Installation or maintenance of this unit should only be carried out by qualified personnel. The manufacturer is not responsible for any eventual damage or injury caused by inadequate skills during installation, or through removal of, or deactivation of any security devices.

4.2.1 Installation

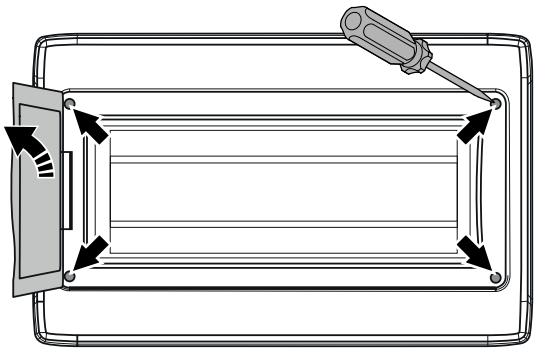
Installing cabinet cable glands

The SCS-M2 cabinet needs to be prepared with cable glands.

1. Open the SCS-M2 cabinet lid.



2. Unscrew the four top section fastening screws (see arrows).



3. Remove the cabinet top section.
4. Use a drill or hole cutter to drill any needed holes in the SCS-M2 cabinet bottom, with use of the moulded hole templates. See the illustration *Figure 4-1*.

Note! If a hole is made in the cabinet or in a cable gland and the cable is removed, the unit will not maintain its IP class.

5. Install the necessary cable glands (free of choice, not provided in the installation kit).

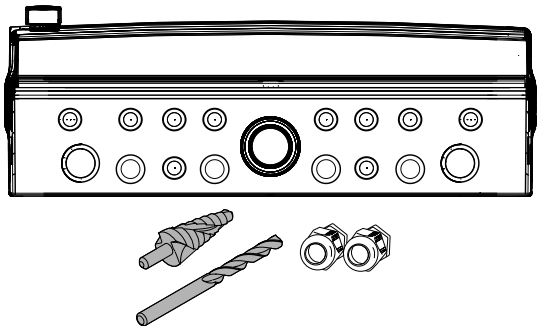
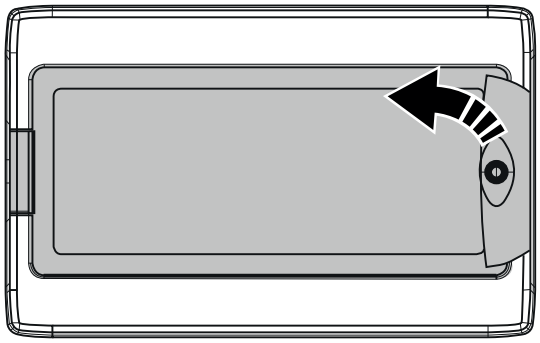


Figure 4-1 Cabinet cable gland templates

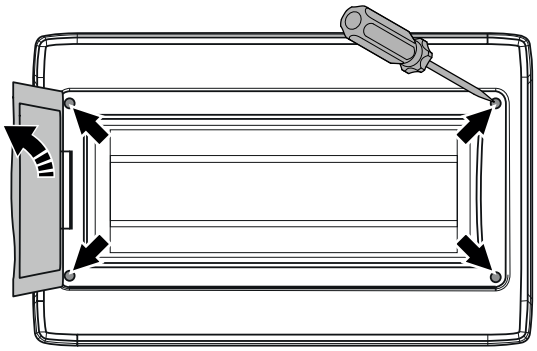
6. Reassemble the cabinet top section in the reverse order.

Mounting cabinet

1. Open the SCS-M2 cabinet lid.

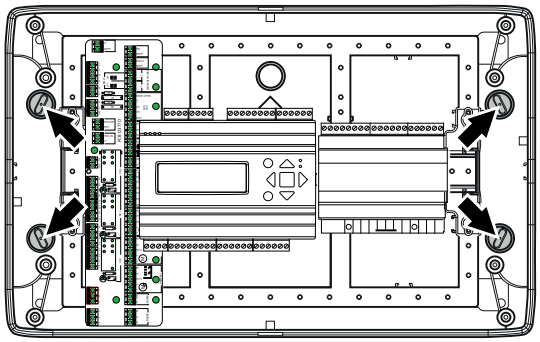


2. Unscrew the four top section fastening screws (see arrows).



3. Remove the cabinet top section.
4. Fasten the cabinet bottom section to a surface with four screws, using the four moulded hole templates (see arrows).

Note! If the unit will be mounted in a high humidity environment, install it vertically with the cable front downwards.

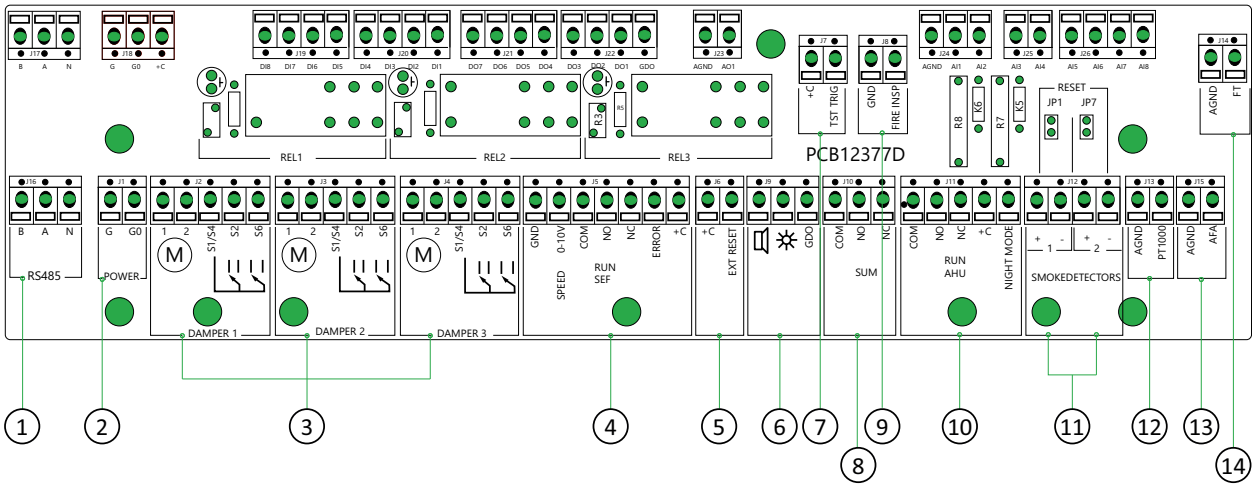


5. Reassemble the top section.

Accessing circuit card

Unscrew the cover lid to access the circuit card, the power supply, and the network cable.

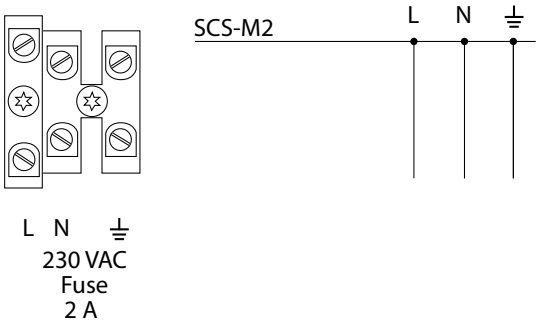
Circuit card overview



1	(RS485) Communication, SCS-PDTX + SCS-S2	✓ Daisy chain communication ✓ A to A, B to B connection ✓ N = Shield ✓ Recommended cable: Shielded twisted pair
2	(POWER) Power SCS-PDTX + two SCS-S2	✓ Can also supply power for two damper units, SCS-S2 + one SCS-PDTX ✓ Recommended cable: Standard 24 V 1x2
3	(DAMPER 1, DAMPER 2, DAMPER 3) Local fire dampers	✓ 1-2 = Power ✓ S1/S4, S2, S6 = End switches **Note!** Not intended for smoke control dampers, when locally connected
4	(RUN SEF) Smoke evacuation fan, SEF	✓ Control speed 0-10 V ✓ Connect via relay ✓ Choose between NO or NC ✓ Error input must be potential free
5	(EXT RESET) External reset, Alarm w. sound	✓ Connect via relay
6	('Light and sound') Communication, SCS-EP	✓ Activated when alarm is triggered
7	(TST TRIG) External activation Test	✓ Input for function test
8	(SUM) Sum alarm for BMS	✓ Output signal to external alarm ✓ Choose between NO or NC
9	(FIRE INSP) Fire inspection	✓ Input for fire inspection
10	(RUN AHU) Air handling unit, AHU	✓ Stops the air handling unit during function test or alarm ✓ Opens when OK ✓ Night mode availability ✓ Must be potential free
11	(SMOKE DETECTORS) Smoke detector	✓ Remove resistor to add smoke detectors ✓ Connect smoke ceiling- and/or duct detectors
12	(AGND/PT1000) Temperature sensor	✓ Input temperature sensor
13	(AGND/AFA) Automatic fire alarm	✓ Input automatic fire alarm
14	(AGND/FT) Duct thermostat	✓ Input for duct thermostat

Connecting Power supply

Power supply connection to the SCS-M2 master unit. Connect the master unit to 230 V.



4.3 Wiring

4.3.1 Cable dimensions

It is recommended to use the **Cable Dimensioning tool SCS-S2 - for Smoke Control System damper unit** calculation sheet to calculate specific project cable dimension requirements. The dimensioning tool can be downloaded from www.regincontrols.com. See also *3.3.4 Addition of external power supplies*.

4.4 Installation - SCS-S2

4.4.1 Installing SCS-S2

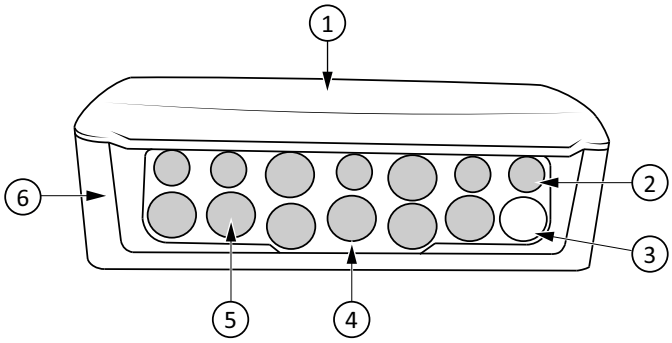


Figure 4-2 Cabinet cable gland templates

① *Lid*
② *Cable front*
③ *LED*
④ *Cable gland*
⑤ *Soft part of cable gland*
⑥ *Housing*

To connect and install cables into the unit (*Figure 4-3*):

1. Pierce a hole that is smaller than the cable diameter through the soft part of the cable gland (see *Figure 4-2*) with a circular object, such as a Phillips head screwdriver or an awl.

Caution! Make sure that the hole is smaller than the cable diameter. The soft material in the cable gland is intended to work as a seal against the cable, and if the hole is too big the unit will not be protected against humidity and dirt.

2. Push the cable through.
3. Secure the cables in the housing with a cable tie around the cable support. The width of the cable tie can be up to 2.8 mm.

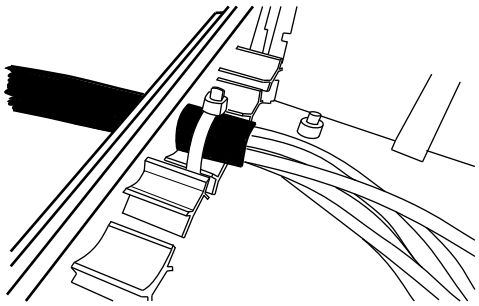


Figure 4-3 Secure the cable with a cable tie

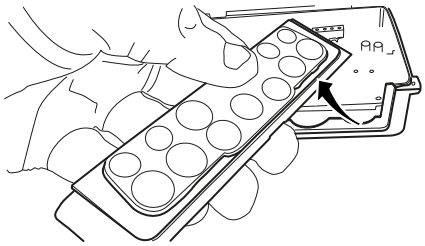


Figure 4-4 Cable gland assembly, removable from the housing

Caution! If a hole is made in a cable gland and the cable is removed, the unit will not maintain its IP-class.

Mounting

1. Mount the damper unit on a stable, vibration-free surface. It can be mounted horizontally with the lid up (No 1 in *Figure 4-2*) or vertically with the cable front (No 2 in *Figure 4-2*) of the unit pointing down.

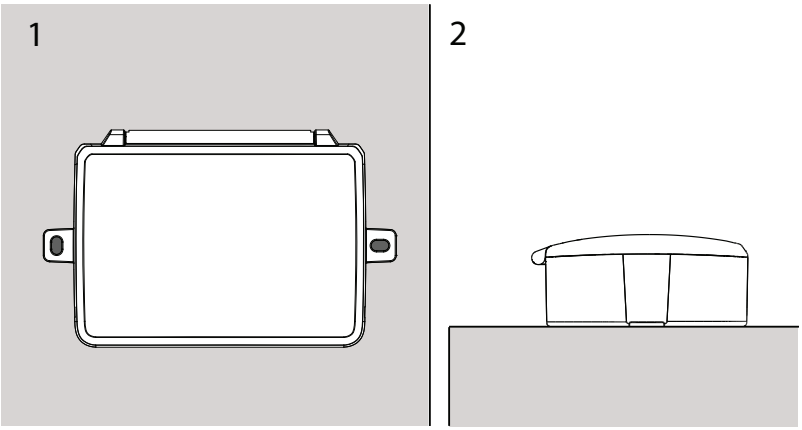


Figure 4-5 1: Vertically mounted on wall 2: Mounted horizontally

① *Refer to the graphics below for wiring.* ② *Power up the unit.*

4.4.2 Wiring

The damper unit has two analogue inputs, two digital inputs, one analogue output and two digital outputs. The inputs and outputs are used for damper control, smoke detector, temperature sensors and VAV. At delivery, the unit is equipped with a 2.2 kΩ resistor mounted between terminals DO1 and AI1 and a 1 kΩ resistor between G0 and AI4. The configuration of the in- and outputs are made from the master unit.

Connect damper actuator to damper unit

One damper actuator per SCS-S2 is allowed. The damper is controlled by either an actuator with spring return, a 3-point actuator or a 0-10 V VAV actuator. When an actuator is used, end position switches must be added to terminals S1/S4, S2 and S6. See wiring in *Figure 4-6*.

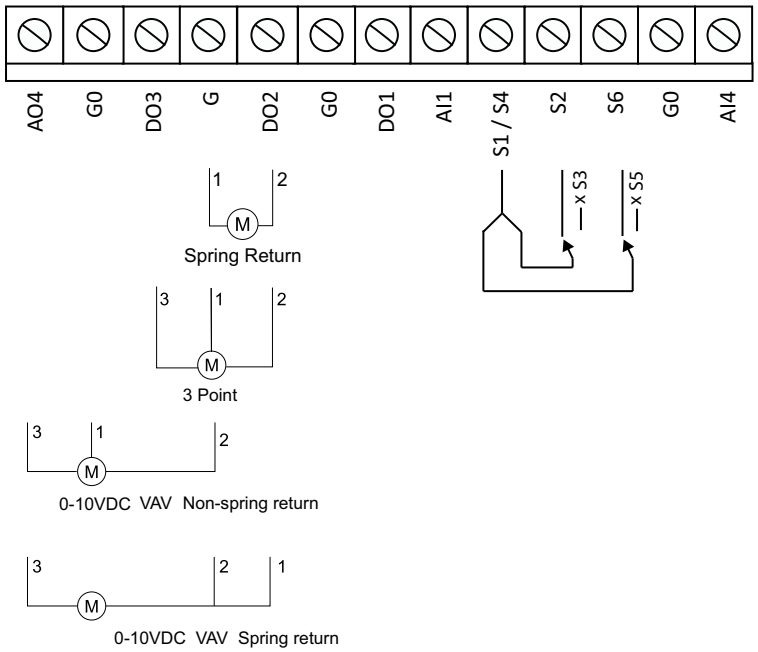


Figure 4-6 Actuators and end position switches

Connect smoke detector to damper unit

One smoke detector per SCS-S2 is allowed. Remove the 2.2 kΩ resistor from the damper unit and move it to the smoke detector. The digital output DO1 works as a +19 V DC power supply for the smoke detector.

AI1 is used to read the detector status in the range 0-100 mA, and is short circuit proof. See wiring in *Figure 4-7*.

Note! This wiring diagram is applicable when the Regin smoke detector SDD... is used. Please consult the smoke detector wiring diagram if another type of smoke detector is used.

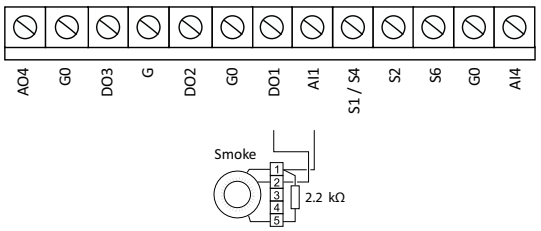


Figure 4-7 Smoke detector connected to power and Analogue input 1

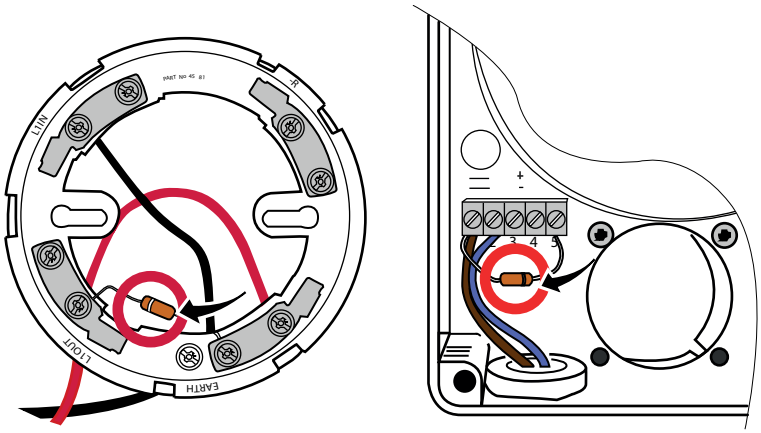


Figure 4-8 Move the resistor from SCS-M2/SCS-S2 to smoke detector

Note! SCS-M2 and SCS-S2 circuit cards have one 2.2 kΩ resistor on each smoke detector connection. When connecting a smoke detector to master/damper unit, remove the resistor from the unit circuit card and add it to the smoke detector. The resistor is still required on the smoke detector, see *Figure 4-8*.

Wiring alternatives

Temperature sensors and resistors can be added to the damper unit according to the wiring diagram *Figure 4-9*. The 1 kΩ resistor is removed when a temperature sensor or the VAV signal 0-10 V from zone is connected.

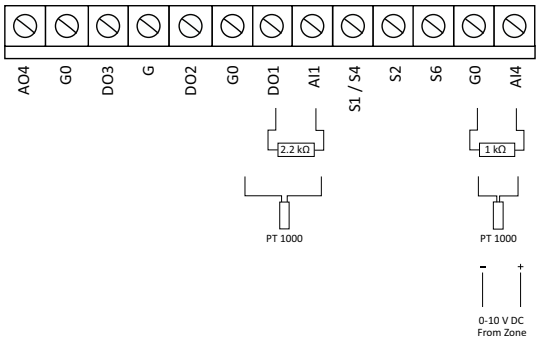


Figure 4-9 Wiring alternatives

Connect damper unit to temperature sensor

Up to two temperature sensors per SCS-S2 are allowed. The two sensors can have separate temperature alarm thresholds, if needed. The thresholds are set in the SCS-M2 master unit.

Note! If a temperature sensor is used on AI1, a smoke detector cannot be used, and if a temperature sensor is used on AI4 a VAV (0-10 V), a damper actuator cannot be used.

Connect damper unit to power

The damper unit is connected to 24 V AC power supply in terminals G and G0, see *Figure 4-11*.

If a number of units are installed in a smoke control system, there will be a voltage drop along the wire which makes it necessary to add external power supplies between the damper units, see *Figure 4-10*.

See also the Cable dimensioning tool, to be downloaded at www.regincontrols.com.

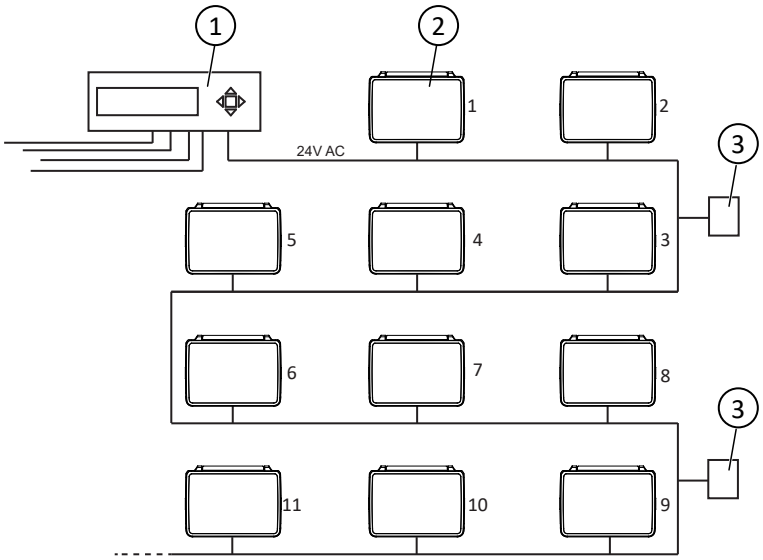


Figure 4-10 Example of smoke control system with master unit , damper units, and external power supplies

① *Master*

② *Damper unit*

③ *External Power Supply*

Note! The first two damper units can be powered by the SCS-M2 unit itself, but for any other additional damper units you need to add additional power supply. We recommend as a rule of thumb to add 75VA (TRAFO75) for every five (5) new damper units, or 150VA (TRAFO150) for every 10 damper units. See also the Cable dimensioning tool, to be downloaded at www.regincontrols.com, for a more detailed calculation of when additional power supply is needed.

Connect damper unit to master unit

The damper unit is connected to the master with a RS485 communication cable, see *Figure 4-11* and *Figure 4-12*. A shielded, double twisted, two wired RS485 cable is recommended.

The cable is connected to the **A** and **B** terminal in the master and the damper unit, see *Figure 4-12*.

Cable shield can not be connected to any terminals inside the SCS-S2 unit so that needs to be handled externally when connecting damper units in a chain.

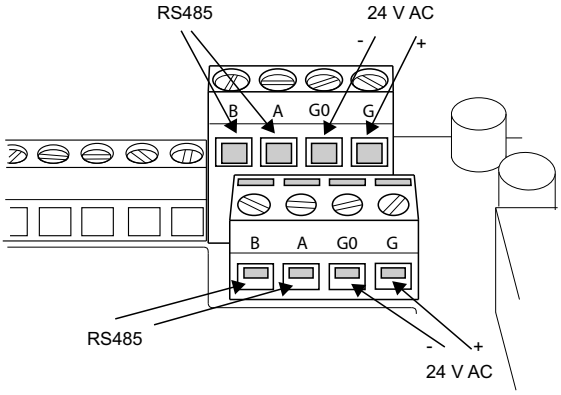


Figure 4-11 Connection to power and communication

Double terminals

The double terminals in the unit (*Figure 4-11*) are used when two or more units are connected to each other as shown in *Figure 4-12*. Both the communication cable and the cables for power supply can be connected in the upper and/or lower terminals for easy installation.

Connect damper unit to damper unit

When a damper unit is connected to another damper unit, G is connected to G, G0 to G0 (Power supply), A to A and B to B (communication, RS485), see *Figure 4-11* and *Figure 4-12*.

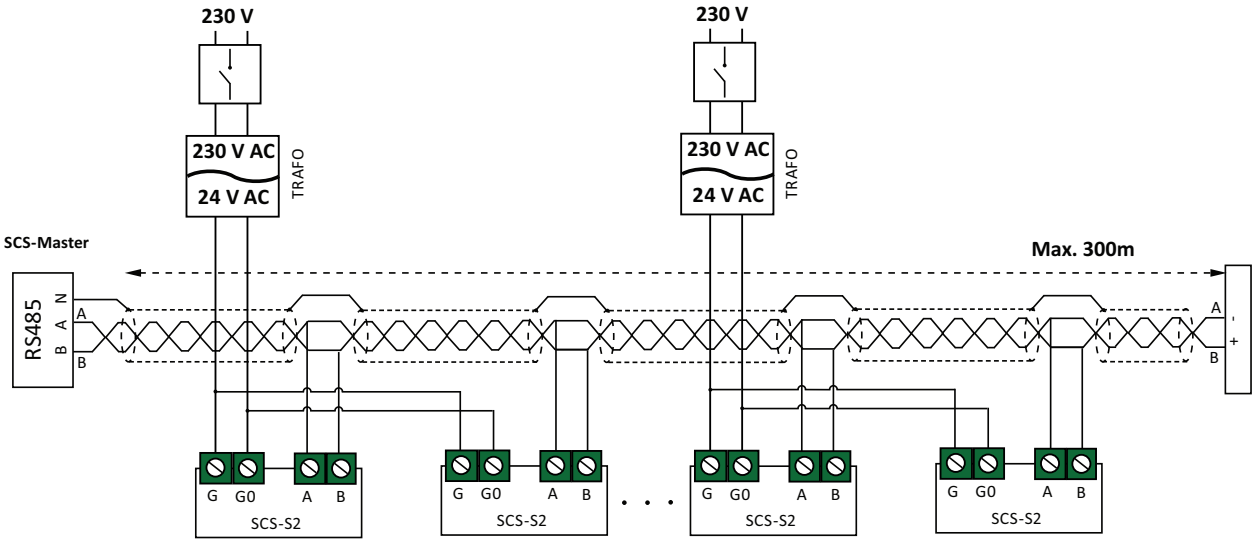


Figure 4-12 Damper units connected to a master unit and external power supplies.

4.5 Installation - SCS-PDTX

The unit can be mounted either vertically or horizontally. If it is installed in a humid environment, vertical mounting is recommended to allow moisture to escape.

Installing the product is made easily since the unit has three separate cable inlets, a large angled terminal and generous space.

4.5.1 Installing SCS-PDTX

The transmitter comes with one cable gland mounted and two loose. If more than one cable is used, the other cable glands must be assembled to the housing. Screw in the cable gland until the plastic knockout in the housing snaps. Make sure to remove the plastic knockout completely. Secure the cable gland. See *Figure 4-13*.

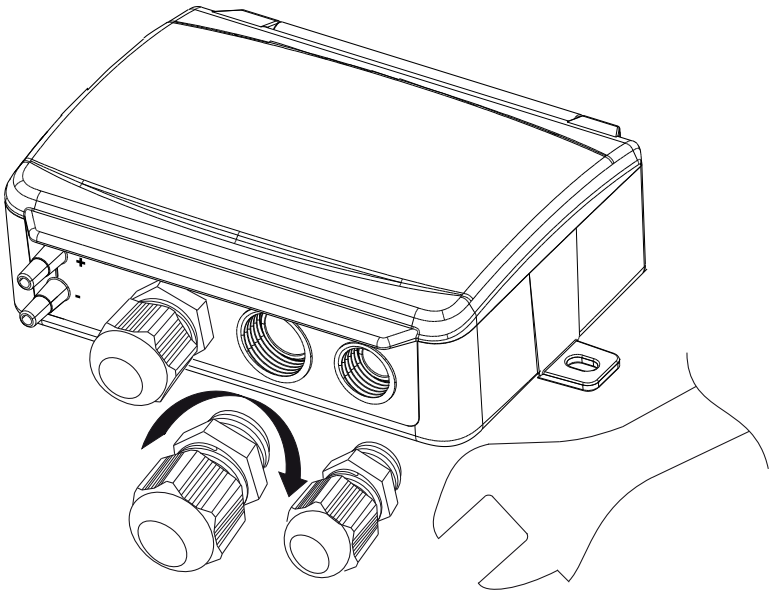
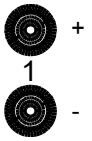


Figure 4-13 Installing cable glands

1. Mount the transmitter horizontally or vertically on a stable, vibration-free surface. If the unit is installed in a humid environment, install it vertically with the cable gland edge of the unit pointing down to allow moisture to escape.
2. Refer to the graphics below for wiring. Connect the communication cable to terminals 3(A) and 4(B). Use the leftmost cable gland for supply voltage and communication.
3. Power up the unit. Set the desired communication settings in the menu (see *2.6.2 Settings*). Note that the transmitter uses the default Modbus address = 1.
4. Refer to the standard product variable list (PDTX...-C) for information on how to access transmitter data.
5. Let the unit warm up for 10 minutes, then perform a zero-set calibration by pressing the push-button (see *2.6.4 Push-button*).
6. Connect plastic tubes from the ventilation duct to the pressure inlets.

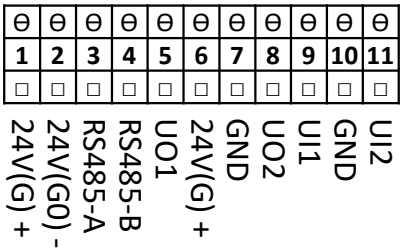


The two left inlets are connected to sensor 1. The inlet marked with '+' should be used to connect the tube with the highest pressure and the inlet marked with '-' to the one with the lowest pressure.

Note! A straight cut off nipple must be used for mounting in the ventilation duct.

For optimal measuring results, measuring points with turbulent air flow should be avoided. Preferably, measuring should be performed at a distance of 2 duct diameters before bends and branching and at 6 duct diameters after bends and branching.

4.5.2 Wiring



Terminal	Name	Description
1	24 V (G) +	Power supply 24 V AC/DC (Positive)
2	24 V (G0) -	Power supply 24 V AC/DC (Negative/Ground)
3	RS485 - A	Communication A (-)
4	RS485 - B	Communication B (+)
5	UO1	Universal output 1
6	24 V (G) +	Internally connected to Terminal 1
7	GND	Internally connected to Terminal 2
8	UO2	Universal output 2
9	UI1	Universal input 1
10	GND	Internally connected to Terminal 2
11	UI2	Universal input 2

Use a shielded, twisted pair cable for RS485 communication. At high risks of interference, a 120 Ω terminating resistor should be mounted at each end of the communications circuit.

Wiring example

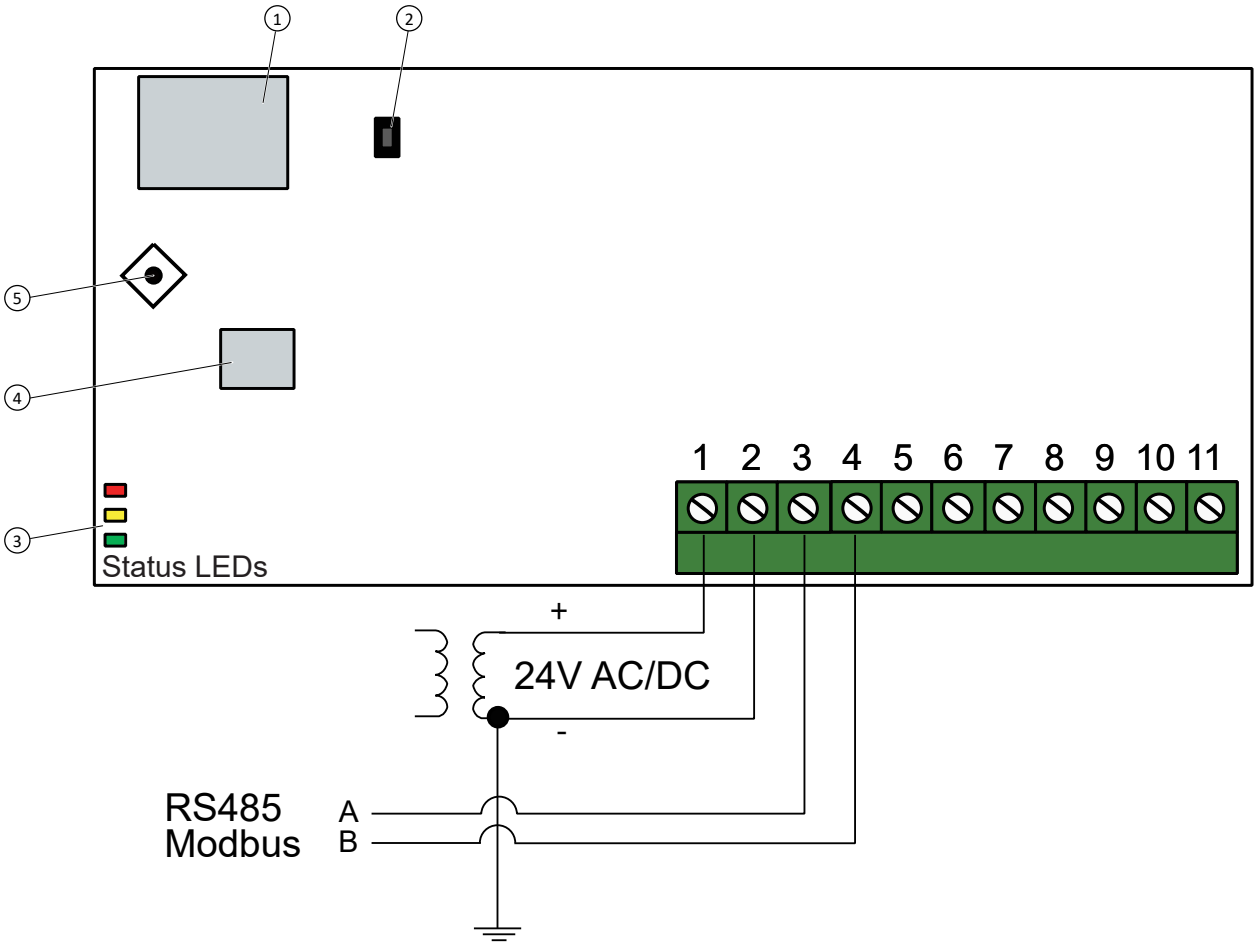


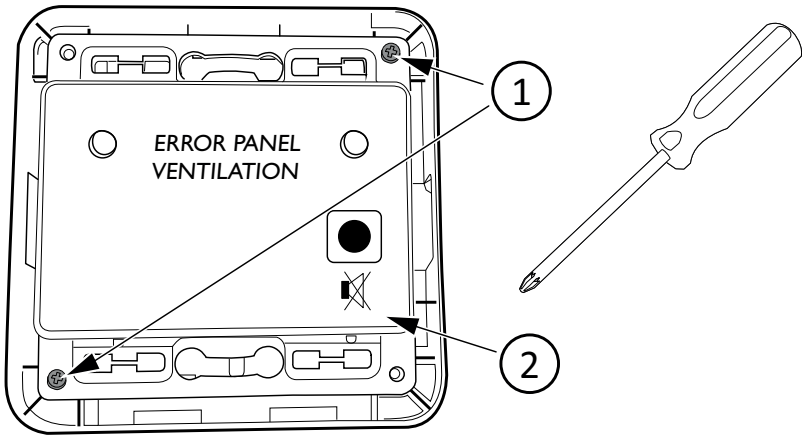
Figure 4-14 Wiring example, RS485 and Modbus connection

① *Display*
② *Push-button*
③ *Status LEDs*
④ *Sensor 1*
⑤ *Joystick*

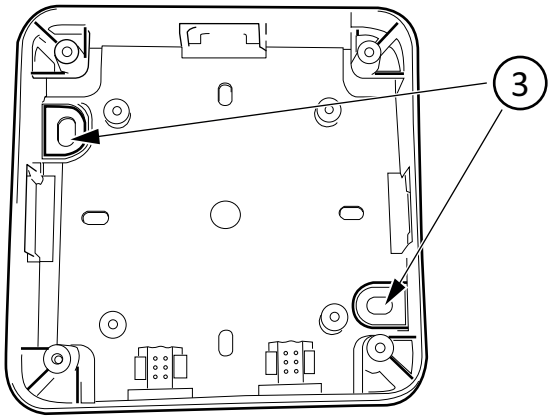
4.6 Installation - SCS-EP

4.6.1 Mounting

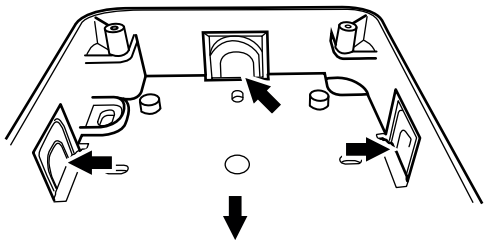
1. Remove the front lid frame.
2. Unscrew the two screws (1).
3. Remove the front cover assembly (2).



4. Place the bottom frame on a surface and mount with two screws in the two fastening holes (3).



5. Carve the needed holes for wiring in the casing with a knife, or similar.



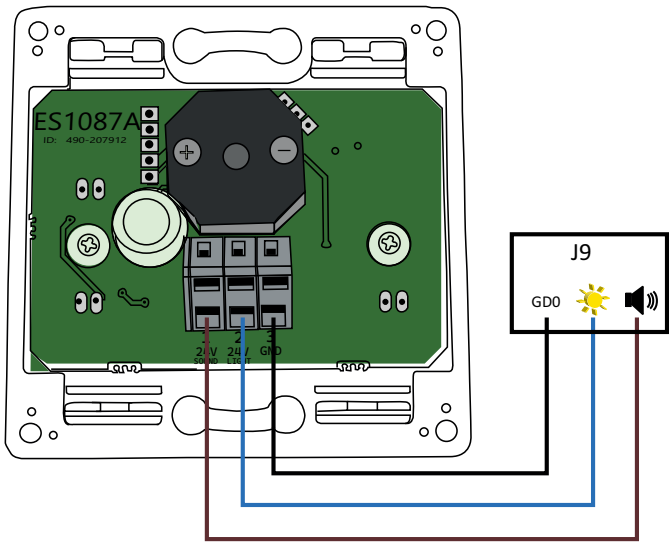
6. Connect the wiring and reassemble in the reverse order. See section *4.6.2 Wiring*.

4.6.2 Wiring

From the master terminal J9:

1. Connect GD0 (black) to connection terminal 3.
2. Connect Light (blue) to connection terminal 2.

3. Connect Sound (brown) to connection terminal 1.



4.7 Installation - Signal repeater, REPEAT485

4.7.1 Installation

Both RS485 cables are connected to the repeater via removable 10-Pin terminal blocks.

The repeater can, if required, easily be mounted on a DIN-Rail.

Note! The maximum transfer distance with a REPEAT485 is 1200 m at transmission speeds of 9.6 kbps (400 m at 115.2 kbps). For longer distances, additional repeaters are required. If the repeater is used on an uninsulated port, it will result in a decrease in transfer distance.

4.7.2 Wiring

Connect signal repeater, REPEAT485 according to *Figure 4-15*.

You need to connect REPEAT485 to a separate power supply - 24 V DC.

See the illustration *Figure 4-15* for an example of connection.

Note! A repeater is needed between SCS-S2 damper units when the number exceeds 30 units, or if the cable length is >300 m between the damper units.

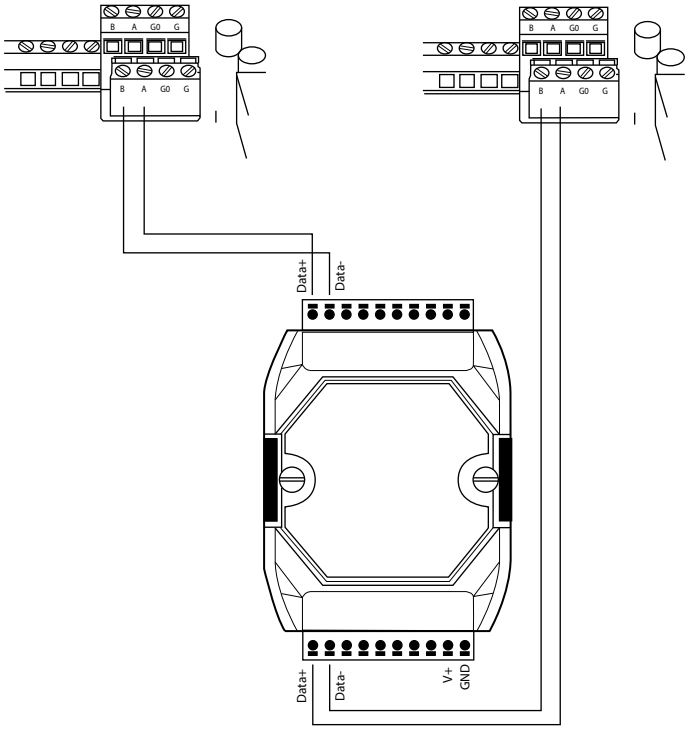


Figure 4-15 Wiring, Repeater

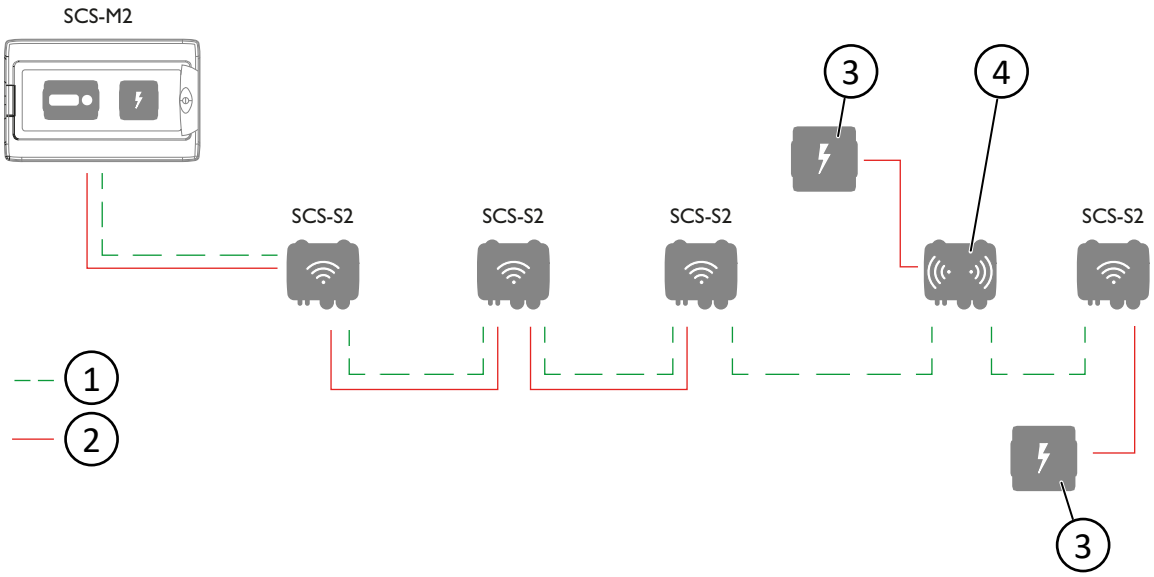


Figure 4-16 Connection, Repeater

① *Communication*
② *24 V*
③ *Power supply, 24 V DC*
④ *Signal repeater*

4.8 Installation - Duct temperature sensor PT1000

The duct temperature sensor is very easy to mount and it has an adjustable insertion length.

The terminal block for connecting the analog input to a controller is located under the cover. The cover is easily removed from the base with a twist.

The sensor is designed so that the seal remains in the cover at all times and the cable gland is replaceable.

It is possible to have one or two duct temperature sensors connected to the damper unit, with separate temperature alarm thresholds, if needed. However, then you cannot have VAV units and smoke detectors connected to the damper unit.

Appendix A Technical data

A.1 SCS-M2 Master unit

A.1.1 General data

Supply voltage	230V
Protection class	IP65
Ambient temperature	0…+50 °C
Storage temperature	-20…+70°C
Mounting	Wall
Dimensions, external (WxHxD)	445 x 280 x 150 (165 w. handle) mm

A.1.2 Controller

General data

Supply voltage	24 V ~ (21…27 V ~ 50…60 Hz) / 20…36 V DC (not units with a CI input)
Power consumption	4 VA
Protection class	IP20
Ambient humidity	Max. 95 % RH
Ambient temperature	0…50 °C
Storage temperature	-20…+70 °C
Operating system	EXOreal
Battery backup	Memory and real-time clock, at least 5 years
Number of modules	8.5
Dimensions, external (WxHxD)	149 x 121 x 58 mm

Inputs & Outputs

Please refer to the manual *Inputs and outputs specifications* for detailed information regarding the inputs and outputs in this model.

+C output	24 V DC, short circuit protected
Digital Output (DO)	Max. 2 A continuous load, total max. 8 A

Communication ports

Communication ports	2
Serial ports	2
Ethernet ports	1

Ethernet port

Port type	Ethernet
Default protocol	EXOline-TCP
Supported protocols	EXOline-TCP / BACnet/IP / Modbus/IP
Cable connection	RJ45, 10Base-T/100Base-TX auto-negotiation

Cable length	Max. 100 m
Cabling	Min. Cat 5

HMI

Clock	Yes
Display	Built-in or/and external
Display type	Backlit, LCD, 4 rows of 20 characters, international character set
Indication type	LEDs

Material

Material, housing	Polycarbonate, PC

A.1.3 Transformer, TRAFO63/D

Technical data

Supply voltage	230 V ~ (230 V ~ 50/60 Hz 63 VA) (as number of damper units increase additional power supply is needed)
Output voltage	12 V AC and 24 V AC
Max. load	63 VA
Mounting	DIN-rail
Number of modules	6
Ambient temperature	Max. 40 °C
Protection class	IP20
Isolation class	II
Temperature class	B
Dimensions, external (WxHxD)	106 x 90 x 62 mm

A.2 SCS-S2, Damper unit

A.2.1 Technical data

Supply voltage	18…30 V AC (50…60 Hz), 22…26 V DC
Power consumption	2 VA, 2 W
Protection, Electrical	Class III
Protection class, Housing	IP44
Ambient temperature	-25…+50 °C
Storage temperature	-25…+70 °C
Ambient humidity	5…95 %RH (non-condensing)
Wireless communication	Bluetooth® Low Energy
Communication frequency	2.4 GHz
Number of cable glands	8 large, 5 small
Recommended cable size, cable glands	**Note!** Circular cable only ✓ Small cable gland: 3…6 mm ✓ Large cable gland: 6…10 mm

Approved cable area	✓ Solid/stranded cable: 0.14…1.5 mm² ✓ Stranded cable with ferrule: 0.25…1.0 mm²
Recommended cable tie width	Up to 2.8 mm
Dimensions, external (WxHxD)	167 x 110 x 46 mm
Material, (housing, base and lid)	Polycarbonate (PC)
Material, cable gland	Thermoplastic elastomer (TPS-SEBS)

A.2.2 Smoke detector specifics

Number of smoke detectors per damper unit	1
Supply voltage	+ 19 V DC, provided from terminal DO1
Detector status range	0…100 mA

A.2.3 Communication port data

Communication ports	1
Port type	RS485, isolated
Supported protocols	Modbus
Modbus address	Modbus addresses 4…60 must be used for the damper units. If addresses outside this range is used, the master will not find the units.
Port isolation	Isolated
Communication speed, default	9600 Baud (default)
Parity	None (default)
Stop bits	1 (default)
Cable length	Max. 300 m[1]

1. A repeater can be used if the cable length exceeds 300 m

A.3 SCS-EP, Error panel

A.3.1 Technical data

IP class	IP40
Power	24 V AC/DC, +/- 15%, powered from SCS-M2
LED light colour	Yellow
Ambient temperature	0...50 °C

A.4 SCS-PDTX, Pressure transmitter

A.4.1 Technical data

Supply voltage	24 V AC/DC (21…27 V AC/DC)
Protection class	IP44
Power consumption	< 4 VA
Ambient humidity	0…95 % RH (non-condensing)
Ambient temperature	-25…+50 °C

Working range, pressure	0…7500 Pa (factory setting) 0…75 mbar 0…764 mmH_2O 0…30 inH_2O
Working range, flow	0...65000 m^3/h (factory setting) 0...31000 l/s 0...65000 Ft^3/min
Cable glands	2 x M20 (cable diameter 5…12 mm) 1 x M16 (cable diameter 3.5…10 mm)
Max. overvoltage	±18 V, on any terminal (not G and G0)
Electronic damping	0 s (0…120 s)
Accessories, included	Two pressure outlets (straight) and 2 m plastic tube. Art. no.: ANS-20
Dimensions, external (WxHxD)	167 x (~130) x 46 mm

A.4.2 Pressure data

Media	Air, non-combustible and non-aggressive gases
Annual deviation	±2 Pa (1250 Pa)
K-factor	5 (5…700)

A.4.3 Universal Input, UI1 and UI2

Please, see the standard PDTX products.

A.4.4 Universal output, UO1 and UO2

Please, see the standard PDTX products.

A.4.5 Communication port data

Communication ports	1
Port type	RS485
Supported protocols	Modbus
Default address	100 (Hex 64)
Port isolation	Non-isolated
Cable length	Max. 100 m

Appendix B Inputs and Outputs

B.1 SCS-S2, Inputs and Outputs

B.1.1 General

Analogue inputs (AI)	2
Digital inputs (DI)	2
Analogue outputs (AO)	1
Digital outputs (DO)	2
+19 V DC (DO1 on label)	1

B.1.2 Analogue inputs

Analogue inputs	0…10 V or PT1000
Accuracy for input	± 1 % (0…10 V) ± 1 K (PT1000)
Measuring range, PT1000	-40…+150 °C

B.1.3 Digital inputs

Digital input (DI)	Potential-free contacts on / off (on = closed)
Output pull-up current	0.5 mA (max. 12 V)

B.1.4 Analogue outputs

Analogue outputs	0…10 V
Load impedance, 0...10 V	Min. 10 kΩ
Accuracy	± 1 %

B.1.5 Digital ouputs

Configuration	Mosfet sinking type outputs, 24 V AC or DC, 2 A continuous
Output current	Max. 2A (in total) **Caution!** This is a non-protected output. A current overload will destroy the unit

B.2 SCS-PDTX, Inputs and Outputs

B.2.1 Universal Input, UI1 and UI2

Universal inputs (UI)	2
Configuration	AI (AI / DI), see specifications below

Configured as AI:

Analogue inputs (AI)	0…10 V (0…10 V / PT1000 / Ni1000-01)
Accuracy	± 1 % (0…10 V) ± 0.5 K (PT1000/Ni1000-01)
Measuring range, temperature	-40…+60 °C

Configured as DI:

Digital input (DI)	Potential-free contacts on / off (on = closed)
Output current	0.5 mA (max. 2.5 V)

B.2.2 Universal Output, UO1 and UO2

Universal outputs (UO)	2
Configuration	AO (AO / DO), see specifications below

Configured as AO:

Analogue outputs (AO)	0…10 V
Load impedance, 0...10 V	Min. 10 kΩ
Accuracy	± 1 %

Configured as DO:

Configuration	Mosfet outputs, 24 V AC or DC, 2 A continuous
Power output	Max. 2 A (total UO1 + UO2)

Appendix C Alarm list

The alarm texts and descriptions for the controller.

C.1 SCS-M2

Variable	Description
Actual.SumAlarm	Sum Alarm
Actual.FireAlarm(0)	Fire alarm, Sum alarm of smoke detector 1-60
Actual.FireAlarm(*NN*)	Alarm# **(1-60)**; Fire alarm, Smoke detector *NN*
Actual.FireAlarm(3)	Not available
Actual.SmokeDetError(0)	Error, Sum alarm of smoke detector 1-60
Actual.SmokeDetError(*NN*)	Alarm# **(61-120)**; Error, Smoke detector *NN*
Actual.SmokeDetError(3)	Not available
Actual.SmokeDetService(0)	Service, Sum alarm of smoke detector **(1-60)**
Actual.SmokeDetService(*NN*)	Alarm# **(121-180)**; Service, Smoke detektor *NN*
Actual.SmokeDetService(3)	Not available
Actual.DamperAlarm(0)	Fault alarm, Sum alarm of damper **(1-60)**
Actual.DamperAlarm(*NN*)	Alarm# **(181-240)**; Fault alarm, Damper *NN*
Actual.SlaveComError(0)	Com error, sum alarm slave **(4-60)**
Actual.SlaveComError(*NN*)	Alarm# **(244-300)**; Com error, slave *NN*
Actual.SlaveTempError(0)	Slave temperature alarm AI1, sum alarm slave **(4-60)**
Actual.SlaveTempError(*NN*)	Alarm# **(304- 360)**; Slave temperature alarm AI1, slave *NN*
Actual.DamperManMode(0)	Sum alarm for damper **(1-60)** in manual mode
Actual.DamperManMode(*NN*)	Alarm# **(361-420)**; Damper 1 in manual mode
Actual.DamperManModeGen	Alarm# 421; General damper control in manual mode
Actual.PressureSensComError	Alarm# 422; Communication error pressure transmitter
Actual.PressureSensError	Alarm# 423; Pressure sensor error
Actual.ABA_Alarm	Alarm# 424; Alarm central automatic fire unit
Actual.Thermostat_Alarm	Alarm# 425; Alarm Thermostat
Actual.FireInpector_Alarm	Alarm# 426; Alarm Inspector
Actual.Temp_Alarm	Alarm# 427; Alarm Temperature
Actual.Temp_Error_Alarm	Alarm# 428; Alarm Temperature Error
Actual.FuncTestFail	Alarm# 429; Function test fail
Actual.SEF_Alarm	Alarm# 430; Alarm SEF
Actual.SEF_Test_Alarm	Alarm# 431; SEF test alarm, pressure setpoint is not ok, within the timeout
Actual.SEF_HighPrAlarm	Alarm# 432; SEF pressure more than max. limit
Actual.SEF_LowPrAlarm	Alarm# 433; SEF pressure less than min. limit
Actual.SEF_ManModeAlarm	Alarm# 434; SEF in manual mode
Actual.AHUSurvAlarm	Alarm# 435; AHU surveillance pressure alarm
Actual.BatteryError	Alarm# 436; Internal battery error

Variable	Description
Actual.SlaveTempErrorAI4(0)	Slave temperature alarm AI4, sum alarm slave **(4-60)**
Actual.SlaveTempErrorAI4(4)	Alarm# **(437-493)**; Slave temperature alarm AI4, slave *NN*

Appendix D Modbus Slave - Cross Reference list

D.1 Coils Register

Address	EXOL Variable	Description
0	Settings.FuncTestRequest	Request Functiontest (whole system)
1	Settings.SEF_FuncTestRequest	Request functiontest on SEF
2	Settings.DamperFuncTestReq(1)	Function test on individual damper,damper 1
3	Settings.DamperFuncTestReq(2)	Function test on individual damper,damper 2
4	Settings.DamperFuncTestReq(3)	Function test on individual damper,damper 3
5	Settings.DamperFuncTestReq(4)	Function test on individual damper,damper 4
6	Settings.DamperFuncTestReq(5)	Function test on individual damper,damper 5
7	Settings.DamperFuncTestReq(6)	Function test on individual damper,damper 6
8	Settings.DamperFuncTestReq(7)	Function test on individual damper,damper 7
9	Settings.DamperFuncTestReq(8)	Function test on individual damper,damper 8
10	Settings.DamperFuncTestReq(9)	Function test on individual damper,damper 9
11	Settings.DamperFuncTestReq(10)	Function test on individual damper,damper 10
12	Settings.DamperFuncTestReq(11)	Function test on individual damper,damper 11
13	Settings.DamperFuncTestReq(12)	Function test on individual damper,damper 12
14	Settings.DamperFuncTestReq(13)	Function test on individual damper,damper 13
15	Settings.DamperFuncTestReq(14)	Function test on individual damper,damper 14
16	Settings.DamperFuncTestReq(15)	Function test on individual damper,damper 15
17	Settings.DamperFuncTestReq(16)	Function test on individual damper,damper 16
18	Settings.DamperFuncTestReq(17)	Function test on individual damper,damper 17
19	Settings.DamperFuncTestReq(18)	Function test on individual damper,damper 18
20	Settings.DamperFuncTestReq(19)	Function test on individual damper,damper 19
21	Settings.DamperFuncTestReq(20)	Function test on individual damper,damper 20
22	Settings.DamperFuncTestReq(21)	Function test on individual damper,damper 21
23	Settings.DamperFuncTestReq(22)	Function test on individual damper,damper 22
24	Settings.DamperFuncTestReq(23)	Function test on individual damper,damper 23
25	Settings.DamperFuncTestReq(24)	Function test on individual damper,damper 24
26	Settings.DamperFuncTestReq(25)	Function test on individual damper,damper 25

Address	EXOL Variable	Description
27	Settings.DamperFuncTestReq(26)	Function test on individual damper,damper 26
28	Settings.DamperFuncTestReq(27)	Function test on individual damper,damper 27
29	Settings.DamperFuncTestReq(28)	Function test on individual damper,damper 28
30	Settings.DamperFuncTestReq(29)	Function test on individual damper,damper 29
31	Settings.DamperFuncTestReq(30)	Function test on individual damper,damper 30
32	Settings.DamperFuncTestReq(31)	Function test on individual damper,damper 31
33	Settings.DamperFuncTestReq(32)	Function test on individual damper,damper 32
34	Settings.DamperFuncTestReq(33)	Function test on individual damper,damper 33
35	Settings.DamperFuncTestReq(34)	Function test on individual damper,damper 34
36	Settings.DamperFuncTestReq(35)	Function test on individual damper,damper 35
37	Settings.DamperFuncTestReq(36)	Function test on individual damper,damper 36
38	Settings.DamperFuncTestReq(37)	Function test on individual damper,damper 37
39	Settings.DamperFuncTestReq(38)	Function test on individual damper,damper 38
40	Settings.DamperFuncTestReq(39)	Function test on individual damper,damper 39
41	Settings.DamperFuncTestReq(40)	Function test on individual damper,damper 40
42	Settings.DamperFuncTestReq(41)	Function test on individual damper,damper 41
43	Settings.DamperFuncTestReq(42)	Function test on individual damper,damper 42
44	Settings.DamperFuncTestReq(43)	Function test on individual damper,damper 43
45	Settings.DamperFuncTestReq(44)	Function test on individual damper,damper 44
46	Settings.DamperFuncTestReq(45)	Function test on individual damper,damper 45
47	Settings.DamperFuncTestReq(46)	Function test on individual damper,damper 46
48	Settings.DamperFuncTestReq(47)	Function test on individual damper,damper 47
49	Settings.DamperFuncTestReq(48)	Function test on individual damper,damper 48
50	Settings.DamperFuncTestReq(49)	Function test on individual damper,damper 49
51	Settings.DamperFuncTestReq(50)	Function test on individual damper,damper 50
52	Settings.DamperFuncTestReq(51)	Function test on individual damper,damper 51
53	Settings.DamperFuncTestReq(52)	Function test on individual damper,damper 52
54	Settings.DamperFuncTestReq(53)	Function test on individual damper,damper 53
55	Settings.DamperFuncTestReq(54)	Function test on individual damper,damper 54

Address	EXOL Variable	Description
56	Settings.DamperFuncTestReq(55)	Function test on individual damper,damper 55
57	Settings.DamperFuncTestReq(56)	Function test on individual damper,damper 56
58	Settings.DamperFuncTestReq(57)	Function test on individual damper,damper 57
59	Settings.DamperFuncTestReq(58)	Function test on individual damper,damper 58
60	Settings.DamperFuncTestReq(59)	Function test on individual damper,damper 59
61	Settings.DamperFuncTestReq(60)	Function test on individual damper,damper 60
62	Settings.NightModeRequest	Request nightmode
63	Settings.FuncTestReqCheckTime	Check new function test time
64	Settings.FuncTestReqTimeCommit	Commit checked time (only works if Func-TestDateStatus is ok)

D.2 Discrete inputs

Address	EXOL variable	Descriptions
0	Actual.DI1_Damper1Closed	Digital input 1, Damper 1 Close indication
1	Actual.DI2_Damper1Open	Digital input 2, Damper 1 Open indication
2	Actual.DI3_Damper2Closed	Digital input 3, Damper 2 Close indication
3	Actual.DI4_Damper2Open	Digital input 4, Damper 2 Open indication
4	Actual.DI5_Damper3Closed	Digital input 5, Damper 3 Close indication
5	Actual.DI6_Damper3Open	Digital input 6, Damper 3 Open indication
6	Actual.DI7_AckAlarmBuzzer	Digital input 7, Acknowledge the alarm buzzer
7	Actual.DI8_FunctionTest	Digital input 8, Trig function test
8	Actual.UI2_Night	Universal input 2 (Digital input 10), Night mode
9	Actual.UI3_SEFAlarm	Universal input 3 (Digital input 11), SEF Alarm
10	Actual.DO1_Damper1	Digital output 1, Damper 1 Power
11	Actual.DO2_Damper2	Digital output 2, Damper 2 Power
12	Actual.DO3_Damper3	Digital output 3, Damper 3 Power
13	Actual.DO4_AlarmBuzzer	Digital output 4, Alarm buzzer
14	Actual.DO5_SumAlarm	Digital output 5, SumAlarm
15	Actual.DO6_RunAHU	Digital output 6, Run AHU
16	Actual.DO7_SEF	Digital output 7, Run SEF
17	Actual.DamperPower(1)	Power to damper 1
18	Actual.DamperPower(2)	Power to damper 2
19	Actual.DamperPower(3)	Power to damper 3
20	Actual.DamperPower(4)	Power to damper 4
21	Actual.DamperPower(5)	Power to damper 5
22	Actual.DamperPower(6)	Power to damper 6
23	Actual.DamperPower(7)	Power to damper 7
24	Actual.DamperPower(8)	Power to damper 8

Address	EXOL variable	Descriptions
25	Actual.DamperPower(9)	Power to damper 9
26	Actual.DamperPower(10)	Power to damper 10
27	Actual.DamperPower(11)	Power to damper 11
28	Actual.DamperPower(12)	Power to damper 12
29	Actual.DamperPower(13)	Power to damper 13
30	Actual.DamperPower(14)	Power to damper 14
31	Actual.DamperPower(15)	Power to damper 15
32	Actual.DamperPower(16)	Power to damper 16
33	Actual.DamperPower(17)	Power to damper 17
34	Actual.DamperPower(18)	Power to damper 18
35	Actual.DamperPower(19)	Power to damper 19
36	Actual.DamperPower(20)	Power to damper 20
37	Actual.DamperPower(21)	Power to damper 21
38	Actual.DamperPower(22)	Power to damper 22
39	Actual.DamperPower(23)	Power to damper 23
40	Actual.DamperPower(24)	Power to damper 24
41	Actual.DamperPower(25)	Power to damper 25
42	Actual.DamperPower(26)	Power to damper 26
43	Actual.DamperPower(27)	Power to damper 27
44	Actual.DamperPower(28)	Power to damper 28
45	Actual.DamperPower(29)	Power to damper 29
46	Actual.DamperPower(30)	Power to damper 30
47	Actual.DamperPower(31)	Power to damper 31
48	Actual.DamperPower(32)	Power to damper 32
49	Actual.DamperPower(33)	Power to damper 33
50	Actual.DamperPower(34)	Power to damper 34
51	Actual.DamperPower(35)	Power to damper 35
52	Actual.DamperPower(36)	Power to damper 36
53	Actual.DamperPower(37)	Power to damper 37
54	Actual.DamperPower(38)	Power to damper 38
55	Actual.DamperPower(39)	Power to damper 39
56	Actual.DamperPower(40)	Power to damper 40
57	Actual.DamperPower(41)	Power to damper 41
58	Actual.DamperPower(42)	Power to damper 42
59	Actual.DamperPower(43)	Power to damper 43
60	Actual.DamperPower(44)	Power to damper 44
61	Actual.DamperPower(45)	Power to damper 45
62	Actual.DamperPower(46)	Power to damper 46
63	Actual.DamperPower(47)	Power to damper 47
64	Actual.DamperPower(48)	Power to damper 48
65	Actual.DamperPower(49)	Power to damper 49
66	Actual.DamperPower(50)	Power to damper 50
67	Actual.DamperPower(51)	Power to damper 51
68	Actual.DamperPower(52)	Power to damper 52

Address	EXOL variable	Descriptions
69	Actual.DamperPower(53)	Power to damper 53
70	Actual.DamperPower(54)	Power to damper 54
71	Actual.DamperPower(55)	Power to damper 55
72	Actual.DamperPower(56)	Power to damper 56
73	Actual.DamperPower(57)	Power to damper 57
74	Actual.DamperPower(58)	Power to damper 58
75	Actual.DamperPower(59)	Power to damper 59
76	Actual.DamperPower(60)	Power to damper 60
77	Actual.DamperIndOpen(1)	Damper 1 open indication
78	Actual.DamperIndOpen(2)	Damper 2 open indication
79	Actual.DamperIndOpen(3)	Damper 3 open indication
80	Actual.DamperIndOpen(4)	Damper 4 open indication
81	Actual.DamperIndOpen(5)	Damper 5 open indication
82	Actual.DamperIndOpen(6)	Damper 6 open indication
83	Actual.DamperIndOpen(7)	Damper 7 open indication
84	Actual.DamperIndOpen(8)	Damper 8 open indication
85	Actual.DamperIndOpen(9)	Damper 9 open indication
86	Actual.DamperIndOpen(10)	Damper 10 open indication
87	Actual.DamperIndOpen(11)	Damper 11 open indication
88	Actual.DamperIndOpen(12)	Damper 12 open indication
89	Actual.DamperIndOpen(13)	Damper 13 open indication
90	Actual.DamperIndOpen(14)	Damper 14 open indication
91	Actual.DamperIndOpen(15)	Damper 15 open indication
92	Actual.DamperIndOpen(16)	Damper 16 open indication
93	Actual.DamperIndOpen(17)	Damper 17 open indication
94	Actual.DamperIndOpen(18)	Damper 18 open indication
95	Actual.DamperIndOpen(19)	Damper 19 open indication
96	Actual.DamperIndOpen(20)	Damper 20 open indication
97	Actual.DamperIndOpen(21)	Damper 21 open indication
98	Actual.DamperIndOpen(22)	Damper 22 open indication
99	Actual.DamperIndOpen(23)	Damper 23 open indication
100	Actual.DamperIndOpen(24)	Damper 24 open indication
101	Actual.DamperIndOpen(25)	Damper 25 open indication
102	Actual.DamperIndOpen(26)	Damper 26 open indication
103	Actual.DamperIndOpen(27)	Damper 27 open indication
104	Actual.DamperIndOpen(28)	Damper 28 open indication
105	Actual.DamperIndOpen(29)	Damper 29 open indication
106	Actual.DamperIndOpen(30)	Damper 30 open indication
107	Actual.DamperIndOpen(31)	Damper 31 open indication
108	Actual.DamperIndOpen(32)	Damper 32 open indication
109	Actual.DamperIndOpen(33)	Damper 33 open indication
110	Actual.DamperIndOpen(34)	Damper 34 open indication
111	Actual.DamperIndOpen(35)	Damper 35 open indication
112	Actual.DamperIndOpen(36)	Damper 36 open indication

Address	EXOL variable	Descriptions
113	Actual.DamperIndOpen(37)	Damper 37 open indication
114	Actual.DamperIndOpen(38)	Damper 38 open indication
115	Actual.DamperIndOpen(39)	Damper 39 open indication
116	Actual.DamperIndOpen(40)	Damper 40 open indication
117	Actual.DamperIndOpen(41)	Damper 41 open indication
118	Actual.DamperIndOpen(42)	Damper 42 open indication
119	Actual.DamperIndOpen(43)	Damper 43 open indication
120	Actual.DamperIndOpen(44)	Damper 44 open indication
121	Actual.DamperIndOpen(45)	Damper 45 open indication
122	Actual.DamperIndOpen(46)	Damper 46 open indication
123	Actual.DamperIndOpen(47)	Damper 47 open indication
124	Actual.DamperIndOpen(48)	Damper 48 open indication
125	Actual.DamperIndOpen(49)	Damper 49 open indication
126	Actual.DamperIndOpen(50)	Damper 50 open indication
127	Actual.DamperIndOpen(51)	Damper 51 open indication
128	Actual.DamperIndOpen(52)	Damper 52 open indication
129	Actual.DamperIndOpen(53)	Damper 53 open indication
130	Actual.DamperIndOpen(54)	Damper 54 open indication
131	Actual.DamperIndOpen(55)	Damper 55 open indication
132	Actual.DamperIndOpen(56)	Damper 56 open indication
133	Actual.DamperIndOpen(57)	Damper 57 open indication
134	Actual.DamperIndOpen(58)	Damper 58 open indication
135	Actual.DamperIndOpen(59)	Damper 59 open indication
136	Actual.DamperIndOpen(60)	Damper 60 open indication
137	Actual.DamperIndClose(1)	Damper 1 close indication
138	Actual.DamperIndClose(2)	Damper 2 close indication
139	Actual.DamperIndClose(3)	Damper 3 close indication
140	Actual.DamperIndClose(4)	Damper 4 close indication
141	Actual.DamperIndClose(5)	Damper 5 close indication
142	Actual.DamperIndClose(6)	Damper 6 close indication
143	Actual.DamperIndClose(7)	Damper 7 close indication
144	Actual.DamperIndClose(8)	Damper 8 close indication
145	Actual.DamperIndClose(9)	Damper 9 close indication
146	Actual.DamperIndClose(10)	Damper 10 close indication
147	Actual.DamperIndClose(11)	Damper 11 close indication
148	Actual.DamperIndClose(12)	Damper 12 close indication
149	Actual.DamperIndClose(13)	Damper 13 close indication
150	Actual.DamperIndClose(14)	Damper 14 close indication
151	Actual.DamperIndClose(15)	Damper 15 close indication
152	Actual.DamperIndClose(16)	Damper 16 close indication
153	Actual.DamperIndClose(17)	Damper 17 close indication
154	Actual.DamperIndClose(18)	Damper 18 close indication
155	Actual.DamperIndClose(19)	Damper 19 close indication
156	Actual.DamperIndClose(20)	Damper 20 close indication

Address	EXOL variable	Descriptions
157	Actual.DamperIndClose(21)	Damper 21 close indication
158	Actual.DamperIndClose(22)	Damper 22 close indication
159	Actual.DamperIndClose(23)	Damper 23 close indication
160	Actual.DamperIndClose(24)	Damper 24 close indication
161	Actual.DamperIndClose(25)	Damper 25 close indication
162	Actual.DamperIndClose(26)	Damper 26 close indication
163	Actual.DamperIndClose(27)	Damper 27 close indication
164	Actual.DamperIndClose(28)	Damper 28 close indication
165	Actual.DamperIndClose(29)	Damper 29 close indication
166	Actual.DamperIndClose(30)	Damper 30 close indication
167	Actual.DamperIndClose(31)	Damper 31 close indication
168	Actual.DamperIndClose(32)	Damper 32 close indication
169	Actual.DamperIndClose(33)	Damper 33 close indication
170	Actual.DamperIndClose(34)	Damper 34 close indication
171	Actual.DamperIndClose(35)	Damper 35 close indication
172	Actual.DamperIndClose(36)	Damper 36 close indication
173	Actual.DamperIndClose(37)	Damper 37 close indication
174	Actual.DamperIndClose(38)	Damper 38 close indication
175	Actual.DamperIndClose(39)	Damper 39 close indication
176	Actual.DamperIndClose(40)	Damper 40 close indication
177	Actual.DamperIndClose(41)	Damper 41 close indication
178	Actual.DamperIndClose(42)	Damper 42 close indication
179	Actual.DamperIndClose(43)	Damper 43 close indication
180	Actual.DamperIndClose(44)	Damper 44 close indication
181	Actual.DamperIndClose(45)	Damper 45 close indication
182	Actual.DamperIndClose(46)	Damper 46 close indication
183	Actual.DamperIndClose(47)	Damper 47 close indication
184	Actual.DamperIndClose(48)	Damper 48 close indication
185	Actual.DamperIndClose(49)	Damper 49 close indication
186	Actual.DamperIndClose(50)	Damper 50 close indication
187	Actual.DamperIndClose(51)	Damper 51 close indication
188	Actual.DamperIndClose(52)	Damper 52 close indication
189	Actual.DamperIndClose(53)	Damper 53 close indication
190	Actual.DamperIndClose(54)	Damper 54 close indication
191	Actual.DamperIndClose(55)	Damper 55 close indication
192	Actual.DamperIndClose(56)	Damper 56 close indication
193	Actual.DamperIndClose(57)	Damper 57 close indication
194	Actual.DamperIndClose(58)	Damper 58 close indication
195	Actual.DamperIndClose(59)	Damper 59 close indication
196	Actual.DamperIndClose(60)	Damper 60 close indication
197	Actual.FunctionTest	Unit in Function test (whole system)
198	Actual.NightMode	Unit in nightmode
500	Actual.SumAlarm	Sum Alarm
501	Actual.FireAlarm(0)	Fire alarm, Sum alarm of smoke detector 1-60

Address	EXOL variable	Descriptions
502	Actual.FireAlarm(1)	Alarm# 1; Fire alarm,Smoke detector 1
503	Actual.FireAlarm(2)	Alarm# 2; Fire alarm,Smoke detector 1
504	Actual.FireAlarm(3)	Not available
505	Actual.FireAlarm(4)	Alarm# 4; Fire alarm,Smoke detector 4
506	Actual.FireAlarm(5)	Alarm# 5; Fire alarm,Smoke detector 5
507	Actual.FireAlarm(6)	Alarm# 6; Fire alarm,Smoke detector 6
508	Actual.FireAlarm(7)	Alarm# 7; Fire alarm,Smoke detector 7
509	Actual.FireAlarm(8)	Alarm# 8; Fire alarm,Smoke detector 8
510	Actual.FireAlarm(9)	Alarm# 9; Fire alarm,Smoke detector 9
511	Actual.FireAlarm(10)	Alarm# 10; Fire alarm,Smoke detector 10
512	Actual.FireAlarm(11)	Alarm# 11; Fire alarm,Smoke detector 11
513	Actual.FireAlarm(12)	Alarm# 12; Fire alarm,Smoke detector 12
514	Actual.FireAlarm(13)	Alarm# 13; Fire alarm,Smoke detector 13
515	Actual.FireAlarm(14)	Alarm# 14; Fire alarm,Smoke detector 14
516	Actual.FireAlarm(15)	Alarm# 15; Fire alarm,Smoke detector 15
517	Actual.FireAlarm(16)	Alarm# 16; Fire alarm,Smoke detector 16
518	Actual.FireAlarm(17)	Alarm# 17; Fire alarm,Smoke detector 17
519	Actual.FireAlarm(18)	Alarm# 18; Fire alarm,Smoke detector 18
520	Actual.FireAlarm(19)	Alarm# 19; Fire alarm,Smoke detector 19
521	Actual.FireAlarm(20)	Alarm# 20; Fire alarm,Smoke detector 20
522	Actual.FireAlarm(21)	Alarm# 21; Fire alarm,Smoke detector 21
523	Actual.FireAlarm(22)	Alarm# 23; Fire alarm,Smoke detector 23
524	Actual.FireAlarm(23)	Alarm# 24; Fire alarm,Smoke detector 24
525	Actual.FireAlarm(24)	Alarm# 24; Fire alarm,Smoke detector 24
526	Actual.FireAlarm(25)	Alarm# 25; Fire alarm,Smoke detector 25
527	Actual.FireAlarm(26)	Alarm# 26; Fire alarm,Smoke detector 26
528	Actual.FireAlarm(27)	Alarm# 27; Fire alarm,Smoke detector 27
529	Actual.FireAlarm(28)	Alarm# 28; Fire alarm,Smoke detector 28
530	Actual.FireAlarm(29)	Alarm# 29; Fire alarm,Smoke detector 29
531	Actual.FireAlarm(30)	Alarm# 30; Fire alarm,Smoke detector 30
532	Actual.FireAlarm(31)	Alarm# 31; Fire alarm,Smoke detector 31
533	Actual.FireAlarm(32)	Alarm# 32; Fire alarm,Smoke detector 32
534	Actual.FireAlarm(33)	Alarm# 33; Fire alarm,Smoke detector 33
535	Actual.FireAlarm(34)	Alarm# 34; Fire alarm,Smoke detector 34
536	Actual.FireAlarm(35)	Alarm# 35; Fire alarm,Smoke detector 35
537	Actual.FireAlarm(36)	Alarm# 36; Fire alarm,Smoke detector 36
538	Actual.FireAlarm(37)	Alarm# 37; Fire alarm,Smoke detector 37
539	Actual.FireAlarm(38)	Alarm# 38; Fire alarm,Smoke detector 38
540	Actual.FireAlarm(39)	Alarm# 39; Fire alarm,Smoke detector 39
541	Actual.FireAlarm(40)	Alarm# 40; Fire alarm,Smoke detector 40
542	Actual.FireAlarm(41)	Alarm# 41; Fire alarm,Smoke detector 41
543	Actual.FireAlarm(42)	Alarm# 42; Fire alarm,Smoke detector 42
544	Actual.FireAlarm(43)	Alarm# 43; Fire alarm,Smoke detector 43
545	Actual.FireAlarm(44)	Alarm# 44; Fire alarm,Smoke detector 44

Address	EXOL variable	Descriptions
546	Actual.FireAlarm(45)	Alarm# 45; Fire alarm,Smoke detector 45
547	Actual.FireAlarm(46)	Alarm# 46; Fire alarm,Smoke detector 46
548	Actual.FireAlarm(47)	Alarm# 47; Fire alarm,Smoke detector 47
549	Actual.FireAlarm(48)	Alarm# 48; Fire alarm,Smoke detector 48
550	Actual.FireAlarm(49)	Alarm# 49; Fire alarm,Smoke detector 49
551	Actual.FireAlarm(50)	Alarm# 50; Fire alarm,Smoke detector 50
552	Actual.FireAlarm(51)	Alarm# 51; Fire alarm,Smoke detector 51
553	Actual.FireAlarm(52)	Alarm# 52; Fire alarm,Smoke detector 52
554	Actual.FireAlarm(53)	Alarm# 53; Fire alarm,Smoke detector 53
555	Actual.FireAlarm(54)	Alarm# 54; Fire alarm,Smoke detector 54
556	Actual.FireAlarm(55)	Alarm# 55; Fire alarm,Smoke detector 55
557	Actual.FireAlarm(56)	Alarm# 56; Fire alarm,Smoke detector 56
558	Actual.FireAlarm(57)	Alarm# 57; Fire alarm,Smoke detector 57
559	Actual.FireAlarm(58)	Alarm# 58; Fire alarm,Smoke detector 58
560	Actual.FireAlarm(59)	Alarm# 59; Fire alarm,Smoke detector 59
561	Actual.FireAlarm(60)	Alarm# 60; Fire alarm,Smoke detector 60
562	Actual.SmokeDetError(0)	Error, Sum alarm of smoke detector1-60
563	Actual.SmokeDetError(1)	Alarm# 61; Error, Smokedetektor 1
564	Actual.SmokeDetError(2)	Alarm# 62; Error, Smokedetektor 2
565	Actual.SmokeDetError(3)	Not available
566	Actual.SmokeDetError(4)	Alarm# 64; Error, Smokedetektor 4
567	Actual.SmokeDetError(5)	Alarm# 65; Error, Smokedetektor 5
568	Actual.SmokeDetError(6)	Alarm# 66; Error, Smokedetektor 6
569	Actual.SmokeDetError(7)	Alarm# 67; Error, Smokedetektor 7
570	Actual.SmokeDetError(8)	Alarm# 68; Error, Smokedetektor 8
571	Actual.SmokeDetError(9)	Alarm# 69; Error, Smokedetektor 9
572	Actual.SmokeDetError(10)	Alarm# 70; Error, Smokedetektor 10
573	Actual.SmokeDetError(11)	Alarm# 71; Error, Smokedetektor 11
574	Actual.SmokeDetError(12)	Alarm# 72; Error, Smokedetektor 12
575	Actual.SmokeDetError(13)	Alarm# 73; Error, Smokedetektor 13
576	Actual.SmokeDetError(14)	Alarm# 74; Error, Smokedetektor 14
577	Actual.SmokeDetError(15)	Alarm# 75; Error, Smokedetektor 15
578	Actual.SmokeDetError(16)	Alarm# 76; Error, Smokedetektor 16
579	Actual.SmokeDetError(17)	Alarm# 77; Error, Smokedetektor 17
580	Actual.SmokeDetError(18)	Alarm# 78; Error, Smokedetektor 18
581	Actual.SmokeDetError(19)	Alarm# 79; Error, Smokedetektor 19
582	Actual.SmokeDetError(20)	Alarm# 80; Error, Smokedetektor 20
583	Actual.SmokeDetError(21)	Alarm# 81; Error, Smokedetektor 21
584	Actual.SmokeDetError(22)	Alarm# 82; Error, Smokedetektor 22
585	Actual.SmokeDetError(23)	Alarm# 83; Error, Smokedetektor 23
586	Actual.SmokeDetError(24)	Alarm# 84; Error, Smokedetektor 24
587	Actual.SmokeDetError(25)	Alarm# 85; Error, Smokedetektor 25
588	Actual.SmokeDetError(26)	Alarm# 86; Error, Smokedetektor 26
589	Actual.SmokeDetError(27)	Alarm# 87; Error, Smokedetektor 27

Address	EXOL variable	Descriptions
590	Actual.SmokeDetError(28)	Alarm# 88; Error, Smokedetektor 28
591	Actual.SmokeDetError(29)	Alarm# 89; Error, Smokedetektor 29
592	Actual.SmokeDetError(30)	Alarm# 90; Error, Smokedetektor 30
593	Actual.SmokeDetError(31)	Alarm# 91; Error, Smokedetektor 31
594	Actual.SmokeDetError(32)	Alarm# 92; Error, Smokedetektor 32
595	Actual.SmokeDetError(33)	Alarm# 93; Error, Smokedetektor 33
596	Actual.SmokeDetError(34)	Alarm# 94; Error, Smokedetektor 34
597	Actual.SmokeDetError(35)	Alarm# 95; Error, Smokedetektor 35
598	Actual.SmokeDetError(36)	Alarm# 96; Error, Smokedetektor 36
599	Actual.SmokeDetError(36)	Alarm# 97; Error, Smokedetektor 37
600	Actual.SmokeDetError(36)	Alarm# 98; Error, Smokedetektor 38
601	Actual.SmokeDetError(36)	Alarm# 99; Error, Smokedetektor 39
602	Actual.SmokeDetError(36)	Alarm# 100; Error, Smokedetektor 40
603	Actual.SmokeDetError(36)	Alarm# 101; Error, Smokedetektor 41
604	Actual.SmokeDetError(36)	Alarm# 102; Error, Smokedetektor 42
605	Actual.SmokeDetError(36)	Alarm# 103; Error, Smokedetektor 43
606	Actual.SmokeDetError(36)	Alarm# 104; Error, Smokedetektor 44
607	Actual.SmokeDetError(36)	Alarm# 105; Error, Smokedetektor 45
608	Actual.SmokeDetError(36)	Alarm# 106; Error, Smokedetektor 46
609	Actual.SmokeDetError(36)	Alarm# 107; Error, Smokedetektor 47
610	Actual.SmokeDetError(36)	Alarm# 108; Error, Smokedetektor 48
611	Actual.SmokeDetError(36)	Alarm# 109; Error, Smokedetektor 49
612	Actual.SmokeDetError(36)	Alarm# 110; Error, Smokedetektor 50
613	Actual.SmokeDetError(36)	Alarm# 111; Error, Smokedetektor 51
614	Actual.SmokeDetError(36)	Alarm# 112; Error, Smokedetektor 52
615	Actual.SmokeDetError(36)	Alarm# 113; Error, Smokedetektor 53
616	Actual.SmokeDetError(36)	Alarm# 114; Error, Smokedetektor 54
617	Actual.SmokeDetError(36)	Alarm# 115; Error, Smokedetektor 55
618	Actual.SmokeDetError(36)	Alarm# 116; Error, Smokedetektor 56
619	Actual.SmokeDetError(36)	Alarm# 117; Error, Smokedetektor 57
620	Actual.SmokeDetError(36)	Alarm# 118; Error, Smokedetektor 58
621	Actual.SmokeDetError(36)	Alarm# 119; Error, Smokedetektor 59
622	Actual.SmokeDetError(60)	Alarm# 120; Error, Smokedetektor 60
623	Actual.SmokeDetService(0)	Service, Sum alarm of smoke detector1-60
624	Actual.SmokeDetService(1)	Alarm# 121; Service, Smoke detektor 1
625	Actual.SmokeDetService(2)	Alarm# 122; Service, Smoke detektor 2
626	Actual.SmokeDetService(3)	Not available
627	Actual.SmokeDetService(4)	Alarm# 124; Service, Smoke detektor 4
628	Actual.SmokeDetService(5)	Alarm# 125; Service, Smoke detektor 5
629	Actual.SmokeDetService(6)	Alarm# 126; Service, Smoke detektor 6
630	Actual.SmokeDetService(7)	Alarm# 127; Service, Smoke detektor 7
631	Actual.SmokeDetService(8)	Alarm# 128; Service, Smoke detektor 8
632	Actual.SmokeDetService(9)	Alarm# 129; Service, Smoke detektor 9
633	Actual.SmokeDetService(10)	Alarm# 130; Service, Smoke detektor 10

Address	EXOL variable	Descriptions
634	Actual.SmokeDetService(11)	Alarm# 131; Service, Smoke detektor 11
635	Actual.SmokeDetService(12)	Alarm# 132; Service, Smoke detektor 12
636	Actual.SmokeDetService(13)	Alarm# 133; Service, Smoke detektor 13
637	Actual.SmokeDetService(14)	Alarm# 134; Service, Smoke detektor 14
638	Actual.SmokeDetService(15)	Alarm# 135; Service, Smoke detektor 15
639	Actual.SmokeDetService(16)	Alarm# 136; Service, Smoke detektor 16
640	Actual.SmokeDetService(17)	Alarm# 137; Service, Smoke detektor 17
641	Actual.SmokeDetService(18)	Alarm# 138; Service, Smoke detektor 18
642	Actual.SmokeDetService(19)	Alarm# 139; Service, Smoke detektor 19
643	Actual.SmokeDetService(20)	Alarm# 140; Service, Smoke detektor 20
644	Actual.SmokeDetService(21)	Alarm# 141; Service, Smoke detektor 21
645	Actual.SmokeDetService(22)	Alarm# 142; Service, Smoke detektor 22
646	Actual.SmokeDetService(23)	Alarm# 143; Service, Smoke detektor 23
647	Actual.SmokeDetService(24)	Alarm# 144; Service, Smoke detektor 24
648	Actual.SmokeDetService(25)	Alarm# 145; Service, Smoke detektor 25
649	Actual.SmokeDetService(26)	Alarm# 146; Service, Smoke detektor 26
650	Actual.SmokeDetService(27)	Alarm# 147; Service, Smoke detektor 27
651	Actual.SmokeDetService(28)	Alarm# 148; Service, Smoke detektor 28
652	Actual.SmokeDetService(29)	Alarm# 149; Service, Smoke detektor 29
653	Actual.SmokeDetService(30)	Alarm# 150; Service, Smoke detektor 30
654	Actual.SmokeDetService(31)	Alarm# 151; Service, Smoke detektor 31
655	Actual.SmokeDetService(32)	Alarm# 152; Service, Smoke detektor 32
656	Actual.SmokeDetService(33)	Alarm# 153; Service, Smoke detektor 33
657	Actual.SmokeDetService(34)	Alarm# 154; Service, Smoke detektor 34
658	Actual.SmokeDetService(35)	Alarm# 155; Service, Smoke detektor 35
659	Actual.SmokeDetService(36)	Alarm# 156; Service, Smoke detektor 36
660	Actual.SmokeDetService(37)	Alarm# 157; Service, Smoke detektor 37
661	Actual.SmokeDetService(38)	Alarm# 158; Service, Smoke detektor 38
662	Actual.SmokeDetService(39)	Alarm# 159; Service, Smoke detektor 39
663	Actual.SmokeDetService(40)	Alarm# 160; Service, Smoke detektor 40
664	Actual.SmokeDetService(41)	Alarm# 161; Service, Smoke detektor 41
665	Actual.SmokeDetService(42)	Alarm# 162; Service, Smoke detektor 42
666	Actual.SmokeDetService(43)	Alarm# 163; Service, Smoke detektor 43
667	Actual.SmokeDetService(44)	Alarm# 164; Service, Smoke detektor 44
668	Actual.SmokeDetService(45)	Alarm# 165; Service, Smoke detektor 45
669	Actual.SmokeDetService(46)	Alarm# 166; Service, Smoke detektor 46
670	Actual.SmokeDetService(47)	Alarm# 167; Service, Smoke detektor 47
671	Actual.SmokeDetService(48)	Alarm# 168; Service, Smoke detektor 48
672	Actual.SmokeDetService(49)	Alarm# 169; Service, Smoke detektor 49
673	Actual.SmokeDetService(50)	Alarm# 170; Service, Smoke detektor 50
674	Actual.SmokeDetService(51)	Alarm# 171; Service, Smoke detektor 51
675	Actual.SmokeDetService(52)	Alarm# 172; Service, Smoke detektor 52
676	Actual.SmokeDetService(53)	Alarm# 173; Service, Smoke detektor 53
677	Actual.SmokeDetService(54)	Alarm# 174; Service, Smoke detektor 54

Address	EXOL variable	Descriptions
678	Actual.SmokeDetService(55)	Alarm# 175; Service, Smoke detektor 55
679	Actual.SmokeDetService(56)	Alarm# 176; Service, Smoke detektor 56
680	Actual.SmokeDetService(57)	Alarm# 177; Service, Smoke detektor 57
681	Actual.SmokeDetService(58)	Alarm# 178; Service, Smoke detektor 58
682	Actual.SmokeDetService(59)	Alarm# 179; Service, Smoke detektor 59
683	Actual.SmokeDetService(60)	Alarm# 180; Service, Smoke detektor 60
684	Actual.DamperAlarm(0)	Fault alarm, Sum alarm of damper1-60
685	Actual.DamperAlarm(1)	Alarm# 181; Fault alarm,Damper 1
686	Actual.DamperAlarm(2)	Alarm# 182; Fault alarm,Damper 2
687	Actual.DamperAlarm(3)	Alarm# 183; Fault alarm,Damper 3
688	Actual.DamperAlarm(4)	Alarm# 184; Fault alarm,Damper 4
689	Actual.DamperAlarm(5)	Alarm# 185; Fault alarm,Damper 5
690	Actual.DamperAlarm(6)	Alarm# 186; Fault alarm,Damper 6
691	Actual.DamperAlarm(7)	Alarm# 187; Fault alarm,Damper 7
692	Actual.DamperAlarm(8)	Alarm# 188; Fault alarm,Damper 8
693	Actual.DamperAlarm(9)	Alarm# 189; Fault alarm,Damper 9
694	Actual.DamperAlarm(10)	Alarm# 190; Fault alarm,Damper 10
695	Actual.DamperAlarm(11)	Alarm# 191; Fault alarm,Damper 11
696	Actual.DamperAlarm(12)	Alarm# 192; Fault alarm,Damper 12
697	Actual.DamperAlarm(13)	Alarm# 193; Fault alarm,Damper 13
698	Actual.DamperAlarm(14)	Alarm# 194; Fault alarm,Damper 14
699	Actual.DamperAlarm(15)	Alarm# 195; Fault alarm,Damper 15
700	Actual.DamperAlarm(16)	Alarm# 196; Fault alarm,Damper 16
701	Actual.DamperAlarm(17)	Alarm# 197; Fault alarm,Damper 17
702	Actual.DamperAlarm(18)	Alarm# 198; Fault alarm,Damper 18
703	Actual.DamperAlarm(19)	Alarm# 199; Fault alarm,Damper 19
704	Actual.DamperAlarm(20)	Alarm# 200; Fault alarm,Damper 20
705	Actual.DamperAlarm(21)	Alarm# 201; Fault alarm,Damper 21
706	Actual.DamperAlarm(22)	Alarm# 202; Fault alarm,Damper 22
707	Actual.DamperAlarm(23)	Alarm# 203; Fault alarm,Damper 23
708	Actual.DamperAlarm(24)	Alarm# 204; Fault alarm,Damper 24
709	Actual.DamperAlarm(25)	Alarm# 205; Fault alarm,Damper 25
710	Actual.DamperAlarm(26)	Alarm# 206; Fault alarm,Damper 26
711	Actual.DamperAlarm(27)	Alarm# 207; Fault alarm,Damper 27
712	Actual.DamperAlarm(28)	Alarm# 208; Fault alarm,Damper 28
713	Actual.DamperAlarm(29)	Alarm# 209; Fault alarm,Damper 29
714	Actual.DamperAlarm(30)	Alarm# 210; Fault alarm,Damper 30
715	Actual.DamperAlarm(31)	Alarm# 211; Fault alarm,Damper 31
716	Actual.DamperAlarm(32)	Alarm# 212; Fault alarm,Damper 32
717	Actual.DamperAlarm(33)	Alarm# 213; Fault alarm,Damper 33
718	Actual.DamperAlarm(34)	Alarm# 214; Fault alarm,Damper 34
719	Actual.DamperAlarm(35)	Alarm# 215; Fault alarm,Damper 35
720	Actual.DamperAlarm(36)	Alarm# 216; Fault alarm,Damper 36
721	Actual.DamperAlarm(37)	Alarm# 217; Fault alarm,Damper 37

Address	EXOL variable	Descriptions
722	Actual.DamperAlarm(38)	Alarm# 218; Fault alarm,Damper 38
723	Actual.DamperAlarm(39)	Alarm# 219; Fault alarm,Damper 39
724	Actual.DamperAlarm(40)	Alarm# 220; Fault alarm,Damper 40
725	Actual.DamperAlarm(41)	Alarm# 221; Fault alarm,Damper 41
726	Actual.DamperAlarm(42)	Alarm# 222; Fault alarm,Damper 42
727	Actual.DamperAlarm(43)	Alarm# 223; Fault alarm,Damper 43
728	Actual.DamperAlarm(44)	Alarm# 224; Fault alarm,Damper 44
729	Actual.DamperAlarm(45)	Alarm# 225; Fault alarm,Damper 45
730	Actual.DamperAlarm(46)	Alarm# 226; Fault alarm,Damper 46
731	Actual.DamperAlarm(47)	Alarm# 227; Fault alarm,Damper 47
732	Actual.DamperAlarm(48)	Alarm# 228; Fault alarm,Damper 48
733	Actual.DamperAlarm(49)	Alarm# 229; Fault alarm,Damper 49
734	Actual.DamperAlarm(50)	Alarm# 230; Fault alarm,Damper 50
735	Actual.DamperAlarm(51)	Alarm# 231; Fault alarm,Damper 51
736	Actual.DamperAlarm(52)	Alarm# 232; Fault alarm,Damper 52
737	Actual.DamperAlarm(53)	Alarm# 233; Fault alarm,Damper 53
738	Actual.DamperAlarm(54)	Alarm# 234; Fault alarm,Damper 54
739	Actual.DamperAlarm(55)	Alarm# 235; Fault alarm,Damper 55
740	Actual.DamperAlarm(56)	Alarm# 236; Fault alarm,Damper 56
741	Actual.DamperAlarm(57)	Alarm# 237; Fault alarm,Damper 57
742	Actual.DamperAlarm(58)	Alarm# 238; Fault alarm,Damper 58
743	Actual.DamperAlarm(59)	Alarm# 239; Fault alarm,Damper 59
744	Actual.DamperAlarm(60)	Alarm# 240; Fault alarm,Damper 60
745	Actual.SlaveComError(0)	Com error, sum alarm slave 4-60
746	Actual.SlaveComError(4)	Alarm# 244; Com error,slave 4
747	Actual.SlaveComError(5)	Alarm# 245; Com error,slave 5
748	Actual.SlaveComError(6)	Alarm# 246; Com error,slave 6
749	Actual.SlaveComError(7)	Alarm# 247; Com error,slave 7
750	Actual.SlaveComError(8)	Alarm# 248; Com error,slave 8
751	Actual.SlaveComError(9)	Alarm# 249; Com error,slave 9
752	Actual.SlaveComError(10)	Alarm# 250; Com error,slave 10
753	Actual.SlaveComError(11)	Alarm# 251; Com error,slave 11
754	Actual.SlaveComError(12)	Alarm# 252; Com error,slave 12
755	Actual.SlaveComError(13)	Alarm# 253; Com error,slave 13
756	Actual.SlaveComError(14)	Alarm# 254; Com error,slave 14
757	Actual.SlaveComError(15)	Alarm# 255; Com error,slave 15
758	Actual.SlaveComError(16)	Alarm# 256; Com error,slave 16
759	Actual.SlaveComError(17)	Alarm# 257; Com error,slave 17
760	Actual.SlaveComError(18)	Alarm# 258; Com error,slave 18
761	Actual.SlaveComError(19)	Alarm# 259; Com error,slave 19
762	Actual.SlaveComError(20)	Alarm# 260; Com error,slave 20
763	Actual.SlaveComError(21)	Alarm# 261; Com error,slave 21
764	Actual.SlaveComError(22)	Alarm# 262; Com error,slave 22
765	Actual.SlaveComError(23)	Alarm# 263; Com error,slave 23

Address	EXOL variable	Descriptions
766	Actual.SlaveComError(24)	Alarm# 264; Com error,slave 24
767	Actual.SlaveComError(25)	Alarm# 265; Com error,slave 25
768	Actual.SlaveComError(26)	Alarm# 266; Com error,slave 26
769	Actual.SlaveComError(27)	Alarm# 267; Com error,slave 27
770	Actual.SlaveComError(28)	Alarm# 268; Com error,slave 28
771	Actual.SlaveComError(29)	Alarm# 269; Com error,slave 29
772	Actual.SlaveComError(30)	Alarm# 270; Com error,slave 30
773	Actual.SlaveComError(31)	Alarm# 271; Com error,slave 31
774	Actual.SlaveComError(32)	Alarm# 272; Com error,slave 32
775	Actual.SlaveComError(33)	Alarm# 273; Com error,slave 33
776	Actual.SlaveComError(34)	Alarm# 274; Com error,slave 34
777	Actual.SlaveComError(35)	Alarm# 275; Com error,slave 35
778	Actual.SlaveComError(36)	Alarm# 276; Com error,slave 36
779	Actual.SlaveComError(37)	Alarm# 277; Com error,slave 37
780	Actual.SlaveComError(38)	Alarm# 278; Com error,slave 38
781	Actual.SlaveComError(39)	Alarm# 279; Com error,slave 39
782	Actual.SlaveComError(40)	Alarm# 280; Com error,slave 40
783	Actual.SlaveComError(41)	Alarm# 281; Com error,slave 41
784	Actual.SlaveComError(42)	Alarm# 282; Com error,slave 42
785	Actual.SlaveComError(43)	Alarm# 283; Com error,slave 43
786	Actual.SlaveComError(44)	Alarm# 284; Com error,slave 44
787	Actual.SlaveComError(45)	Alarm# 285; Com error,slave 45
788	Actual.SlaveComError(46)	Alarm# 286; Com error,slave 46
789	Actual.SlaveComError(47)	Alarm# 287; Com error,slave 47
790	Actual.SlaveComError(48)	Alarm# 288; Com error,slave 48
791	Actual.SlaveComError(49)	Alarm# 289; Com error,slave 49
792	Actual.SlaveComError(50)	Alarm# 290; Com error,slave 50
793	Actual.SlaveComError(51)	Alarm# 291; Com error,slave 51
794	Actual.SlaveComError(52)	Alarm# 292; Com error,slave 52
795	Actual.SlaveComError(53)	Alarm# 293; Com error,slave 53
796	Actual.SlaveComError(54)	Alarm# 294; Com error,slave 54
797	Actual.SlaveComError(55)	Alarm# 295; Com error,slave 55
798	Actual.SlaveComError(56)	Alarm# 296; Com error,slave 56
799	Actual.SlaveComError(57)	Alarm# 297; Com error,slave 57
800	Actual.SlaveComError(58)	Alarm# 298; Com error,slave 58
801	Actual.SlaveComError(59)	Alarm# 299; Com error,slave 59
802	Actual.SlaveComError(60)	Alarm# 300; Com error,slave 60
803	Actual.SlaveTempError(0)	Slave temperature alarm Ai1, sum alarm slave 4-60
804	Actual.SlaveTempError(4)	Alarm# 304; Slave temperature alarm Ai1, slave 4
805	Actual.SlaveTempError(5)	Alarm# 305; Slave temperature alarm Ai1, slave 5
806	Actual.SlaveTempError(6)	Alarm# 306; Slave temperature alarm Ai1, slave 6
807	Actual.SlaveTempError(7)	Alarm# 307; Slave temperature alarm Ai1, slave 7

Address	EXOL variable	Descriptions
808	Actual.SlaveTempError(8)	Alarm# 308; Slave temperature alarm Ai1, slave 8
809	Actual.SlaveTempError(9)	Alarm# 309; Slave temperature alarm Ai1, slave 9
810	Actual.SlaveTempError(10)	Alarm# 310; Slave temperature alarm Ai1, slave 10
811	Actual.SlaveTempError(11)	Alarm# 311; Slave temperature alarm Ai1, slave 11
812	Actual.SlaveTempError(12)	Alarm# 312; Slave temperature alarm Ai1, slave 12
813	Actual.SlaveTempError(13)	Alarm# 313; Slave temperature alarm Ai1, slave 13
814	Actual.SlaveTempError(14)	Alarm# 314; Slave temperature alarm Ai1, slave 14
815	Actual.SlaveTempError(15)	Alarm# 315; Slave temperature alarm Ai1, slave 15
816	Actual.SlaveTempError(16)	Alarm# 316; Slave temperature alarm Ai1, slave 16
817	Actual.SlaveTempError(17)	Alarm# 317; Slave temperature alarm Ai1, slave 17
818	Actual.SlaveTempError(18)	Alarm# 318; Slave temperature alarm Ai1, slave 18
819	Actual.SlaveTempError(19)	Alarm# 319; Slave temperature alarm Ai1, slave 19
820	Actual.SlaveTempError(20)	Alarm# 320; Slave temperature alarm Ai1, slave 20
821	Actual.SlaveTempError(21)	Alarm# 321; Slave temperature alarm Ai1, slave 21
822	Actual.SlaveTempError(22)	Alarm# 322; Slave temperature alarm Ai1, slave 22
823	Actual.SlaveTempError(23)	Alarm# 323; Slave temperature alarm Ai1, slave 23
824	Actual.SlaveTempError(24)	Alarm# 324; Slave temperature alarm Ai1, slave 24
825	Actual.SlaveTempError(25)	Alarm# 325; Slave temperature alarm Ai1, slave 25
826	Actual.SlaveTempError(26)	Alarm# 326; Slave temperature alarm Ai1, slave 26
827	Actual.SlaveTempError(27)	Alarm# 327; Slave temperature alarm Ai1, slave 27
828	Actual.SlaveTempError(28)	Alarm# 328; Slave temperature alarm Ai1, slave 28
829	Actual.SlaveTempError(29)	Alarm# 329; Slave temperature alarm Ai1, slave 29
830	Actual.SlaveTempError(30)	Alarm# 330; Slave temperature alarm Ai1, slave 30
831	Actual.SlaveTempError(31)	Alarm# 331; Slave temperature alarm Ai1, slave 31
832	Actual.SlaveTempError(32)	Alarm# 332; Slave temperature alarm Ai1, slave 32
833	Actual.SlaveTempError(33)	Alarm# 333; Slave temperature alarm Ai1, slave 33
834	Actual.SlaveTempError(34)	Alarm# 334; Slave temperature alarm Ai1, slave 34
835	Actual.SlaveTempError(35)	Alarm# 335; Slave temperature alarm Ai1, slave 35
836	Actual.SlaveTempError(36)	Alarm# 336; Slave temperature alarm Ai1, slave 36

Address	EXOL variable	Descriptions
837	Actual.SlaveTempError(37)	Alarm# 337; Slave temperature alarm Ai1, slave 37
838	Actual.SlaveTempError(38)	Alarm# 338; Slave temperature alarm Ai1, slave 38
839	Actual.SlaveTempError(39)	Alarm# 339; Slave temperature alarm Ai1, slave 39
840	Actual.SlaveTempError(40)	Alarm# 340; Slave temperature alarm Ai1, slave 40
841	Actual.SlaveTempError(41)	Alarm# 341; Slave temperature alarm Ai1, slave 41
842	Actual.SlaveTempError(42)	Alarm# 342; Slave temperature alarm Ai1, slave 42
843	Actual.SlaveTempError(43)	Alarm# 343; Slave temperature alarm Ai1, slave 43
844	Actual.SlaveTempError(44)	Alarm# 344; Slave temperature alarm Ai1, slave 44
845	Actual.SlaveTempError(45)	Alarm# 345; Slave temperature alarm Ai1, slave 45
846	Actual.SlaveTempError(46)	Alarm# 346; Slave temperature alarm Ai1, slave 46
847	Actual.SlaveTempError(47)	Alarm# 347; Slave temperature alarm Ai1, slave 47
848	Actual.SlaveTempError(48)	Alarm# 348; Slave temperature alarm Ai1, slave 48
849	Actual.SlaveTempError(49)	Alarm# 349; Slave temperature alarm Ai1, slave 49
850	Actual.SlaveTempError(50)	Alarm# 350; Slave temperature alarm Ai1, slave 50
851	Actual.SlaveTempError(51)	Alarm# 351; Slave temperature alarm Ai1, slave 51
852	Actual.SlaveTempError(52)	Alarm# 352; Slave temperature alarm Ai1, slave 52
853	Actual.SlaveTempError(53)	Alarm# 353; Slave temperature alarm Ai1, slave 53
854	Actual.SlaveTempError(54)	Alarm# 354; Slave temperature alarm Ai1, slave 54
855	Actual.SlaveTempError(55)	Alarm# 355; Slave temperature alarm Ai1, slave 55
856	Actual.SlaveTempError(56)	Alarm# 356; Slave temperature alarm Ai1, slave 56
857	Actual.SlaveTempError(57)	Alarm# 357; Slave temperature alarm Ai1, slave 57
858	Actual.SlaveTempError(58)	Alarm# 358; Slave temperature alarm Ai1, slave 58
859	Actual.SlaveTempError(59)	Alarm# 359; Slave temperature alarm Ai1, slave 59
860	Actual.SlaveTempError(60)	Alarm# 360; Slave temperature alarm Ai1, slave 60
861	Actual.DamperManMode(0)	Sum alarmfor damper 1-60 in manual mode
862	Actual.DamperManMode(1)	Alarm# 361; Damper 1 in manual mode
863	Actual.DamperManMode(2)	Alarm# 362; Damper 2 in manual mode
864	Actual.DamperManMode(3)	Alarm# 363; Damper 3 in manual mode
865	Actual.DamperManMode(4)	Alarm# 364; Damper 4 in manual mode
866	Actual.DamperManMode(5)	Alarm# 365; Damper 5 in manual mode
867	Actual.DamperManMode(6)	Alarm# 366; Damper 6 in manual mode

Address	EXOL variable	Descriptions
868	Actual.DamperManMode(7)	Alarm# 367; Damper 7 in manual mode
869	Actual.DamperManMode(8)	Alarm# 368; Damper 8 in manual mode
870	Actual.DamperManMode(9)	Alarm# 369; Damper 9 in manual mode
871	Actual.DamperManMode(10)	Alarm# 370; Damper 10 in manual mode
872	Actual.DamperManMode(11)	Alarm# 371; Damper 11 in manual mode
873	Actual.DamperManMode(12)	Alarm# 372; Damper 12 in manual mode
874	Actual.DamperManMode(13)	Alarm# 373; Damper 13 in manual mode
875	Actual.DamperManMode(14)	Alarm# 374; Damper 14 in manual mode
876	Actual.DamperManMode(15)	Alarm# 375; Damper 15 in manual mode
877	Actual.DamperManMode(16)	Alarm# 376; Damper 16 in manual mode
878	Actual.DamperManMode(17)	Alarm# 377; Damper 17 in manual mode
879	Actual.DamperManMode(18)	Alarm# 378; Damper 18 in manual mode
880	Actual.DamperManMode(19)	Alarm# 379; Damper 19 in manual mode
881	Actual.DamperManMode(20)	Alarm# 380; Damper 20 in manual mode
882	Actual.DamperManMode(21)	Alarm# 381; Damper 21 in manual mode
883	Actual.DamperManMode(22)	Alarm# 382; Damper 22 in manual mode
884	Actual.DamperManMode(23)	Alarm# 383; Damper 23 in manual mode
885	Actual.DamperManMode(24)	Alarm# 384; Damper 24 in manual mode
886	Actual.DamperManMode(25)	Alarm# 385; Damper 25 in manual mode
887	Actual.DamperManMode(26)	Alarm# 386; Damper 26 in manual mode
888	Actual.DamperManMode(27)	Alarm# 387; Damper 27 in manual mode
889	Actual.DamperManMode(28)	Alarm# 388; Damper 28 in manual mode
890	Actual.DamperManMode(29)	Alarm# 389; Damper 29 in manual mode
891	Actual.DamperManMode(30)	Alarm# 390; Damper 30 in manual mode
892	Actual.DamperManMode(31)	Alarm# 391; Damper 31 in manual mode
893	Actual.DamperManMode(32)	Alarm# 392; Damper 32 in manual mode
894	Actual.DamperManMode(33)	Alarm# 393; Damper 33 in manual mode
895	Actual.DamperManMode(34)	Alarm# 394; Damper 34 in manual mode
896	Actual.DamperManMode(35)	Alarm# 395; Damper 35 in manual mode
897	Actual.DamperManMode(36)	Alarm# 396; Damper 36 in manual mode
898	Actual.DamperManMode(37)	Alarm# 397; Damper 37 in manual mode
899	Actual.DamperManMode(38)	Alarm# 398; Damper 38 in manual mode
900	Actual.DamperManMode(39)	Alarm# 399; Damper 39 in manual mode
901	Actual.DamperManMode(40)	Alarm# 400; Damper 40 in manual mode
902	Actual.DamperManMode(41)	Alarm# 401; Damper 41 in manual mode
903	Actual.DamperManMode(42)	Alarm# 402; Damper 42 in manual mode
904	Actual.DamperManMode(43)	Alarm# 403; Damper 43 in manual mode
905	Actual.DamperManMode(44)	Alarm# 404; Damper 44 in manual mode
906	Actual.DamperManMode(45)	Alarm# 405; Damper 45 in manual mode
907	Actual.DamperManMode(46)	Alarm# 406; Damper 46 in manual mode
908	Actual.DamperManMode(47)	Alarm# 407; Damper 47 in manual mode
909	Actual.DamperManMode(48)	Alarm# 408; Damper 48 in manual mode
910	Actual.DamperManMode(49)	Alarm# 409; Damper 49 in manual mode
911	Actual.DamperManMode(50)	Alarm# 410; Damper 50 in manual mode

Address	EXOL variable	Descriptions
912	Actual.DamperManMode(51)	Alarm# 411; Damper 51 in manual mode
913	Actual.DamperManMode(52)	Alarm# 412; Damper 52 in manual mode
914	Actual.DamperManMode(53)	Alarm# 413; Damper 53 in manual mode
915	Actual.DamperManMode(54)	Alarm# 414; Damper 54 in manual mode
916	Actual.DamperManMode(55)	Alarm# 415; Damper 55 in manual mode
917	Actual.DamperManMode(56)	Alarm# 416; Damper 56 in manual mode
918	Actual.DamperManMode(57)	Alarm# 417; Damper 57 in manual mode
919	Actual.DamperManMode(58)	Alarm# 418; Damper 58 in manual mode
920	Actual.DamperManMode(59)	Alarm# 419; Damper 59 in manual mode
921	Actual.DamperManMode(60)	Alarm# 420; Damper 60 in manual mode
922	Actual.DamperManModeGen	Alarm# 421; General damper control in manual mode
923	Actual.PressureSensComError	Alarm# 422; Communication error pressure transmitter
924	Actual.PressureSensError	Alarm# 423; Pressure sensor error
925	Actual.ABA_Alarm	Alarm# 424; Alarm centralautomatic fire unit
926	Actual.Thermostat_Alarm	Alarm# 425; Alarm Thermostat
927	Actual.FireInpector_Alarm	Alarm# 426; Alarm Inspector
928	Actual.Temp_Alarm	Alarm# 427; Alarm Temperature
929	Actual.Temp_Error_Alarm	Alarm# 428; Alarm Temperature Error
930	Actual.FuncTestFail	Alarm# 429; Function test fail
931	Actual.SEF_Alarm	Alarm# 430; Alarm SEF
932	Actual.SEF_Test_Alarm	Alarm# 431; SEF test alarm, pressure setpoint is not ok, within the timeout
933	Actual.SEF_HighPrAlarm	Alarm# 432; SEF pressure more than max limit
934	Actual.SEF_LowPrAlarm	Alarm# 433; SEF pressureless than min limit
935	Actual.SEF_ManModeAlarm	Alarm# 434; SEF in manial mode
936	Actual.AHUSurvAlarm	Alarm# 435; AHU surveillance pressure alarm
937	Actual.BatteryError	Alarm# 436; Internal battery error
938	Actual.SlaveTempErrorAi4(0)	Slave temperature alarmAi4, sum alarm-slave 4-60
939	Actual.SlaveTempErrorAi4(4)	Alarm# 437; Slave temperature alarm Ai4, slave 4
940	Actual.SlaveTempErrorAi4(5)	Alarm# 438; Slave temperature alarm Ai4, slave 5
941	Actual.SlaveTempErrorAi4(6)	Alarm# 439; Slave temperature alarm Ai4, slave 6
942	Actual.SlaveTempErrorAi4(7)	Alarm# 440; Slave temperature alarm Ai4, slave 7
943	Actual.SlaveTempErrorAi4(8)	Alarm# 441; Slave temperature alarm Ai4, slave 8
944	Actual.SlaveTempErrorAi4(9)	Alarm# 442; Slave temperature alarm Ai4, slave 9
945	Actual.SlaveTempErrorAi4(10)	Alarm# 443; Slave temperature alarm Ai4, slave 10
946	Actual.SlaveTempErrorAi4(11)	Alarm# 444; Slave temperature alarm Ai4, slave 11

Address	EXOL variable	Descriptions
947	Actual.SlaveTempErrorAi4(12)	Alarm# 445; Slave temperature alarm Ai4, slave 12
948	Actual.SlaveTempErrorAi4(13)	Alarm# 446; Slave temperature alarm Ai4, slave 13
949	Actual.SlaveTempErrorAi4(14)	Alarm# 447; Slave temperature alarm Ai4, slave 14
950	Actual.SlaveTempErrorAi4(15)	Alarm# 448; Slave temperature alarm Ai4, slave 15
951	Actual.SlaveTempErrorAi4(16)	Alarm# 449; Slave temperature alarm Ai4, slave 16
952	Actual.SlaveTempErrorAi4(17)	Alarm# 450; Slave temperature alarm Ai4, slave 17
953	Actual.SlaveTempErrorAi4(18)	Alarm# 451; Slave temperature alarm Ai4, slave 18
954	Actual.SlaveTempErrorAi4(19)	Alarm# 452; Slave temperature alarm Ai4, slave 19
955	Actual.SlaveTempErrorAi4(20)	Alarm# 453; Slave temperature alarm Ai4, slave 20
956	Actual.SlaveTempErrorAi4(21)	Alarm# 454; Slave temperature alarm Ai4, slave 21
957	Actual.SlaveTempErrorAi4(22)	Alarm# 455; Slave temperature alarm Ai4, slave 22
958	Actual.SlaveTempErrorAi4(23)	Alarm# 456; Slave temperature alarm Ai4, slave 23
959	Actual.SlaveTempErrorAi4(24)	Alarm# 457; Slave temperature alarm Ai4, slave 24
960	Actual.SlaveTempErrorAi4(25)	Alarm# 458; Slave temperature alarm Ai4, slave 25
961	Actual.SlaveTempErrorAi4(26)	Alarm# 459; Slave temperature alarm Ai4, slave 26
962	Actual.SlaveTempErrorAi4(27)	Alarm# 460; Slave temperature alarm Ai4, slave 27
963	Actual.SlaveTempErrorAi4(28)	Alarm# 461; Slave temperature alarm Ai4, slave 28
964	Actual.SlaveTempErrorAi4(29)	Alarm# 462; Slave temperature alarm Ai4, slave 29
965	Actual.SlaveTempErrorAi4(30)	Alarm# 463; Slave temperature alarm Ai4, slave 30
966	Actual.SlaveTempErrorAi4(31)	Alarm# 464; Slave temperature alarm Ai4, slave 31
967	Actual.SlaveTempErrorAi4(32	Alarm# 465; Slave temperature alarm Ai4, slave 32
968	Actual.SlaveTempErrorAi4(33)	Alarm# 466; Slave temperature alarm Ai4, slave 33
969	Actual.SlaveTempErrorAi4(34)	Alarm# 467; Slave temperature alarm Ai4, slave 34
970	Actual.SlaveTempErrorAi4(35)	Alarm# 468; Slave temperature alarm Ai4, slave 35
971	Actual.SlaveTempErrorAi4(36)	Alarm# 469; Slave temperature alarm Ai4, slave 36
972	Actual.SlaveTempErrorAi4(37)	Alarm# 470; Slave temperature alarm Ai4, slave 37
973	Actual.SlaveTempErrorAi4(38)	Alarm# 471; Slave temperature alarm Ai4, slave 38
974	Actual.SlaveTempErrorAi4(39)	Alarm# 472; Slave temperature alarm Ai4, slave 39
975	Actual.SlaveTempErrorAi4(40)	Alarm# 473; Slave temperature alarm Ai4, slave 40

Address	EXOL variable	Descriptions
976	Actual.SlaveTempErrorAi4(41)	Alarm# 474; Slave temperature alarm Ai4, slave 41
977	Actual.SlaveTempErrorAi4(42)	Alarm# 475; Slave temperature alarm Ai4, slave 42
978	Actual.SlaveTempErrorAi4(43)	Alarm# 476; Slave temperature alarm Ai4, slave 43
979	Actual.SlaveTempErrorAi4(44)	Alarm# 477; Slave temperature alarm Ai4, slave 44
980	Actual.SlaveTempErrorAi4(45)	Alarm# 478; Slave temperature alarm Ai4, slave 45
981	Actual.SlaveTempErrorAi4(46)	Alarm# 479; Slave temperature alarm Ai4, slave 46
982	Actual.SlaveTempErrorAi4(47)	Alarm# 480; Slave temperature alarm Ai4, slave 47
983	Actual.SlaveTempErrorAi4(48)	Alarm# 481; Slave temperature alarm Ai4, slave 48
984	Actual.SlaveTempErrorAi4(49)	Alarm# 482; Slave temperature alarm Ai4, slave 49
985	Actual.SlaveTempErrorAi4(50)	Alarm# 483; Slave temperature alarm Ai4, slave 50
986	Actual.SlaveTempErrorAi4(51)	Alarm# 484; Slave temperature alarm Ai4, slave 51
987	Actual.SlaveTempErrorAi4(52)	Alarm# 485; Slave temperature alarm Ai4, slave 52
988	Actual.SlaveTempErrorAi4(53)	Alarm# 486; Slave temperature alarm Ai4, slave 53
989	Actual.SlaveTempErrorAi4(54)	Alarm# 487; Slave temperature alarm Ai4, slave 54
990	Actual.SlaveTempErrorAi4(55)	Alarm# 488; Slave temperature alarm Ai4, slave 55
991	Actual.SlaveTempErrorAi4(56)	Alarm# 489; Slave temperature alarm Ai4, slave 56
992	Actual.SlaveTempErrorAi4(57)	Alarm# 490; Slave temperature alarm Ai4, slave 57
993	Actual.SlaveTempErrorAi4(58)	Alarm# 491; Slave temperature alarm Ai4, slave 58
994	Actual.SlaveTempErrorAi4(59)	Alarm# 492; Slave temperature alarm Ai4, slave 59
995	Actual.SlaveTempErrorAi4(60)	Alarm# 493; Slave temperature alarm Ai4, slave 60

D.3 Holding Registers

Address	Scale	EXOL Variable	Description
0	1	QSystem.Minute	Minute
1	1	QSystem.Hour	Hour
2	1	QSystem.WDay	Day of Week(1-7, 1=Monday)
3	1	QSystem.Week	Week number
4	1	QSystem.Date	Day of month
5	1	QSystem.Month	Month
6	1	QSystem.Year	Year
7	1	Settings.DamperSelectAll	Damper manual open/close signal on all dampers (0=Close,1= Open,2=Auto (open only possible when no alarm)

Address	Scale	EXOL Variable	Description
8	1	Settings.DamperSelect(1)	Damper 1 manual open/close (0=Close,1=Open,2=Auto)
9	1	Settings.DamperSelect(2)	Damper 2 manual open/close
10	1	Settings.DamperSelect(3)	Damper 3 manual open/close
11	1	Settings.DamperSelect(4)	Damper 4 manual open/close
12	1	Settings.DamperSelect(5)	Damper 5 manual open/close
13	1	Settings.DamperSelect(6)	Damper 6 manual open/close
14	1	Settings.DamperSelect(7)	Damper 7 manual open/close
15	1	Settings.DamperSelect(8)	Damper 8 manual open/close
16	1	Settings.DamperSelect(9)	Damper 9 manual open/close
17	1	Settings.DamperSelect(10)	Damper 10 manual open/close
18	1	Settings.DamperSelect(11)	Damper 11 manual open/close
19	1	Settings.DamperSelect(12)	Damper 12 manual open/close
20	1	Settings.DamperSelect(13)	Damper 13 manual open/close
21	1	Settings.DamperSelect(14)	Damper 14 manual open/close
22	1	Settings.DamperSelect(15)	Damper 15 manual open/close
23	1	Settings.DamperSelect(16)	Damper 16 manual open/close
24	1	Settings.DamperSelect(17)	Damper 17 manual open/close
25	1	Settings.DamperSelect(18)	Damper 18 manual open/close
26	1	Settings.DamperSelect(19)	Damper 19 manual open/close
27	1	Settings.DamperSelect(20)	Damper 20 manual open/close
28	1	Settings.DamperSelect(21)	Damper 21 manual open/close
29	1	Settings.DamperSelect(22)	Damper 22 manual open/close
30	1	Settings.DamperSelect(23)	Damper 23 manual open/close
31	1	Settings.DamperSelect(24)	Damper 24 manual open/close
32	1	Settings.DamperSelect(25)	Damper 25 manual open/close
33	1	Settings.DamperSelect(26)	Damper 26 manual open/close
34	1	Settings.DamperSelect(27)	Damper 27 manual open/close
35	1	Settings.DamperSelect(28)	Damper 28 manual open/close
36	1	Settings.DamperSelect(29)	Damper 29 manual open/close
37	1	Settings.DamperSelect(30)	Damper 30 manual open/close
38	1	Settings.DamperSelect(31)	Damper 31 manual open/close
39	1	Settings.DamperSelect(32)	Damper 32 manual open/close
40	1	Settings.DamperSelect(33)	Damper 33 manual open/close
41	1	Settings.DamperSelect(34)	Damper 34 manual open/close
42	1	Settings.DamperSelect(35)	Damper 35 manual open/close
43	1	Settings.DamperSelect(36)	Damper 36 manual open/close
44	1	Settings.DamperSelect(37)	Damper 37 manual open/close
45	1	Settings.DamperSelect(38)	Damper 38 manual open/close
46	1	Settings.DamperSelect(39)	Damper 39 manual open/close
47	1	Settings.DamperSelect(40)	Damper 40 manual open/close
48	1	Settings.DamperSelect(41)	Damper 41 manual open/close
49	1	Settings.DamperSelect(42)	Damper 42 manual open/close
50	1	Settings.DamperSelect(43)	Damper 43 manual open/close
51	1	Settings.DamperSelect(44)	Damper 44 manual open/close

Address	Scale	EXOL Variable	Description
52	1	Settings.DamperSelect(45)	Damper 45 manual open/close
53	1	Settings.DamperSelect(46)	Damper 46 manual open/close
54	1	Settings.DamperSelect(47)	Damper 47 manual open/close
55	1	Settings.DamperSelect(48)	Damper 48 manual open/close
56	1	Settings.DamperSelect(49)	Damper 49 manual open/close
57	1	Settings.DamperSelect(50)	Damper 50 manual open/close
58	1	Settings.DamperSelect(51)	Damper 51 manual open/close
59	1	Settings.DamperSelect(52)	Damper 52 manual open/close
60	1	Settings.DamperSelect(53)	Damper 53 manual open/close
61	1	Settings.DamperSelect(54)	Damper 54 manual open/close
62	1	Settings.DamperSelect(55)	Damper 55 manual open/close
63	1	Settings.DamperSelect(56)	Damper 56 manual open/close
64	1	Settings.DamperSelect(57)	Damper 57 manual open/close
65	1	Settings.DamperSelect(58)	Damper 58 manual open/close
66	1	Settings.DamperSelect(59)	Damper 59 manual open/close
67	1	Settings.DamperSelect(60)	Damper 60 manual open/close
68	1	Settings.SEF_Select	SEF manual (0=Manual off,1=Manual on,2=Auto)
69	1	Settings.SEF_ManualOutput	SEF manual output
70	1	Settings.SEF_SupportSetP	SEF fan pressure support setpoint
71	1	Settings.SEF_FireSetP	SEF fan pressure fire setpoint
72	1	Settings.SEF_ExcerciseSetP	SEF fan pressure exercise setpoint
73	100	Settings.SEF_PID_PGain	The proportional gain of the SEF PID
74	1	Settings.SEF_PID_ITime	The Integral time of the SEF PID
75	1	Settings.FuncTestInterval	Interval between function test, 0=24h,1=48h,2=Once a week,3=Once every two weeks,4=Once a month (30days),5=Once every six months
76	1	Settings.FuncTestReqTimeD	Request new time for function test, Date
77	1	Settings.FuncTestReqTimeM	Request new time for function test, Month
78	1	Settings.FuncTestReqTimeY	Request new time for function test,Year (2dig)
79	1	Settings.FuncTestReqTimeMin	Request new time for function test, Min
80	1	Settings.FuncTestReqTimeH	Request new time for function test, Hour
81	1	Settings.AcknowledgeAlarm	Acknowledge Alarm function (will acknow. alarm no# input)

D.4 Input Registers

Address	Scale	EXOL Variable	Description
0	1	Actual.SystemStatus	System status,0=PowerUp,1=Install,2=Running
1	1	Actual.SystemRunMode	System runmode, 0=Off/Install,1=Night mode,2=Normal run,3=Exercise,4=Emergency run,5=Fire alarm run
2	10	Actual.AI1_SmokeDetector1	Analog input1, Smoke detector1
3	10	Actual.AI2_SmokeDetector2	Analog input2, Smoke detector2
4	10	Actual.AI3_ABACableSurv	Analog input 3, ABA Cable surveillance
5	10	Actual.AI4_FireTherCableSurv	Analog input 4, Fire thermostat cable surveillance
6	10	Actual.UI1_Temp	Universal input 1 (AI5),Temperature sensor
7	10	Actual.UI4_FireInspCableSurv	Universal input 4 (AI8), Fire inspector surveillance

Address	Scale	EXOL Variable	Description
8	10	Actual.AO1_SEF	Analog output1, SEF speed
9	10	Actual.Pressure	Pressure reading
10	1	Actual.DetectorStatus(1)	Detector 1 status (0=Ok,1=Dirty,2=Fault,3=Fire,4=Not connected,5=ComFail)
11	1	Actual.DetectorStatus(2)	Detector 2 status
12	1	Actual.DetectorStatus(3)	Not available
13	1	Actual.DetectorStatus(4)	Detector 4 status
14	1	Actual.DetectorStatus(5)	Detector 5 status
15	1	Actual.DetectorStatus(6)	Detector 6 status
16	1	Actual.DetectorStatus(7)	Detector 7 status
17	1	Actual.DetectorStatus(8)	Detector 8 status
18	1	Actual.DetectorStatus(9)	Detector 9 status
19	1	Actual.DetectorStatus(10)	Detector 10 status
20	1	Actual.DetectorStatus(11)	Detector 11 status
21	1	Actual.DetectorStatus(12)	Detector 12 status
22	1	Actual.DetectorStatus(13)	Detector 13 status
23	1	Actual.DetectorStatus(14)	Detector 14 status
24	1	Actual.DetectorStatus(15)	Detector 15 status
25	1	Actual.DetectorStatus(16)	Detector 16 status
26	1	Actual.DetectorStatus(17)	Detector 17 status
27	1	Actual.DetectorStatus(18)	Detector 18 status
28	1	Actual.DetectorStatus(19)	Detector 19 status
29	1	Actual.DetectorStatus(20)	Detector 20 status
30	1	Actual.DetectorStatus(21)	Detector 21 status
31	1	Actual.DetectorStatus(22)	Detector 22 status
32	1	Actual.DetectorStatus(23)	Detector 23 status
33	1	Actual.DetectorStatus(24)	Detector 24 status
34	1	Actual.DetectorStatus(25)	Detector 25 status
35	1	Actual.DetectorStatus(26)	Detector 26 status
36	1	Actual.DetectorStatus(27)	Detector 27 status
37	1	Actual.DetectorStatus(28)	Detector 28 status
38	1	Actual.DetectorStatus(29)	Detector 29 status
39	1	Actual.DetectorStatus(30)	Detector 30 status
40	1	Actual.DetectorStatus(31)	Detector 31 status
41	1	Actual.DetectorStatus(32)	Detector 32 status
42	1	Actual.DetectorStatus(33)	Detector 33 status
43	1	Actual.DetectorStatus(34)	Detector 34 status
44	1	Actual.DetectorStatus(35)	Detector 35 status
45	1	Actual.DetectorStatus(36)	Detector 36 status
46	1	Actual.DetectorStatus(37)	Detector 37 status
47	1	Actual.DetectorStatus(38)	Detector 38 status
48	1	Actual.DetectorStatus(39)	Detector 39 status
49	1	Actual.DetectorStatus(40)	Detector 40 status
50	1	Actual.DetectorStatus(41)	Detector 41 status

Address	Scale	EXOL Variable	Description
51	1	Actual.DetectorStatus(42)	Detector 42 status
52	1	Actual.DetectorStatus(43)	Detector 43 status
53	1	Actual.DetectorStatus(44)	Detector 44 status
54	1	Actual.DetectorStatus(45)	Detector 45 status
55	1	Actual.DetectorStatus(46)	Detector 46 status
56	1	Actual.DetectorStatus(47)	Detector 47 status
57	1	Actual.DetectorStatus(48)	Detector 48 status
58	1	Actual.DetectorStatus(49)	Detector 49 status
59	1	Actual.DetectorStatus(50)	Detector 50 status
60	1	Actual.DetectorStatus(51)	Detector 51 status
61	1	Actual.DetectorStatus(52)	Detector 52 status
62	1	Actual.DetectorStatus(53)	Detector 53 status
63	1	Actual.DetectorStatus(54)	Detector 54 status
64	1	Actual.DetectorStatus(55)	Detector 55 status
65	1	Actual.DetectorStatus(56)	Detector 56 status
66	1	Actual.DetectorStatus(57)	Detector 57 status
67	1	Actual.DetectorStatus(58)	Detector 58 status
68	1	Actual.DetectorStatus(59)	Detector 59 status
69	1	Actual.DetectorStatus(60)	Detector 60 status
70	1	Actual.DamperStatus(1)	Damper 1 status, 0=No damper installed,1=Open,2=Open (hand),3=Open (alarm),4=Open (func. test),5=Open (damper error),6=Opening,7=Opening (func.test),8=Opening (alarm),9=Opening (hand),10=Pre func. test opening
71	1	Actual.DamperStatus(2)	Damper 2 status, 11=Closed,12=Closed (hand),13=Closed (func. test),14=Closed (alarm),15=Closed (night),16=Closed (damper error),17=Closing,18=Closing (hand),19=Closing (alarm),20=Closing (func.test)
72	1	Actual.DamperStatus(3)	Damper 3 status, 21=Closing (night), 22=Damper connected, waiting for command
73	1	Actual.DamperStatus(4)	Damper 4 status
74	1	Actual.DamperStatus(5)	Damper 5 status
75	1	Actual.DamperStatus(6)	Damper 6 status
76	1	Actual.DamperStatus(7)	Damper 7 status
77	1	Actual.DamperStatus(8)	Damper 8 status
78	1	Actual.DamperStatus(9)	Damper 9 status
79	1	Actual.DamperStatus(10)	Damper 10 status
80	1	Actual.DamperStatus(11)	Damper 11 status
81	1	Actual.DamperStatus(12)	Damper 12 status
82	1	Actual.DamperStatus(13)	Damper 13 status
83	1	Actual.DamperStatus(14)	Damper 14 status
84	1	Actual.DamperStatus(15	Damper 15 status
85	1	Actual.DamperStatus(16)	Damper 16 status
86	1	Actual.DamperStatus(17)	Damper 17 status
87	1	Actual.DamperStatus(18)	Damper 18 status
88	1	Actual.DamperStatus(19)	Damper 19 status
89	1	Actual.DamperStatus(20)	Damper 20 status
90	1	Actual.DamperStatus(21)	Damper 21 status

Address	Scale	EXOL Variable	Description
91	1	Actual.DamperStatus(22)	Damper 22 status
92	1	Actual.DamperStatus(23)	Damper 23 status
93	1	Actual.DamperStatus(24)	Damper 24 status
94	1	Actual.DamperStatus(25)	Damper 25 status
95	1	Actual.DamperStatus(26)	Damper 26 status
96	1	Actual.DamperStatus(27)	Damper 27 status
97	1	Actual.DamperStatus(28)	Damper 28 status
98	1	Actual.DamperStatus(29)	Damper 29 status
99	1	Actual.DamperStatus(30)	Damper 30 status
100	1	Actual.DamperStatus(31)	Damper 31 status
101	1	Actual.DamperStatus(32)	Damper 32 status
102	1	Actual.DamperStatus(33)	Damper 33 status
103	1	Actual.DamperStatus(34)	Damper 34 status
104	1	Actual.DamperStatus(35)	Damper 35 status
105	1	Actual.DamperStatus(36)	Damper 36 status
106	1	Actual.DamperStatus(37)	Damper 37 status
107	1	Actual.DamperStatus(38)	Damper 38 status
108	1	Actual.DamperStatus(39)	Damper 39 status
109	1	Actual.DamperStatus(40)	Damper 40 status
110	1	Actual.DamperStatus(41)	Damper 41 status
111	1	Actual.DamperStatus(42)	Damper 42 status
112	1	Actual.DamperStatus(43)	Damper 43 status
113	1	Actual.DamperStatus(44)	Damper 44 status
114	1	Actual.DamperStatus(45)	Damper 45 status
115	1	Actual.DamperStatus(46)	Damper 46 status
116	1	Actual.DamperStatus(47)	Damper 47 status
117	1	Actual.DamperStatus(48)	Damper 48 status
118	1	Actual.DamperStatus(49)	Damper 49 status
119	1	Actual.DamperStatus(50)	Damper 50 status
120	1	Actual.DamperStatus(51)	Damper 51 status
121	1	Actual.DamperStatus(52)	Damper 52 status
122	1	Actual.DamperStatus(53)	Damper 53 status
123	1	Actual.DamperStatus(54)	Damper 54 status
124	1	Actual.DamperStatus(55)	Damper 55 status
125	1	Actual.DamperStatus(56)	Damper 56 status
126	1	Actual.DamperStatus(57)	Damper 57 status
127	1	Actual.DamperStatus(58)	Damper 58 status
128	1	Actual.DamperStatus(59)	Damper 59 status
129	1	Actual.DamperStatus(60)	Damper 60 status
130	1	Actual.DamperFuncTestStatus(1)	Status on function test, damper 1, 0=no test,1=Open test (started closed),2=Open test (started opened),3=Open test failed,4=Close test (started closed),5=Close test (started opened),6=Close test failed,7=Test ok,8=Test interrupted
131	1	Actual.DamperFuncTestStatus(2)	Status on function test, damper 2
132	1	Actual.DamperFuncTestStatus(3)	Status on function test, damper 3

Address	Scale	EXOL Variable	Description
133	1	Actual.DamperFuncTestStatus(4)	Status on function test, damper 4
134	1	Actual.DamperFuncTestStatus(5)	Status on function test, damper 5
135	1	Actual.DamperFuncTestStatus(6)	Status on function test, damper 6
136	1	Actual.DamperFuncTestStatus(7)	Status on function test, damper 7
137	1	Actual.DamperFuncTestStatus(8)	Status on function test, damper 8
138	1	Actual.DamperFuncTestStatus(9)	Status on function test, damper 9
139	1	Actual.DamperFuncTestStatus(10)	Status on function test, damper 10
140	1	Actual.DamperFuncTestStatus(11)	Status on function test, damper 11
141	1	Actual.DamperFuncTestStatus(12)	Status on function test, damper 12
142	1	Actual.DamperFuncTestStatus(13)	Status on function test, damper 13
143	1	Actual.DamperFuncTestStatus(14)	Status on function test, damper 14
144	1	Actual.DamperFuncTestStatus(15)	Status on function test, damper 15
145	1	Actual.DamperFuncTestStatus(16)	Status on function test, damper 16
146	1	Actual.DamperFuncTestStatus(17)	Status on function test, damper 17
147	1	Actual.DamperFuncTestStatus(18)	Status on function test, damper 18
148	1	Actual.DamperFuncTestStatus(19)	Status on function test, damper 19
149	1	Actual.DamperFuncTestStatus(20)	Status on function test, damper 20
150	1	Actual.DamperFuncTestStatus(21)	Status on function test, damper 21
151	1	Actual.DamperFuncTestStatus(22)	Status on function test, damper 22
152	1	Actual.DamperFuncTestStatus(23)	Status on function test, damper 23
153	1	Actual.DamperFuncTestStatus(24)	Status on function test, damper 24
154	1	Actual.DamperFuncTestStatus(25)	Status on function test, damper 25
155	1	Actual.DamperFuncTestStatus(26)	Status on function test, damper 26
156	1	Actual.DamperFuncTestStatus(27)	Status on function test, damper 27
157	1	Actual.DamperFuncTestStatus(28)	Status on function test, damper 28
158	1	Actual.DamperFuncTestStatus(29)	Status on function test, damper 29
159	1	Actual.DamperFuncTestStatus(30)	Status on function test, damper 30
160	1	Actual.DamperFuncTestStatus(31)	Status on function test, damper 31
161	1	Actual.DamperFuncTestStatus(32)	Status on function test, damper 32
162	1	Actual.DamperFuncTestStatus(33)	Status on function test, damper 33
163	1	Actual.DamperFuncTestStatus(34)	Status on function test, damper 34
164	1	Actual.DamperFuncTestStatus(35)	Status on function test, damper 35
165	1	Actual.DamperFuncTestStatus(36)	Status on function test, damper 36
166	1	Actual.DamperFuncTestStatus(37)	Status on function test, damper 37
167	1	Actual.DamperFuncTestStatus(38)	Status on function test, damper 38
168	1	Actual.DamperFuncTestStatus(39)	Status on function test, damper 39
169	1	Actual.DamperFuncTestStatus(40)	Status on function test, damper 40
170	1	Actual.DamperFuncTestStatus(41)	Status on function test, damper 41
171	1	Actual.DamperFuncTestStatus(42)	Status on function test, damper 42
172	1	Actual.DamperFuncTestStatus(43)	Status on function test, damper 43
173	1	Actual.DamperFuncTestStatus(44)	Status on function test, damper 44
174	1	Actual.DamperFuncTestStatus(45)	Status on function test, damper 45
175	1	Actual.DamperFuncTestStatus(46)	Status on function test, damper 46
176	1	Actual.DamperFuncTestStatus(47)	Status on function test, damper 47

Address	Scale	EXOL Variable	Description
177	1	Actual.DamperFuncTestStatus(48)	Status on function test, damper 48
178	1	Actual.DamperFuncTestStatus(49)	Status on function test, damper 49
179	1	Actual.DamperFuncTestStatus(50)	Status on function test, damper 50
180	1	Actual.DamperFuncTestStatus(51)	Status on function test, damper 51
181	1	Actual.DamperFuncTestStatus(52)	Status on function test, damper 52
182	1	Actual.DamperFuncTestStatus(53)	Status on function test, damper 53
183	1	Actual.DamperFuncTestStatus(54)	Status on function test, damper 54
184	1	Actual.DamperFuncTestStatus(55)	Status on function test, damper 55
185	1	Actual.DamperFuncTestStatus(56)	Status on function test, damper 56
186	1	Actual.DamperFuncTestStatus(57)	Status on function test, damper 57
187	1	Actual.DamperFuncTestStatus(58)	Status on function test, damper 58
188	1	Actual.DamperFuncTestStatus(59)	Status on function test, damper 59
189	1	Actual.DamperFuncTestStatus(60)	Status on function test, damper 60
190	10	Actual.SEF_CurrSetp	SEF fan current setpoint
191	1	Actual.SEF_FuncTestStatus	SEF function test status (0=no SEF fan,1=Testing,2=Failed,3=Test Ok,4=Test interrupted/no test made)
192	1	Actual.FuncTestNextTimeD	Date when next functiontest will be started
193	1	Actual.FuncTestNextTimeM	Month when next functiontest will be started
194	1	Actual.FuncTestNextTimeY	Year when next function test will be started (2dig)
195	1	Actual.FuncTestNextTimeMin	Minute when next functiontest will be started
196	1	Actual.FuncTestNextTimeH	Hour when next functiontest will be started
197	1	Actual.FuncTestTimeLeft	Time left to next function test, in minutes (32bits)
199	100	Actual.FuncTestTimeLeftDays	Time left to next function test,in days
200	1	Actual.FuncTestLastTimeD	Date when last functiontest was started
201	1	Actual.FuncTestLastTimeM	Month when last functiontest was started
202	1	Actual.FuncTestLastTimeY	Year when last functiontest was started(2dig)
203	1	Actual.FuncTestLastTimeMin	Minute when last functiontest was started
204	1	Actual.FuncTestLastTimeH	Hour when last functiontest was started
205	1	Actual.FuncTestDateStatus	Function date input test status, 0=Idle,1=Bad,2=Ok
206	1	Actual.AcknowledgeAlarmStatus	Acknow. Alarm func. status,0=Idle,1=Running,2=OK,3=Error

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