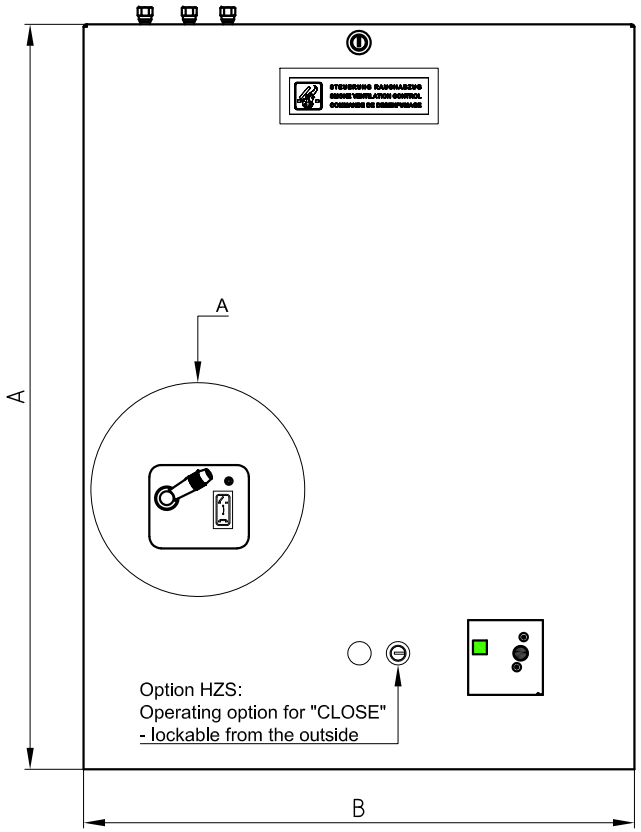
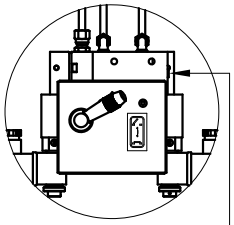
ALK 1x.y- ... R

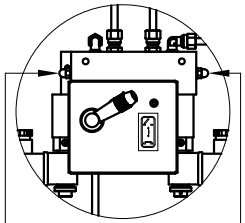


Detail A: ALK 10.y



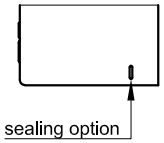
Reset button
priority valve

Detail A: ALK 11.y

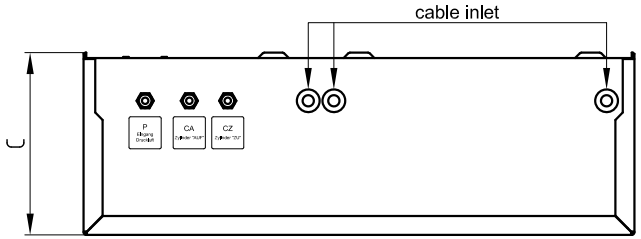


Reset buttons
priority valve

Securing function:



sealing option



Holding position of cover:

type	A [mm]	B [mm]	C [mm]	max. CO2-amount for	
				OPEN [g]	CLOSE [g]
ALK 10.5-OR- ... -R	500	400	130	1x500	—
ALK 11.5-OR- ... -R	500	500	130	1x500	1x500
ALK 10.9-OR- ... -R	700	400	170	1x1500	—
ALK 11.9-OR- ... -R	700	515	170	1x1500	1x1500

Functional description:

1) Ventilation function:
   Operate the manual lever to activate the ventilation. Alternatively, electrical remote control via add-on components for OPEN and/or CLOSE is possible (see options). As long as the add-on component is controlled, manual activation is not possible.
2) Alarm function is activated:
   - manually be pressing the black release push-button
   - electrically by applying the rated voltage at the solenoid
   - pneumatically by applying the min. release pressure at the pneumatic add-on component at the RTC.
   Simultaneously, the ventilation function is deactivated.
3) Resetting the alarm release:
   Wait until the system has been exhausted and then press the reset button(s) on the priority valve all the way in. Only after that, the ventilation function is active again.

Connections:

CA ... cylinder OPEN, CZ ... cylinder CLOSE, P ... on-site compressed air supply

Technical data

RTC		HH5/2	
max. operating pressure	80bar	min. / max. operating pressure	3 / 10bar
min. control pressure at HPA/HEPA	6bar	min. control pressure at CO2	4bar
nominal width of valve	4mm	nominal width of valve	4mm
nominal width of piercing needle	2mm	power input - attracting - DC	-
rated voltage of electrical release	24VDC +30/-20%	power input - attracting - AC	9VA
rated current of electrical release	0,29ADC	power input - holding - DC	5W
duty cycle of electrical release	100%	power input - holding - AC	6VA
can be used in temperature range	-5°C - +55°C		
environmental class	I		

The expected output pressure strongly depends on the connected device and the amount of CO2. The CO2 bottle must be selected in the way that the output pressure does not exceed 80bar.

Order designation:

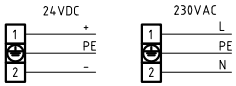
ALK 11.9 - xx - yy - R - zz

- zz: HH5/2-options (see "Options")
- R: spare bottle bracket
- yy: HA ... manual OPEN, HA-HZ ... manual OPEN - manual CLOSE
  HEA ... manual, electrical OPEN,
  HEA-HZ ... manual, electrical OPEN - manual CLOSE
  HPA ... manual, pneumatic OPEN,
  HPA-HZ ... manual, pneumatic OPEN - manual CLOSE
- xx: colour (OR=RAL 2011, RT=RAL 3000)
- 9: alarm box size
- 1: number of CO2 bottles CLOSE
- 1: number of CO2 bottles OPEN

Options HH5/2:

EZ230 ..... elektrically CLOSE 230V
EZ24 ..... elektrically CLOSE 24VDC
EZS230 ..... elektrically CLOSE 230V (currentless)
EZS24 ..... elektrically CLOSE 24VDC (currentless)
EA230 ..... elektrically OPEN 230V
EA24 ..... elektrically OPEN 24VDC
Ø8 ..... all pipe connections for Ø8mm
OFR ..... without filter pressure reducer

Circuit diagram for solenoid HH5/2:



Tolerance | Scale 1:4 | Material

Created: Simetzberger	Sheet: 1/2	Format: A3	Title: Alarm-/ ventilation box ALK 1x.y- ... -R	Document Style: Data sheet
Approved: HA	Issue Date: 14.09.2022			Document State: Valid
Grasl Pneumatic Mechanik Gmbh QM FO 05.24.0				Document Number: 06.005.DAT.00.02-E

Technical Instructions

Alarm box type AK

Please read these „Technical Instructions“ carefully and completely. Only technically qualified personnel may work on this device.

Meaning of symbols

Safety instructions must be observed!
Failure to observe these notes may result in personal injury and property damage.

Advice, the non-compliance with these instructions or the technical data shall lead to the loss of rights under guarantee.

Correct,
this is how it should be done.

Incorrect,
this is not how it should be done.

Correct and proper use

The alarm box is used as control (emergency control board) of smoke and heat exhaust vent system (SHEVS). By input command using a push-button or by electrical/pneumatic signal, the energy of a CO_2 bottle suited for SHEVS systems is released.

When installing SHEVS devices controlled by the alarm box below an installation height of 2,5m from the floor, or from the next access level, suitable devices must be provided to prevent danger to people (crushing and pinching hazard). Follow the corresponding guidelines, rules and norms, e.g. EN 14351 and ASR A1.6. Do not allow children to play with the device or its regulation and/or control devices, including window controls.

General notes

When using multiple alarm box release stations in one group, suitable shuttle and vent valves for the connection must be installed.

The alarm box must be freely accessible and may not be obstructed by other objects.

The alarm box is not suited for use in highly corrosive environments (e.g.: thermal spas, waste management industry, etc.).

Always close the threaded connection of the bottle and protect it against dirt and humidity.

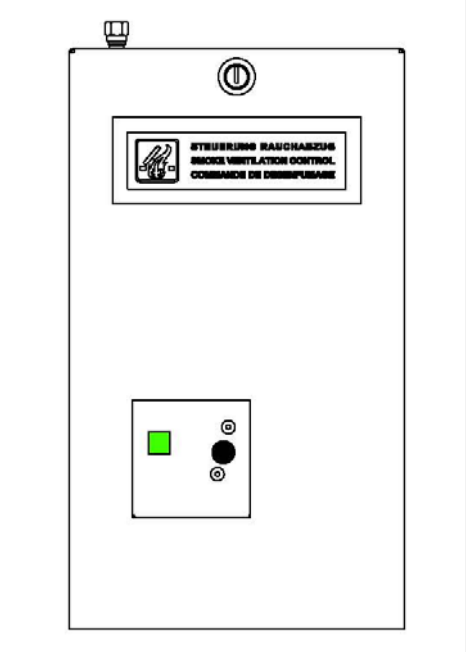


Figure 1: Alarm box (symbolically)

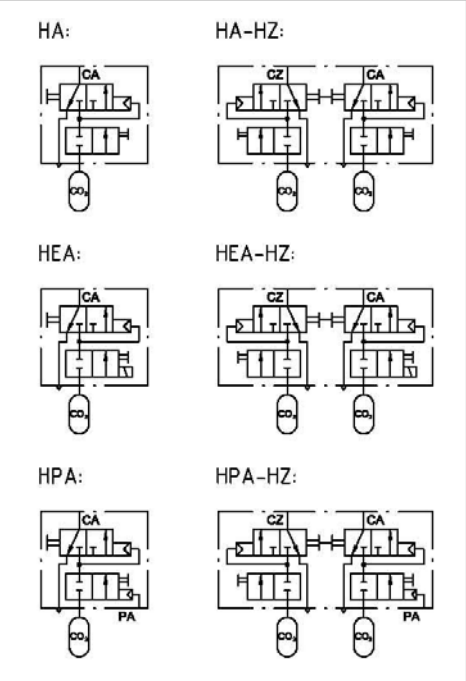


Figure 2: RTC circuit diagrams

When handling this product, always use suitable PPE – personal protective equipment (e.g. protective gloves, safety boots) as protection against sharp and pointed edges, pointed piercing needle, falling objects, and as protection against cold burns.

Pipe connection

Possible pipe connections: Ø6 and Ø8

The pipe connection at the alarm box must be >= the external pipe.
pipe connection Ø6 –> external pipe Ø6
pipe connection Ø8 –> external pipe Ø6, or Ø8

Glass plate

Only our glass plates may be used.

We can supply a hammer for breaking the glass as optional accessory part.

Installation

Observe the following before the installation:

Check that all parts of the delivery scope have been received and inspect the box for any transport damage. If any damage is visible, a complaint must be lodged immediately.

When installing the alarm box, observe the national standards and regulations. If the conditions at the installation site permit, we recommend installing the alarm box in a secure access area of the corresponding fire compartment, as the provided flaps/windows, where it will be protected from fire and smoke.
The glass cut-out (push-button) should be installed at a height of 1,4-1,6m within the area of the fire department access (normally EMERGENCY-exit), where easy access is ensured.
The alarm box may not be exposed to extreme temperatures and weather and it is not suited for outdoor storage and assembly.
The alarm box must be mounted to all provided mounting points (refer to Figure 4) using fasteners suited for the respective underground, on a level, vertical surface.
Next, interconnect the respective connections.
Ensure stress-free installation when mounting the pipes.
Once the installation is complete, mount the CO_2 bottles in the provided devices. They must not be stored outside the provided devices.

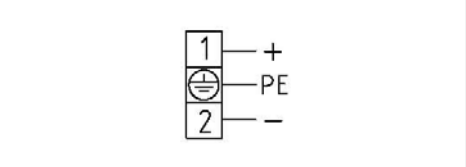


Figure 3: RTC solenoid connection

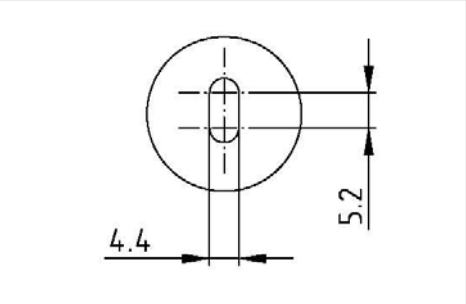


Figure 4: Attachment point

The connections must face upward.

For the installation, store the cover in a safe position away from the alarm box.

Only install the alarm box in sufficiently dimensioned and well-ventilated rooms.

Commisioning

If the CO_2 bottles are not securely fastened, there is a risk that they might catapult during piercing.

Only operate the alarm box once the SHEVS has been fully installed and is ready for operation.

Commisioning of the release lever

Before inserting the CO_2 bottle, check the position of the piercing needle (refer to number *4* in *Commisioning of the release lever*). There is a risk that the CO_2 bottle might be triggered unintentionally and, as a result, the SHEVS unit might move by accident.

1. Hook the clamping device in the provided recess (refer to Figure 5).
2. Place the clamping bolt on the piercing bolt in the valve.
3. Press the clamping device fully in clamping direction until the piercing bolt locks.
4. Make sure that the piercing needle is positioned behind the piercing face of the bottle screw-in thread!
5. Lightly grease the O-ring inside the bottle screw-in thread (consult the company Grasl regarding the type of grease to be used, which is not included in the delivery scope) and check it for possible damage (if damaged, it must be replaced).
6. Check the position of the visual indicator. The visual indicator must be positioned at „green“; if not, press the visual indicator angle towards the valve until the visual indicator is at „green“ (refer to Figure 6)!
7. Check the position of the priority slider. Both sliders must be in home position (refer to Figure 7)!
8. Fully screw in the full CO_2 bottle.
   Screw-in depth: Standard 1/2” UNF –> min. 10mm
   Optional rising pipe M18x1,5 –> min. 11mm
9. Insert glass plate and lock the box with the cover.

CO_2-bottle

Only verified CO_2 bottles authorised by us and meeting the requirements of the standards „EN 12205“ or „ADR 2003“ may be used.

Only the clamping device specified by us may be used for initial operation of the release valve.

The alarm box is not equipped with devices that provide protection against crushing at the SHEVS unit.

1)	...	standard 1/2” UNF
2)	...	option rising pipe M18x1,5
a	...	recess for clamping device
b	...	clamping bolt
c	...	release button ”OPEN”
d	...	clamping device
e	...	clamping direction

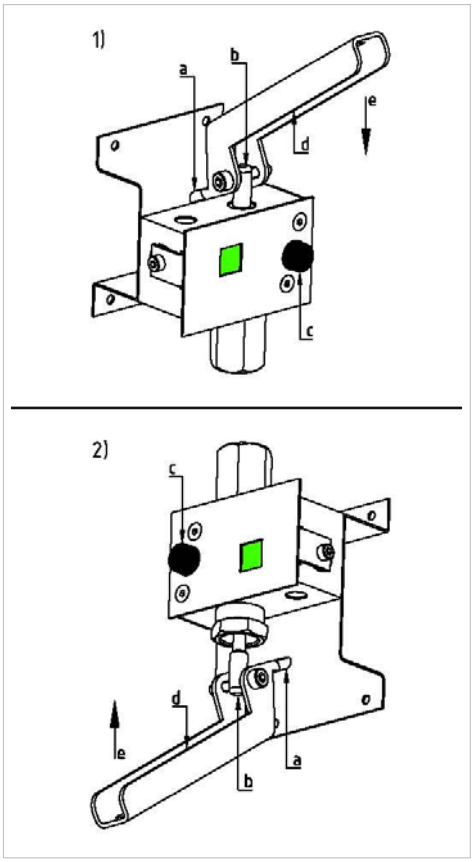


Figure 5: OPEN release RTC

Normal operation

The alarm box is ready for operation when the „green“ visual indicator is fully visible, a glass plate has been inserted, and the cover has been locked.

SHEVS release

- AK xx.y-HA (manual release): After breaking the glass plate, press the release button fully down to release the alarm box.

- AK xx.y-HEA (electric release): In addition to the manual release, remote release by applying the rated voltage is possible (refer to Technical Data).
- AK xx.y-HPA (pneumatic release): In addition to the manual release, remote release by applying the min. release pressure is also possible (refer to Technical Data).

Pressing the release button ”OPEN” will pierce the screwed-in CO_2 bottle and the CO_2 will be connected to the output. The „red“ visual indicator indicating the state „fire“ will then be visible.

SHEVS resetting (AK xx.y-...-HZ)

The alarm box is in the state „fire“ (red visual indicator). Pressing the release button ”CLOSE” will pierce the screwed-in CO_2 bottle and the CO_2 will be connected to the „CZ“ output. During this, the output „CA“ will be vented and the visual indicator will switch to an intermediate position, to the state “Malfunction” („red/green“ indicator).

Activation of the reset function

- AK xx.y-...-HZ: Use the included key to unlock the cover and arrange it in hold position. Fully press the black release push-button ”CLOSE” to release the reset function.
- AK xx.y-...-HZS (optional): Use the included key to fold away the round hole cover plate. Fully press the black release push-button ”CLOSE” arranged underneath it to release the reset function.

Restarting operation/reset

Always wear suitable PPE (protective gloves, safety boots) when handling this product.

Piercing the CO_2 bottles will significantly cool down the CO_2 bottles and all pipes and components in the nearness through which the CO_2 flows. Touching these components for extended periods might cause cold burns.

1. Unlock the alarm box cover and arrange it in hold position (refer to data sheet).
2. Slowly screw out the bottle up to the vent hole (venting noise can be heard).
3. Wait until all pressure has been released from the bottle (priority slider can be moved again).
4. Fully turn out the bottle.
5. For additional points, refer to *Commisioning of the release lever*.

Once released, the alarm box must be restarted by authorised personnel.

1)	...	standard 1/2” UNF
2)	...	option rising pipe M18x1,5
a	...	visual indicator angle
b	...	visual indicator - green (OK) / red (fire)

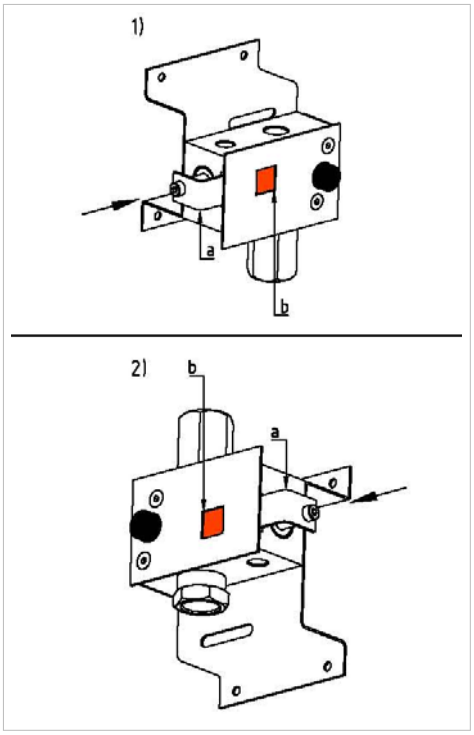


Figure 6: Position of RTC visual indicator

1)	...	standard 1/2” UNF
2)	...	option rising pipe M18x1,5
a	...	priority slider
b	...	release button ”OPEN”
c	...	release button ”CLOSE”

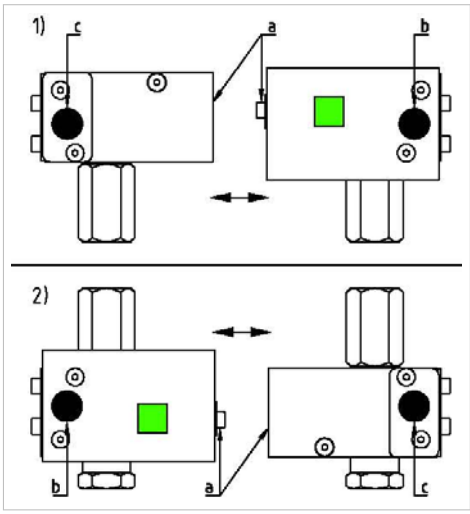


Figure 7: RTC slider position

Malfunction

A malfunction is present if:

- the alarm box cover has not been mounted or is not locked
- no glass plate has been inserted
- not all CO_2 bottles have been inserted
- the visual indicator is in intermediate position („red/green“ display)
- there is a lack of spare consumables

In the event of a malfunction, arrange for a service by a qualified company immediately.

Maintenance

If the alarm box is no longer functional, it must be replaced completely. It is not permitted to modify or remove any components of the alarm box. This would impair the safe operation of the alarm box in which case it may no longer be used.
Possible consequences may include failure to function, release of CO_2, risk of explosion of the CO_2 bottles.

Disconnect the power supply when carrying out maintenance work/troubleshooting on the SHEVS system to prevent unintended operation. This can be achieved by turning out the CO_2 bottle.

If the visual indicator is no longer in „green“ position, or if the slider is activated at the RTC-CLOSE valve (Figure 6), CO_2 might have been released into the system and all connected components might be under high pressure. Remove the CO_2 bottle as described under *Restarting operation/reset*.

Check the following as part of the annual maintenance:

- piercing needle for damage
- connection cable for damage
- function of the strain relief in the connecting plug
- secure attachment of the alarm box
- pipes and CO_2 bottles for corrosion or damage
- CO_2 bottles for falling below the engraved total weight

Disassembly

Disassembly sequence:

1. Remove CO_2 bottles.
2. Remove lines from the alarm box.
3. Remove alarm box from the wall.

1) ... standard 1/2” UNF
2) ... option rising pipe M18x1,5
a ... CO_2 bottle
b ... screw-in thread for CO_2 bottles
standard: 1/2” UNF
option rising pipe: M18x1,5

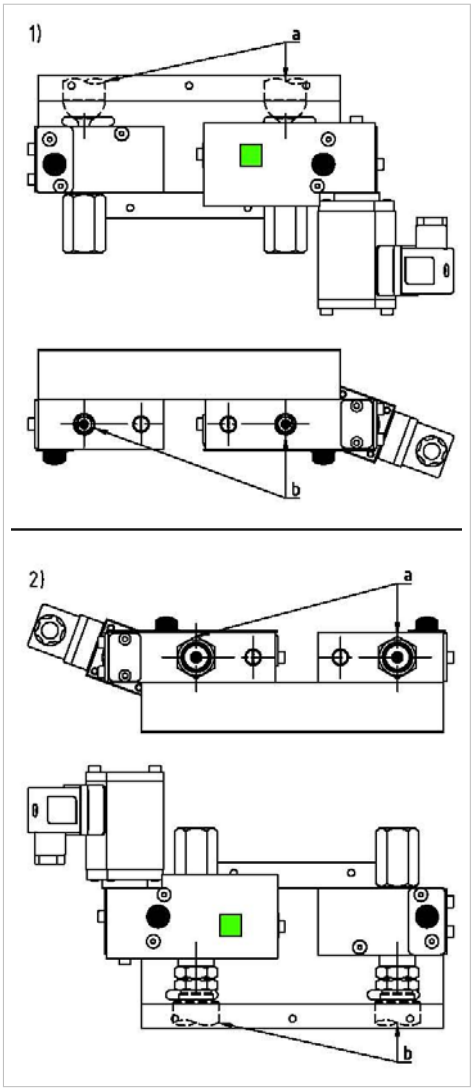


Figure 8: CO_2 screw-in thread

Disposal

This product is made of steel, aluminium, non-ferrous metals, plastic and electronic components.

Dispose of this product in observance of the national regulations.