cool it

More than just doors

RWA12 RWA12H

Natural smoke & heat ventilator with electrical actuation

for installation in false ceilings of **cold stores and freezer rooms** with CE mark to EN 12101-2:2003

SMOKE VENTILATION SYSTEMS FOR COLD STORES AND FREEZER ROOMS

Please check you have the current issue of this document. This is a technical information sheet. The publication of an updated issue supersedes and renders obsolete all previous issues. Thank you!

3rd EDITION DECEMBER 2023

Whenever a reliable thermal room sealing point is required, *cool it* has proven itself to be a strong partner for over 35 years. And *cool it* also excels with innovative solutions in the field of smoke and heat ventilation systems. More than ten years of experience underpin every single *cool it* ventilation hatch. The results of this continuous further development are top-quality, ventilation hatches for cold stores and freezer rooms that have proven themselves in practical use.

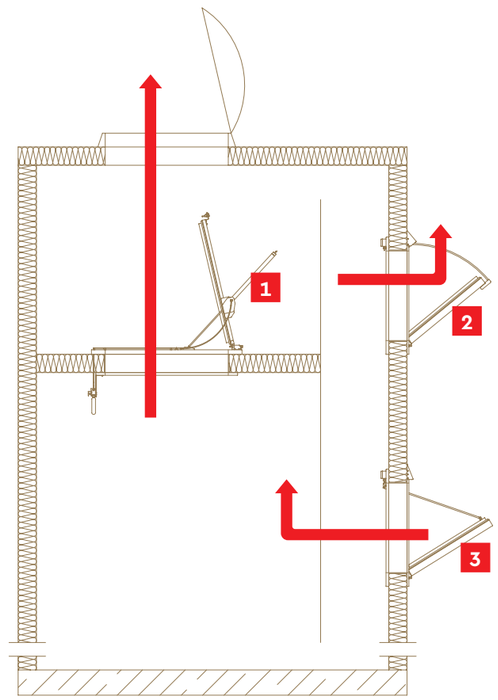
Outstanding quality
Co*ol it* ceiling hatches are manufactured from high-quality materials using state-of-the-art production methods.

Our smoke evacuation hatches for installation in the false ceiling and the façade

1 Pneumatically or electrically operated ceiling hatch for installation in false ceilings (RWA12/RWA12H)

2 BL12RWA wall hatch, tested in accordance with DIN EN 12101–2

3 BL12ZL supply air hatch for wall installation



For practically any application or any requirements – the optional extensions to the standard co*ol it* smoke and ventilation hatches make it possible.

Hygiene / occupational health and safety: In freezer rooms, it is important that no ice can form in the area around the ceiling hatches. That is why the co*ol it* hatch has been engineered to open "upwards". On hatches that open "downwards", water condensation necessarily collects on the hatch leaf and then penetrates through the seal into the interior of the room. This can cause hygiene-related problems in cold stores or cause hazardous icicles to form in freezer rooms.

Corrosion-resistant materials: All the hatch mounting parts are manufactured from rustproof materials: the brackets from rustproof stainless steel and the locks on the opening system from aluminium.

Optimum operating reliability: *VdS*-tested mounting parts and the frame heater (RWA12H) that is fitted as standard effectively prevent the seal from freezing tight to the frame. The 4-point locking mechanism guarantees an optimised hermetic seal.

Energy efficiency: The use of special connecting elements prevents the formation of thermal bridges. The insulation values of the 12 cm-thick hatch leaf ensure minimum energy loss.

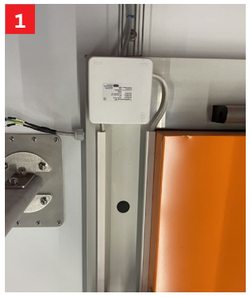
Safe acceptance: The co*ol it* SHEV hatches create safety for everyone involved in the construction project and thus enable your building to be commissioned on schedule.

The co*ol it* smoke and ventilation hatches with pneumatic actuation – thoroughly tested by leading experts.

CE mark to
DIN EN 12101–2

Design of the electric ceiling hatch

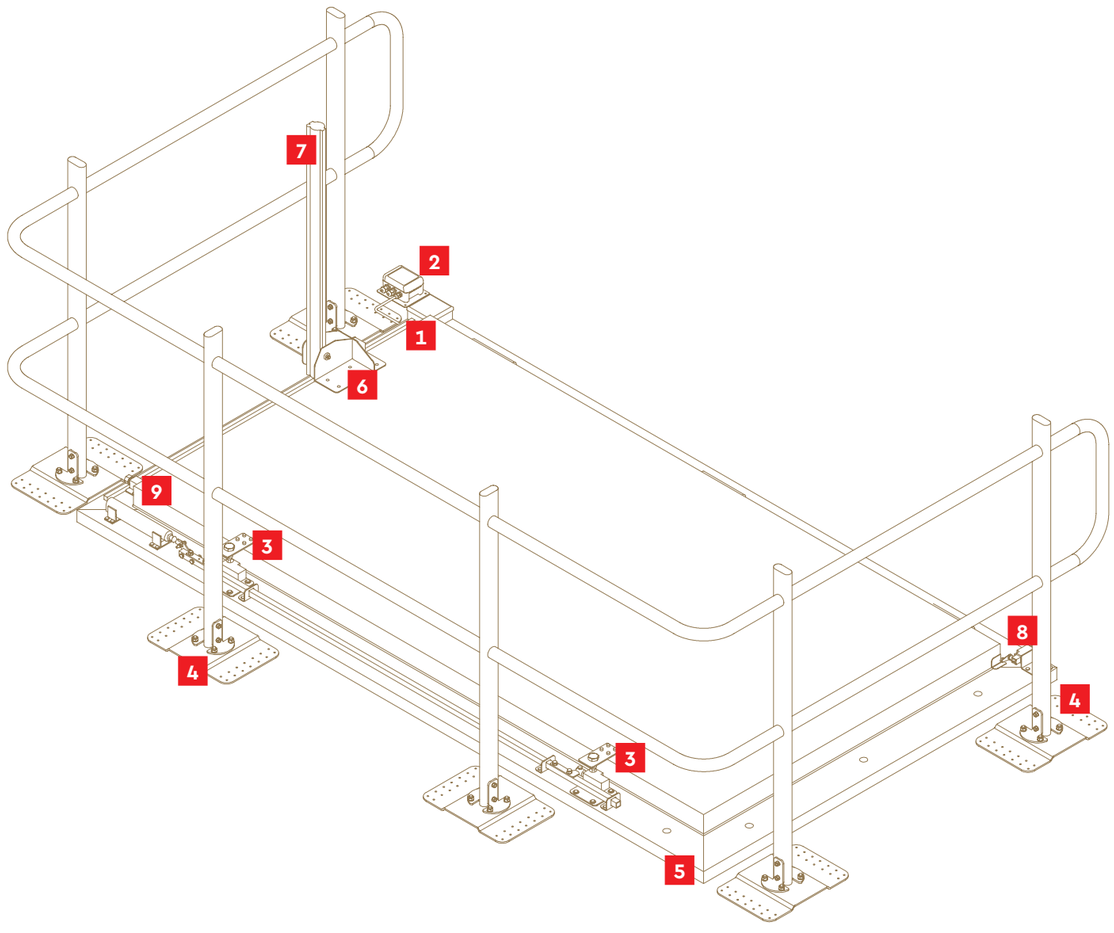
Output from the frame heater
with factory-fitted 24 V sequence control on the Thermotec flat frame



Heater monitoring
Pre-mounted on the frame with potential-free feedback contacts for on-site evaluation.

Locking unit
Lock on opening system with Cardan shaft fixed locking pin in stainless steel

Fall-arrester
6 mm base plates on the fall-arrester with approval for riveting to ceiling panels



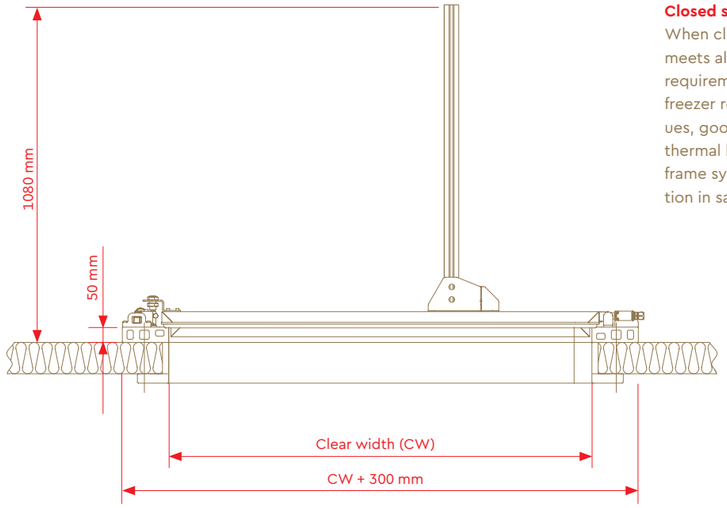
Thermotec flat frame
for RWA12H with heating cable and aluminium cover profile

Brackets for actuating cylinders
Stainless steel brackets on leaf and frame of 1.4301 stainless steel to hold the actuating cylinders

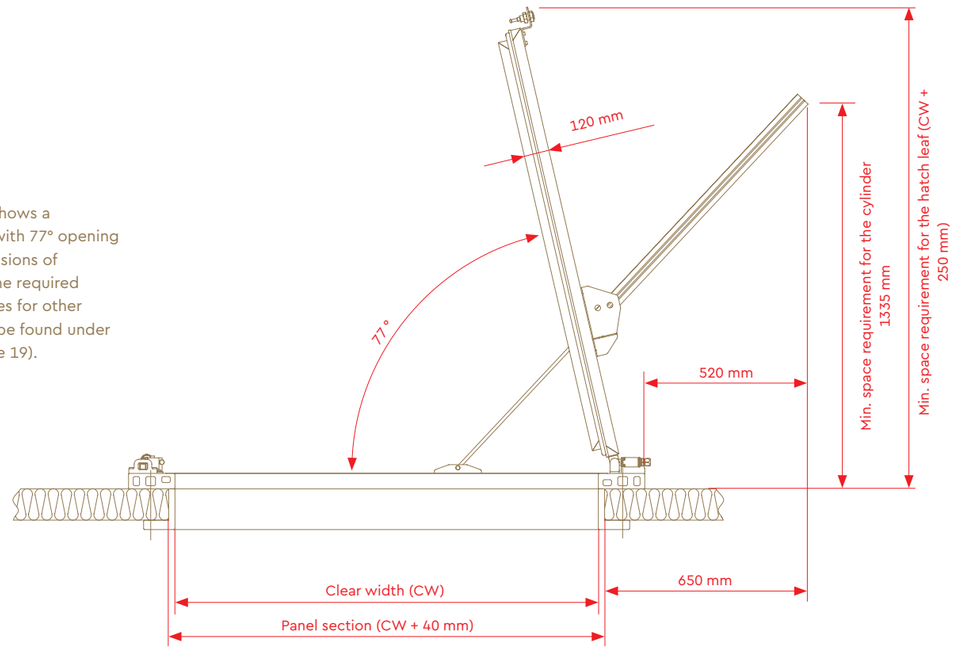
Electric drive cylinders for
41° opening angle (350mm stroke)
48° opening angle (400mm stroke)
63° opening angle (500mm stroke)
77° opening angle (600mm stroke)

Feedback contact
"Hatch open" (8) and "Hatch closed" (9) for activation or interrogation of on-site systems or displays

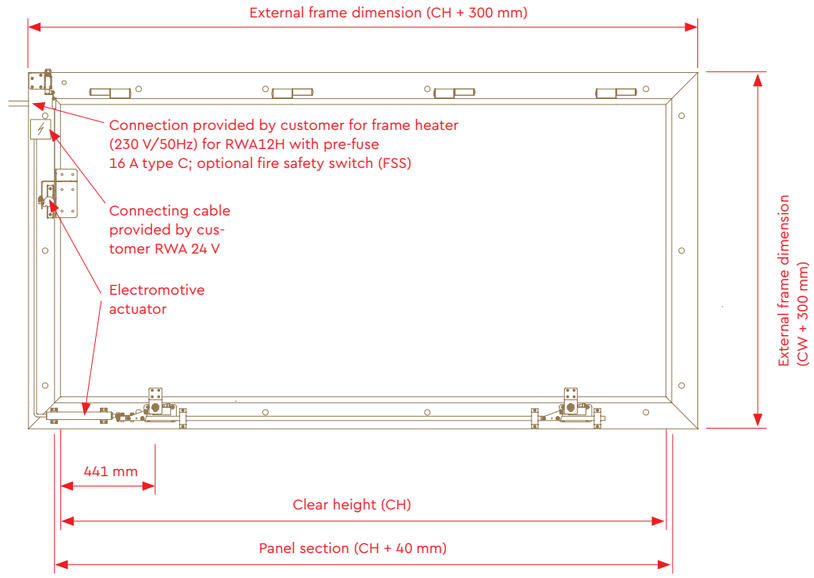
The ceiling hatches **in detail**



Closed state
When closed, the ceiling hatch meets all thermal partitioning requirements in cold stores and freezer rooms: high insulation values, good sealing properties, no thermal bridges. The clamping frame system is ideal for installation in sandwich panels.



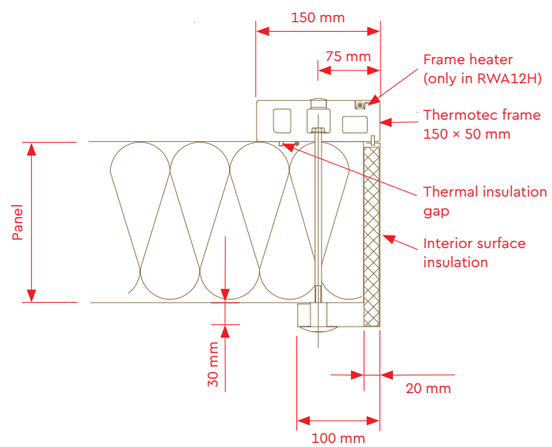
Open state
The illustration shows a standard hatch with 77° opening angle and dimensions of 128 × 250 cm. The required installation spaces for other dimensions can be found under *selection 4* (page 19).



Top view
We supply the standard hatch in the maximum size of 1280 mm × 2500 mm. The minimum dimensions are 800 mm × 800 mm.

Maximum leak tightness
Due to the four existing locking points between the hatch leaf and the frame (2 × opening system lock + 2 × pneumatic cylinder), the hatch system is always optimally locked, regardless of seasonal extreme temperature differences within the false ceiling.

Detailed view of frame
The RWA12H, the hatch for freezer rooms, is also equipped with a frame heater and interior surface insulation. Thanks to the thermal insulation gap, the frame is designed to have no thermal bridges.



Panel cut-out
Clear height HL +40
Clear width BL +40

Declared performance as specified in DIN EN 12101-2:2003

UNIQUE IDENTIFICATION CODE FOR THE PRODUCT TYPE
Smoke ventilation ceiling hatch type RWA12
opening angle: 77°, 63°, 48°, 41°
cylinder stroke: 600 mm, 500 mm, 400 mm, 350 mm
drive type: electric (24 V)

PURPOSE
Fire protection
natural smoke and heat ventilator (NSHV)
for installation in false ceilings,
installation inclination 0° to the horizontal

SYSTEM FOR THE EVALUATION OF PERFORMANCE STABILITY
1

HARMONISED STANDARD
EN 12101–2: 2003

NOTIFIED BODY
MPA NRW – NB No. 0432

A sample declaration of performance can be found on this page. The product-specific declarations of performance in the respective national languages can be found at **www.coolit.de/downloads**.

KEY **FEATURES**	**DESCRIPTION** OF THE FEATURE	**SECTIONS** WITH THE REQUIREMENTS	MANDATED **CLASS**	HARMONISED TECHNOLOGICAL **SPECIFICATION**
NOMINAL TRIGGERING CONDITIONS/ SENSITIVITY	Thermal-electric release element	4.1	passed	EN 12101–2: 2003
	Electrical opening mechanism	4.2	passed	EN 12101–2: 2003
DELAYED RESPONSE		7.1.2	passed	EN 12101–2: 2003
FUNCTIONAL SAFETY	without external load	7.1	Re 100 (type A)	EN 12101–2: 2003
	Comfort/ventilation position	7.1.3	npd	EN 12101–2: 2003
	Wind load	7.4	WL 0	EN 12101–2: 2003
EFFECTIVENESS OF SMOKE AND HEAT DISSIPATION/ AERODYNAMICALLY EFFECTIVE OPENING AREA		6	A_a (see *selection 5*)	EN 12101–2: 2003
PERFORMANCE UNDER FIRE CONDITIONS, FIRE RESISTANCE – MECHANICAL INTEGRITY, HEAT RESISTANCE		7.5	$B_{300}30$	EN 12101–2: 2003
OPENING UNDER ENVIRONMENTAL CONDITIONS	Snow load	7.2	SL 0	EN 12101–2: 2003
	Snow load at low ambient temperatures	7.3	T (-15) with SL 0	EN 12101–2: 2003
FIRE PERFORMANCE OF CONSTRUCTION MATERIALS		7.5.2.1	E	EN 13501–2: 2010

Technical **information**

	RWA12 HATCH FOR COLD STORES	**RWA12H** HATCH FOR FREEZER ROOMS	
DIMENSIONS			
Min. size	**800 mm × 800 mm**		
Max. size	**1280 mm × 2500 mm**		
Weight 1280 mm × 2500 mm	approx. 130 kg		
AMBIENT TEMPERATURE			
Room	≥ 4 °C to 60 °C *	< 4 °C to -28 °C	down to -50 °C **
False ceiling	min. -15 °C	min. -15 °C	
INSULATION PROPERTIES			
Heat transfer coefficient	$U_w = 0{,}595 \frac{W}{m^2 \times K}$ (U-value DIN EN ISO 10077–1)		
MATERIAL			
Top face of hatch leaf	Stainless steel or steel aluminium sheet 0.63 mm–0.8 mm; galvanised and plastic-coated		
Core insulation of the ceiling hatch leaf	Polyurethane B2 as per DIN 4102–1, **no thermal bridges with 120 mm** thickness of insulation		
frame	PVC, Thermotec frame: 150 mm × 50 mm		
MECHANICAL CONSTRUCTION			
Lifting cylinder	Jofo, JM-DC2–2500–0600		
Unlocking cylinder	Jofo, JM-DC-650–0020		
Locking units	Jofo, TS 6000		
Control system	Sequence controller LA-F		
AERODYNAMIC OPENING SURFACE			
	see selection 4		
FRAME HEATER			
Performance		self-regulating, **27 W/m** at 10 °C (max. 50 W)	
Electrical connections (provided by the customer)		Power supply **230 V/50 Hz**, pre-fuse **16 A type C**, residual current device **30 mA** **Total capacity** = (2 × CH [m] + 2 × CW [m]) × 50 W The capacity of all the heaters connected to a fuse must be less than 1000 W.	

* higher temperatures on request ** on request, special equipment may reduce the temperature range.

Load cut-off LA-F sequence controller

When push-rod actuators of type JM-DC2–2500–0600 are used as servomotor and a JM-DC-650–0020 is used as locking motor then an electronic sequence controller LA-F is required.

The logic monitors the power consumption of each motor. The switching threshold for the servomotor is preset to I = 3.5 A (this cut-off value can be set to the values 3.5 A/4.0 A). The switching threshold for the locking motor is preset to I = 1.6 A (this cut-off value can be set to the values 1.6 A/2.1 A).

In the opening direction

The locking motor operates first (3 s or 5 s). Once this period has elapsed, the servomotor is activated. If the current at a motor rises above the permitted maximum value then its travel is stopped **immediately**. However, this does not affect the second motor

In the closing direction

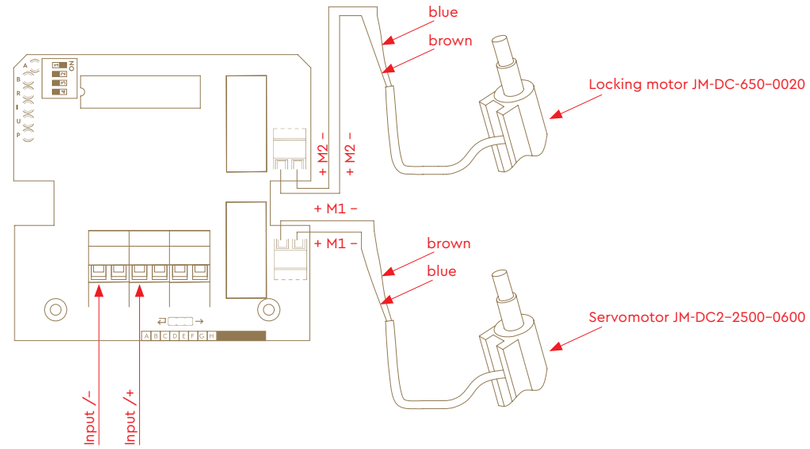
The servomotor operates first (45 s or 55 s). Once this period has elapsed, the locking motor is activated. If the current at a motor rises above the permitted maximum value then its travel is stopped **immediately**. However, this does not affect the second motor

The sequence controller LA-F may only be operated with a protective low voltage as per DIN EN 60742.

Characteristic technical data

TYPE	LA-F
NOMINAL VOLTAGE	as per DIN EN 60742 24 V DC +30 %/-20 % residual ripple 5 %
CUT-OFF CURRENT	Servomotor adjustable 3.5 A or 4.0 A Locking motor adjustable 1.6 A or 2.1 A
TURN-ON DELAY	Servomotor adjustable 3 s or 5 s Locking motor adjustable 45 s or 55 s
PERCENTAGE DUTY CYCLE	Maximum 100% PDC
PROTECTION CLASS	IP54 splash-proof
TERMINALS	Cable max. 2.5 mm² rigid, max. 1.5 mm² flexible with end sleeve
TEMPERATURE RANGE	-20 °C to +60 °C
COLOUR	Box: white
WEIGHT	200 g

View of LA-F
Connection diagram for sequence controller



Connection plan LA-T2

TERMINAL NO.	1	2	M+	M–	M+	M–
VOLTAGE	Input		Motor 1		Motor 2	
			Servomotor		Locking motor	
OPEN	+	–	+	–	+	–
CLOSE	–	+	–	+	–	+

Function of the DIP switch

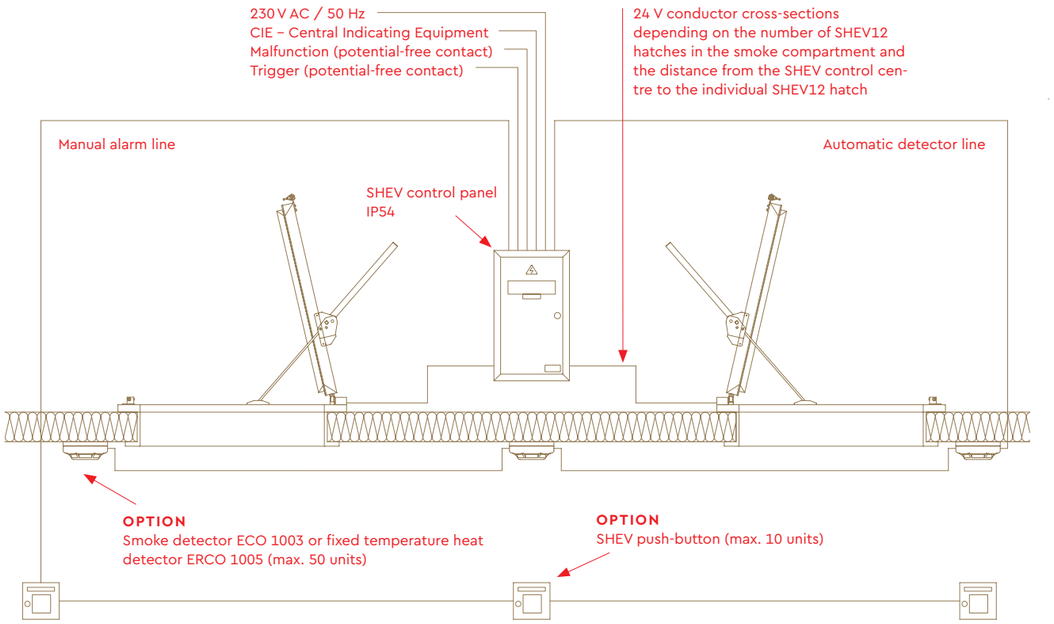
MOTOR CUT-OFF CURRENT	DIP-S. 1	
SERVOMOTOR M1	OFF	ON
	4.0 A	3.5 A
MOTOR CUT-OFF CURRENT	**DIP-S. 2**	
LOCKING MOTOR M2	OFF	ON
	1.6 A	2.1 A
OVERTRAVEL TIME (S)	**DIP-S. 3**	
SERVOMOTOR M1	OFF	ON
	3 s	5 s
MOTOR CUT-OFF CURRENT	**DIP-S. 4**	
LOCKING MOTOR M2	OFF	ON
	45 s	55 s

Diagrammatic representation of a complete system
for operation of an RWA12 hatch

Operation of the *cool it* smoke and heat ventilation hatches requires a 24V power supply. This can be provided by the customer. Alternatively, the *cool it* company is able to supply all the components required for the operation of the smoke and heat ventilation hatches.

You will find all the necessary components in the options below.

The diagram below illustrates a complete system consisting of hatches, backup power supply, automatic detectors (smoke detectors or fixed temperature heat detectors) and manual alarms (push-buttons for manual activation).



Operation

In the event of fire, a signal is sent to the spindle motors of the hatch, and the hatch opens. The open pulse can be initiated by means of three different signals:

1 **manually by pressing a smoke and heat ventilation "Trigger" push-button (see page 32),**

2 **automatically by a connected smoke or heat alarm (see page 33),**

3 **by the fire alarm system installed in the building.**

If necessary or if requested by the fire service, the opened smoke and heat ventilation hatch can be closed again by a reset command. To do this, the smoke and heat ventilation trigger action is first acknowledged using the Reset button at the smoke and heat ventilation push-button. The close button at the smoke and heat ventilation push-button itself or the close button on the circuit board on the control panel can then be used to close the hatches again.

Three different SHEV control centres are available as standard for supplying up to five ***cool it*** hatches are available as standard (see page 30ff.). The distances between the hatches must be considered here because the actuators are direct current devices (see table *Determining the conductor cross-section*).

Depending on the structural constraints and the number of hatches to be installed, we are able to select an appropriately dimensioned control panel.

Conductor cross-section

The design of the conductor cross-section always depends on:

1 **Number of RWA12 hatches in the smoke compartment**

2 **Distance from the SHEV control centre to the individual SHEV12 hatch**

All cable types must always be clarified with the responsible building and fire protection authorities. See also the operating instructions for the SHEV control centre for the design of the required conductor cross-sections.

Regulations and instructions

- State building regulations
- DIN 18232 *Structural Fire Protection in Industrial Buildings*
- VdS Guideline 2098
- Provisions set out by the responsible fire prevention authority
- Guideline ZH 1/494 *Powered windows, doors and gates*
- VDE 0100, VDE 0108
- The provisions of the responsible power supply companies (PSC)
- Clarify the required cable types with the responsible building and fire prevention authorities
- Refer to the most recent versions of the technical documentation from the company *Jofo Pneumatics* (issue 02/2014: *Control panel EN 230V/24V – Technical documentation – development status: July 2013*, *Data sheet on load cut-off for LA-F sequence controller, 28.05.2013*)

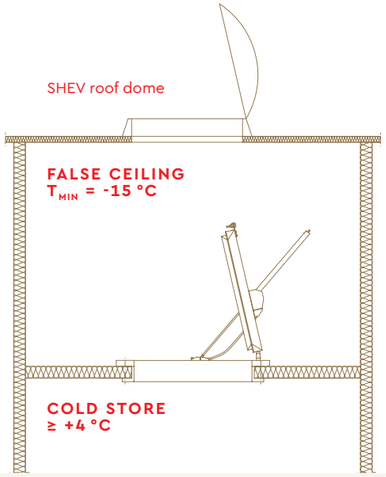
Configure the right hatch for your requirements

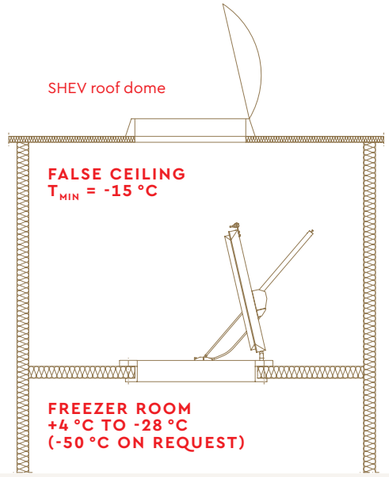
SELECTION 1	**Climatic conditions** Hatch for cold stores or freezer rooms	COLD STORES > +4 °C WITHOUT FRAME HEATER RWA12 FREEZER ROOMS +4 °C TO -28 °C WITH FRAME HEATER RWA12H
SELECTION 2	**Ceiling construction** Installation with or without angle bracket frame	SOLID CEILING/CONCRETE CEILING PANELLED CEILING WITH PANEL HICKNESS
SELECTION 3	**Material and surface** Hatch leaf outer shell/inner shell	OUTER LEAF STAINLESS STEEL OUTER LEAF SHEET METAL IN RAL COLOUR INNER LEAF STAINLESS STEEL INNER LEAF SHEET METAL IN RAL COLOUR
SELECTION 4	**Hatch dimensions** corresponding to the aerodynamicallyeffective opening area	OPENING ANGLE [°] 77°, 63°,48°,41° CLEAR WIDTH CW [MM] 800–1250MM CLEAR HEIGHT CH [MM] 800–2500MM
SELECTION 5	**Door contact switch** for the feedback signal ("hatch open" or "hatch closed")	HATCH OPEN HATCH CLOSED HATCH OPEN AND HATCH CLOSED WITHOUT DOOR CONTACT SWITCH
SELECTION 6	**Fall arrester** collective protection system	WITH FALL-ARRESTER COLLECTIVE PROTECTIVE GRATING WITHOUT FALL-ARRESTER COLLECTIVE PROTECTIVE GRATING
SELECTION 7	**Fire safety switch (FSS)** to DIN VDE 0100–420 (only for RWA12H)	FSS + RESIDUAL CURRENT DEVICE/CB FSS + RESIDUAL CURRENT DEVICE/CB WITHOUT FSS
SELECTION 8	**Temperature and mains voltage monitoring** of the frame heating	WITH TEMPERATURE AND MAINS VOLTAGE MONITORING WITHOUT TEMPERATURE AND MAINS VOLTAGE MONITORING

SELECTION 1

Climatic conditions

Hatch for cold stores or freezer rooms





COLD STORE ≥ +4 °C
WITHOUT FRAME HEATING
RWA12

FREEZER ROOM +4 °C TO -28 °C
WITH FRAME HEATER
RWA12H

Two different variants of cool *it* hatches are available, derived from the climatic conditions on site. The limit temperature on the inside is 4 °C. The basic geometric design of the hatches is identical.

In order to achieve a room temperature of 4 °C, the evaporators/refrigeration systems "blow in" at "minus temperatures". We therefore recommend the use of a frame heater below the limit temperature of +4 °C, which keeps the seal area free of ice and ensures safe opening at all times.

Hygiene: In processing areas of the food industry where open products are handled, droplet contamination through condensation water is an existential problem. Heating of the hatch in the weakly insulated sealing area effectively prevents the formation of condensation water.

Technical data for the frame heater

- Self-regulating heater cable, 27 W/m at 10 °C (max. 50 W)
- Power supply 230 V/50 Hz
- Pre-fuse 16 A, type C
- Residual current device/circuit breaker 30 mA

The capacity of all the heaters connected to a fuse must be less than 1000W. The total output of the frame heater can be calculated using the following formula:

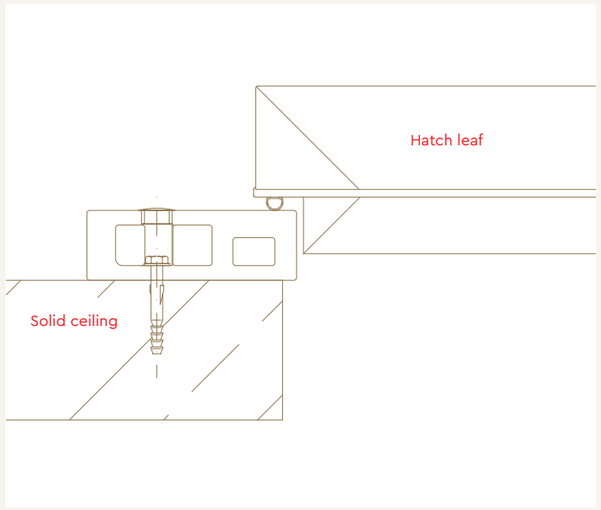
Power consumption [W] =
(2 × CH [m] + 2 × CW [m]) × 50W ≤ 1000 W

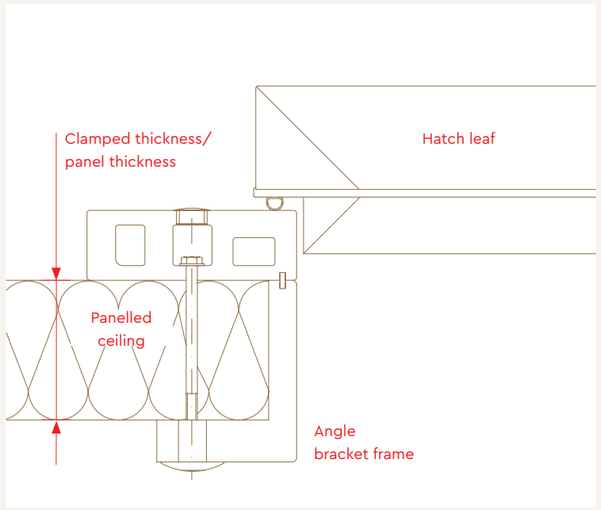
View of the frame heater
in the Thermotec frame with heater cover profile in model RWA12H for freezer rooms

SELECTION 2

Ceiling construction

Installation with or without angle bracket frame





SOLID CEILING/CONCRETE CEILING

PANELLED CEILING

PANEL THICKNESS [MM]

Two mounting variants are available. The standard variant is **panel mounting, whereby the *cool it SHEV hatch* is clamped and bolted to the panel using an angle bracket frame**. With this type of installation, the exact thickness of the panel must also be known in order to securely fix the hatch. The clamp thickness required for ordering corresponds to the panel thickness.

Alternatively, **installation on a solid ceiling** is possible. In this case, the hatch is fixed using dowels and suitable screws.

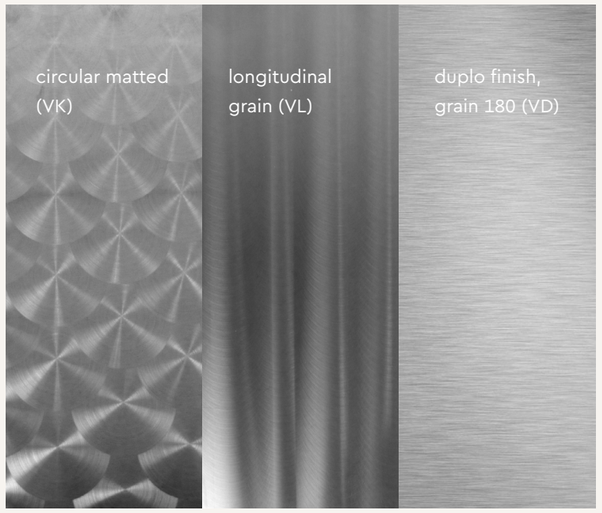
Fixing materials: The required fixings for the chosen installation type are included with the *cool it* SHEV hatch on delivery.

Angle bracket frame
Mounting in a panelled ceiling using an angle bracket frame.

SELECTION 3

Material and surface

Hatch leaf outer shell/inner shell



RAL 1021 (Rape yellow)	RAL 3000 (Flame red)	RAL 5010, (Gentian blue)
RAL 9010 (food safe Pure white)	RAL 9002 (Grey white)	RAL 9006 (Aluminium white)
RAL 9001 (food safe Cream white)	RAL 1019 (Grey beige)	RAL 1015 (Light ivory)
RAL 5015 (Sky blue)	RAL 5014 (Pigeon blue)	RAL 7024 (Graphite grey)

INNER SHELL: STAINLESS STEEL

OUTER SHELL: STAINLESS STEEL

INNER SHELL: RAL COLOUR

OUTER SHELL: RAL COLOUR

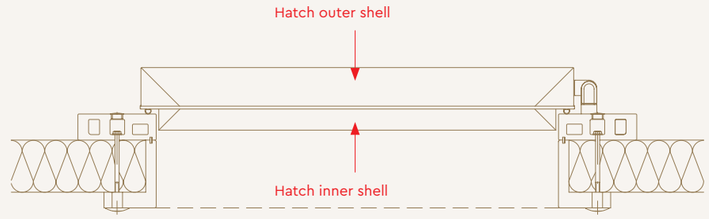
When configuring the *cool it* SHEV hatch, you can choose from three different **basic materials**:

- **Stainless steel (V2A)**, 0.7–0.8 mm, 1.4301, version: circular ground (VK), longitudinal ground (VL), duplo ground (VD)
- **Stainless steel (V4A)**, 0.7–0.8 mm, 1.4401, version: circular ground (VK), longitudinal ground (VL), duplo ground (VD)
- **RAL sheet metal** 0.63–0.75 mm, organically coated panels to DIN EN 10169, base material S220GD hot-dip galvanised, 25µm polyester coating in RAL colour with protective film. Almost all RAL colours are available on request.

Material and colour combinations: Depending on the application, the inner and outer shells can be configured as desired. The respective materials and surface finishes can be freely combined.

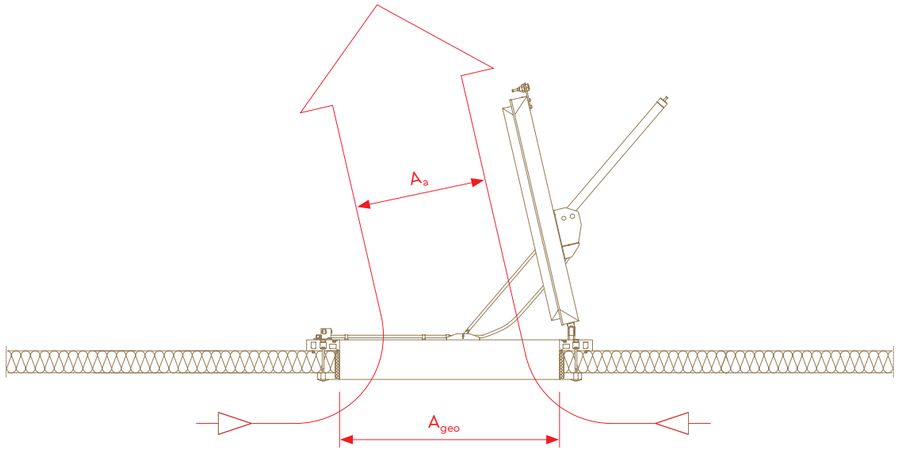
For planning purposes: In processing areas (hygiene) in the food industry, for example, it may be necessary to make the inner shell of the hatch in stainless steel. However, when configuring the outer shell, which is arranged in the false ceiling, foil-laminated sheet steel in the desired RAL colour can be used for cost/benefit reasons.

Cross section RWA12
installed in panelled ceiling. The design of the inner and outer shells can be configured as desired.



SELECTION
4

Hatch dimensions in relation to the aerodynamically effective opening area [A_a]



OPENING ANGLE [°]		CLEAR WIDTH		CLEAR HEIGHT	
77°, 63°, 48°, 41°		CW [MM] 800–1250mm		CH [MM] 800–2500mm	

The option of selecting different opening angles and clear width dimensions for the hatch means that the *cool it* SHEV hatch can be adapted to a wide range of on-site conditions.

The aerodynamic effective opening area [A_a] of the *cool it* SHEV hatch as a natural smoke and heat ventilator was determined in a test in accordance with DIN EN 12101–2, Annex B. All available
dimensions and opening angles were tested and the corresponding flow coefficient [C_v] determined.

Planning/configuration of the hatch dimensions: To define the right hatch for your building project, at least the following two values must be known:

1: **The required aerodynamic opening area for each individual hatch**

2: **The installation space available on site or the height of the false ceiling**

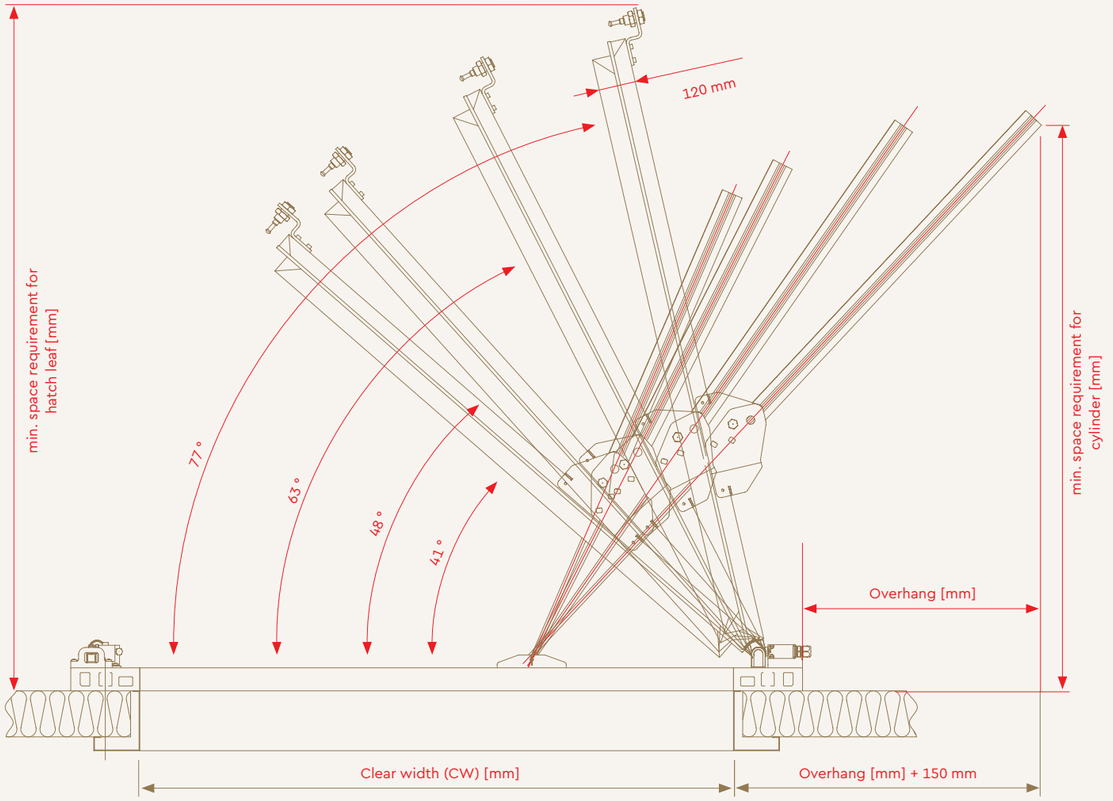
Note on 1: To configure and order the *cool it* SHEV hatches, the necessary A_a value for each individual hatch must be known. This is the only way to define the correct hatch for your building project.

The A_a value is either specified or can be found in the corresponding fire protection report for the building project. If you are unsure about this point, please contact the relevant specialist planner.

To simplify the selection process, we have created tables for the four opening angles available as standard (77°, 63°, 48°, 41°) in which the corresponding dimensions can be determined directly via the Aa value (*see pages 20–21*).

Note on 2: The minimum installation space for the available *cool it* SHEV standard hatches is 115 cm between the upper edge of the false ceiling and the lower edge of the roof. If you have less space available, please contact the *cool it* sales team directly – based on our project experience, we are able to find custom solutions even for difficult installation situations.

If the distance is greater than 155 cm, any SHEV hatch can be selected.



Installation space/space requirement for the hatch

OPENING ANGLE	CYLINDER STROKE [mm]	MIN. SPACE REQUIRED FOR HATCH LEAF [mm]						MIN. SPACE REQUIRED FOR CYLINDER [mm]	OVER-HANG [mm]	OVER-HANG +150mm [mm]
		BL 800	BL 900	BL 1000	BL 1100	BL 1200	BL 1280			
77 °	600	1045	1140	1240	1335	1435	1530	1335	520	670
63 °	500	970	1060	1145	1235	1325	1410	1300	235	385
48 °	400	850	925	1000	1075	1150	1225	1210	-60	90
41 °	350	780	845	915	980	1045	1115	1150	-165	-15

Aerodynamic opening area of an individual hatch

Often, the A_a value required for the construction section exceeds the maximum possible value for a single hatch. For this reason, the required number of systems must be calculated beforehand during in the planning phase. In addition, the fire protection report may stipulate a certain number or geometric distribution of the systems in the room. This is typically the case, for example, if smoke dissipation is obstructed by fixtures in the room, such as high shelves. In this case, the required A_a value must be apportioned to multiple hatches.

A_a [m²]	
	≥ 0.75 m² to ≤ 0.99 m²
	≥ 1.00 m² to ≤ 1.49 m²
	≥ 1.50 m² to ≤ 1.99 m²
	≤ 2.00 m²

Opening angle 41°

A_a VALUES [m²]	CLEAR WIDTH [cm]					
CLEAR HEIGHT [cm]	80	≥90	≥100	≥110	≥120	≥128
80	0.34	0.39	0.44	0.49	0.55	0.59
≥90	0.37	0.43	0.48	0.53	0.58	0.63
≥100	0.42	0.47	0.53	0.58	0.64	0.69
≥110	0.45	0.51	0.57	0.63	0.69	0.75
≥120	0.49	0.55	0.61	0.67	0.73	0.80
≥130	0.52	0.59	0.65	0.72	0.78	0.83
≥140	0.56	0.63	0.70	0.75	0.82	0.88
≥150	0.59	0.66	0.74	0.81	0.86	0.92
≥160	0.63	0.69	0.77	0.84	0.90	0.96
≥170	0.65	0.73	0.80	0.88	0.94	1.00
≥180	0.69	0.76	0.85	0.93	0.99	1.06
≥190	0.73	0.80	0.89	0.98	1.05	1.12
≥200	0.75	0.85	0.94	1.03	1.10	1.18
≥210	0.79	0.89	0.99	1.06	1.16	1.24
≥220	0.83	0.93	1.01	1.11	1.21	1.30
≥230	0.86	0.95	1.06	1.16	1.27	1.35
≥240	0.88	0.99	1.10	1.21	1.32	1.41
≥250	0.92	1.04	1.15	1.27	1.38	1.47

Opening angle 48°

A_a VALUES [m²]	CLEAR WIDTH [cm]					
CLEAR HEIGHT [cm]	80	≥90	≥100	≥110	≥120	≥128
80	0.36	0.42	0.47	0.52	0.58	0.62
≥90	0.41	0.46	0.52	0.58	0.64	0.69
≥100	0.45	0.50	0.57	0.64	0.70	0.76
≥110	0.49	0.55	0.57	0.68	0.75	0.82
≥120	0.53	0.59	0.67	0.74	0.81	0.88
≥130	0.57	0.64	0.72	0.79	0.86	0.92
≥140	0.60	0.68	0.76	0.83	0.91	0.97
≥150	0.65	0.73	0.81	0.87	0.95	1.02
≥160	0.68	0.76	0.85	0.93	1.02	1.06
≥170	0.72	0.81	0.88	0.97	1.04	1.11
≥180	0.76	0.84	0.94	1.03	1.10	1.18
≥190	0.79	0.89	0.99	1.07	1.16	1.24
≥200	0.83	0.94	1.02	1.12	1.22	1.31
≥210	0.87	0.96	1.07	1.18	1.29	1.37
≥220	0.90	1.01	1.12	1.23	1.35	1.41
≥230	0.94	1.06	1.17	1.27	1.38	1.47
≥240	0.96	1.08	1.20	1.32	1.44	1.54
≥250	1.00	1.13	1.25	1.38	1.50	1.60

Opening angle 63°

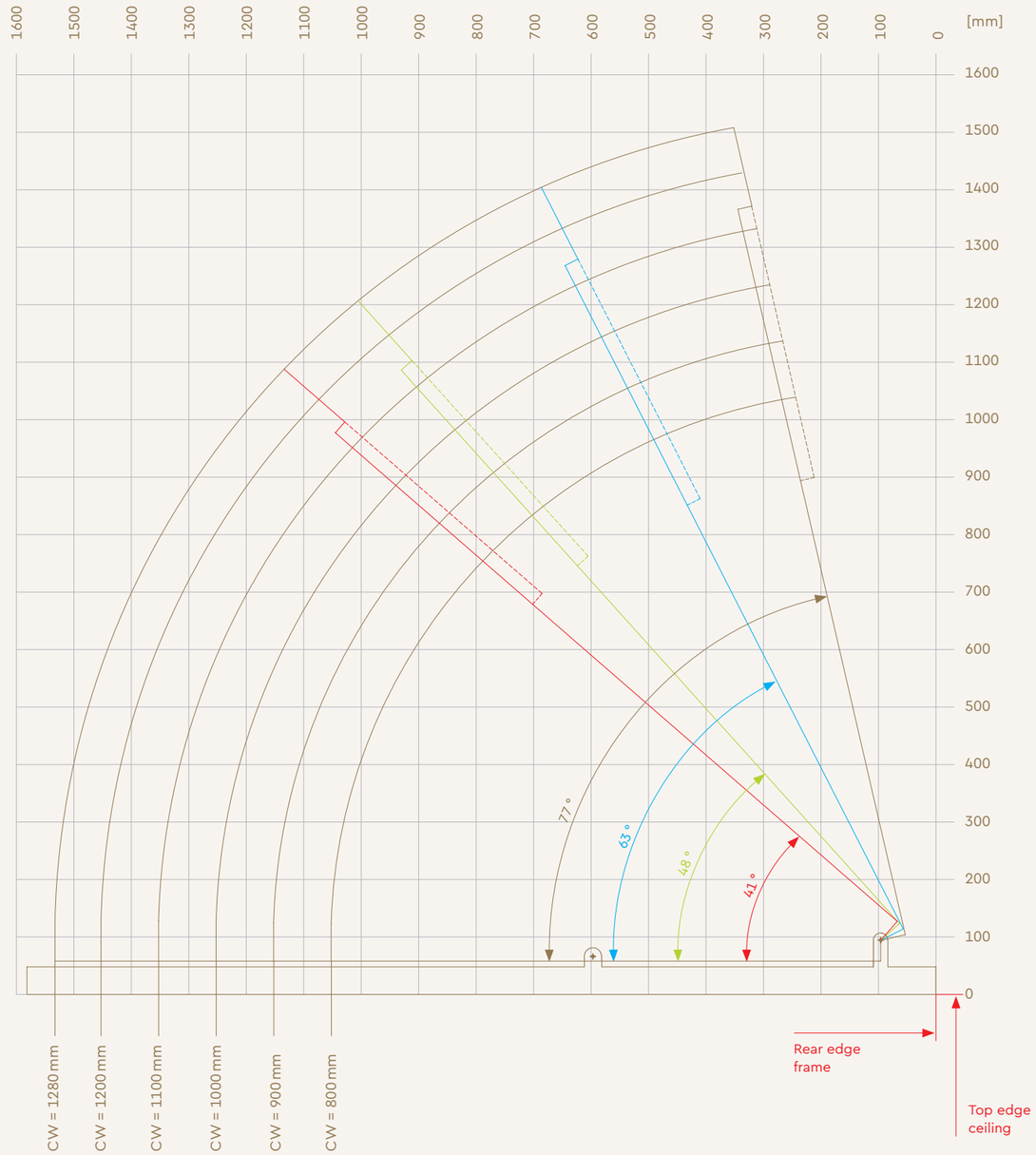
A_a VALUES [m²]	CLEAR WIDTH [cm]					
CLEAR HEIGHT [cm]	8 0	≥90	≥100	≥110	≥120	≥128
80	0.40	0.45	0.51	0.56	0.62	0.67
≥90	0.45	0.51	0.57	0.63	0.69	0.74
≥100	0.50	0.56	0.63	0.69	0.76	0.81
≥110	0.55	0.61	0.68	0.76	0.83	0.89
≥120	0.60	0.67	0.74	0.82	0.89	0.95
≥130	0.63	0.71	0.79	0.89	0.97	1.03
≥140	0.68	0.77	0.85	0.94	1.02	1.09
≥150	0.73	0.82	0.92	0.99	1.08	1.15
≥160	0.77	0.86	0.96	1.06	1.15	1.23
≥170	0.82	0.92	1.02	1.10	1.20	1.28
≥180	0.86	0.97	1.08	1.17	1.27	1.36
≥190	0.91	1.03	1.14	1.23	1.35	1.43
≥200	0.94	1.06	1.18	1.30	1.42	1.51
≥210	0.99	1.12	1.24	1.34	1.46	1.56
≥220	1.04	1.17	1.30	1.40	1.53	1.63
≥230	1.09	1.22	1.36	1.47	1.60	1.71
≥240	1.11	1.25	1.39	1.50	1.64	1.75
≥250	1.16	1.31	1.45	1.57	1.71	1.82

Opening angle 77°

A_a VALUES [m²]	CLEAR WIDTH [cm]					
CLEAR HEIGHT [cm]	8 0	≥90	≥100	≥110	≥120	≥128
80	0.42	0.48	0.53	0.59	0.64	0.69
≥90	0.48	0.53	0.59	0.66	0.72	0.77
≥100	0.52	0.59	0.65	0.73	0.79	0.84
≥110	0.57	0.64	0.72	0.80	0.87	0.93
≥120	0.62	0.70	0.78	0.86	0.94	1.00
≥130	0.67	0.75	0.83	0.93	1.01	1.08
≥140	0.72	0.81	0.90	0.99	1.08	1.15
≥150	0.77	0.86	0.96	1.06	1.15	1.23
≥160	0.81	0.91	1.01	1.11	1.21	1.29
≥170	0.86	0.96	1.07	1.18	1.29	1.37
≥180	0.91	1.02	1.13	1.25	1.36	1.45
≥190	0.96	1.08	1.20	1.32	1.44	1.53
≥200	1.01	1.13	1.26	1.39	1.51	1.61
≥210	1.06	1.19	1.32	1.46	1.59	1.69
≥220	1.11	1.25	1.39	1.52	1.66	1.77
≥230	1.16	1.30	1.45	1.59	1.74	1.85
≥240	1.21	1.36	1.51	1.66	1.81	1.94
≥250	1.26	1.42	1.58	1.73	1.89	2.02

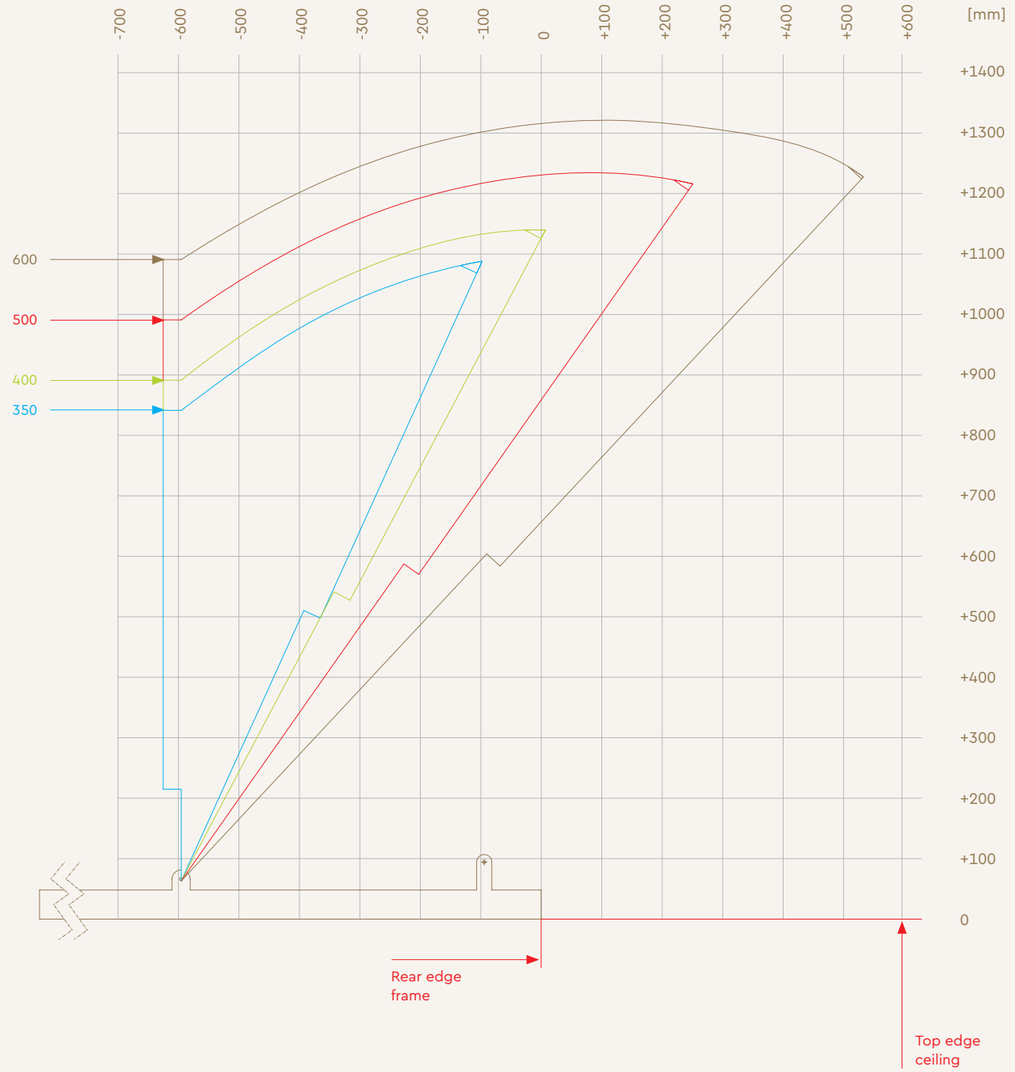
Swing range of the door leaf

The swing ranges shown here represent the minimum installation spaces necessary to prevent collisions on site. Accessibility for assembly and maintenance work must be taken into account! Tolerances are not shown! Depending on the building project, allowances may need to be made to accommodate additional tolerances.



Cylinder swing range

CYLINDER END POINTS [mm]			HIGHEST POINT [mm]	
Cylinder stroke	X	Y	X	Y
350 mm	-95	+1095	/	/
400 mm	+10	+1145	/	/
500 mm	+255	+1225	+85	+1240
600 mm	+535	+1235	+110	+1330



SELECTION
5

Door contact switch for the feedback signal ("hatch open" or "hatch closed")

WITHOUT	HATCH OPEN	HATCH CLOSED	HATCH OPEN + HATCH CLOSED
○	●	●	●

To monitor the position of the hatch, the c*ool it* SHEV hatch can be equipped with **two different door contact switches**: Both the "hatch closed" contact switch to query the closed position and the "hatch open" contact switch to query the fully open position are available.

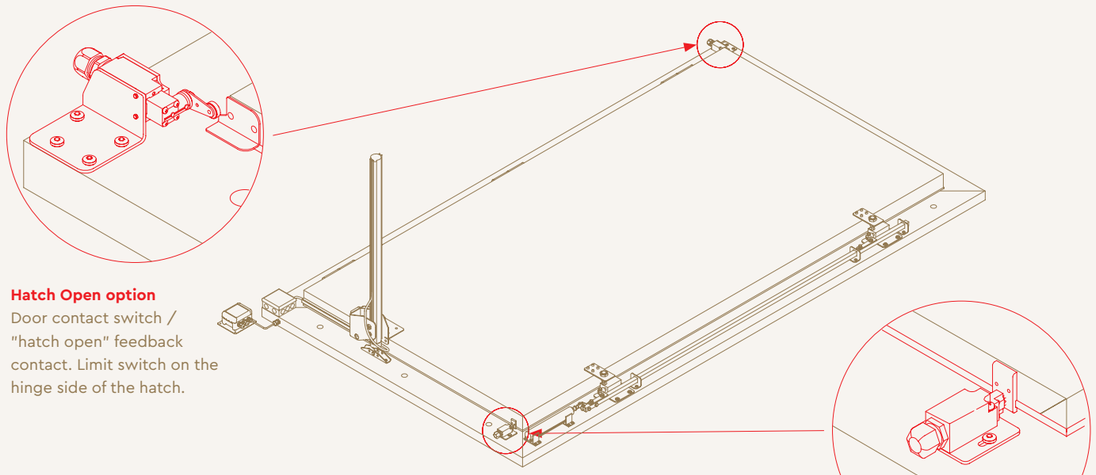
The switches are available in **any combination**. You can order the hatch without any switches, with only one or with both.

For planning purposes: There are many systems or queries that require a signal in order to determine the hatch position, below are some examples:

- **Combination with a mechanical smoke evacuation system:** If you plan to implement your construction project using a mechanical smoke evacuation solution (smoke gas ventilation), it is essential that you read *Appendix 2* of this brochure. Please also request our information material on *risk assessments for mechanical smoke ventilation in combination with SHEV hatches*. In this case, the"Hatch open" feedback contact should be switched to send a signal to the control unit for the smoke gas ventilators.
- **Refrigeration system/evaporator:** The evaporators in a cold store or freezer room have a negative effect on the flow of rising fire gases due to their built-in fans. For this purpose, the "hatch closed" feedback contact can be connected to the control unit of the refrigeration system so that the latter is deactivated in case of fire.
- **Indication of correct closure of all hatches:** The "Hatch closed" contact switch can be polled to determine whether the hatch is correctly closed and to ensure that opening the hatch does not cause condensation or ice formation in the vicinity of the hatch. Especially in rooms with high ceilings, it is difficult to see whether the hatches are still slightly open.

Technical data

	HATCH OPEN OPTION	HATCH CLOSED OPTION
TYPE	Door contact switch for polling "hatch open"	Door contact switch for polling "hatch closed"
ITEM NUMBER	52–021	52–006
RATED INSULATION VOLTAGE	U_i = 500 V	U_i = 400 V
RATED IMPULSE WITHSTAND VOLTAGE	U_{imp} = 6 kV	U_{imp} = 4 kV
CONTINUOUS THERMAL CURRENT	I = 10 A	I = 6 A
SAFETY CLASS	IP67 in accordance with ICE/EN 60529	
UTILIZATION CATEGORY	AC-15 230V/4A, AC-13 24V/1A	AC-15 230V/6A, AC-13 24V/1A
TYPE OF CIRCUIT	Normally Closed (NC) / Normally Open (NO)	
CONNECTION CROSS-SECTION	0.75 mm² – 2.5 mm²	max. 2.5 mm² (incl. end sleeves)
TEMPERATURE RANGE	-30 °C to +80 °C	-20 °C to +80 °C
LOAD APPLICATION	M20 × 1.5	
SWITCHING SYSTEM		Snap-action
REGULATIONS	EN ISO 13849–1, EN 60947–5–1, BG-GS-ET-15	



Hatch Open option
Door contact switch / "hatch open" feedback contact. Limit switch on the hinge side of the hatch.

Hatch Closed option
Door contact switch / "hatch closed" feedback c ontact. Roller switch on the closing side of the hatch.

Fall-arrester collective protection system to DIN EN 13374:2013, DIN EN ISO 14122-3:2002

WITH FALL-ARRESTER COLLECTIVE PROTECTIVE GRATING

WITHOUT FALL-ARRESTER COLLECTIVE PROTECTIVE GRATING

In order to prevent a fall through the open hatch after triggering, we offer a **fall-arrester in the form of an approved railing**, which is supplied in a ready-for-use condition. Crucially, the system has **approval for mounting on foamed panels** and can therefore be used safely on any standard panelled ceiling in cold stores and freezer rooms.

The available collective protection system has been tested in accordance with DIN EN 13374:2013 and DIN EN ISO 14122–3:2002.

Retrofitting: This system can be retrofitted to any existing *cool it* SHEV hatch. Please contact us for a tailored quotation.

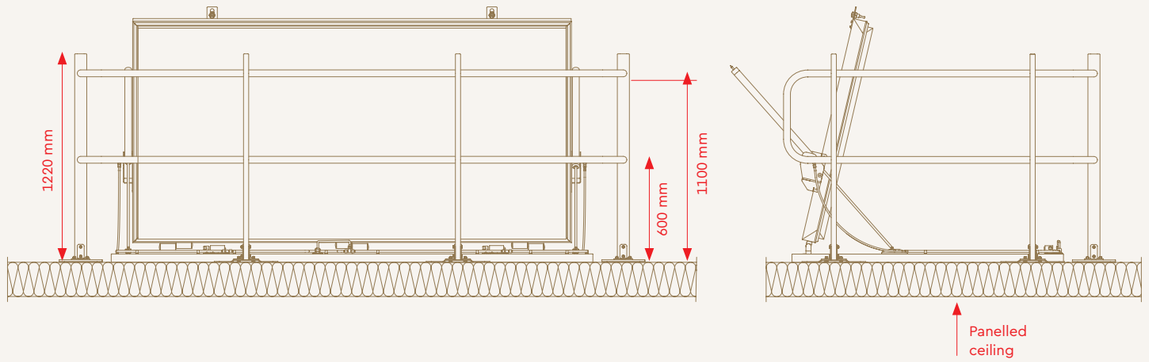
Why don't we offer fall-through protection like all other NSHEV manufacturers?

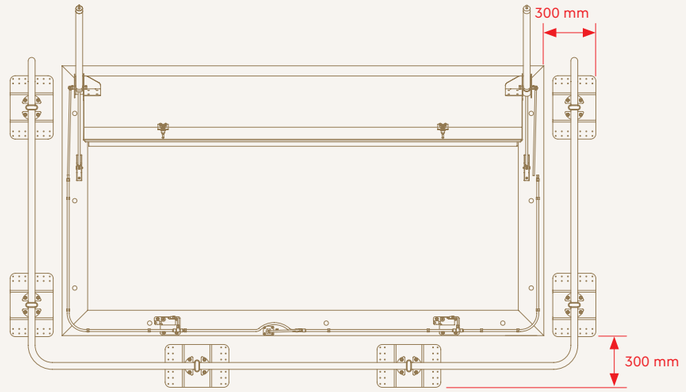
Unlike conventional SHEV systems, the *cool it* SHEV hatch does not need to be opened for maintenance work. All mechanical components are located on the top of the hatch. This means that they can be reached from the false ceiling with the hatch closed and can thus be safely inspected, replaced and serviced. A theoretical fall-through is therefore only possible after a test release or regular release.

Fall-through protection within the clear dimensions of the hatch cannot be provided without additional structural measures to reinforce the false ceiling, as the statics of a standard panelled ceiling are not able to absorb the forces that would occur. For example, a steel replacement would have to be installed under each hatch to safely dissipate these forces. Since *cool it* has no influence on the statics of the ceiling construction, we do not offer such systems.

Furthermore, the necessary static measures would probably result in additional costs that would exceed the price of the collective protection system. In order to circumvent the problems described above, we offer a different type of collective protection system whose function is not influenced by the statics of the panelled ceiling and therefore does not require any additional reinforcement measures on site.

Views
top: Side views
with panelled ceiling
below: Top view



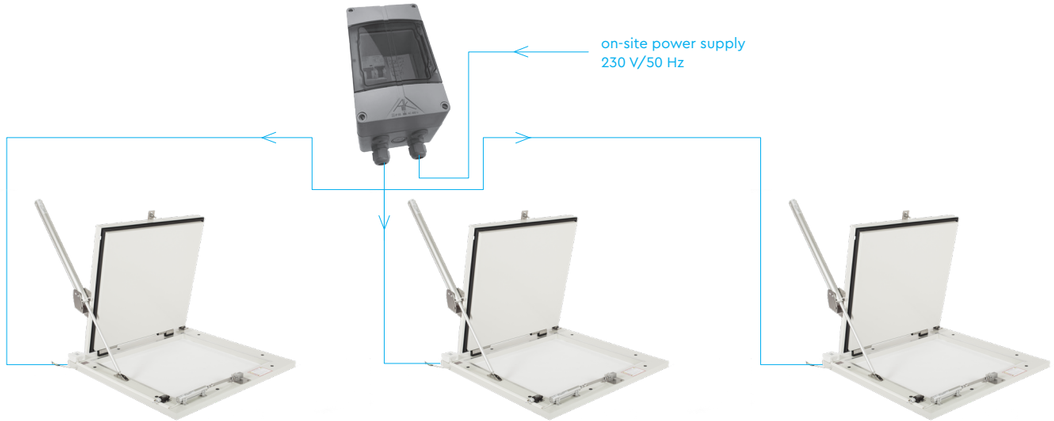


Collective protection system
left: Base plate for mounting the railing on a panelled ceiling
right: customised for the corresponding hatch size

SELECTION 7

Fire safety switch (FSS)

to DIN VDE 0100-420, only for RWA12H



WITHOUT FIRE SAFETY SWITCH

FIRE SAFETY SWITCH + RESIDUAL CURRENT DEVICE/CIRCUIT BREAKER

FIRE SAFETY SWITCH + CIRCUIT BREAKER

As an option for the coo*l it* hatch RWA12/RWA12H: Fire safety switch (FSS) to DIN VDE 0100–420

The *International Electrotechnical Commission* and *the German Standardization Institute (DIN)* recommend the use of a fire safety switch (FSS) as good engineering practice. Since 2016, the use of such a device in certain applications has been set out in DIN VDE 0100, part 420. Upon expiry of a transitional period on 18/12/2017, their installation will be obligatory in many facilities.

In the past, the available protective mechanisms (circuit breaker and residual current device) did not provide adequate protection against hazardous arc faults, whether serial or parallel in nature. The FSS extends these systems and consequently reduces the probability of fires resulting from electrical causes.

At coo*l it*, the FSS is optionally available to protect the heating circuits. It is recommended to take account of this type of safety mechanism when planning and installing coo*l it* hatches of type RWA12. The FSS is supplied in a separate box and is therefore suitable for use in new installations or in retrofit installations. It is supplied as a unit with another safety mechanism.

Two variants are available:

1. **Fire safety switch + residual current device/circuit breaker (combination circuit breaker).**
2. **Fire safety switch + circuit breaker if the required residual current device is already provided by the customer upstream in the building.**

For planning purposes, not every hatch necessarily has to be equipped with a fire safety switch. On the technical side, the power consumption per FSS must not exceed 1000 W.

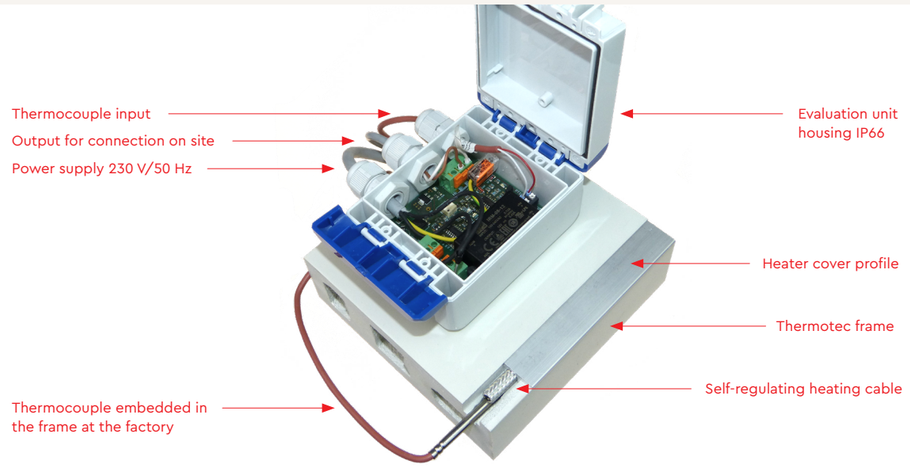
Power consumption [W] =
(2 × CH [m] + 2 × CW [m]) × 50 W ≤ 1000 W

A standard hatch in the format 128 cm × 250 cm has a calculated power consumption of 380 W. Accordingly, at least two hatches can be connected to one FSS. For the exact dimensioning, please contact us or consult a specialist planner.

SELECTION 8

Temperature and mains voltage monitoring

for the frame heater



WITH TEMPERATURE AND MAINS VOLTAGE MONITORING

WITHOUT TEMPERATURE AND MAINS VOLTAGE MONITORING

To ensure safe opening of the hatch at all times and to prevent condensation, the coo*l it* hatch RWA12H can be equipped with a frame heater. We offer temperature monitoring of the heater to ensure that it is functioning properly at all times.

Technical design: A thermocouple is inserted into the frame underneath the heater, which transmits the actual measured temperature to an evaluation unit. This evaluation unit is pre-mounted on the frame in an IP66 protected housing. No additional supply voltage is required for the evaluation unit; this is drawn directly from the supply line to the frame heater.

Temperature monitoring: If the temperature at the thermocouple falls below the factory-set switching threshold, a potential-free contact is switched which can be evaluated by the customer.

Mains voltage monitoring: In addition, the evaluation unit can detect a drop in the supply voltage and an open circuit supply line. In such cases, the potential-free contact also trips.

On-site evaluation: The evaluation unit includes a relay output which offers the following evaluation options:

1. **Changeover contact**
2. **Silent contact/alarm**
3. **Normally open contact**

This covers all eventualities that could lead to a failure or drop in the heating capacity of the hatch.

Technical data

SUPPLY VOLTAGE	230 V/50 Hz
SAFETY CLASS	IP66
ADJUSTMENT RANGE	-5 °C to 15 °C
THERMOCOUPLE	Type PT 100
FEEDBACK CONTACT	potential-free • Heater too cold • Voltage drop • Cable open circuit

24 V SHEV control panel with emergency power supply in the event of mains failure to DIN EN 12101-10:2003

The **24 V SHEV control panel is a smoke and heat ventilation control unit with backup power supply allowing for 72 hours of operation in the event of a mains power failure**. It is used to open and close the *cool it* SHEV hatches.

Important for RWA12H: The backup power supply for the frame heater must be provided and monitored by the customer.

The type EN control panels available from us comply with the valid European standard DIN EN 12101–10. This standard specifies the requirement for a redundant power supply in the case of natural smoke and heat ventilation.

Two equivalent sources of energy are installed in this control panel version: a powerful power supply unit and rechargeable batteries.

The power supply unit is powerful enough to cover the maximum peak loads that may occur. The SHEV hatch is operated by the rechargeable batteries only if the 230 V power supply fails. The employed rechargeable batteries are dimensioned in such a way that they can ensure a backup power supply for 72 hours and then still open the connected hatches twice and close them once.

Attention: Control panels that are not redundantly configured are also available on the market. With these devices, the function of the system cannot be fulfilled if the batteries fail. As a result, the actuators cannot move and the hatch does not open in the event of a fire!

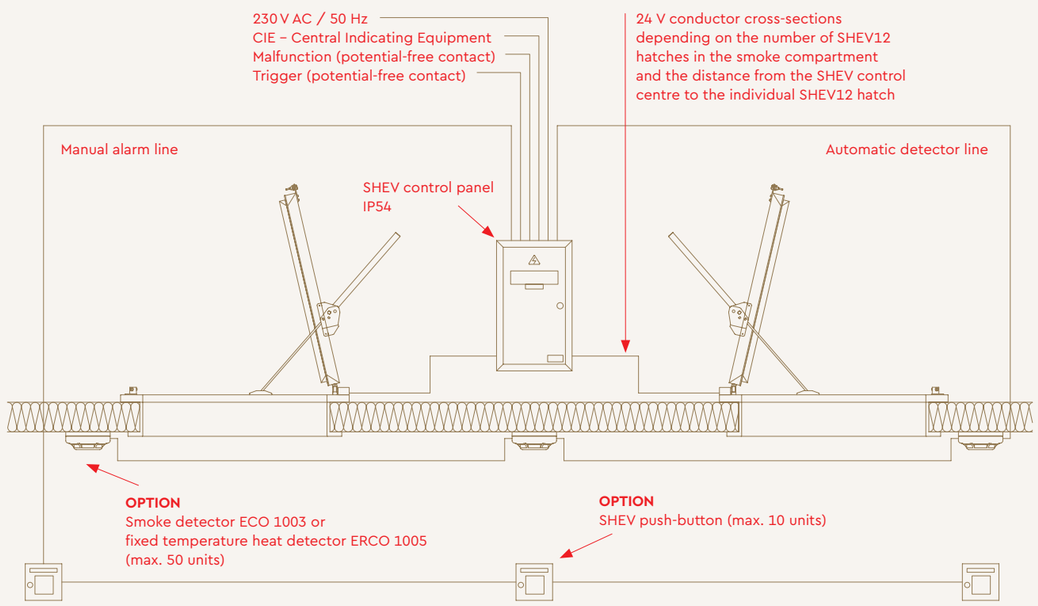
For planning purposes: If your building project includes more than one hatch then a **custom-designed control panel** can be created for you. For this, the following information is essential:

- Situation plan of the hatches and required installation location of the control panel. Alternatively: Distance between the control panel and each individual hatch in metres
- Number of trigger groups (e.g. total of four hatches: If all four hatches are to open at once then there is a single trigger group. If only two hatches are to be triggered by any one push-button then there are two trigger groups.)

Since the supply voltage is 24 V direct current, the dimensioning of the conductor cross-sections depends on the current intensity and the cable length. We will be happy to advise you on the dimensioning of all system components and their geometric arrangement in your building project.

Technical data

	Type EN 230 V/24 V 10 A-2–1	Type EN 230 V/24 V 20 A-4–1	Type EN 230 V/24 V 25 A-5–1
ARTICLE NO.	09471	10852	13157
EMERGENCY POWER SUPPLY	72 h emergency power supply in the event of a mains voltage failure		
Contact	two programmable potential-free signalling contacts ("SHE triggered", "fault")		
MONITORED LINES	Mains supply, rechargeable battery, SHEV button, automatic detector, FACP/BMA, motor line		
CASING	Sheet steel housing with sash lock, colour: RAL 7035 (Light grey)		
MAX. NUMBER OF SHEV HATCHES	2	4	5
PROTECTION CLASS	IP 54		
TEMPERATURE RANGE	-5 °C to +40 °C (environmental class 1 to EN 12101–10)		
DIMENSIONS	400 mm × 500 mm × 210 mm		
WEIGHT	18 kg	22 kg	22 kg
NOMINAL BATTERY CAPACITY	7.0 Ah	7.0 Ah	12.0 Ah
NOMINAL BATTERY VOLTAGE	24 V (2 × 12 V)	24 V (2 × 12 V)	24 V (2 × 12 V)
NOMINAL OUTPUT	230 V AC/550 VA	230 V AC/850 VA	230 V AC/850 VA
SWITCHING CAPACITY MOTOR LINE	2 with 24 V DC 10 A	4 with 24 V DC 15 A	5 with 24 V DC 15 A
TOTAL SWITCHING CAPACITY	24 V DC/10 A at t<60 s	24 V DC/20 A at t<60 s	24 V DC/25 A at t<60 s
NUMBER OF SHEV TRIGGER LINES	1	1	1
NO. SHEV PUSH-BUTTONS	max. 10 units can be mixed as desired		
AUTOMATIC DETECTORS	max. 50 units ECO 1003/ECO 1005T		
FEEDBACK CONTACTS	max. switching capacity (ohmic) 60 V AC/DC 3 A		



Optional **SHEV button** with weather protection cover protection class IP54

The pulse that causes the SHEV hatches to open can be triggered by manually activating an optional smoke and heat ventilation push-button. The smoke and heat ventilation push-button fulfils the following tasks:

1 **Trigger** the SHEV function

2 **Reset** the SHEV group To do this, the push-button at the top right is pressed

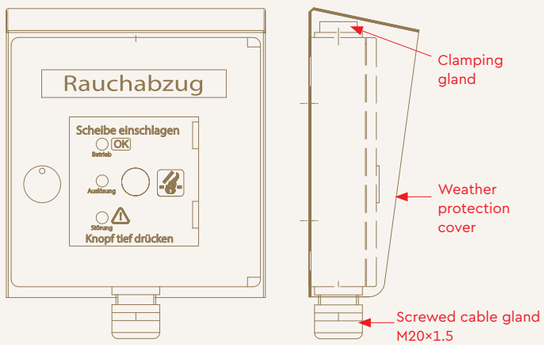
3 **Close** the SHEV group If the push-button is pressed once, the SHEV group moves autonomously in the close direction.

5 **Visual indication** of the operating state:
green: Operating
red: Triggered
yellow: Malfunction

Up to 10 smoke and heat ventilation push-buttons can be combined as a line. To do this, a 33 kOhm terminating resistance must be connected in the last (or only) smoke and heat ventilation push-button in the line.

Characteristic technical data

TYPE	SHEV push-button IP54
ARTICLE NO.	ET01128
LED OPERATING VALUES	24 V +50 %/-30 %/2mA DC1
BREAKING CAPACITY OF ALL PUSH-BUTTONS	24 V +50 %/-30 %/20mA DC1 (normally open)
SCREW TERMINALS	max. 1.5 mm²
ENVIRONMENTAL CLASS	3 (-5 °C to +40 °C)
TEMPERATURE RANGE	Flame-retarded up to 90 °C
CASING	125 mm × 145 mm × 55 mm, orange (RAL 2011), weather protection: grey (RAL 7035)



Weather protection cover
A weather protection cover is also supplied to extend the safety class to IP54.

Automatic **smoke or heat detector** ECO 1005T/ECO 1004T/ECO 1003

Fixed temperature heat detector
ECO 1005T
ECO 1004T

Optical smoke detector
ECO 1003

Bracket
of stainless steel for mounting on the angle bracket frame

Optionally, the hatches can be extended with automatic detectors. There are two different types to choose from: the ECO 1005T fixed temperature heat detector or alternatively the ECO 1003 optical smoke detector.

Both detectors have a removable cover to simplify cleaning operations. Internally, they are equipped with an easy-to-clean insect protection system. The detector boxes are encapsulated to prevent penetration by moisture and crawling animals (to prevent false alarms).

The detector is supplied together with a stainless steel bracket that is mounted on the angle bracket frame. The design can be seen in *selection 9, variant 6, 11 and 12*. There is no need for additional assembly work.

Attention: The detectors are not suitable for use in damp rooms (IP00)!

Technical data

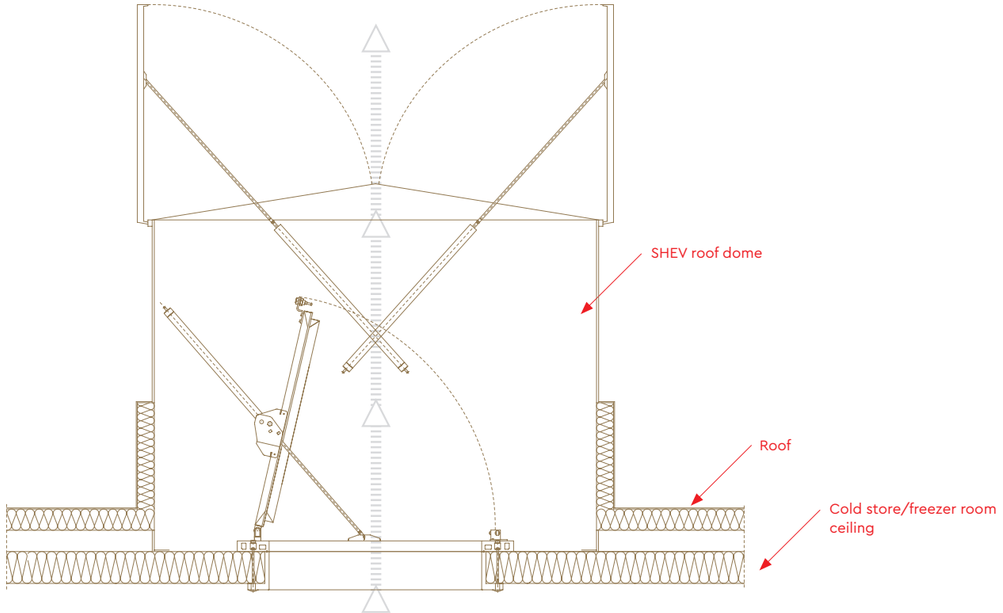
	ECO 1005T fixed temperature heat detector	ECO 1004T fixed temperature heat detector	ECO 1003 smoke detector
ARTICLE NO.	10439	09470	10438
OPERATING VOLTAGE	8–30 V DC		
OPERATING TEMPERATURE	-30 °C to +70 °C	-30 °C to +8 °C	-30 °C to +70 °C
COLOUR	similar to RAL 9016 ("traffic white")		
AIR HUMIDITY	5% to 95 %		
TRIGGER TEMPERATURE	58 °C	78 °C	58 °C
IDLE CURRENT	125 µA (typical)	60 µA (typical)	45 µA (typical)
VdS RECOGNITION NO.	G 201073	G 204042	G 201060
SAFETY CLASS	IP00		

Examples of installation without a false ceiling

Natural smoke evacuation

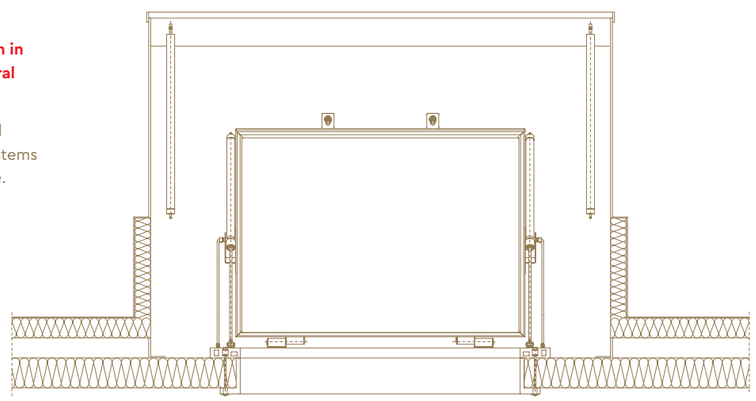
If you plan to use natural smoke evacuation in your building project then it is vitally important that the **systems are compatible with one another**. It must be ensured at the installation site that the two systems cannot interfere with one another under any circumstances. The reliability of the smoke evacuation function must be assured at all times. At the geometrical level, the installation space provided must be sufficient to enable the systems to open simultaneously without touching one another at any point. Alternatively, it is possible to consider using a sequence controller. We are able to design an optimised hatch for these operating conditions by adapting the width of the hatch leaf and the opening angle.

Please note that unobstructed assess to the hatch must be possible at all times. There must also be sufficient space to perform assembly and maintenance work.



Example installation in a system with natural smoke evacuation

The SHEV hatch and SHEV roof dome systems must be compatible.



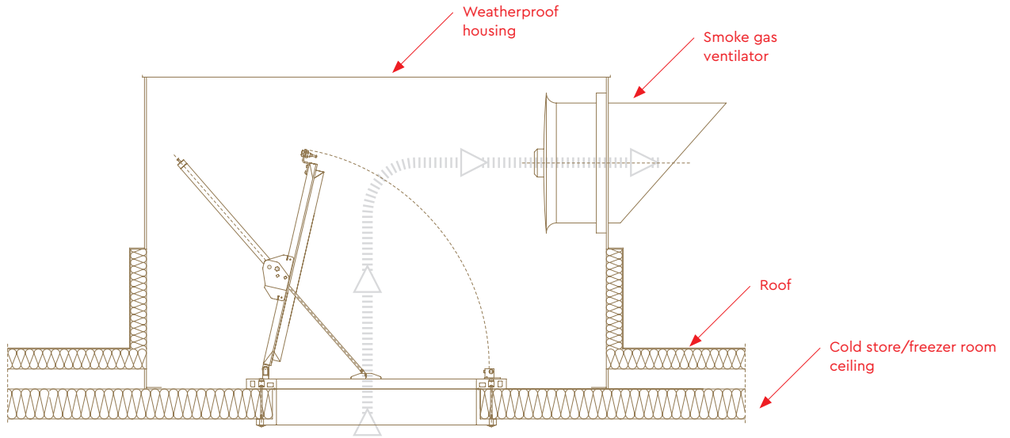
Examples of installation without a false ceiling

Mechanical smoke evacuation

When *cool it* smoke and heat ventilation hatches are used in a **system with mechanical smoke evacuation**, it is essential to use the feedback contact (*see selection 6)* for the "hatch open" state and to analyse this feedback in the customer's on-site control system. It is necessary to ensure that the smoke gas ventilators do not start up until the inlet and exhaust air flows are assured in the corresponding building section. If this requirement is not complied with then the company *cool it* will not accept any liability for consequential loss or damage at the building resulting from the ensuing under/overpressure.

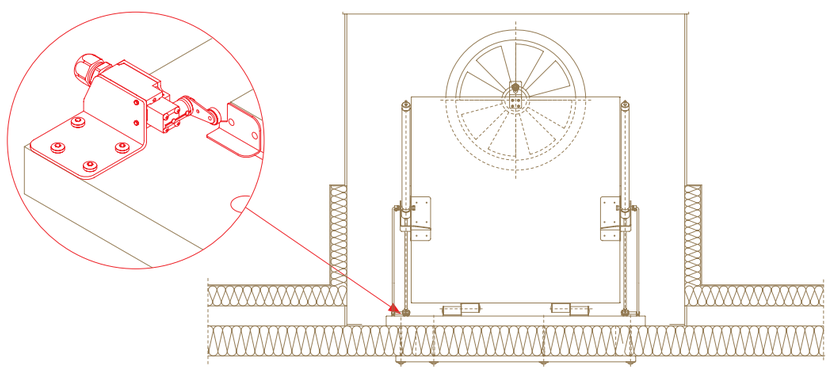
If your building project involves the use of smoke gas ventilators, please request our information material *risk assessments for mechanical smoke ventilation in combination with smoke and heat ventilation hatches* and read it carefully.

Please note that unobstructed assess to the hatch must be possible at all times. There must also be sufficient space to perform assembly and maintenance work.



Example installation in a system with mechanical smoke evacuation

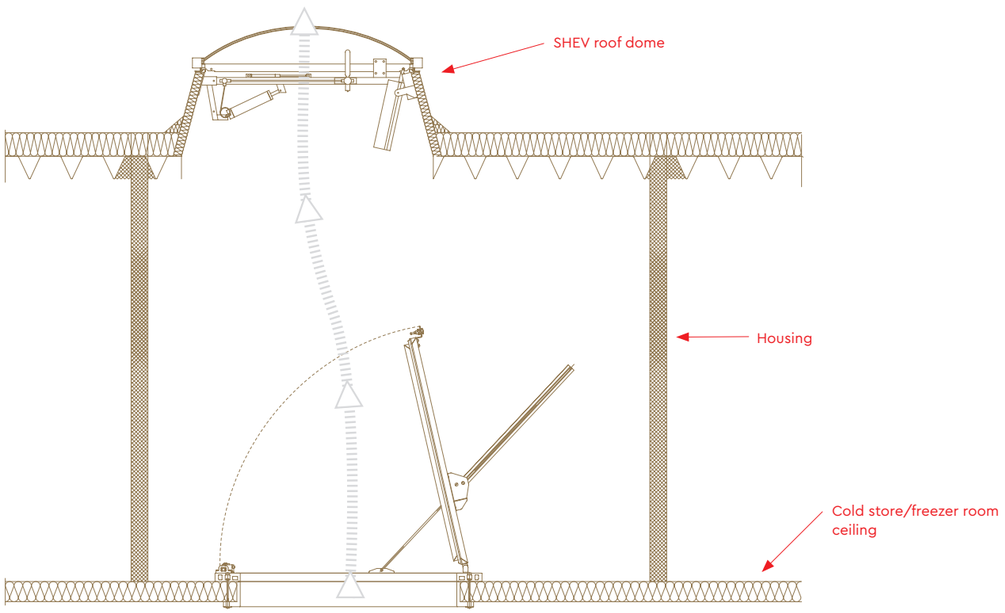
It is essential to use a door contact switch/"hatch open" feedback contact.



Example of **installation in a false ceiling** with and enclosure for smoke and gas ventilation

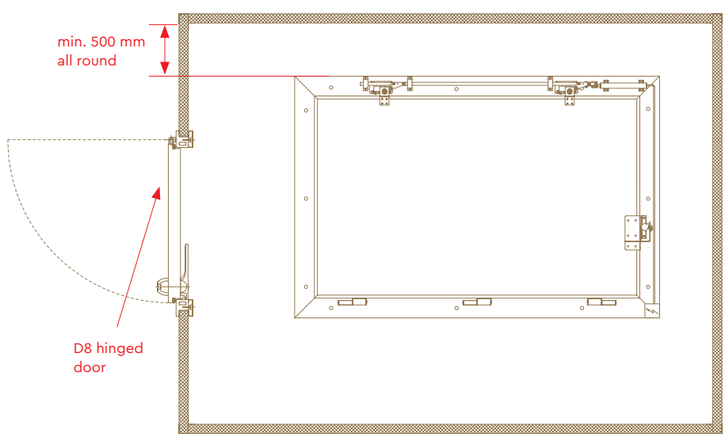
When positioning the *cool it* SHEV hatch relative to the smoke evacuation hatches in the roof, it is important to ensure that the rising air is aerodynamically guided as optimally as possible. It is essential to avoid unnecessary eddying. As far as possible, therefore, there should be no cables etc. in the vicinity of the rising smoke gas.

The optimum design variant has an **additional housing** going from the false ceiling to the roof. When planning this housing, it is essential to take account of the free space for the actuating cylinders. In addition, it is necessary to allow sufficient space for installation and maintenance work. The space required for this should be approximately 500 mm on all sides.



Unhindered, rapid access must be ensured at all times.

If hatches are opened involuntarily in freezer rooms then they must be closed again as quickly as possible. Because pneumatic systems have to be closed manually, it is necessary to ensure rapid access via a hinged door. In such cases, it is advisable to install a *cool it* type D8 hinged door. In freezer rooms, it is advisable to use *cool it* SHEV hatches with electrical actuator which close automatically within 20 seconds at the touch of a button!



Notes on maintenance and inspection of the SHEV system

Regular, professional maintenance and inspection of the *cool it* SHEV hatches is essential in order to ensure the permanent correct functioning of the system.

Maintenance is a vital obligation on the part of the owners or operators of the building and is stipulated in various laws, ordinances, guidelines and other regulations. (e.g. § 3 of the German standard building regulations: "Building systems must be arranged, installed and maintained in such a way that [...] in particular, there can be no risk to life and health." § 4 Ordinance on workplaces (ArbStV), Special requirements relating to workplace operation (1): "The employer must maintain the workplace and ensure that any identified deficiencies are eliminated immediately. If deficiencies that are associated with a direct hazard cannot be eliminated immediately then work must be suspended."). If the necessary maintenance work is not carried out then the building owner or operator faces the risk not only of fines and the closure of the works by the authorities but also the loss of any warranty entitlements.

Frequency of maintenance

Servicing and maintenance of the SHEV system must be performed at regular intervals as specified by DIN 18232 RWA and DIN 57833 (VDE 833) but in any case at least once a year as per the manufacturer's specifications, and these activities must be recorded in the inspection log. In addition, a half-yearly visual inspection of the system must be performed by the operating company (DIN 18232–2).

Inspection log

The inspection log must be kept by the operator of the system. It documents the operator's fulfilment of their obligation to maintain the SHEV system in a way that ensures that it is fit for use and operation.

Authorised companies

Maintenance and service work may only be performed by qualified specialist companies in accordance with the above-mentioned DIN standard. Qualified companies are the installer/manufacturer of the system or companies trained by or designated as qualified by *cool it*. When replacing wear or spare parts, it is necessary to use original *cool it* spare parts. Only in this way is it possible to ensure that all the system components interact correctly and without error (system compatibility).

Maintenance agreements

cool it offers the corresponding maintenance agreements. During these maintenance operations, only the *cool it* SHEV hatches are inspected and not the entire system.

This maintenance does not replace the inspection of smoke ventilation systems to be performed in accordance with DIN 15232 part 2, DIN 57833 part 1.

The annual inspection is performed automatically by specialist personnel. The agreement on dates and monitoring of the services are of course undertaken by *cool it*.

More than just doors

Also available:

Additional brochures in the pipeline:

BL12ZL Supply air hatch

BL12RWA smoke evacuation wall hatch to DIN EN 12101:2003

Your cool *it* partner

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More than just doors

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