

REGULATED VENTILATION FOR LIFT SHAFTS SIMPLE AND EFFICIENT

PRODUCT CATALOG

BlueKit L-AIO



• INNOVATION • SECURITY • EFFICIENCY

www.bluekit.eu

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Tomorrow's solutions in today's buildings

BK-Factory is the European leader in intelligent ventilation and smoke extraction for lift shafts. BK-Factory is offering need oriented solutions for the ventilation, heat and smoke extraction with the specifically for this purpose designed BlueKit^{*} system.



You also close your windows!

And do the same with all of the lift shafts and machine rooms. These have to be capable of aerating and ventilating through an opening to the outside in order to provide reliable smoke extraction. But keeping them open at all times leads to an unwanted chimney effect: Heated air rises upward in the lift shaft and escapes uncontrolled through the opening at the top. This can cause more than just extremely unpleasant drafts as well as disturbing noise inside the building. Failure to take the permanent opening at the top of the shaft into account in building energy planning can also lead to substantial heat energy loss.

Heat insulation in the walls,

but a permanent opening at the top of the shaft?

The chimney effect costs property owners a substantial bit of money and is harmful to the environment. This problem could be easily avoided with state-of-the-art technology by making use of demandoptimised ventilation that meets all the necessary standards and remains entirely safe in case of fire.

The joy of saving

With the application of a smart lift shaft ventilation, it is possible. For a conventional residential building having an energy efficiency class < C, the savings can amount to more than 1,000 euros/year.

In energy-efficient buildings equipped with mechanical ventalitaion systems, energy losses are present as well. Negative pressure can be created in the lift shaft: This pulls warm air into the building in summer and cold air in winter.



BlueKit L-AIO

The system

Regulated ventilation

When a BlueKit^{*} system is installed, the existing permanent opening is closed by a high-quality ventilation flap. The energy losses are thus reduced. However, BlueKit^{*} does not ignore ventilation of the lift shaft, but instead adapts it optimally to the actual needs of the building. This also provides an adequate fresh air supply to ensure the safety of lift users in the event of trouble.

The ventilation unit opens automatically in the following situations:

- Smoke detection in the shaft or the machine room
- Excess temperature
- Use-driven or time-driven ventilation to maintain a healthy building climate
- Lift system malfunction
- People present in the lift car
- Poor air quality in the shaft: at the car position

certified according to		
	EN 12101-10	
	pr EN 12101-9	
	EN 54-7/12/20	
	EN 54-11	
	EN 12101-2	

BlueKit[®] solutions provide need-optimised ventilation combining energy efficiency and safety in lifts.

Mechanical ventilation

As a complementary product to the BlueKit L-AIO system, Shaft Vent can provide a thermal airflow in the shaft through mechanical ventilation. This allows the safety of passengers in the car to be ensured by supplying enough air for a prolonged time. Shaft Vent is compatible with the BlueKit L-AIO system.

Shaft Vent

Ventilators, which are installed in the shaft, move the air in the opposite direction in order to let it flow around the car. The ventilators thus provide for the air ventilation inside the car as well as for an appropriate air mix within the shaft.





BlueKit L-AIO

Mode of operation

VENTILATION FLAP

for vertical or horizontal installation, with or without weather protection (see. «ventilation flaps» brochure)

SMOKE DETECTION

in case of smoke development, the detector, installed in the shaft, transmits a signal to the central unit that opens the ventilation flap in order to enable the natural smoke extraction.

SYSTEM STATUS DISPLAY AND MANUAL TRIGGERING (OPTIONAL)

Pressing the push button triggers a command for ventilation or smoke extraction. It also enables to reset the fire alarm and informs about the system status via LEDs.

CENTRAL UNIT

BK-AIO controls the opening of the ventilation flap. With its integrated thermostat, the central unit is able to detect a temperature increase and, thus, to activate the ventilation.

3

5

VENTILATION CONTROL

via radio wave, the Lift Status Transmitter LST-VOC sends the command to activate the ventilation to the central unit: at regular time interval, depending on the use of the lift and the air quality or in case of excess temperature around the lift car. It also detects trapped persons inside the lift car

MECHANICAL VENTILATION

insufficient air flow within the lift car.

Supplementary product for the BlueKit L-AIO system as support for the lift shaft ventilation inside buildings with a high level of airtightness, which entails



Central unit

BK-AIO

Description

The BK-AIO central unit stands out by its handy and particularly compact casing and its increased modularity. The BK-AIO has been developped to be installed in no time and to be ready for immediate use without any previous programming.

Characteristics

- Can be configurated via encoding switch if needed (all systems delivered fully functional)
- Integrated radio transmitter for the communication with the wireless ventilation control (LST)
- Integrated temperature sensor for the ventilation when registered temperature is exceeded
- Motor monitoring by the integrated cycle counter
- Programmed ventilation cycle of 10 minutes every 10 hours (other cycles can be programmed according to needs direct programming is possible using LST)
- Easy startup through 230V plug-in connection
- Simple connection of additional components thanks to 8 RJ45 connectors with LED status display / group monitoring : disfunction or alarm
- Outputs / inputs for the connection to fire alarm systems or building control systems





Opened casing with emergency batteries



RJ45 connectors with LED and 230V plug



Supplementary products

Emergency batteries



for the back-up of ventilation functions in the event of a power failure (compulsory for the use of ventilation flaps with direct current motor)

Mounting angles



to fix the casing onto the shaft walls (included in the mounting set)

RJ45 interface cable



for the connection to fire alarm or building control systems as well as to the lift control



Central unit

BK-AIO

Technical specification	
Туре	BK-AIO
Power supply	230V AC, 50Hz
Power output	75 W , 127 VA
Power output in standy	6,5 W , 12 VA
Voltage OUT	24V DC
Current OUT	2A
Potential free contacts:	
Max. voltage	60 V DC
Max. current	1A
Temperature range	-5°C to +40°C
Temperature sensor setting range	30°C or 35°C
Temperature sensor hysteresis	Ventilation operation 2°K
Cycle counter	LED coded
Operationg modes	Surveillance, alarm/ventilation
Protection class	IP50
Casing	Polycarbonate (grey-RAL7035)
Casing dimensions (WxHxL)	172mm x 151mm x 95mm
Weight without batteries	820g
Weight with batteries	1634g
Туре	Battery-Pack 0,8 Ah (AIO)
Tension	2 x 12V
Electric charge	0,8Ah
Dimensions one battery (WxHxL)	24,5mm x 95,7mm x 61,7mm



Application

The BK-AIO is suitable for lifts with no machine room as well as lifts with one. The BK-AIO central unit can be installed either at the head shaft or in the machine room. To keep the startup as simple as possible, the BK-AIO central unit is configured before dispatch.



Articles		
Туре	Description	Article no.
BK-AIO	Central unit	01.044.00
Battery-Pack 0,8 Ah (AIO)	Emergency power supply batteries	01.096.00
RJ45-4M-A-Interface-COM1 & COM2	Connection cable with interface for fire alarm system, building control systems or lift control	01.040.00



Ventilation control

LST-VOC

Description

The LST-VOC (Lift Status Transmitter - Volatile Organic Compounds) is an advanced lift status reporting unit which performs meaningful measurements at the lift car to improve the safety and wellbeing of lift users. Additionally to the commucation of information such as the operation, the maintenance or a breakdown of the lift, the reporting unit also informs the BlueKit^{*} central unit about the temperature and air quality surrounding the lift car.

Characteristics

- Recognition of lift car mouvements (by an integrated acceleration sensor)
- Programmable ventilation modes and cycles depending on the usage of the building through DIP switches
- Recognition of a breakdown with trapped persons in the lift car thanks to the PIR motion sensor (LST-VOC-PIR) or the connection to emergency call button (LST-VOC-AB)
- Surveillance of the air quality surrounding the lift car thanks to the integrated VOC sensor
- Fail-Safe: in case of a radio communication failure with the central unit, the ventilation flaps opens
- Maintenance mode: automatic opening of the ventilation flap
- Surveillance of the temperature around the lift car and opening of the ventilation flap when 32°C are exceeded



LED display



VOC air quality sensor



PIR motion sensor

Supplementary products

LSR - End module







The LSR amplifies the radio signal and is necessary for lifts with a machine room and if communication distance between LST and BK-AIO exceeds 70m. The connection module is necessary when several LSR are used.



Ventilation control

LST-VOC

Technical specification	
Туре	LST-VOC
Power supply	230 VAC , 50 Hz
Frequency	868,3 MHz
Range (higher range with LSR)	max. 70 m
Detected substances	volatile organic compounds
Triggering threshold	1550 ppm
Connection voltage call button	6 – 48 VDC/AC
Temperature range	-5°C +40°C
Fire protection class	UL94-V0
Protection class	IP32
Casing	Polycarbonate
Casing dimensions (LxBxH)	44,4mm x 177,8mm x 56,6mm
Туре	LSR
Power supply	24V DC, 35mA
Range	36 m
Protection class	IP30
Casing	Polycarbonate (grey)
Casing dimensions (LxBxH)	50mm x 48mm x 24mm



Туре	PIR
Power supply	2,3 VDC – 4,0 VDC (by LST-VOC)
Voltage OUT	max. 0,5 VDC
Current OUT	max. 100μA
Detection range	max. 5 m
Detection zone	94° horizontal, 82° vertical
Temperature of use	-20°C +60°C
Casing	Metal
Lense colour	Black
Thread dimensions (Ø x H)	14mm x 11,5mm
Total dimensions (Ø x H)	17mm x 29mm
Connection	2m patch cable (to LST-VOC)
Туре	AB cable
Cable length	2 m
Connection	RJ 11 connector
Туре	Battery (only for LST without VOC)
Battery type and size	3,6V Lithium, A
Durability	2-3 years, depending on use

Application

The LST-VOC can be installed on the lift car roof. The back of the door drive is generally well suited for fixing the LST-VOC. The LST-VOC and the BK-AIO central unit communicate wirelessly. Up to 8 LST-VOC can be linked with the central unit. Please refer to the BlueKit L-AIO installation guide for the commissioning of LST-VOC.



Articles Description Article no. Туре Lift Status Transmitter with AB cable LST (no VOC) with cable for emergency call button 01.083.00 Lift Status Transmitter with PIR cable LST (no VOC) with motion sensor 01.084.00 Lift Status Transmitter with AB and PIR cable LST (no VOC) with cable for emergency call button and motion sensor 01.087.00 Lift Status Transmitter with VOC and AB cable LST-VOC with cable for emergency call button 01.085.00 Lift Status Transmitter with VOC and PIR cable LST-VOC with motion sensor 01.086.00 Lift Status Transmitter with VOC, AB and PIR cable LST-VOC with cable for emergency call button and motion sensor 01.088.00 Repeater - radio communication amplification LSR - end module 02.002.00 Repeater - radio communication amplification (IN-OUT) LSR - connection module 02.002.01



LIFT Beam

Description

The LIFT BEAM is a infrared optical beam smoke detector which detects smoke over the entire lift shaft height. It combines an infrared transmitter and receiver (LB-BEAM) in the same unit. The LB-BEAM projects a well-defined infrared beam to a reflective prism (LB-PRISM), which returns the beam to the receiver for analysis. Smoke in the beam path causes a drop in power, which results in an alarm signal sent to the control unit (LB-CONTROLLER).

Characteristics

- Smoke detection over the entire lift shaft height
- Very short installation, maintenance and testing time •
- Allows for 2 LB-BEAMs per LB-CONTROLLER •
- For shaft heights from 8 to 200 m •
- Each LB-BEAM is configurable from 8m to 100m
- Solutions for shafts with multiple lifts
- Integrated alignment laser •
- Auto-align: fast automatic LB-BEAM alignment •
- Building movement and dust compensation
- Low consumption LB-CONTROLLER
- Plug & Play connection over RJ45 connectors





Mounting angle

mounting angle for LB-BEAM and LB-PRISM (included)



for LB-PRISM in case of detection heights from 8 to 12m (included)

LIFT Beam

Technical specification		
Туре	LIFT Beam	
Operating Voltage (to LB CONTROLLER)	14-36 VDC	
Operating Current (constant) - with 1 LB-BEAM	5-6 mA	
Operating Current (constant) - with 2 LB-BEAM	7.5-8.5 mA	
Operating Current (constant) -alignment modes with 1 or 2 LB-BEAM	36-46mA	
Response Threshold/ Sensitivity	ld/ Sensitivity 0.45-3.98 dB	
(Default 35%)	10-60 %	
Delay to Alarm – user settable (Default 20 sec)) 2-30 sec	
Delay to Fault – user settable (Default 20 sec)	2-30 sec	
Operating distance (separation) *	8-100 m	
Maximum angular alignment of LB-BEAM	±3.5 Deg	
Optical wavelength	850 nm	
Fault level/ Rapid obscuration ($\Delta \le 2$ sec)) 87 %	
Operating temperature	-10 +55°C	
Storage temperature	-40 +85°C	
Relative humidity (non condensing)	max. 93 %	
Protection class	IP54	
Cable length – LB-CONTROLLER to LB-BEAM	4 to max. 100m	
Casing flammability rating	UL94 V0	
CPD reference	0832-CPR-F0664	
UL file	S3417	



Dimensions and Weight	
Туре	LB-CONTROLLER
Casing dimensions (LxBxH)	230mm x 202mm x 87mm
Weight	1,0 kg
Туре	LB-BEAM
Casing dimensions (LxBxH)	131mm x 134mm x 134mm
Weight	0,98 kg
Туре	LB-PRISM
Casing dimensions (LxBxH)	100mm x 100mm x 10mm
Weight	0,4 kg

All figures are quoted for 25°C *a large LB-PRISM is necessary for > 50 m operation

Application

LB-CONTROLLER and LB-BEAM are installed in the shaft head and LB-PRISM in the shaft pit. Once the LB-BEAM is connected, an integrated laser can be activated. This allows the reflective LB-PRISM to be positioned quickly. Once the LASER has been used to coarsely align the LB-BEAM, Auto-Align takes over and automatically steers the LB-BEAM head into the optimum position. The number of LB-BEAM and LB-PRISM may change according to the installation and shaft height.





Articles		
Туре	Description	Article no.
RJ Lift Beam 50m	1 x LB-CONTROLLER, 1 x LB-BEAM, 1 x LB-PRISM (small) last or single	01.072.00
RJ Lift Beam 50m P&G	1 x LB-CONTROLLER, 1 x LB-BEAM, 1 x LB-PRISM (small) first to second to last	01.072.01
RJ Lift Beam 100m	1 x LB-CONTROLLER, 1 x LB-BEAM, 1 x LB-PRISM (large) last or single	01.073.00
RJ Lift Beam 100m P&G	1 x LB-CONTROLLER, 1 x LB-BEAM, 1 x LB-PRISM (grand) first to second to last	01.073.01
RJ Lift Beam 150m	1 x LB-CONTROLLER, 2 x LB-BEAM, 2 x LB-PRISM (small&large) last or single	01.074.00
RJ Lift Beam 150m P&G	1 x LB-CONTROLLER, 2 x LB-BEAM, 2 x LB-PRISM (small&large) first to second to last	01.074.01
RJ Lift Beam 200m	1 x LB-CONTROLLER, 2 x LB-BEAM, 2 x LB-PRISM (large) last or single	01.075.00
RJ Lift Beam 200m P&G	1 x LB-CONTROLLER, 2 x LB-BEAM, 2 x LB-PRISM (large) first to second to last	01.075.01
RJ Lift Beam 2x50m	1 x LB-CONTROLLER, 2 x LB-BEAM, 2 x LB-PRISM (small) last or single	01.076.00
RJ Lift Beam 2x50m P&G	1 x LB-CONTROLLER, 2 x LB-BEAM, 2 x LB-PRISM (small) first to second to last	01.076.01
RJ Lift Beam 2x100m	1 x LB-CONTROLLER, 2 x LB-BEAM, 2 x LB-PRISM (large) last or single	01.077.00
RJ Lift Beam 2x100m P&G	1 x LB-CONTROLLER, 2 x LB-BEAM, 2 x LB-PRISM (large) first to second to last	01.077.01



Smoke detector

Description

State-of-the-art spot-type smoke detector for an active and early fire detection in the lift shaft operating on the principle of scattered light. The smoke detectors are suited for lift shafts and machine rooms.

Characteristics

- Optical fire detector operating on the principle of scattered light
- For shaft heights up to 32m
- Individual red LED-Display
- Permanent self-monitoring
- Operation time up to 8 years
- CE certified
- Simple installation thanks to mounting angle
- Plug & Play connection over RJ45 connectors



certified according to: EN 54-7

Supplementary products Aerosol test spray

Aerosor test spra



for testing the detectors after mounting or during maintenance



Smoke detector

Smoke detector
24 V DC
<= 95 %
IP 40
max. 12 m
-20 °C +72 °C
62 x 117 mm
0,11 kg
ABS
white



Side view



Front view

Application

The spot-type smoke detectors are vertically installed, if possible in line, with a mounting angle. Assembly cables and -plugs between the smoke detectors are matched to the lift shaft. Please consider the installation guide to align the smoke detectors. The detector can be installed on the ceiling of the machine room or evacuation level by his base (without mounting angle).





Description	Article no.
Intermediate detector in the shaft	01.034.00
Last detector in the shaft	01.035.00
Detector for the main evacuation level	01.036.00
Detector for the machine room	01.039.00
Aeroso spray for the detector testing	02.018.00
	Description Intermediate detector in the shaft Last detector in the shaft Detector for the main evacuation level Detector for the machine room Aeroso spray for the detector testing

Manual triggering - system status display

RT-45L-RJ

Description

RT-45L-RJ is a manual triggered device which also displays indications about the status of the BlueKit L-AIO system and allows the reset of the fire alarm in the system.

Characteristics

- Lockable surface-mounted aluminium die-cast housing with break-type glass,
- Well suited for visualisation on the levels next to the lift doors
- LED display of the system status:
- Green system OK, yellow malfunction, red fire alarm, blue ventilation
- Manual triggering of a fire alarm or the ventilation
- Connection of up to 8 buttons in line
- Available in 5 powder-coated colours
- Plug & Play connection over RJ45 connectors



RT-45L-RJ



Manual activation - system status display

RT-45L-RJ

Technical specification	
Туре	RT-45L-RJ
Power supply	18 28 V DC
Alarm resistor	1,1 kOhm
Alarm display	24 V/ 8 mA
O.K. display	24 V/ 8 mA
Malfunction display	24 V / 0,2 mA
Ventilation display	24V / 8 mA
Connection	4x2 AWG26 cable 7 wires / RJ45
Protection class	IP40
Temperature range	-5°C +40°C
Casing	Aluminium
Dimensions (LxBxH)	129mm x 138mm x 39mm
Weight	0,31 kg



Application

RT-45L-RJ can be installed for visualisation close to the lift control, as well as on the levels. The recommended installation height is between 1,40m +/- 0,20m. The connection is made via RJ45 cables which are fixed inside the shaft. Please refer to the indications in the BlueKit L-AIO installation guide for the mounting and disposition.



Articles

Туре	Description	Article no.
BK-RT 45-L-RJ	Alarm & ventilation / visualisation button - orange	02.172.00
BK-RT 45/Y-L-RJ	Alarm & ventilation / visualisation button - yellow	02.172.20
BK-RT 45/G-L-RJ	Alarm & ventilation / visualisation button - grey	02.172.15

Blue and red unit available on demand



Mechanical ventilation

Shaft Vent

Description

Ventilators, which are installed in the shaft, move the air in the shaft around the lift car. The ventilators thus provide indirect air ventilation inside the lift car and increase the safety of passengers for a prolonged time in the event of trouble.

Characteristics

- Enhances the safety of lift users
- Ensures the lift car ventilation
- Number of ventilators in pairs depends on the shaft height
- Simple installation on the shaft wall thanks to support bracket
- Additional module as support to the lift shaft ventilation
- Protection grilles on the ventilator to avoid risks of injury
- Connection of up to 5 ventilators in-line
- Connection of the ventilators to the Shaft Vent relay box
- Connection of the Shaft Vent relay box to the BK-AIO central unit
- Automatic interruption in case of smoke detection



Supplementary products Support bracket for ventilator



for the mounting of the ventilators to the lift shaft wall (included)

Shaft Vent relay box

for the activation of the ventilators (included)



Mechanical ventilation

Shaft Vent

Technical specification	
Туре	Shaft Vent relay box
Supply	230 VAC , 50 Hz
Power	107,6 W
Power in standby	< 5 W
Voltage OUT	27,6 VDC
Current OUT	0,78 – 3,9 A
Temperature range	-10°C +60°C
Operating modes	Control, ventilation
Protection class	IP66
Casing	Polycarbonate
Dimensions (LxBxH)	225mm x 295mm x 122mm
Туре	DC axial ventilator
Nominal voltage	24 VDC
Nominal voltage range	12 VDC 30 VDC
Current OUT	0,39 A
Temperature range	-25°C +72°C
Volume flow	260 m³⁄h
Sound power level	6,1 dB
Sound pressure level	48 dB
Dimensions (LxBxH)	135mm x 138mm x 50mm
Weight	0,85 kg
Connection	4x2 AWG26 cable, 7 wires / RJ45





Application

The Shaft Vent ventilators are placed on opposite side and fixed to the shaft walls. The ventilation occures parallel to the shaft wall. The ventilator pairs are operating in opposite air flow direction and move the air around the lift car utilizing the full air volume of the shaft and thus providing air ventilation inside the lift car.

Articles			
	Туре	Description	Article no.
	Shaft Vent (<= 16m module)	Shaft Vent components for a shaft height of max. 16m	01.120.16
	Shaft Vent (+8m module)	Shaft Vent components for additional shaft height in 8m steps	01.120.08

Accessories

BlueKit L-AIO mounting kit

Type Article no. BlueKit L-AIO mounting kit 01.101.00

Characteristics

- Fixing material for the installation of the BlueKit L-AIO system
- Mounting angles for the BK-AIO central unit
- Nuts and bolts for the componentsMounting plugs and plastic ties for air
- sampling pipes

Technical sp	ecification
Weight	0,56 kg

Ventilation flap mounting kit



Characteristics

- Fixing material for the installation of ventilation flaps
- Wall anchors, screws and plugs for mounting ventilation flaps in various materials
- Sealing tape of 5,6 m for ventilation flaps

Technical specification Weight 0,47 kg

RJ45 connection cable

Туре	Article no.
RJ45-CHF-A-4 m	01.090.00
RJ45-CHF-A-6 m	01.091.00
RJ45-CHF-A-12 m	01.092.00



Characteristics

- RJ45 cable for the connection of various components (e.g. smoke detectors or RT-45L-RJ unit)
- Connector included
- Cable length: 4 m, 6 m or 12 m
- Halogen-free

Technical sp	ecification
Weight 4 m	0,17 kg
Weight 6 m	0,24 kg
Weight 12 m	0,47 kg
Colour	red
Туре	4x2 AWG26 cable, 7 wires



Notes		
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Subject to technical changes. No responsibility is accepted for the accuracy of information. BK-Factory will not assume any responsibility for their use EN_BLUEKIT_PRODUCT_CATALOG_BLUEKIT_L-AIO_20180108