

# Lindab **LETA K**

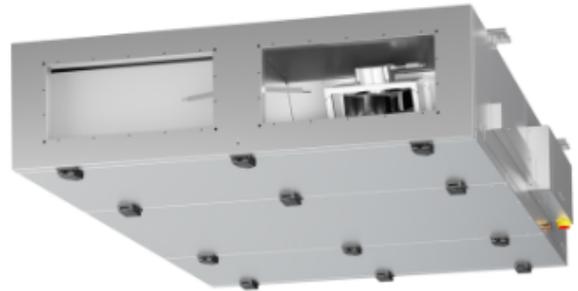
Commercial heat recovery unit  
Technical guide

# LETA K heat recovery unit

## Compact air handling unit with heat recovery and integrated controls

Flat air handling unit with highly efficient heat recovery and integrated microprocessor control, factory tested and commissioned.

Thanks to its compact design, the LETA K F air handling unit is suitable for a wide range of applications. The design with access panels located on the side and bottom results in extremely high ease of maintenance. Since the LETA K F units have aluminium counter flow heat exchangers with 100% summer bypass, they guarantee a pleasant indoor climate all year round.



- High performance counter flow heat exchanger with up to 93% efficiency and Eurovent certification
- High efficiency backward-curved radial impellers with EC rotor motor
- 3,5" display touch control unit
- Frameless double wall housing made of galvanised sheet metal
- 40mm non-combustible mineral wool insulation
- Right & left-hand versions available
- 4 standard sizes up to 2500m<sup>3</sup>/h
- Bottom & side access panels with large doors for easy access to all components
- Optional motorised shut-off dampers 3P/ SR
- Suitable for internal and external mounting (optional accessories required)
- Optional heating & cooling modules available
- Modulating 100% bypass for summer and night cooling
- Pre-wired, pre-configured and factory tested plug and play units
- Terminal box outside the unit for easy maintenance
- Modbus RTU or 0-10v input
- Various control options to ensure efficient operation.

## Overview data

Type of ventilation unit	BVU-Supply
Type of heat recovery system	Recuperative
Application	Indoor/ outdoor with optional rain hood
Connection supply air	Right/ left (option)
Housing material	Galvanised steel
Casing P protection class	IP41
Max. medium temperature	40°C
Environmental temperature	-20 to 40°C
Filter class extract	ePM10 50% (M5) ISO 16890
Filter class supply	ePM1 55% (F7) ISO 16890
Motor type	EC
Motor frequency	50 Hz
Motor protection class	IP54
Motor control type	Stepless control

# Features

## Housing

Frameless, double wall, galvanised sheet steel housing, insulated on all sides with 40mm mineral wool. The mineral wool used corresponds to class A1 (non-combustible) according to DIN EN 13501-1. Housing quality according to DIN EN 1886 L2 T2 TB2.

The housing is designed with smooth inner surfaces for easy cleaning according to VDI 6022. All casing parts are hygienically sealed against each other.

The maintenance covers of the flat units are both hinged and removable with lockable hinge catches.

All built-in components are easily accessible from the operating side. The control system is accessible through the side-mounted control box without opening the maintenance cover.

Consistently high quality assurance is proven by ISO 9001: 2015 certification.

## Fans

Direct driven single inlet fans with backward curved high-performance radial impellers, mounted on an EC external rotor motor with integrated control electronics. Motor impeller statically and dynamically balanced in two planes to balance quality G 6.3 according to DIN ISO 1940.

Maintenance-free ball bearings with long-term lubrication, theoretical nominal service life of at least 40,000 operating hours. Fan can be used on all standard EVU networks with unchanged air performance. Integrated electronics, low-noise commutation logic; 100% speed controllable.

The fan units are easily removable, the cables with plug-in connection can be disconnected without tools for maintenance purposes.

## Heat recovery

The high-performance counter flow heat exchangers with separation plates made of corrosion resistant aluminum, are characterised by high tightness, hygiene, dimensional stability and long service life.

The heat exchangers can be removed for cleaning purposes according to VDI 6022. The performance data of the design software for counter-current heat exchangers have been measured according to EN 308 and certified via Eurovent Certification.

Integrated frost protection function at low outside temperatures by modulating bypass damper. Ice monitoring is integrated in controls.

When the bypass damper is fully open, the air flow through the heat exchanger is completely closed, enabling very efficient free cooling of the building. The condensate connection is located on the side of the unit.

## Panel filters

Compact panel filters with long service life, easy filter change by quick release frame.

Supply air filter class ePM1  $\geq$  55% according to ISO 16890 (F7 according to EN779: 2012), polystyrene frame, fully incinerable.

Extract air filter class ePM10  $\geq$  50% according to ISO 16890 (M5 according to EN779: 2012), polystyrene frame, fully incinerable.

## Controls

Control cabinet with controls components and all required field devices are integrated in the base unit.

Integrated CAV (constant air volume) system with four nozzle pressure measuring points on both fans. The control system compensates for the outside air-dependent density change of the air. This ensures a constant volume flow in the supply air and extract air on the room side all year round, regardless of the fan position. The energy savings for fans and reheating are up to 15%.

Volume flows for supply air and extract air can be steplessly set. Up to 6 different modes are available for this purpose. The desired volumetric flows are set user-friendly via the control panel.

Combined PV constant volumetric flow/constant pressure control for VAV systems in non-residential buildings.

In the case of an air volume zone control of several volume flow controllers, the control ensures a constant inlet pressure in the supply air with a traced extract air volume flow. This type of control ensures the equal supply and extract air volume flows, even in case of zone control, and prevents under-pressure or over-pressure in the rooms. In addition, unequal volume flows are avoided, which can adversely affect the heat recovery.

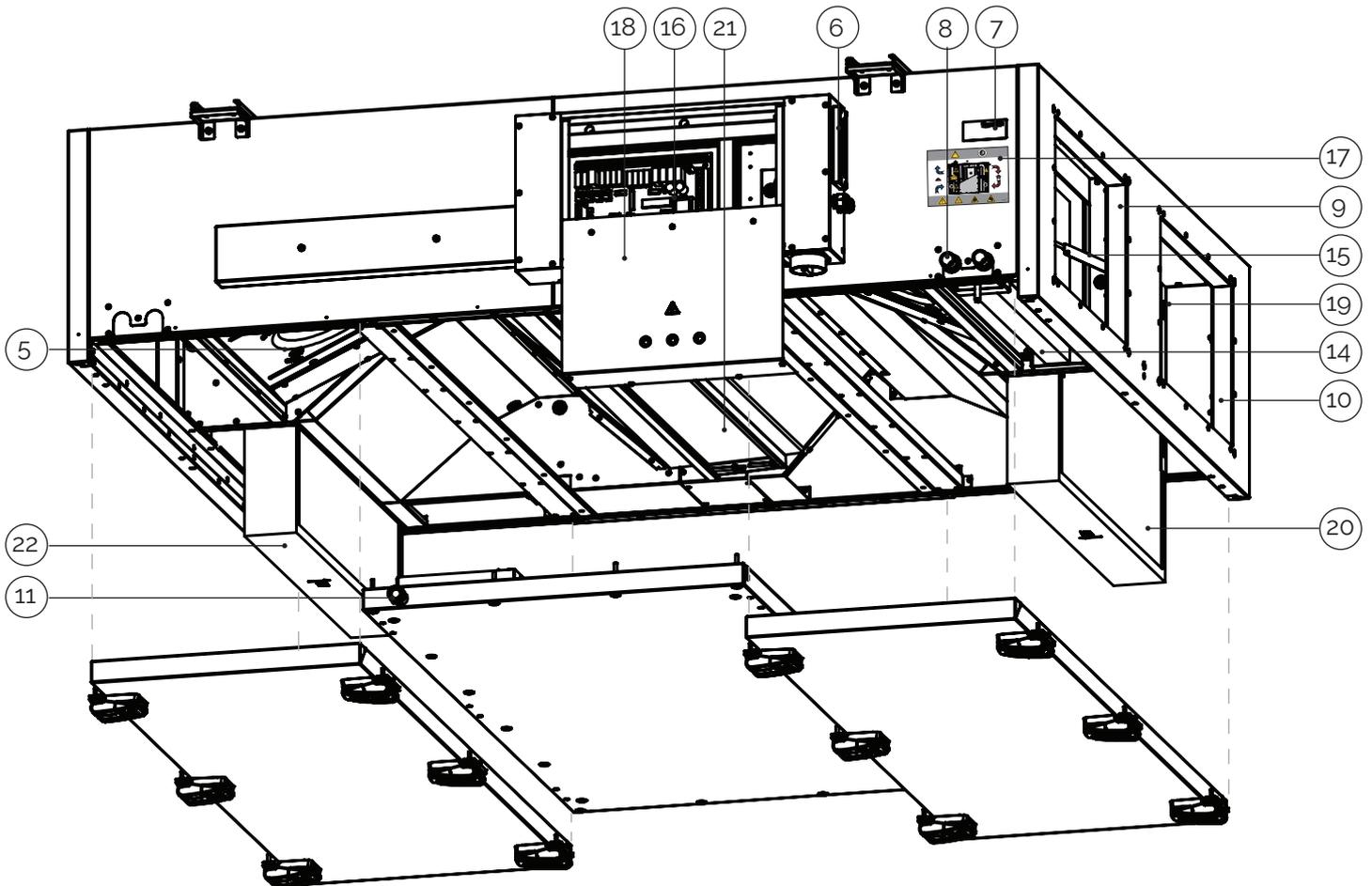
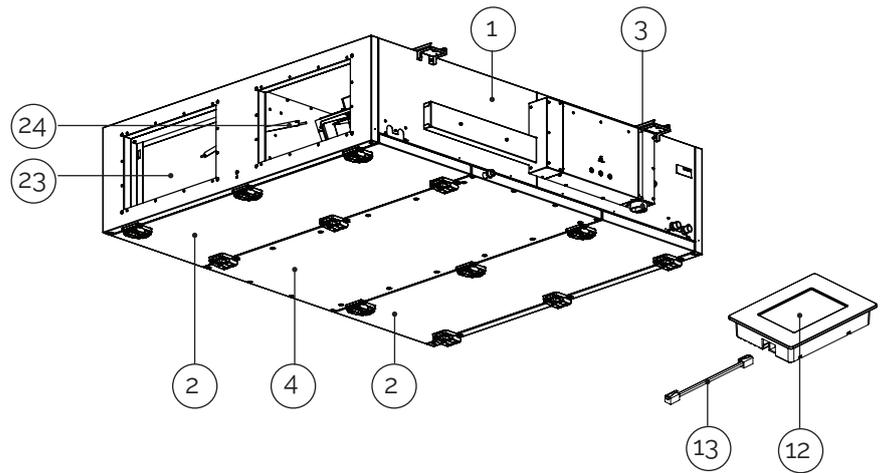
Both filters are equipped with differential pressure monitoring. The degree of contamination of the filter is displayed via the control unit.

Integrated free building cooling through automatic summer bypass.

The integrated controls activates the free cooling of the building in the event of an increased internal heat load during the transition period or on hot summer days. The room is cooled down by switching off the heat recovery with cool outside air and without additional energy demand.

# Features

1. Housing
2. Maintenance cover
3. Isolator switch
4. Cover with condensate tray
5. EC-fan
6. Cable glands
7. Rating plate
8. Connection heating coil
9. Connection supply air
10. Connection extract air
11. Connection condensate drainage
12. Remote control
13. Remote control cable
14. Hot water coil or electrical heating coil (depending on the type)
15. Supply air temperature sensor
16. Controller board
17. Safety labels
18. Switchboard cover
19. Extracted air temperature sensor
20. Air filter ISO ePM10 (M5) - extract air
21. Counter cross-flow heat exchanger
22. Air filter ISO ePM1 (F7) - supply air
23. Connection intake air
24. Connection exhaust air



## Technical data

General technical data for standard units is shown.  
Specific data related to your product selection is available on request.

		LETA K 700	LETA K 1300	LETA K 1700	LETA K 2500
<b>Nominal airflow rate</b>	m <sup>3</sup> /h	600	1100	1500	2300
<b>Max. airflow rate</b>	m <sup>3</sup> /h	870	1500	2060	3030
<b>Nominal external pressure</b>	Pa	250	250	250	250
<b>Max. static pressure</b>	Pa	860	800	1120	1280
<b>Heat recovery dry (EN 308)</b>	%	815	81%	79%	81%
<b>Frequency</b>	Hz	50	50	50	50
<b>Voltage</b>	V	230	230	230	230
<b>Max. current draw</b>	A	2.9	4.0	4.7	6.5
<b>Max. power consumption</b>	W	360	590	1060	1470
<b>Casing sound power level</b>	dB(A)	57	60	61	65
<b>Max. medium temperature</b>	°C	40	40	40	40
<b>Environmental temperature</b>	°C	-20 to 40	-20 to 40	-20 to 40	-20 to 40

At -12°C 90% r.h. outdoor air/ 22°C 40% r.h. extract air

### Sizing

Duct size W x H	mm	300x200	500x300	500x300	700x300
<b>Length</b>	mm	1473	1800	1800	2000
<b>Width</b>	mm	1000	1460	1460	1900
<b>Height</b>	mm	390	435	435	520
<b>Weight</b>	kg	138	245	248	355

### Electrical data - standard unit without heater

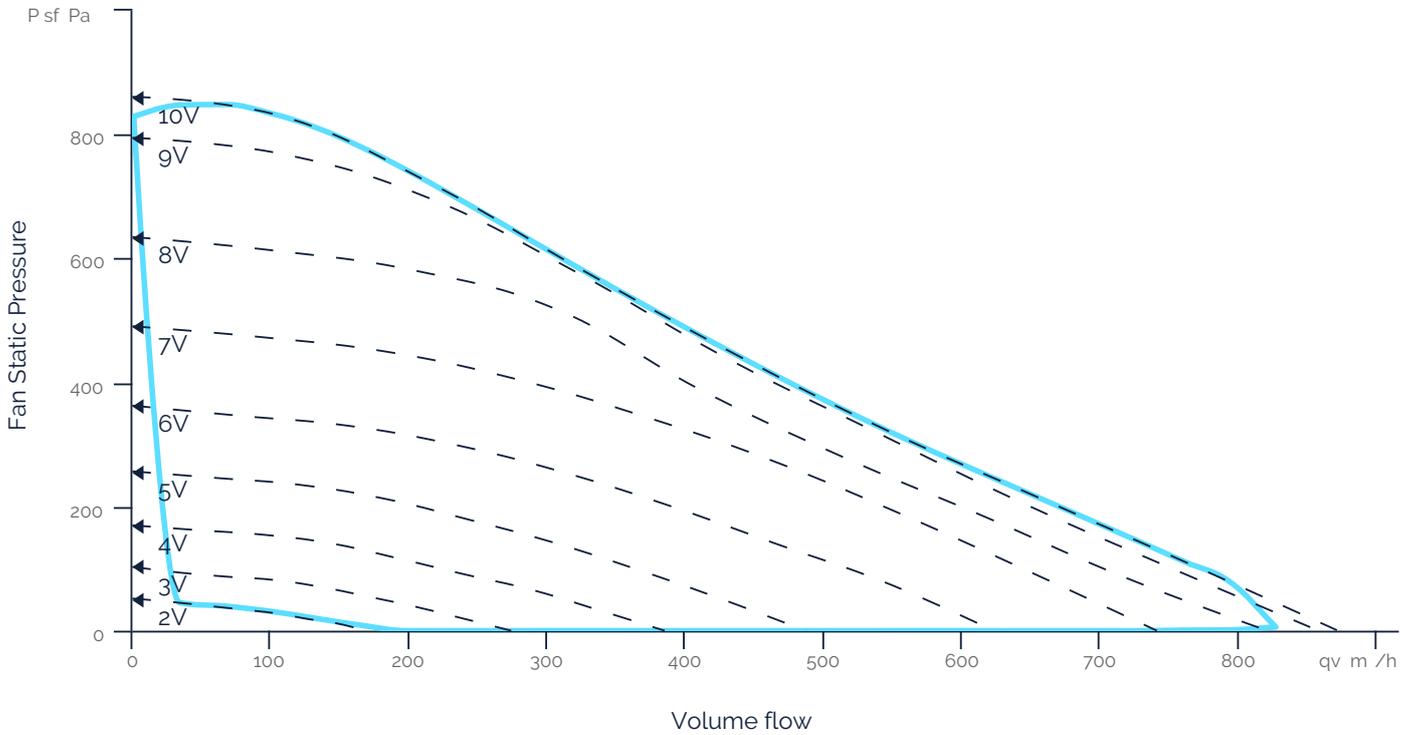
<b>Voltage</b>	V	230	230	230	230
<b>Phase</b>		1	1	1	1
<b>Max. power consumption</b>	W	370	700	1200	1600
<b>Max. operating current</b>	A	3.2	3.9	5	7

### Electrical data - with heater

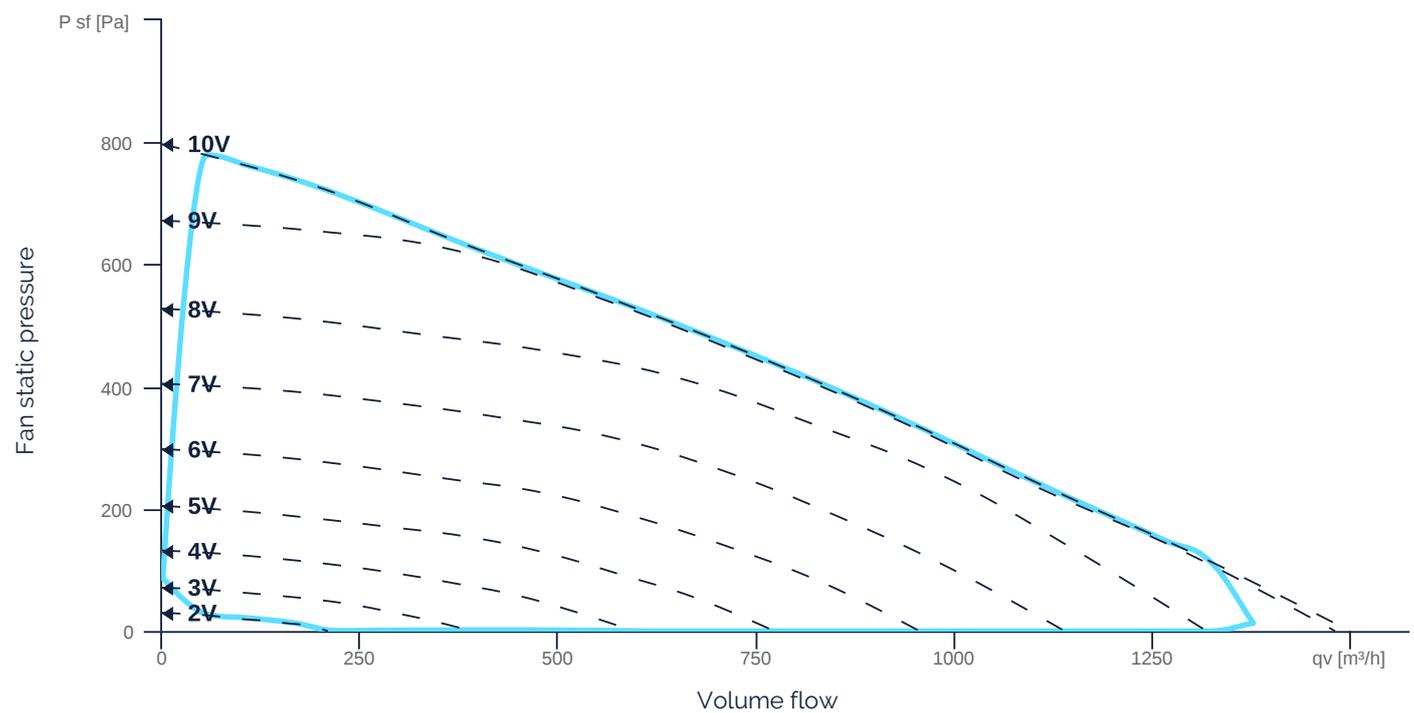
<b>Voltage</b>	V	230	400	400	400
<b>Phase</b>		1	3	3	3
<b>Max. output</b>	Kw	3kw	6kw	6Kw	18kw
<b>Mounting</b>		Internal	Internal	Internal	External
<b>Heater weight</b>	kg	1.0	2.0	2.0	21.5

# Performance data

## LETA K 700

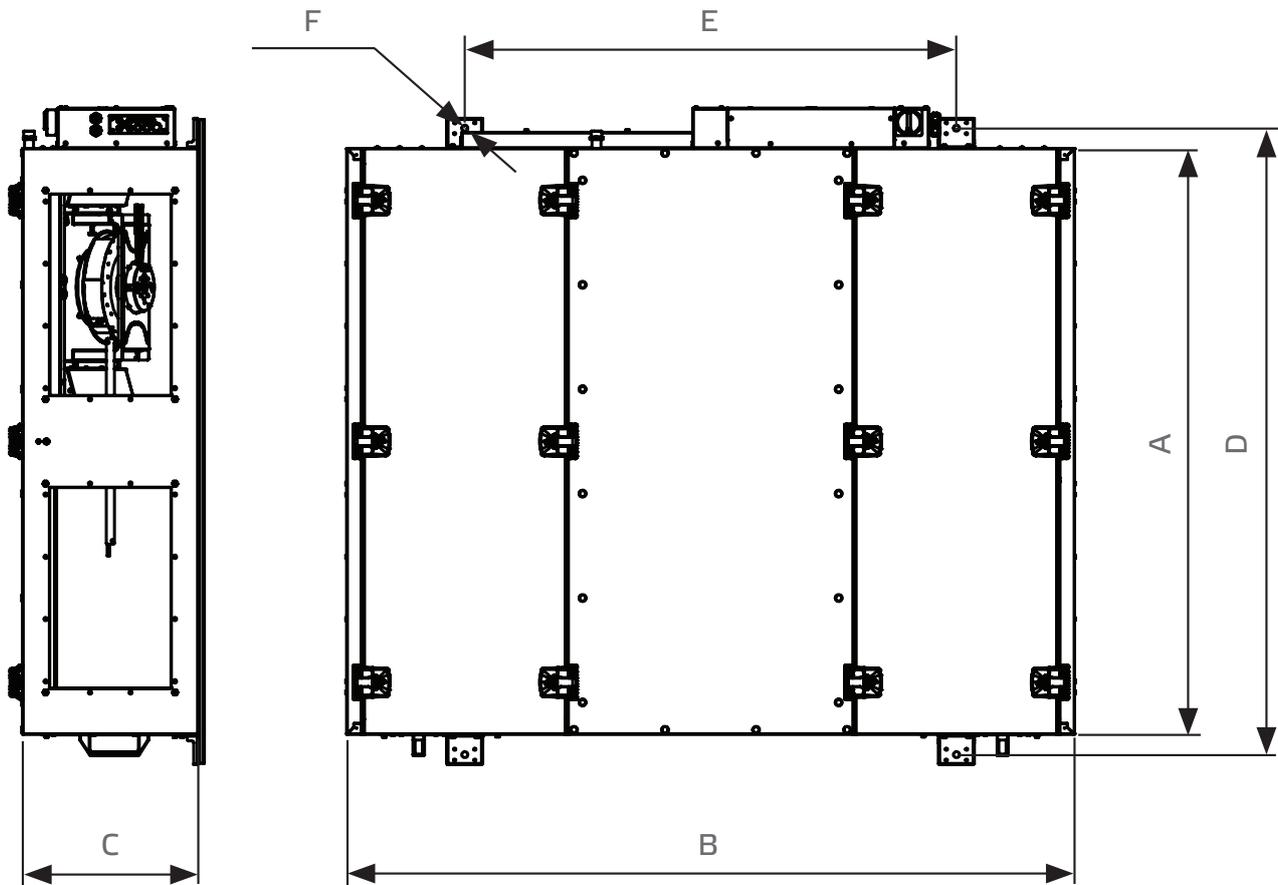


## LETA K 1300





# Dimensions



Product name	Duct connection mm	A mm	B mm	C mm	D mm	E mm	F mm
LETA K 700 F OOJR S	200 x 300	1000	1473	390	1099	1155	4 x Ø15
LETA K 1300 F OOJR S	300 x 500	1460	1800	435	1560	1215	4 x Ø15
LETA K 1700 F OOJR S	300 x 500	1460	1800	435	1560	1215	4 x Ø15
LETA K 2500 F OOJR S	300 x 700	1900	2000	520	2000	1350	4 x Ø15

## Controls

The controls of the LETA air handling units, including sensors and actuators, are integrated in the unit and completely wired. All units are commissioned and tested in advance in the factory. To ensure that they are ready for use immediately after connection, we supply the units with three predefined operating modes: Party, Eco and Night. The desired operating parameters can be easily set to individual requirements on the touch control unit supplied or BMS.

### Fan functions:

- Operating mode V constant volume control
- Operating mode P constant pressure control
- Operating mode PV constant volume / constant pressure control

### Temperature control functions:

- Operating mode supply air temperature control
- Operating mode extract air temperature control
- Operating mode room air temperature control
- Free cooling via outside air bypass (free night cooling)
- Heat recovery without after heating
- Heating warm water
- Heating electric
- Cooling direct evaporator
- Cooling cold water
- Heating condenser and cooling direct evaporator

### Monitoring functions:

- Temperature monitoring supply, extract, exhaust, outdoor air
- Frost protection monitoring of the warm water heating coils (at P version)
- Air filters monitoring via pressure difference
- Automatic adjustment of ventilation capacity at very low outside temperatures
- Plausibility check of the sensor against cable break

### Inputs:

- MO BUS RTU interface
- Motion sensor potential-free contact
- Frost protection thermostat potential-free contact
- Fire detector potential-free contact
- Unit enable, potential-free contact
- Pressure sensor (0-10V) SE P for P and PV control
- Control input (0-10V) for external volume flow control
- Control input (0-10V) for external CO<sub>2</sub>, VOC or humidity sensors



### Outputs:

- Fan supply air (0-10V)
- Fan extract air (0-10V)
- Valve heating circuit (0-10V and 3-point control)
- Valve cooling circuit (0-10V and 3-point control)
- Enable cooling device
- Circulation pump heating circuit
- Circulation pump cooling circuit
- Operation indication, potential-free contact
- Fault indication with error code displayed on the remote control unit and potential-free output contact
- Bypass damper (3-point control)
- Outside air damper (open/close or spring return)
- Extract air damper (open/close or spring return)



Most of us spend the majority of our time indoors. Indoor climate is crucial to how we feel, how productive we are and if we stay healthy.

We at Lindab have therefore made it our most important objective to contribute to an indoor climate that improves people's lives. We do this by developing energy-efficient ventilation solutions and durable building products. We also aim to contribute to a better climate for our planet by working in a way that is sustainable for both people and the environment.

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