TEKADOOR®

OVAL EC

DESIGN AIR CURTAIN

INDIVIDUAL
INNOVATIVE
ENERGY-SAVING

ERP conform

OVAL EC

DESIGN AIR CURTAIN

Applications

Oval EC is particularly suited to modern and architecturally-sophisticated entry areas: in large warehouses, flagship stores, airports, shopping malls, hotels and banks. Free-hanging unit with optional attractive suspended cladding to cover the supply lines. Thanks to its oval design and low maintenance operation, Oval EC will satisfy architects, planners, clients and operators.

Special design

Oval EC is available in variable unit lengths up to 2.5 m. It is also simple to individually adjust and retrofit in existing door systems. Oval EC is characterised by a low noise level when compared with other conventional units. Sheet metal housing and fan casing have been acoustically insulated.

The housing

Self-supporting steel-composite construction made from powder coated sheet steel or stainless steel (polished to grain size 240). Screws and rivets are not visible. Powder coated intake grille in the same colours as the unit or stainless steel version, consisting of a perforated plate with micro grille behind it for easy maintenance. Aluminium discharge fins for an infinitely adjustable, unidirectional air stream

Energy supply lines are invisible behind suspended cladding (optional). For wider entry areas it is possible to arrange multiple units in a row and install the cabling and piping inside.

Heating media

Heat exchangers for different heating media

LPHW: for normal temperature 70/50°C and low-temperature 60/40°C, other temperatures available on request.

High-quality heat exchanger made from copper tubes, with pressed-on, extra-strong aluminium fins.

+ **Self-supporting powder-coated sheet steel or stainless steel housing**

Advantages at a glance

- + Made in Germany
- + ErP conform / EC fans
- + Particularly low noise
- + Service-friendly thanks to filterless micro-intake grille
- + Individual unit lengths up to 2500 mm
- + Aerodynamically-optimised discharge fin
- + Robust, self-supporting steel/ aluminium composite construction
- + Individual RAL colours available or, alternatively, a stainless steel version
- + Different heating media possible
- + Simple to install

EC fans

The efficiency of the EC fans used by Tekadoor is > 90% under partial load operation. This is 30–35% higher than for conventional AC fans. This does not just increase the efficiency, but also reduces the operating costs. The individually-driven EC fans with integrated motor protection can intake air in both directions. They have vibration-free bearings and are controlled with 0-10V. They do not just comply with the ErP Directive, but actually exceed this standard.

Mounting

Simple mounting thanks to the rivet nuts (M10) incorporated on the upper side of the unit and optionally-available assembly materials.

Maintenance

Easy to clean (micro grille) without opening the unit by simply vacuuming the intake grille.

Control

Electronic TEKADOOR GTC EC control unit, multifunctional with touch display, including an optional ModBus interface

A GTC 1 EC control unit is used as standard for models with LPHW heating. The units come with 20 m preassembled and shielded data cable. The GTC 1 EC 5-stage control unit includes the ability to switch from manual to automatic and from summer mode to winter mode as standard. A solenoid valve of up to 2.5 A can be connected as an option for the winter mode. The control unit includes a manual to automatic mode switch and a potential-free contact for enabling via any on-site BMS or BEMS. A choice of 5-stage or stepless fan operation is offered as standard.
A maximum of 10 units can be connected in parallel.

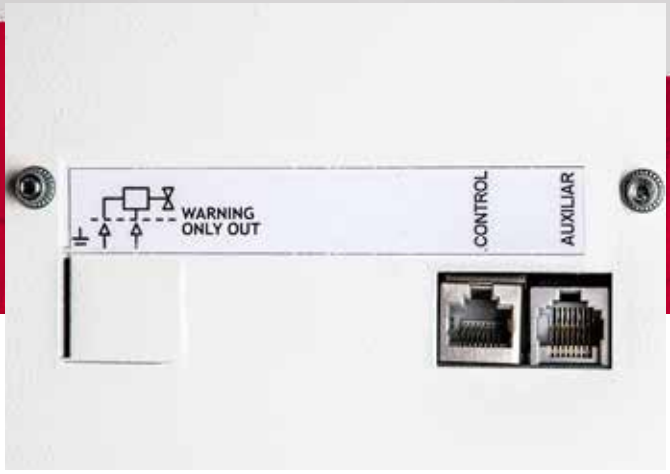
OVAL EC
DETAILS

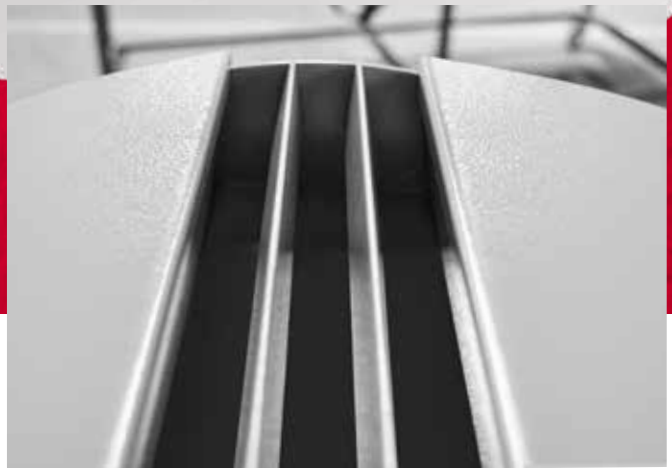
Connections

Heating connections – flow and return – on the top left of the unit as standard for easy connection to the on-site heating system. (Internal thread dimensions depend on the model series). Optionally, the connections can also be offset.

Connection box for LPHW units

Simple electrical connection via connection box (voltage supply 230V/50 Hz) on the top of the unit. Optionally, the connections can also be offset.





Data cable connection/interface

Simple, standard plug and play connection of the data cable and an optional solenoid valve on the top of the unit.
The connection can be offset on request.

Control:
Input for the data cable to the control unit.

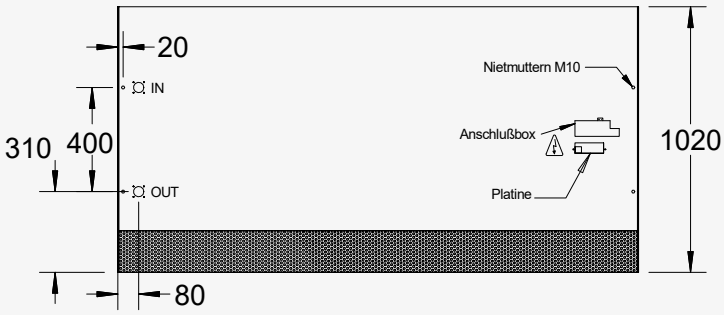
Auxiliary:
Output for parallel operation with other units.

Discharge fin

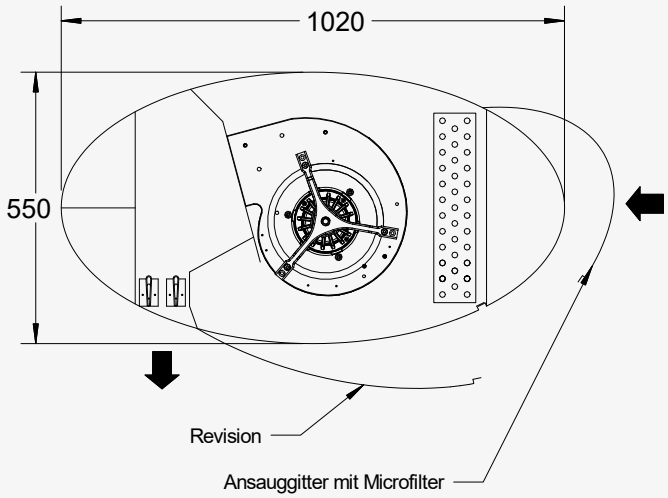
Aluminium discharge fins (drop profile), depending on the model available in designs with double or multiple fins, for an infinitely adjustable, unidirectional air stream. During the heating period, the fins should be tilted outwards by 10 to 15 degrees to prevent cold air coming in from the outside. In contrast, during operation in the summer, the fins are tilted inwards, so that the cooled indoor air cannot escape.

OVAL EC
FREE-HANGING INSTALLATIO

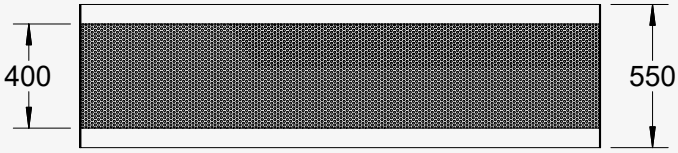
TOP VIEW



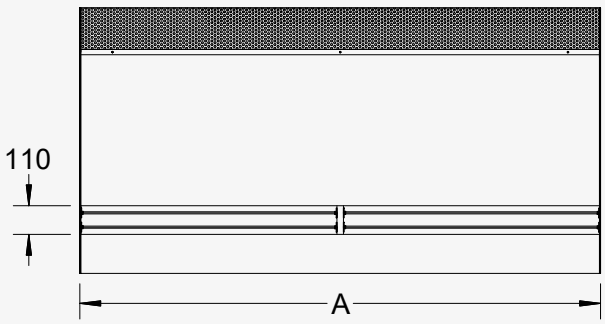
SIDE VIEW



FRONT VIEW



BOTTOM VIEW



A = VARIABLE UNIT LENGTH

* WE RESERVE THE RIGHT TO MAKE TECHNICAL CHANGES

Connection-ready, free-hanging door air curtain unit for visible installation directly above the door.
Ambient air intake is at the front, on the room side.

OVAL EC
OPTIONAL ACCESSORIES

Thermostatic straight-way valve

(Setting range + 20 °C to + 35 °C) limits the discharge temperature (constant supply air temperature limitation). Also available as a 3-way valve.

Solenoid valve

Opens or closes the warm water circuit in the summer/winter setting of the control unit, in order to close the heating water circuit and save energy during summer operation or when the air curtain is not working (normally closed). **Caution:** If solenoid valves are used, it is expressly recommended to install a frost protection thermostat (automatically actuated) and a strainer.

Thermo-electric shut-off valve

230 V / 50 Hz, normally closed. On-site installation in the heating flow. Actuated by the summer/ winter circuit. Summer function – closed. Winter function – opened.

Ceiling attachment set

For problem-free, vibration free ceiling attachment, consisting of M8 or M10 threaded rods, up to 1000 mm length, vibration dampers, turnbuckles and counter nuts.

Frost protection thermostat

For monitoring LPHW heat exchangers exposed to the risk of frost. As soon as the temperature falls below +7 °C, the fans are switched off and an optional solenoid valve is opened.

Control unit GTC 2 EC

Possibility of combination of various automatic operations. A constant discharge temperature can be set via an optional electronic control valve, and a week timer is incorporated as standard, enabling up to 12 different switching times to be programmed per week.

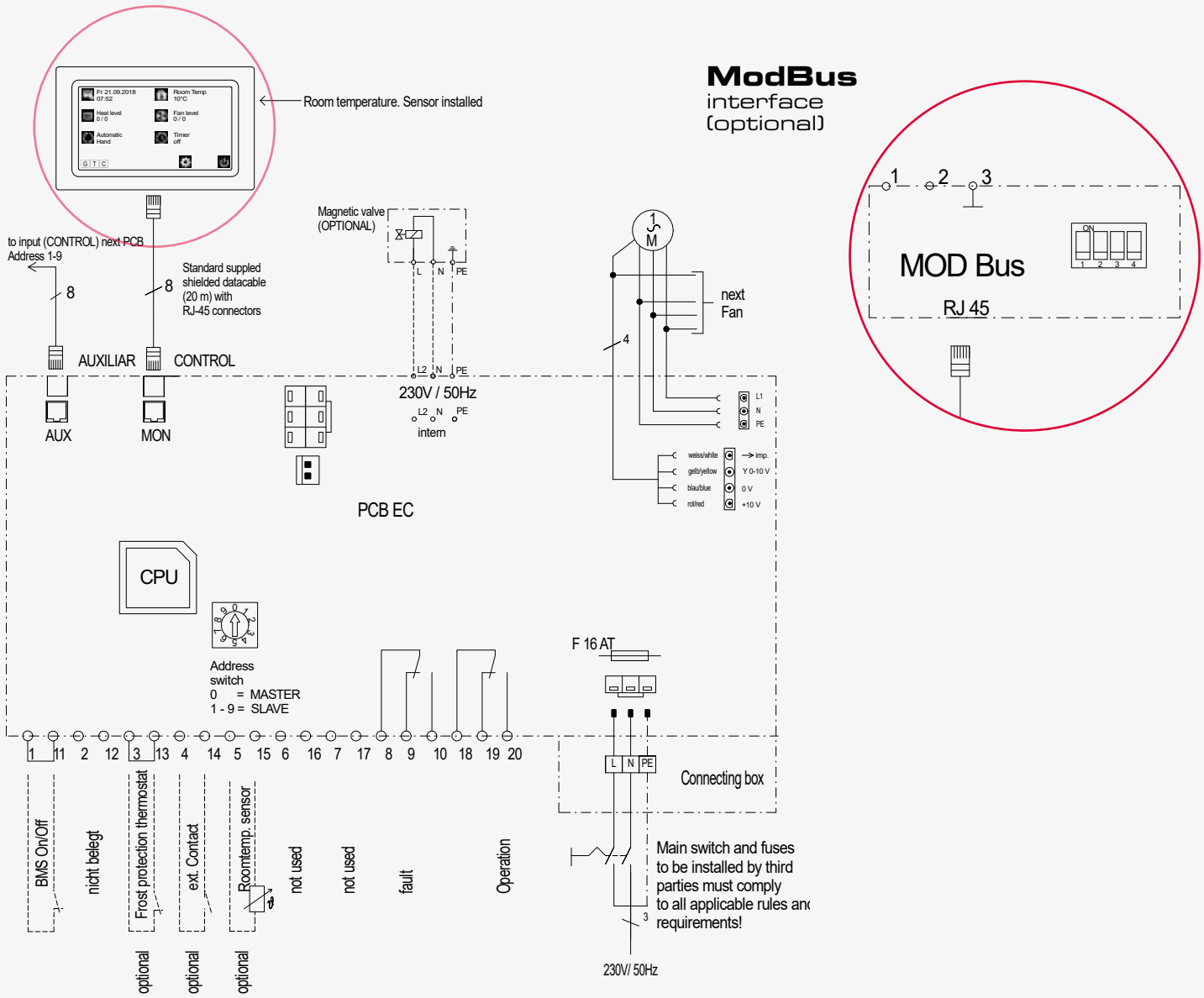
Electronic control valve

Electronic valve with 0-10V impulse and blow-out temperature sensor completely installed and wired. In combination with the GTC 2 control, a preselected blow-out temperature is kept constant.

Door contact solenoid switch

In automatic mode switches on the door air curtain in the preselected stage

OVAL EC
STANDARD CIRCUIT DIAGRAM FOR LPHW



* WE RESERVE THE RIGHT TO MAKE TECHNICAL CHANGES

CONTROL UNIT GTC 1 EC

Multilingual, menu-driven electronic control unit for TEKADOOR air curtains with LPHW heating and energy-saving EC fans. A standard feature of the control unit with touch display is a choice between 5-stage or stageless fan control, which can be selected individually by the operator. The relevant operating modes and symbols are arranged clearly on the colour display. The date, time and room temperature are shown as standard. The room temperature is monitored via an internal temperature sensor in the control unit as standard.

An easy-to-navigate menu offers a selection of different operating modes:
Hand – manual operation
Auto AS – automatic operation via cool down protection
Auto RT – automatic operation via room temperature
Auto TK – automatic operation via door contact
Auto Kombi – option to combine all individual automatic modes

An enabling contact and potential-free operation and malfunction signals are provided for control via an on-site BMS or BEMS. Errors and faults are displayed with a red „warning“ sign. By coding the control boards differently, up to 10 door air curtains can also be operated in parallel with 1 control unit, using the Master/Slave principle. The control board is preinstalled in the door air curtain unit and 20 m of preassembled data cable (connection between the door air curtain and control unit) are included as standard.

OVAL 4000 EC

TECHNICAL DATA FREE-HANGING

TEKADOOR®

Design based on:

recommended operating point
intake temperature tLE = +20 °C
discharge temperature tLA = +34 °C
discharge height = up to 3.30 m

OVAL EC 4000			4001.5	4002	4002.5
Total air quantity		m^3/h	6000	8000	10000
Heating capacity rated[1]	LPHW 70 / 50 °C	kW	28.27	37.70	47.12
	LPHW 60 / 40 °C	kW	28.27	37.70	47.12
Flow rate	LPHW 70 / 50 °C	m^3/h	1.24	1.65	2.06
	LPHW 60 / 40 °C	m^3/h	1.23	1.64	2.05
Water resistance	LPHW 70 / 50 °C	kPa	1.53	2.68	4.45
	LPHW 60 / 40 °C	kPa	1.49	2.87	4.81
Nominal connection sizes	Internal thread	Inches	2 x 1"	2 x 1"	2 x 1"
	Flow/return	DN	25	25	25
EC fans	Voltage	V		230 / 1 / N / PE	
	Frequency	Hz		50	
	Current consumption	A	6.2	9.3	12.4
	Motor power	kW	1.36	2.04	2.72
Sound pressure level [2]	Highest setting	dB (A)	63	64	65
Drawing dimension	Unit width (A)	mm	1500	2000	2500
	Unit height (E)	mm	550	550	550
	Unit depth (D)	mm	1020	1020	1020
Weight		kg	180	195	210

* WE RESERVE THE RIGHT TO MAKE TECHNICAL CHANGES

1. Rated operation based on operating point (see above), discharge temperature control recommended.
2. Measured at a lateral distance of 3 m. The sound pressure level may vary depending on the environmental conditions.

A well-balanced pressure ratio is one of the prerequisites for perfect function.

TEKADOOR®

www.TEKADOOR.de

German headquarters
TEKADOOR GmbH
Albert-Einstein-Str. 11
D-40764 Langenfeld

T. +49 (0) 2173 - 20766-0
F. +49 (0) 2173 - 20766-111
E. info@tekadoor.de

A = 01.07.2019