TEKADOOR®

COLUM EC

DESIGN AIR CURTAIN

INDIVIDUAL
INNOVATIVE
ENERGY-SAVING

ERP conform

COLUM EC

DESIGN AIR CURTAIN

Applications

With its suspended and standing versions, Colum EC is particularly suited to the visible parts of modern entry areas and, thanks to its rounded design and low maintenance operation, will satisfy architects, planners, clients and operators. The floor mounted vertical unit is particularly suited to revolving doors, since the heated airflow is discharged directly all the way down to the floor level without losing heat, thus preventing the formation of a "cold patch". The choice of standard RAL powder coatings or the stainless steel housing fit superbly in existing entry areas. Colum EC is used in hotels, banks, flagship stores, shopping malls, airports and public buildings.

Special design

Colum EC is available in variable housing lengths up to 3 m. It is simple to retrofit the floor mounted vertical unit in existing door systems.

The housing

Self-supporting steel-composite construction in a cylindrical shape with split sheet steel or stainless steel housing (polished to grain size 240) in a round-rolled design.
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 application.
Aluminium discharge grille for an infinitely adjustable, unidirectional air stream Invisible energy connections for the floor mounted vertical unit (discreetly bolted in place via holes in the floor plate).

Heating media

Heat exchangers for different heating media

LPHW: for normal temperature LPHW 70/50 °C and low-temperature
LPHW 60/40 °C, other temperatures available on request.
DX: DX register soldered under nitrogen for operation with heat pumps (only heating modus possible). High-quality heat exchanger made from copper tubes, with pressed-on, extra-strong aluminium fins.
ELECTRO: 3-stage heat exchanger 400V, spiral form, corrosion resistant, with thermal overheating protection and switch-off delay.

Advantages at a glance

- Made in Germany
- ErP conform / EC fans
- Certified by TÜV-Süd
- Individual colours standard RAL colours available alternatively as stainless steel version
- Individual unit lengths up to 3000 mm
- Service-friendly thanks to filterless micro-intake grille
- Aluminium profile discharge fins (drop form) for optimum airflow
- Large throw distance, low noise, optimum shielding
- 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 using a PWM signal (pulse width modulation) – and with 0-10 V for the DX. They do not just comply with Directive ErP, but actually exceed this standard.

Mounting

Floor mounted vertical unit: Problem-free mounting via holes in the floor plate directly on the finished flooring. The floor plate has appropriate recesses for invisible energy supply from below. Optional: Power supply is also possible from above.
Suspended version: simple mounting thanks to the M8 rivet nuts incorporated on the upper side of the unit as well as optionally-available assembly materials.

Maintenance

Easy to clean (micro grille) without opening the unit by simply vacuuming the intake grille. The intake grille must be removed before the revision panel can be opened.
To do this, a cross-headed screw at the upper end of the intake grille must be removed. Then the intake grille can be taken out of the lower frame.

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. A GTC E EC control unit is used for models with electrical 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. With the standard GTC E EC control unit, the airflow can be selected manually in 5 stages and the heating capacity – depending on the fan level – can be selected manually in 3 stages. Each 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.

COLUM EC
DETAILS

Connections
Floor mounted vertical unit

Heating connections – flow and return – for easy connection to the on-site heating system.

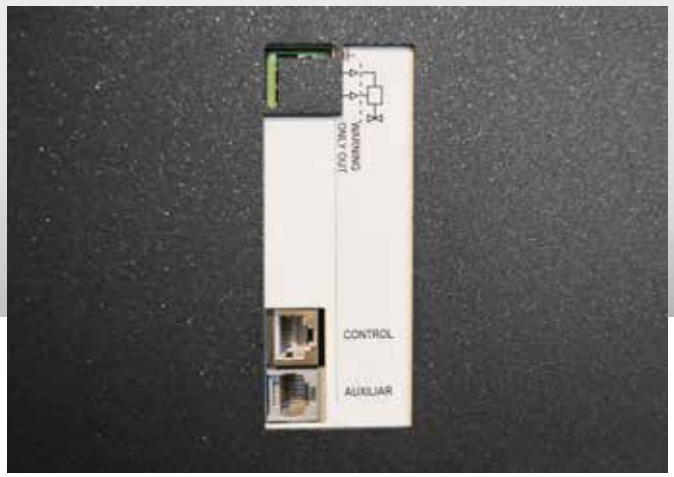
- Connections for the floor mounted vertical unit: either from below or above, invisible within the door air curtain.

- for the suspended version: on the upper side of the unit (or optionally from the side)

Connection box

Simple electrical connection of the power supply 230 V/50 Hz thanks to the internal connection box.

Exception:
Electrical units with a heating capacity greater than 22.5 kW.



Data cable connection/interface

Standard connection options for the data cable and an optional solenoid valve or thermo-electric shut-off valve within the unit. Simple plug and play of the data cable.

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

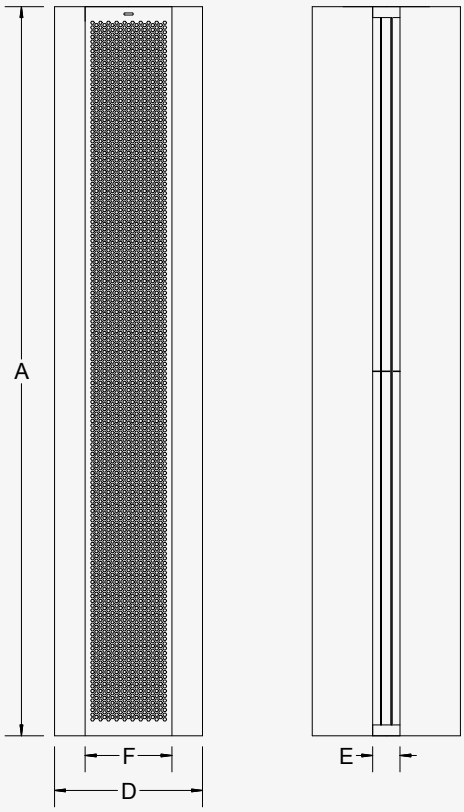
Auxiliary:
Output for parallel operation with other units.

Discharge fins

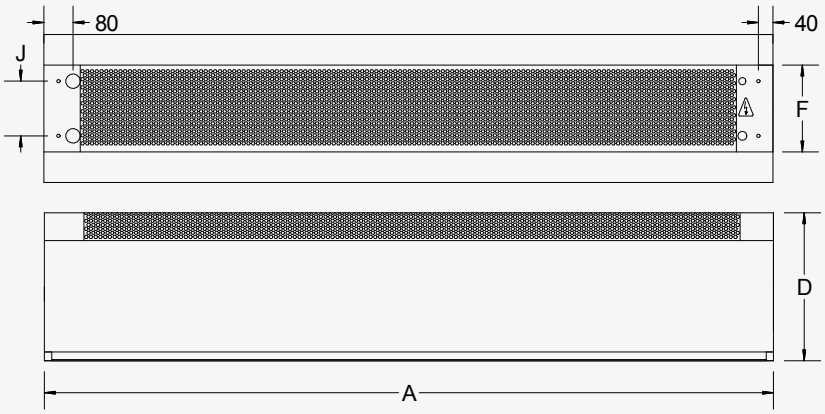
Discharge grille with aluminium fins (drop profile), depending on the model available in designs with double or multiple fins, for an infinitely adjustable, unidirectional air stream. During the heating period, the fins should be tilted outwards by 10 to 15 degrees to prevent cold air coming in from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

COLUM EC

FLOOR MOUNTED VERTICAL UNIT



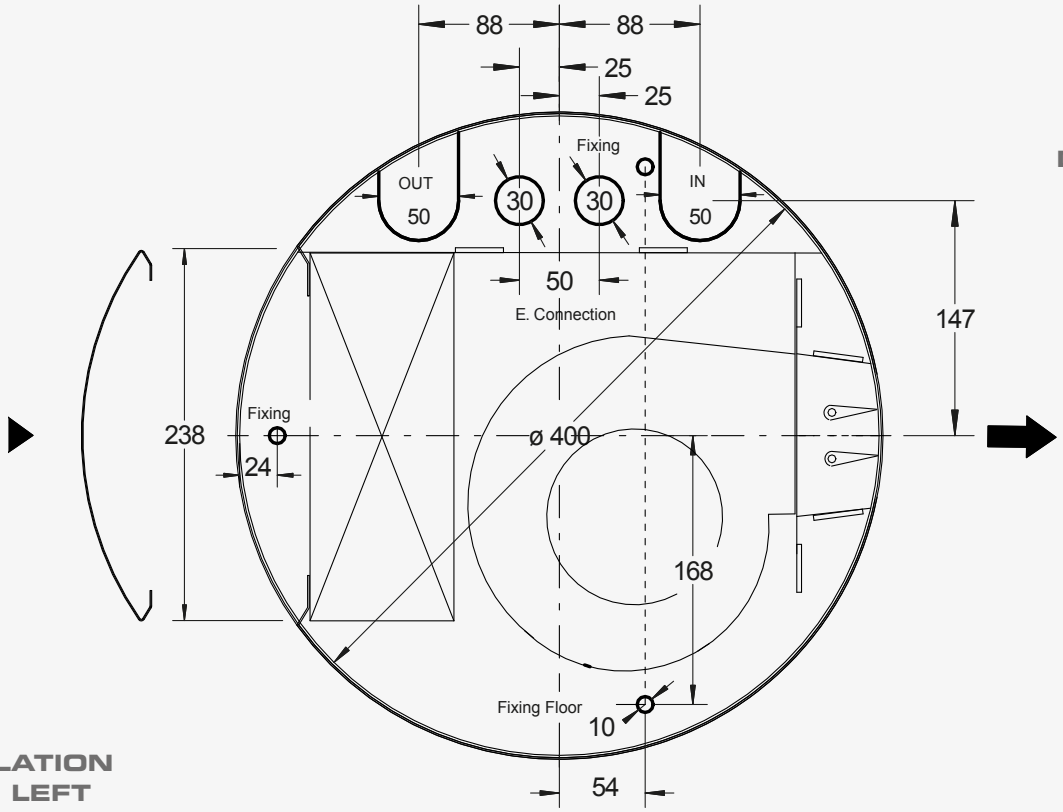
SUSPENDED UNIT



A = VARIABLE UNIT LENGTH

* WE RESERVE THE RIGHT TO MAKE TECHNICAL CHANGES

Connection-ready, free-hanging door air curtain unit for visible installation above the door or as a floor mounted vertical unit.
The ambient air intake for the suspended version is from above and from the side for the floor mounted vertical unit.



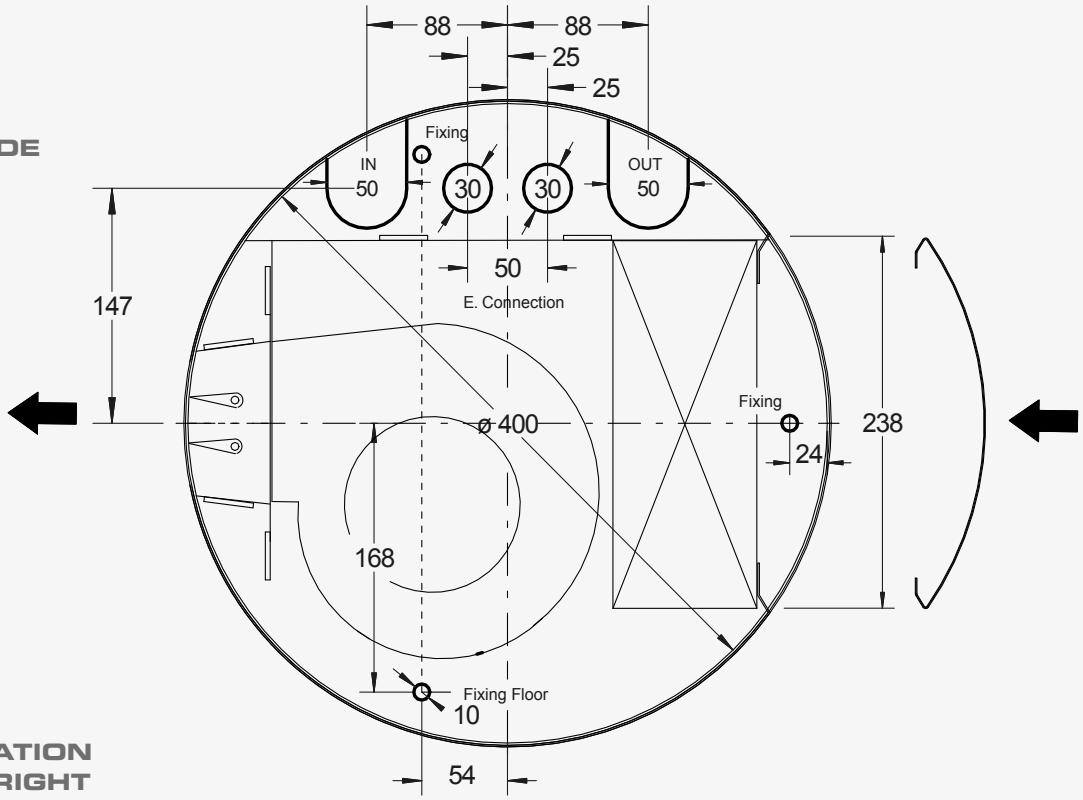
DOOR SIDE

INSTALLATION
ON THE LEFT

* WE RESERVE THE RIGHT TO MAKE TECHNICAL CHANGES

Floor plate with all relevant dimensions for a floor mounted vertical unit.
Shown here installed on the left.

DOOR SIDE

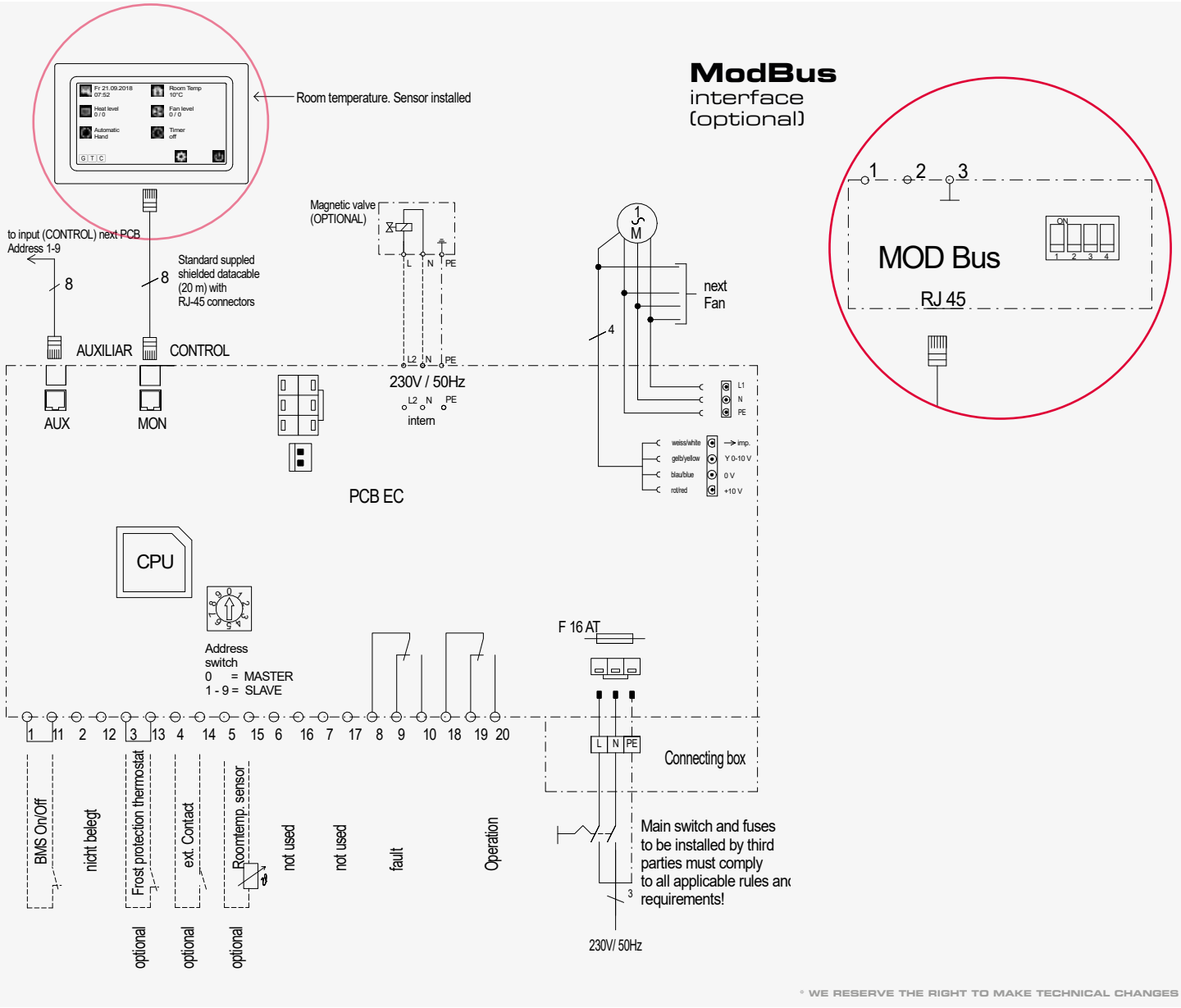


INSTALLATION
ON THE RIGHT

* WE RESERVE THE RIGHT TO MAKE TECHNICAL CHANGES

Floor plate with all relevant dimensions for a floor mounted vertical unit.
Shown here installed on the right.

COLUM EC
STANDARD CIRCUIT DIAGRAM FOR LPHW



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CONTROL UNIT GTC 1 EC

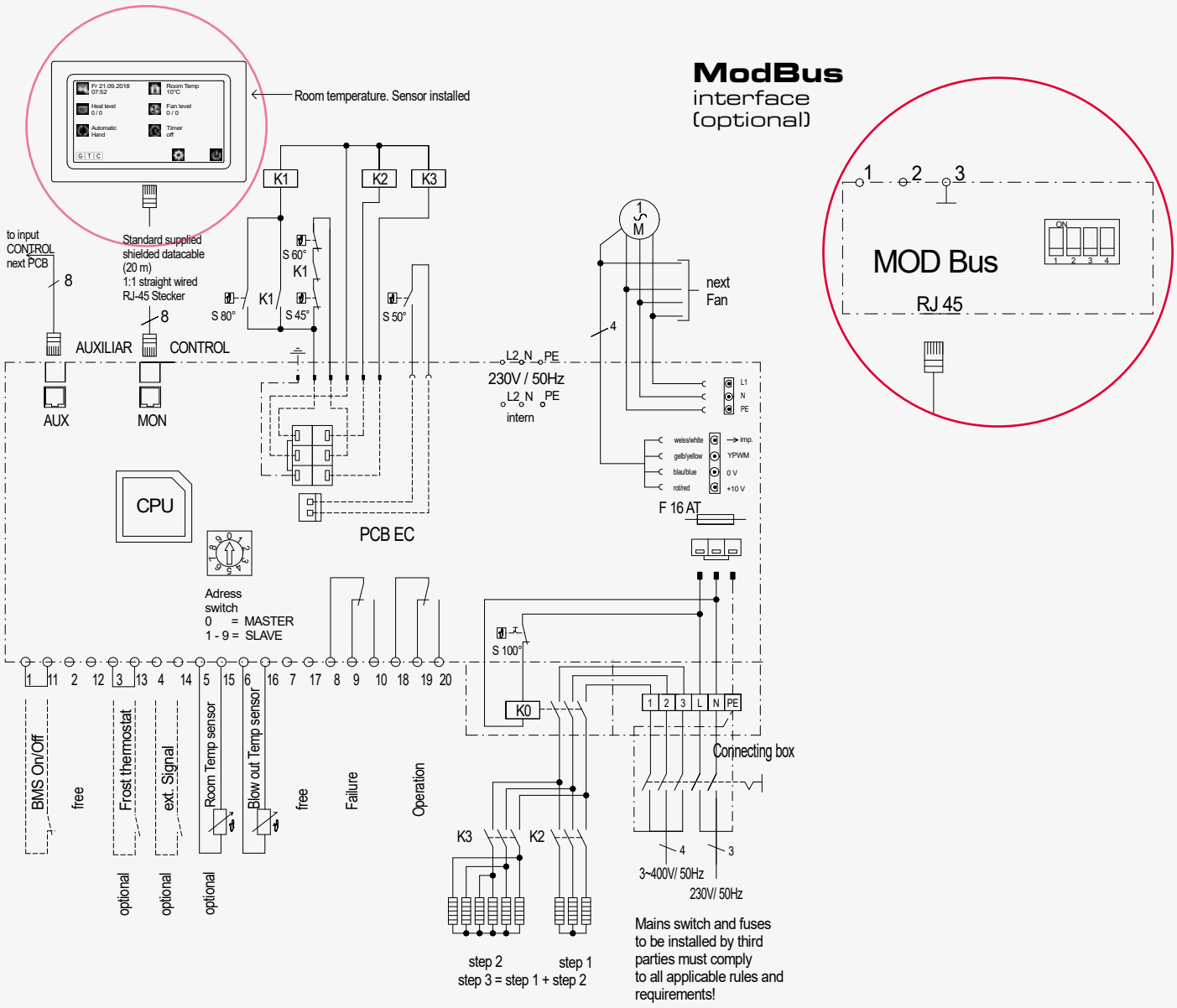
Multilingual, menu-driven electronic control unit for TEKADOOR air curtains with LPHW heating and energy-saving EC fans. A standard feature of the control unit with touch display is a choice between 5-stage or stageless fan control, which can be selected individually by the operator. The relevant operating 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.

COLUM EC

CIRCUIT DIAGRAM FOR
ELECTRICAL HEAT EXCHANGER



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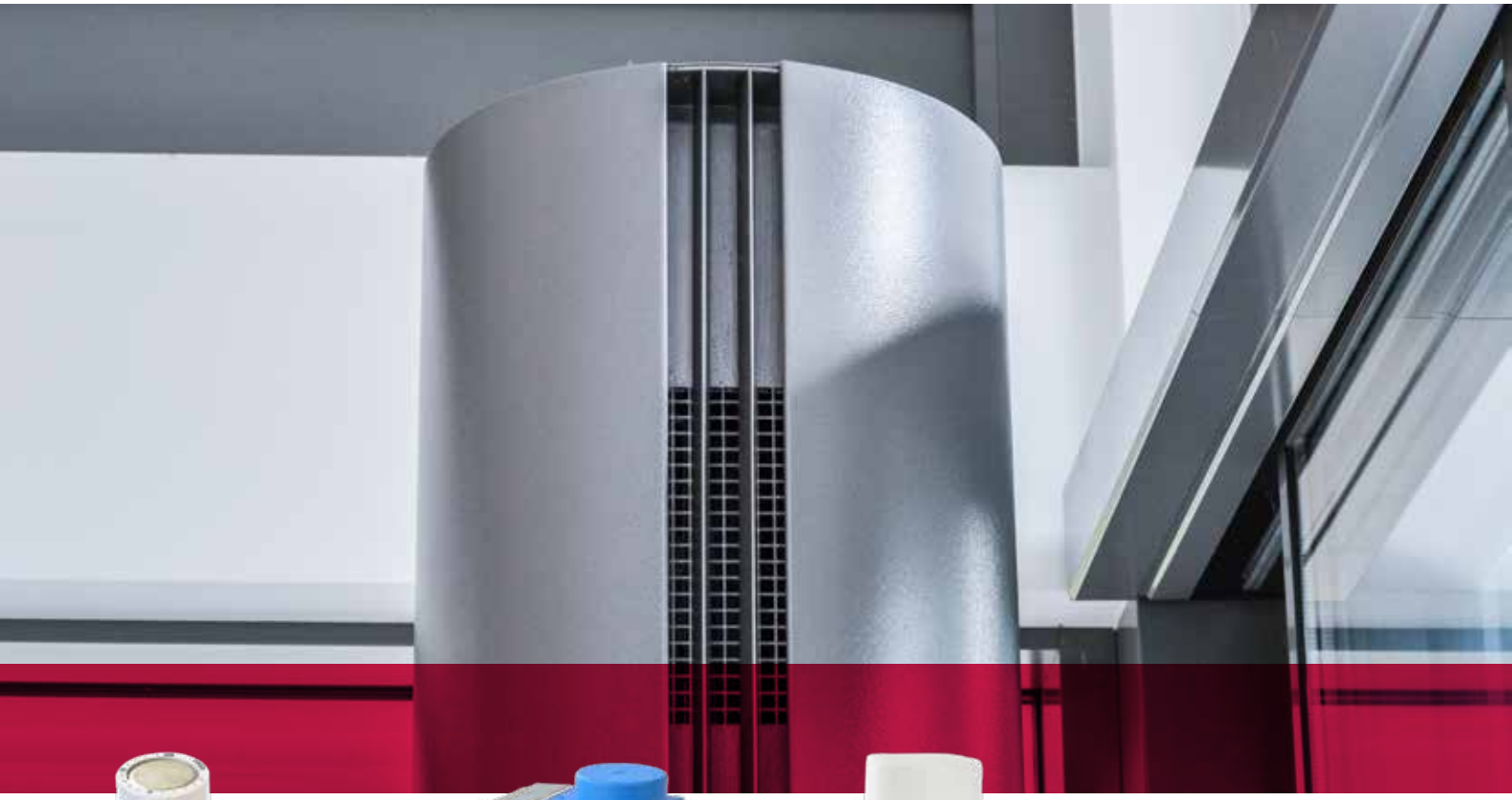
CONTROL UNIT GTC E EC

Multilingual, menu-driven electronic control unit for TEKADOOR air curtains with LPHW heating and energy-saving EC fans. 5-stage fan operation or stageless fan control – easy to adjust on the control unit using the touch display. The electric heater can be activated in 3 stages.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 AT – automatic operation via constant discharge temperature
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. A constant discharge temperature can be set via an optional cable temperature sensor. This enables optimisation of the shielding performance. A week timer is incorporated as standard, enabling up to 12 different switching times to be programmed per week. 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.

COLUM 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

COLUM EC 2000

TECHNICAL DATA

Design based on:

recommended operating point
intake temperature tLE = +20 °C
discharge temperature tLA = +34 °C
throw distance = up to 2.50 m

COLUM EC 2000			2001	2001.5	2002	2002.5	2003
Air quantity max.		m^3/h	1800	2700	3600	4500	5400
Heating capacity rated[1]	LPHW 70 / 50 °C	kW	8.5	12.7	17.0	21.2	25.5
	LPHW 60 / 40 °C	kW	8.5	12.7	17.0	21.2	25.5
Flow rate	LPHW 70 / 50 °C	m^3/h	0.37	0.56	0.75	0.93	1.30
	LPHW 60 / 40 °C	m^3/h	0.37	0.55	0.74	0.92	1.29
Water resistance	LPHW 70 / 50 °C	kPa	0.5	5.7	2.4	3.2	4.1
	LPHW 60 / 40 °C	kPa	3.8	7.0	4.5	3.2	4.2
Nominal connection sizes	Internal thread	Inches	2 x 3/4"	2 x 3/4"	2 x 3/4"	2 x 3/4"	2 x 3/4"
	Flow/return	DN	20	20	20	20	20
EC fans	Voltage	V	230 / 1 / N / PE				
	Frequency	Hz	50				
	Current consumption	A	2.1	3.1	4.1	5.1	7.2
	Motor power	kW	0.3	0.5	0.6	0.8	0.9
Electric heater 3-stage	Voltage	V	400 / 3 / N / PE				
	Frequency	Hz	50				
	Heating capacity	kW	3/6/9	4/8/12	6/12/18	6/12/18	10/20/30
Sound pressure level[2]	Highest setting	dB(A)	58	59	60	61	62
Drawing dimension	Unit height/width (A)	mm	1000	1500	2000	2500	3000
	Diameter	mm	400	400	400	400	400
Weight		kg	50	70	90	100	134

* 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. Sound pressure level may very depending on surrounding conditions.

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

COLUM EC 3000

TECHNICAL DATA

TEKADOOR®

Design based on:

recommended operating point
intake temperature tLE = +20 °C
discharge temperature tLA = +34 °C
discharge height = up to 2.80 m

COLUM EC 3000			3001	3001.5	3002	3002.5	3003
Air quantity max.		m^3/h	2700	3600	5400	6300	7200
Heating capacity rated[1]	LPHW 70 / 50 °C	kW	12.7	17.0	25.5	29.7	34.0
	LPHW 60 / 40 °C	kW	12.7	17.0	25.5	29.7	34.0
Flow rate	LPHW 70 / 50 °C	m^3/h	0.56	0.75	1.11	1.31	1.49
	LPHW 60 / 40 °C	m^3/h	0.55	0.74	1.11	1.29	1.48
Water resistance	LPHW 70 / 50 °C	kPa	0.8	2.8	3.7	5.2	7.2
	LPHW 60 / 40 °C	kPa	1.7	3.7	4.2	6.1	7.2
Nominal connection sizes	Internal thread	Inches	2 x 3/4"	2 x 3/4"	2 x 3/4"	2 x 3/4"	2 x 3/4"
	Flow/return	DN	20	20	20	20	20
EC fans	Voltage	V	230 / 1 / N / PE				
	Frequency	Hz	50				
	Current consumption	A	3.1	4.1	6.2	7.2	8.2
	Motor power	kW	0.5	0.6	0.9	1.1	1.2
Electric heater 3-stage	Voltage	V	400 / 3 / N / PE				
	Frequency	Hz	50				
	Heating capacity	kW	5/10/15	7.5/15/22.5	10/20/30	10.7/21.4/32	10.7/21.4/32
Sound pressure level[2]	Highest setting	dB(A)	60	61	62	63	64
Drawing dimension	Unit height/width (A)	mm	1000	1500	2000	2500	3000
	Diameter	mm	400	400	400	400	400
Weight		kg	62	77	103	135	145

* 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. Sound pressure level may very depending on surrounding conditions.

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

COLUM EC 4000

TECHNICAL DATA

Design based on:

recommended operating point
intake temperature tLE = +20 °C
discharge temperature tLA = +34 °C
throw distance = up to 3.20 m

COLUM EC 4000			4001	4001.5	4002	4002.5	4003
Air quantity max.		m^3/h	4500	5100	7300	9800	12000
Heating capacity rated[1]	LPHW 70 / 50 °C	kW	21.2	24.0	34.4	46.2	56.6
	LPHW 60 / 40 °C	kW	21.2	24.0	34.4	46.2	56.6
Flow rate	LPHW 70 / 50 °C	m^3/h	0.93	1.05	4.51	2.02	2.48
	LPHW 60 / 40 °C	m^3/h	0.92	1.05	1.50	2.01	2.47
Water resistance	LPHW 70 / 50 °C	kPa	4.5	4.1	9.1	4.4	6.9
	LPHW 60 / 40 °C	kPa	3.2	4.1	3.7	4.5	7.0
Nominal connection sizes	Internal thread	Inches	2 x 1"	2 x 1"	2 x 1"	2 x 1"	2 x 1"
	Flow/return	DN	25	25	25	25	25
EC fans	Voltage	V	230 / 1 / N / PE				
	Frequency	Hz	50				
	Current consumption	A	6.0	6.5	9.1	12.1	15.0
	Motor power	kW	1.1	1.4	2.1	2.7	3.5
Electric heater 3-stage	Voltage	V	400 / 3 / N / PE				
	Frequency	Hz	50				
	Heating capacity	kW	On request				
Sound pressure level[2]	Highest setting	dB(A)	64	64	64	65	67
Drawing dimension	Unit height/width (A)	mm	1000	1500	2000	2500	3000
	Diameter	mm	600	600	600	600	600
Weight		kg	85	120	160	200	240

* 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. Sound pressure level may very depending on surrounding conditions.

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

COLUM EC 5000

TECHNICAL DATA

TEKADOOR®

Design based on:

recommended operating point
intake temperature tLE = +20 °C
discharge temperature tLA = +34 °C
discharge height = up to 3.60 m

COLUM EC 5000			5001	5001.5	5002	5002.5	5003
Air quantity max.		m^3/h	4900	7300	9800	12000	14200
Heating capacity rated[1]	LPHW 70 / 50 °C	kW	23.1	34.4	46.2	56.6	67.0
	LPHW 60 / 40 °C	kW	23.1	34.4	46.2	56.6	67.0
Flow rate	LPHW 70 / 50 °C	m^3/h	1.01	1.51	2.02	4.48	2.93
	LPHW 60 / 40 °C	m^3/h	1.01	1.50	2.01	4.45	2.92
Water resistance	LPHW 70 / 50 °C	kPa	1.3	2.9	7.9	7.8	9.6
	LPHW 60 / 40 °C	kPa	3.8	2.4	4.7	7.8	9.7
Nominal connection sizes	Internal thread	Inches	2 x 1 1/4"	2 x 1 1/4"	2 x 1 1/4"	2 x 1 1/4"	2 x 1 1/4"
	Flow/return	DN	32	32	32	32	32
EC fans	Voltage	V	230 / 1 / N / PE				
	Frequency	Hz	50				
	Current consumption	A	6.1	9.1	12.1	15.2	18.2
	Motor power	kW	1.4	2.1	2.8	3.5	4.1
Electric heater 3-stage	Voltage	V	400 / 3 / N / PE				
	Frequency	Hz	50				
	Heating capacity	kW	On request				
Sound pressure level[2]	Highest setting	dB(A)	63	64	65	66	68
Drawing dimension	Unit height/width (A)	mm	1000	1500	2000	2500	3000
	Diameter	mm	600	600	600	600	600
Weight		kg	120	155	200	235	265

* 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. Sound pressure level may very depending on surrounding conditions.

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

COLUM 2000 DX-H EC

TECHNICAL DATA
ONLY HEATING MODE POSSIBLE

Design based on:

recommended operating point
intake temperature tLE = +20 °C
discharge temperature tLA = +34 °C
throw distance = up to 2.50 m
heating gas temperature = 70° C
condensation temperature = 50 °C
condensate exit temp. = 45 °C
operating pressure = max. 45 bar

COLUM 2000 DX-H EC			2001	2001.5	2002	2002.5
Air quantity max.		m^3/h	1800	2700	3600	4500
Power[1]	DX heating capacity	kW	8.1	12.5	16.9	21.3
Delivery and intake line	Connections	mm	10/16	10/16	10/18	10/22
EC fans[3]	Voltage	V	230 / 1 / N / PE			
	Frequency	Hz	50			
	Max. current consumption	A	2.4	3.6	4.7	5.9
	Max. motor power	kW	0.3	0.5	0.7	0.8
Sound pressure level[2]	Highest setting	dB(A)	58	59	60	61
Drawing dimension	Unit height/width (A)	mm	1000	1500	2000	2500
	Diameter	mm	500	500	500	500
Weight		kg	50	70	90	100

* WE RESERVE THE RIGHT TO MAKE TECHNICAL CHANGES

1. Rated operation based on operating point (see above).
2. Measured at a lateral distance of 3 m. Sound pressure level may very depending on surrounding conditions.
3. Control voltage 0-10 V.

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

COLUM 3000 DX-H EC

TECHNICAL DATA
ONLY HEATING MODE POSSIBLE

Design based on:

recommended operating point
intake temperature tLE = +20 °C
discharge temperature tLA = +34 °C
throw distance = up to 2.80 m
heating gas temperature = 70° C
condensation temperature = 50 °C
condensate exit temp. = 45 °C
operating pressure = max. 45 bar

COLUM 3000 DX-H EC			3001	3001.5	3002	3002.5
Air quantity max.		m^3/h	2700	3600	5400	6300
Power[1]	DX heating capacity	kW	12.7	17.0	25.7	29.6
Delivery and intake line	Connections	mm	10/16	10/18	10/22	10/22
EC fans[3]	Voltage	V	230 / 1 / N / PE			
	Frequency	Hz	50			
	Current consumption	A	3.5	4,7	7.1	8.2
	Motor power	kW	0.5	0.7	1.0	1.2
Sound pressure level[2]	Highest setting	dB(A)	60	61	62	63
Drawing dimension	Unit height/width (A)	mm	1000	1500	2000	2500
	Diameter	mm	500	500	500	500
Weight		kg	62	77	103	135

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1. Rated operation based on operating point (see above).
2. Measured at a lateral distance of 3 m. Sound pressure level may very depending on surrounding conditions.
3. Control voltage 0-10 V.

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

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