TEKADOOR®

TIC 7000
TIC/TIC-S 6000
TIC 3000

INDUSTRIAL DOOR AIR CURTAIN

INDIVIDUAL
INNOVATIVE
ENERGY-SAVING

ERP conform

TIC
INDUSTRIAL DOOR AIR CURTAIN

Applications
The TIC series TEKADOOR door air curtain is suitable for shielding larger doors in the industrial, warehousing and logistics sectors. This not only ensures draught-free transport of goods through entry and exit doors for the people working there, but also ideally utilises the area around the door.

Special design
Installation-ready industrial door air curtains either as heated or recirculated air curtains (without heat exchanger), in suspended or floor mounted versions. Both variants can be installed in series. Depending on the door width, the floor mounted vertical unit can be installed next to the door, either on one side or both sides. The appropriate TIC modules can be installed on top of each other, depending on the door height.
For the suspended variant, multiple modules can be installed next to each other, depending on the door width. In the higher specification variant, the air exitsTIC 6000 & TIC 7000 via the Coanvara discharge nozzle – a multi-nozzle system with optimised, drop-shaped profiles. Using the Coanda effect to bring the individual streams together results in a very broad, homogenous airstream. The purposely long profiles, which are parallel and steplessly adjustable in both directions (up to 40°), act as a flow straightener. This ensures the stream mixing factor remains low, as desired. The selected discharge temperature is carried far down to the floor, effectively preventing the room from cooling down. This means the discharged air is heated less than with air curtains using a conventional discharge system.
For the basic TIC-S design, the air is discharged via a conical discharge box – located centrally – without a discharge grill.
For the TIC 3000, the air is discharged through a fully adjustable system of fins.

The housing
Industrial air curtain unit manufactured with a robust, self-supporting, powder coated sheet steel housing. Available in the colour RAL 7032 (pebble grey) as standard, or powder coated in standard RAL tones depending on the wishes of the client.
In contrast, the housings of the TIC 3000, TIC-S 6000 und TIC 7000 are manufactured from galvanised sheet steel.
For the floor mounted vertical unit, the floor console and connecting pieces for series installation are included as standard.
For the suspended version, fixation/suspension is performed using M10 rivet nuts.

Advantages at a glance TIC

- Made in Germany
- ErP conform
- Robust, self-supporting sheet steel housing
- Large throw distance, optimum shielding
- Simple to install
- Optional available with EC fans
- Optional available with electrical heat exchanger (230V fans)

Heating media

Heat exchangers for different heating media

LPHW: For normal temperature LPHW 70/50 °C or low-temperature LPHW 60/40 °C, other temperatures available on request. Recirculating air operation without heating is possible (without heating media).

TIC 3000 E: 3-stage heat exchanger, spiral-form, corrosion resistant, with thermal overheating protection.

The fans

Axial fans with three-phase motor, IP 54 degree of protection, motor protection via thermal contacts, including protection guard. These fans comply with the EU Directive ErP regarding minimum efficiency requirements for fans within the EU.

Mounting

Easy installation thanks rivet buts (M10) on top of the unit.

Maintenance

In the TIC series, a filter is not necessary thanks to the purposefully large distance between the fins on the electric heater. This enables easy cleaning of the units.

Control unit

TIC 7000 / TIC 6000 / TIC-S 6000 / TIC 3000

5 stage HATI speed controller. 400 V / 50 Hz according to VDE 0550 in the housing, with step switch, fault and operation lights, restart interlock for full motor protection, manual to automatic switching and contactor for external signal encoder (e.g. door contact).

Control unit

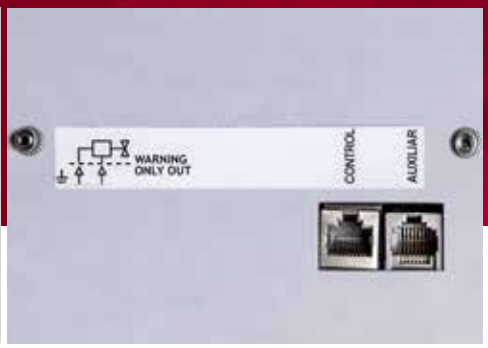
TIC 3000 EC

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 control board is preassembled in the air curtain and 20m of preassembled data cable (connection between the door air curtain and control unit) are included.

TIC7000 / TIC-S 6000 / TIC 3000

DETAILS



Connections TIC

Heating connections – flow and return (dimensions depend on the model) – at the front side of the unit as standard for easy connection to the on-site heating system. Optionally, the connections can also be located at the side.

Connection box TIC

Connection box (400 V – IP 54 according to VDE 0550) in the unit, easy to open from the outside.

Data cable connection/interface

Simple, standard plug and play connection of the data cable and an optional magnetic valve on top side 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.

Coanvara discharge nozzle
TIC 7000 / TIC 6000
(TIC-S 6000 optional)

Multi-nozzle system with optimised, drop-shaped profiles, steplessly adjustable in both directions (parallel), up to 40°.

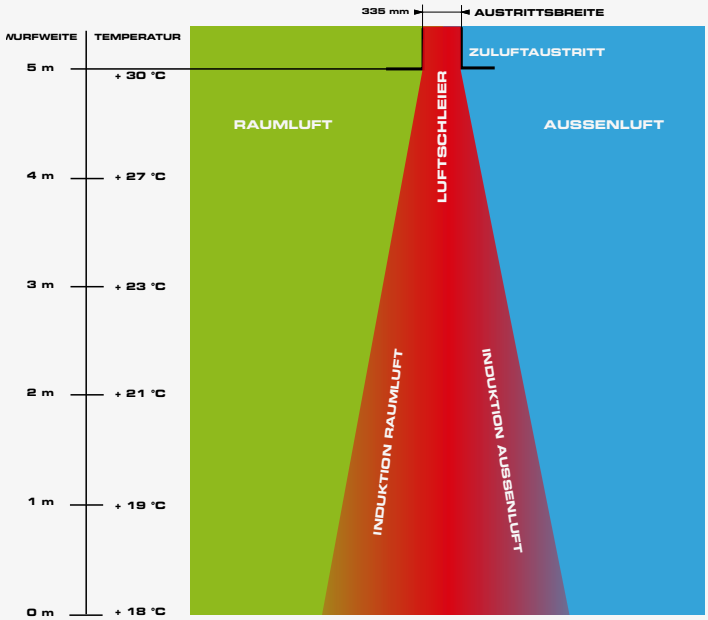
Alu-Discharge-fin-system
TIC 3000

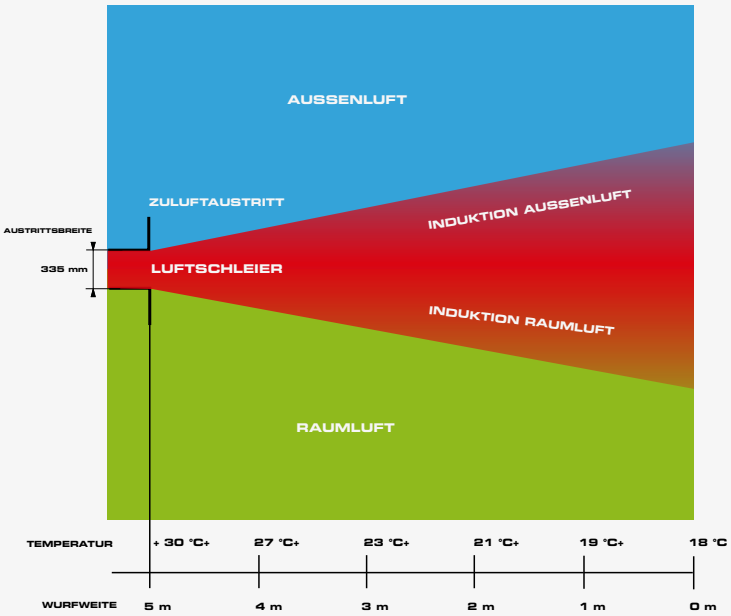
Completely infinitely adjustable in both directions.
For a linear, smoothly directed airflow.

THE INDUSTRIAL AIR CURTAIN

AN INVESTMENT WHICH PAYS OFF!

Basic illustration of the air curtain on the stream axis:





Side section

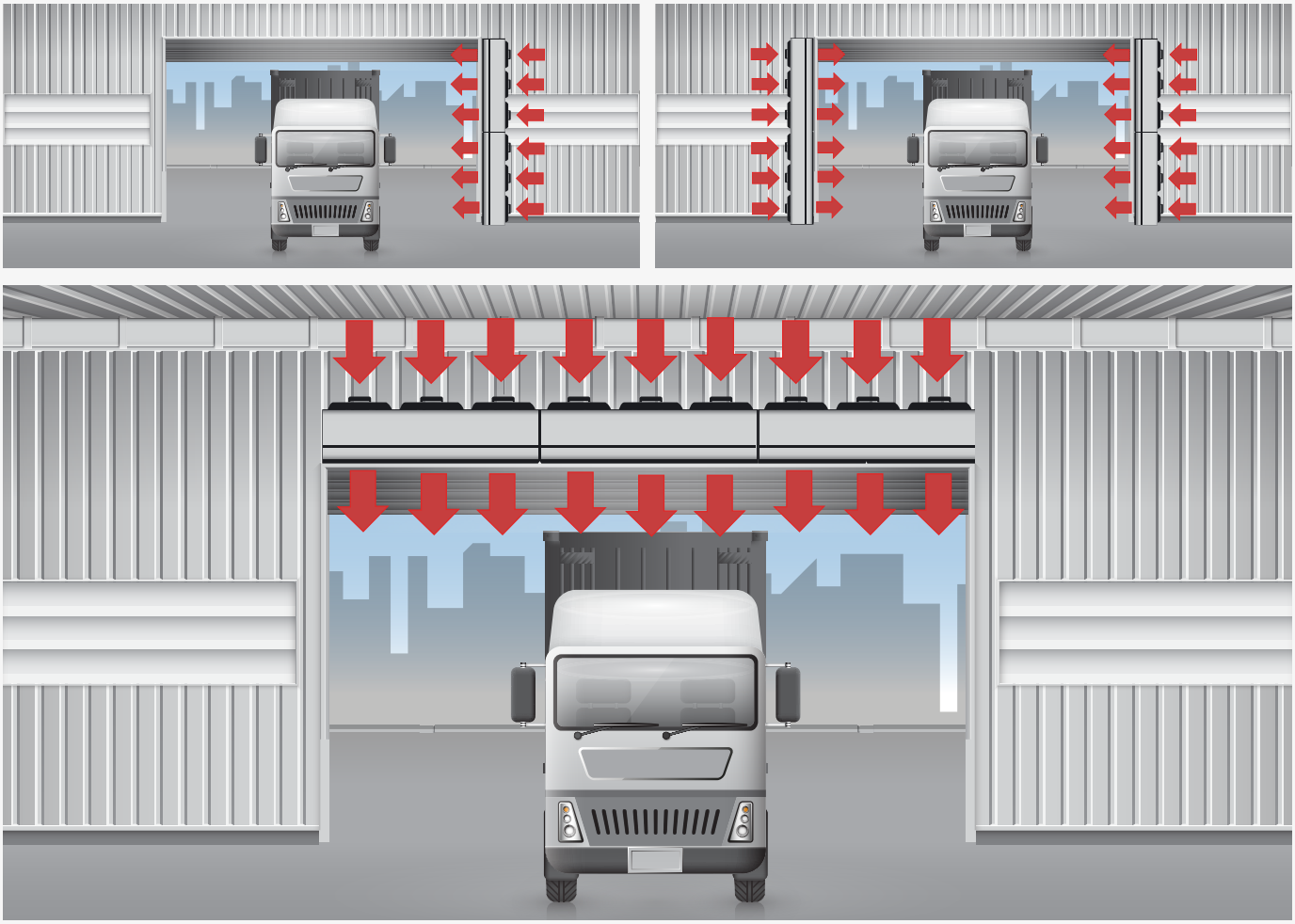
Air curtain mixing temperature in the entry area of a suspended industrial air curtain, using a TIC 6001.8 at rated operation as an example. Temperature: + 5 °C outside temperature and + 30 °C discharge temperature.

Vertical section

Air curtain mixing temperature in the entry area of a floor mounted industrial air curtain, using a TIC 6001.8 at rated operation as an example. Temperature: + 5 °C outside temperature and + 30 °C discharge temperature. The output parameters of our door air curtain units are calculated so that there is still a residual speed of approximately 1.5 m/s - 2 m/s or more after the desired stream length, as well as a room temperature of about 18°C. This is the only way to ensure sufficient function.

TIC 6000 /

Installation options:

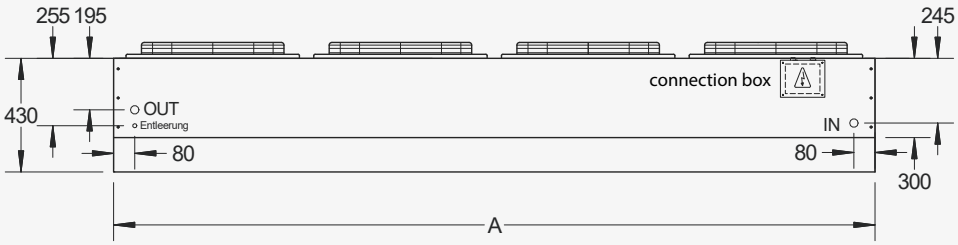


TIC-S 6000

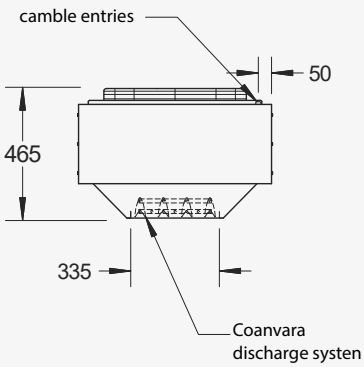
TIC 7000
INSTALLATION VARIANTS

Suspended

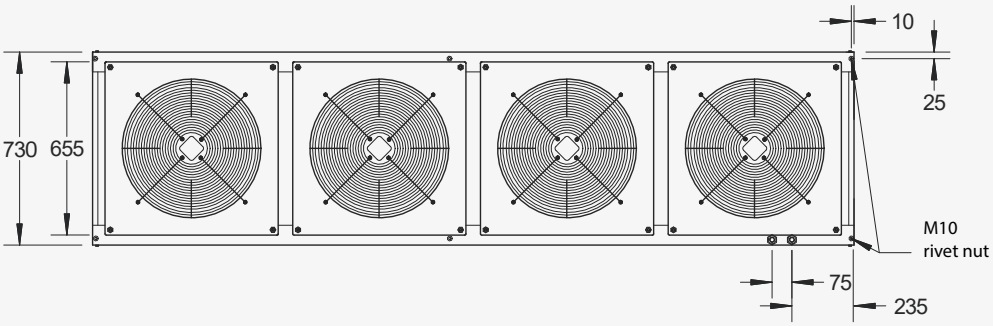
FRONT VIEW



SIDE VIEW



PLAN VIEW



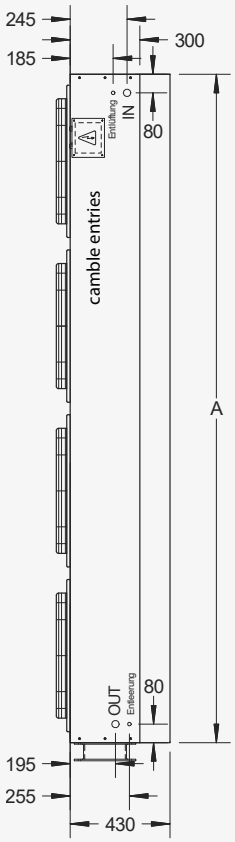
A = UNIT LENGTH (1440 mm, 2160 mm, 2880 mm)

* WE RESERVE THE RIGHT TO MAKE TECHNICAL CHANGES

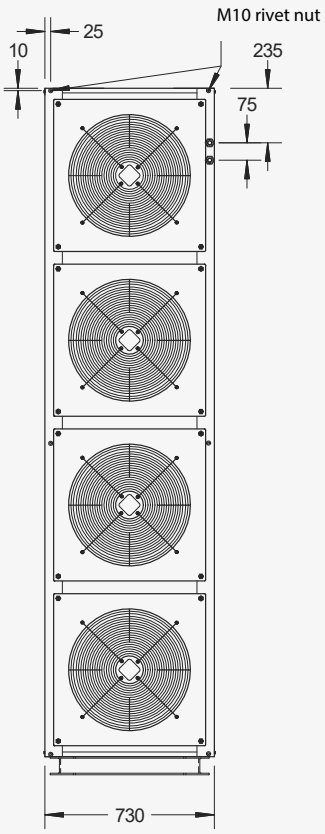
Connection-ready free-hanging door air curtain unit for visible installation directly above the door.
Ambient air intake is from above, from the ceiling area.

Floor mounted

DISCHARGE SIDE

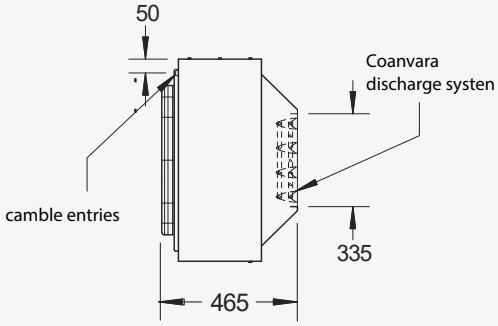


SIDE VIEW



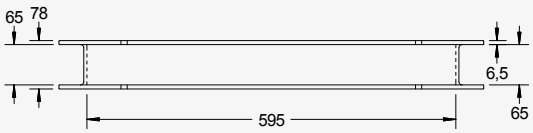
INTAKE SIDE

PLAN VIEW (FROM RIGHT)

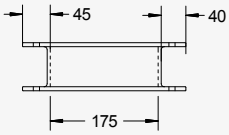


Floor console

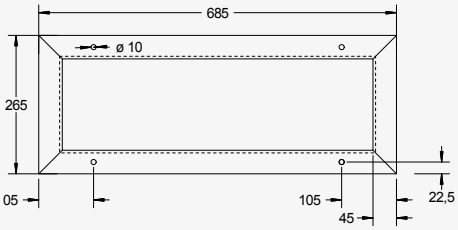
FRONT VIEW



SIDE VIEW



TOP VIEW



A = UNIT LENGTH (1440 mm, 2160 mm, 2880 mm)

* WE RESERVE THE RIGHT TO MAKE TECHNICAL CHANGES

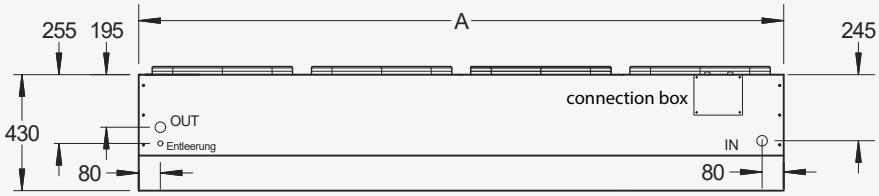
Connection-ready floor mounted door air curtain unit for visible installation directly next to the door.
Ambient air intake is from the side, on the room side.

TIC & TIC-S 6000
INSTALLATION VARIANTS

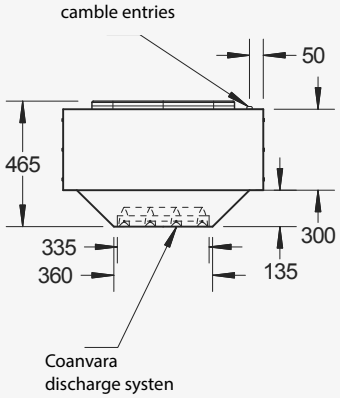
Suspended

NOTE: TIC-S 6000 DOESN'T INCLUDE COANVARA-DIS-CHARGE-NOZZLE IN STANDARD

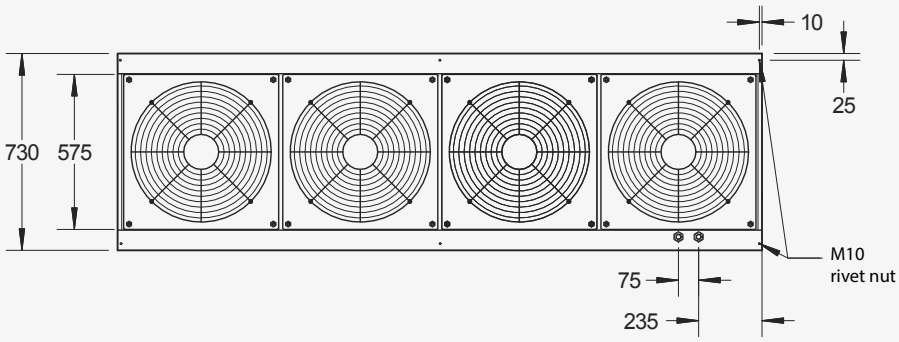
FRONT VIEW



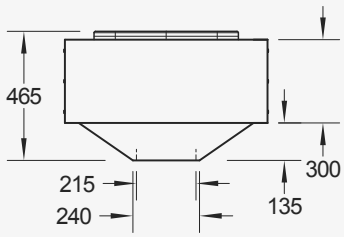
SIDE VIEW



PLAN VIEW



PLAN VIEW TIC-S 6000



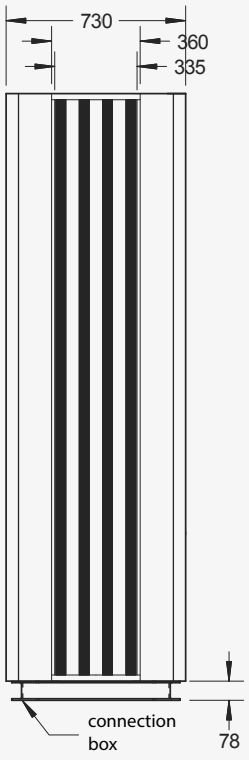
A = UNIT LENGTH (1200 mm, 1800 mm, 2400 mm, 3000 mm)

* WE RESERVE THE RIGHT TO MAKE TECHNICAL CHANGES

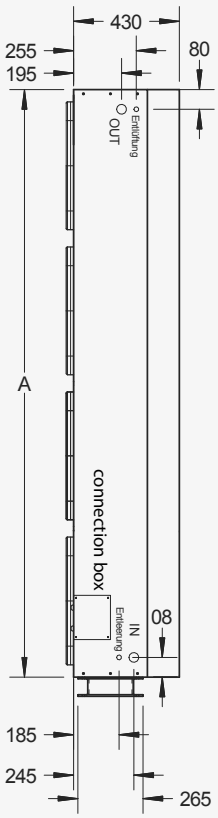
Connection-ready free-hanging door air curtain unit for visible installation directly above the door.
Ambient air intake is from above, from the ceiling area.

Floor mounted

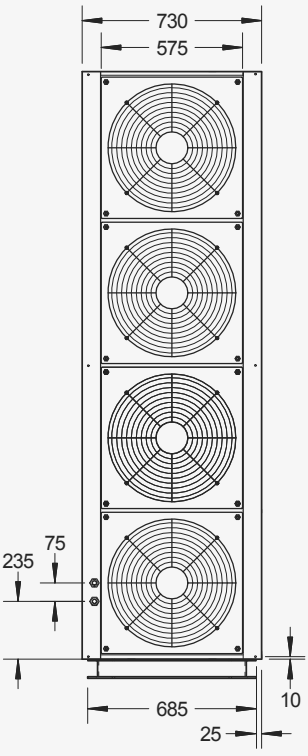
DISCHARGE SIDE



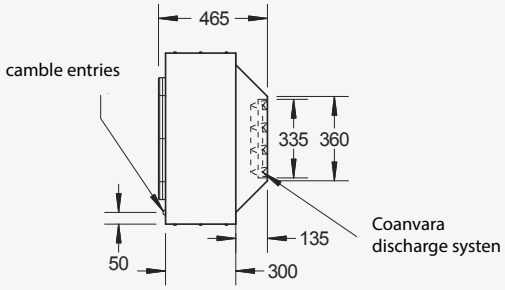
SIDE VIEW



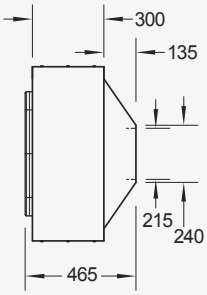
INTAKE SIDE



PLAN VIEW (FROM LEFT)
TIC 6000

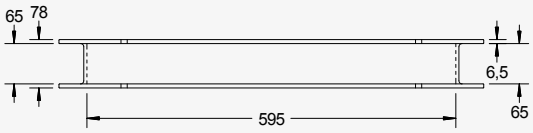


PLAN VIEW (FROM LEFT)
TIC-S 6000

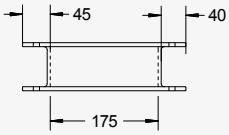


Floor console

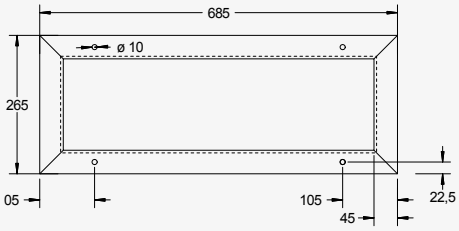
FRONT VIEW



SIDE VIEW



TOP VIEW

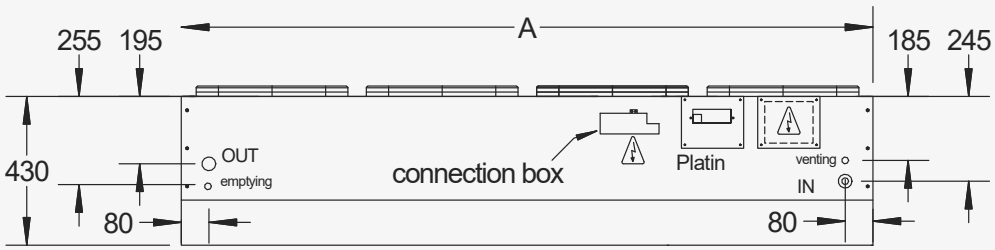


A = UNIT LENGTH (1200 mm, 1800 mm, 2400 mm, 3000 mm * WE RESERVE THE RIGHT TO MAKE TECHNICAL CHANGES

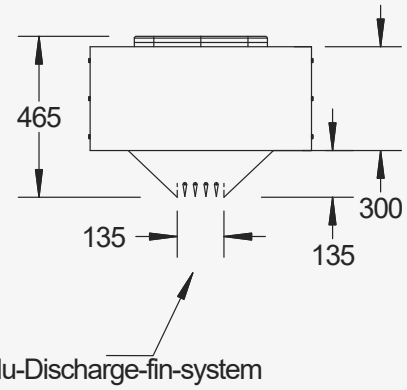
Connection-ready floor mounted door air curtain unit for visible installation directly next to the door.
Ambient air intake is from the side, on the room side.

Suspended

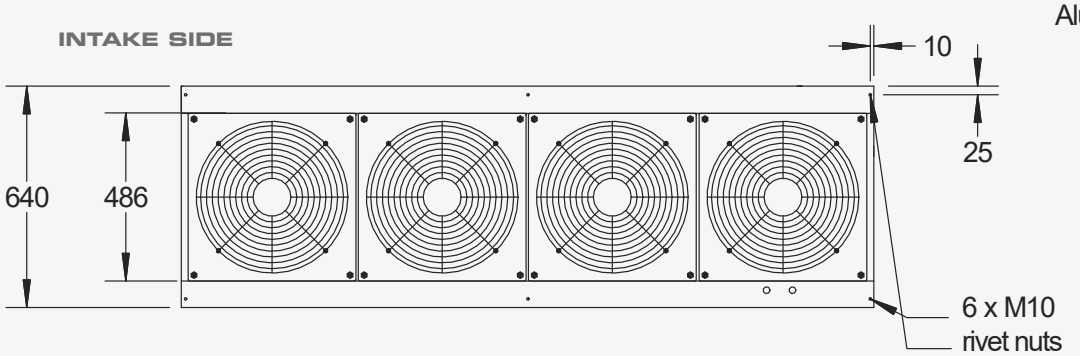
BOTTOM VIEW



SIDE VIEW



INTAKE SIDE



TECHNICAL DRAWING
TIC 3000 W/E EC/AC, 230V, 400V

SCAN AND
DOWNLOAD THE
TECHNICAL DRAWING

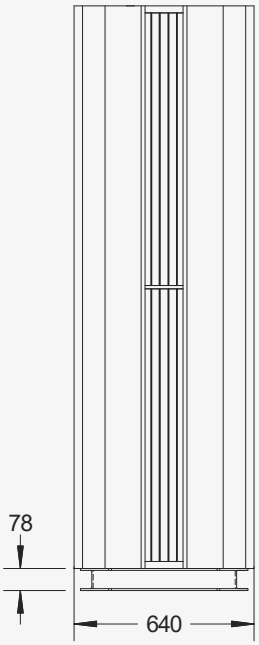
A = UNIT LENGTH (1500 MM, 2000 MM)

* WE RESERVE THE RIGHT TO MAKE TECHNICAL CHANGES

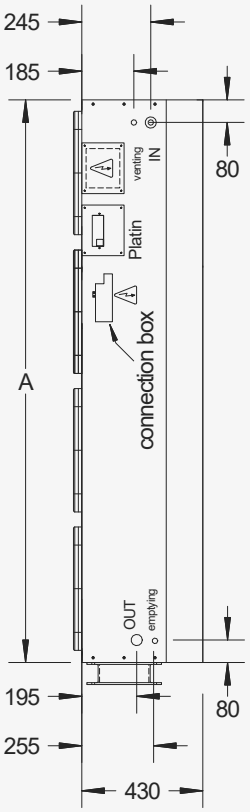
Connection-ready free-hanging door air curtain unit for visible installation directly above the door.
Ambient air intake is from above, from the ceiling area.

Floor mounted

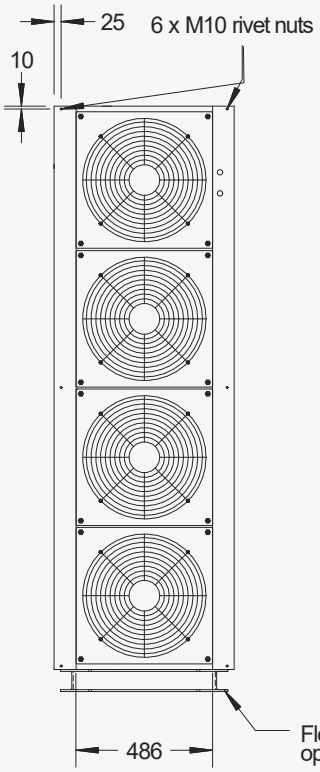
OUTLET SIDE



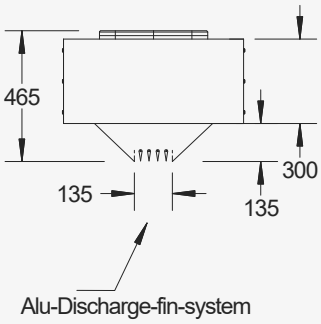
SIDE VIEW



INTAKE SIDE

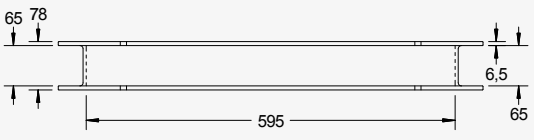


PLAN VIEW

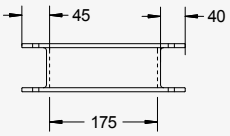


Floor console

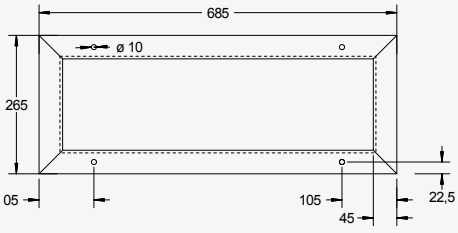
FRONT VIEW



SIDE VIEW



TOP VIEW



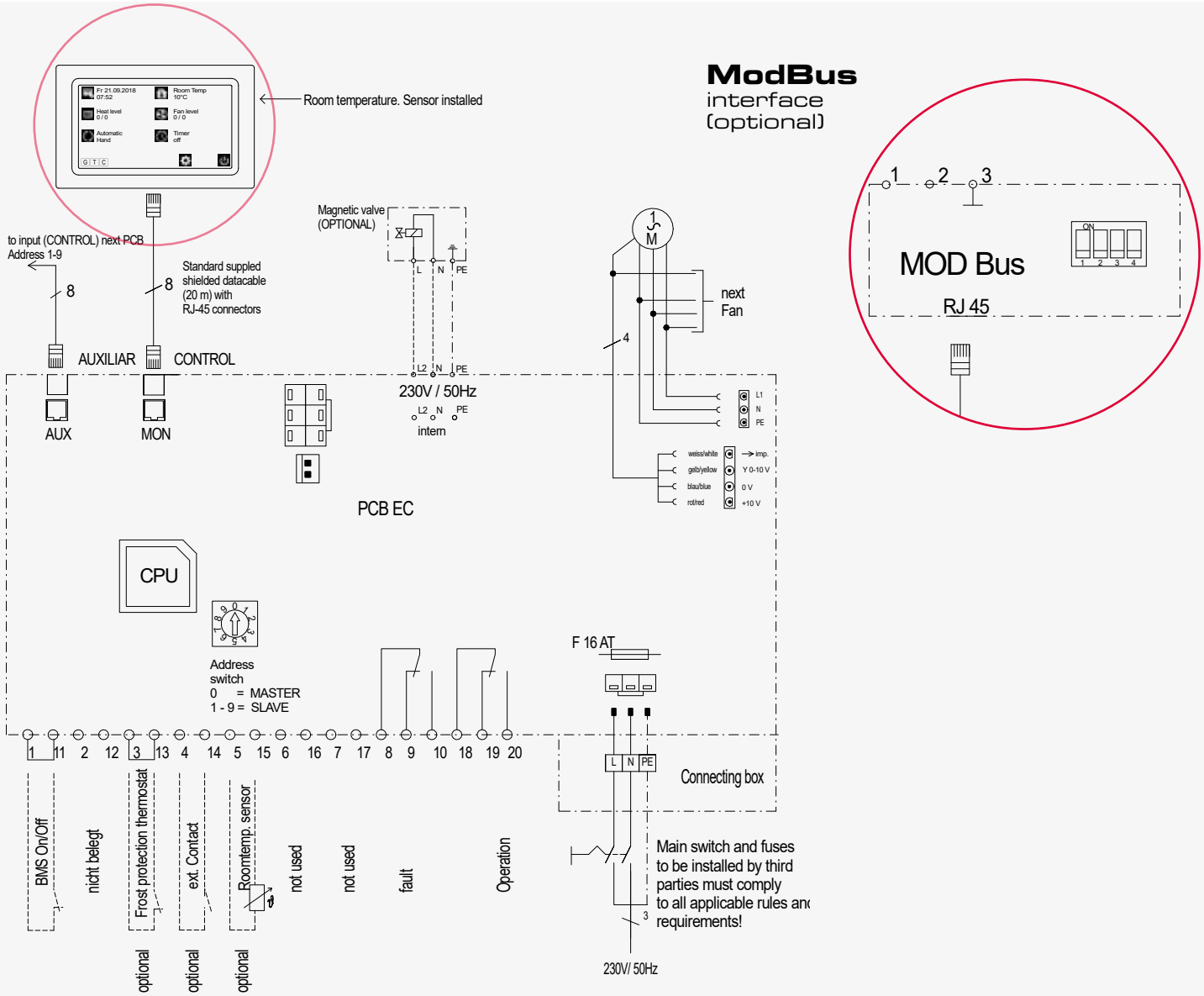
A = UNIT HEIGHT (1500 MM, 2000 MM)

* WE RESERVE THE RIGHT TO MAKE TECHNICAL CHANGES

Connection-ready floor mounted door air curtain unit for visible installation directly next to the door.
Ambient air intake is from the side, on the room side.

TIC 3000 EC

STANDARD CIRCUIT DIAGRAM FOR LPHW
(PUMPED WARM WATER)



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CONTROL UNIT GTC 1 EC

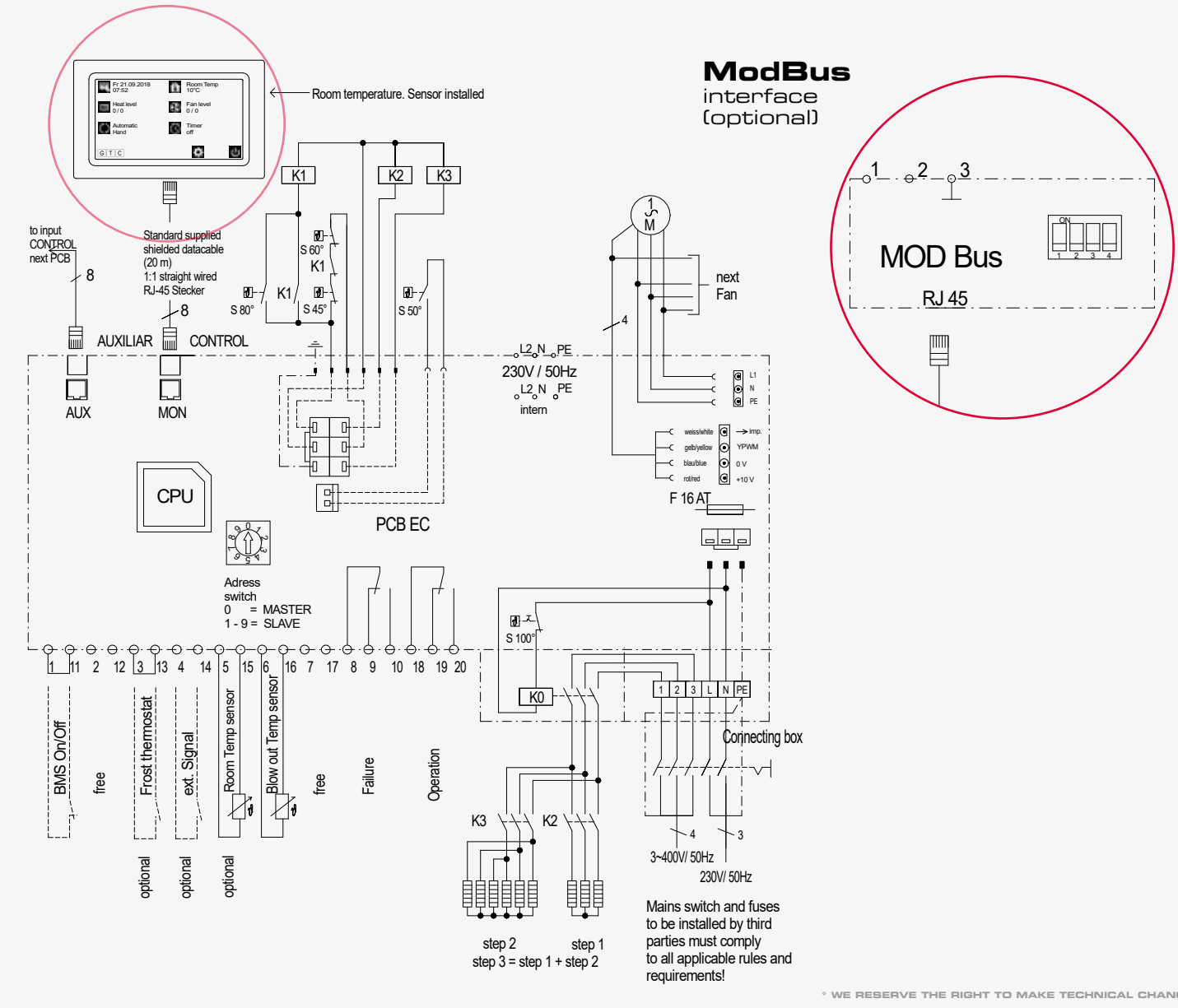
Multilingual, menu-driven electronic control unit for TEKADOOR air curtains with LPHW heating and energy-saving EC fans. A standard feature of the control unit with touch display is a choice between 5-stage or stageless fan control, which can be selected individually by the operator. The relevant operating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

TIC 3000 EC

CIRCUIT DIAGRAM FOR ELECTRICAL HEAT EXCHANGER



° WE RESERVE THE RIGHT TO MAKE TECHNICAL CHANGES

CONTROL UNIT GTC E EC

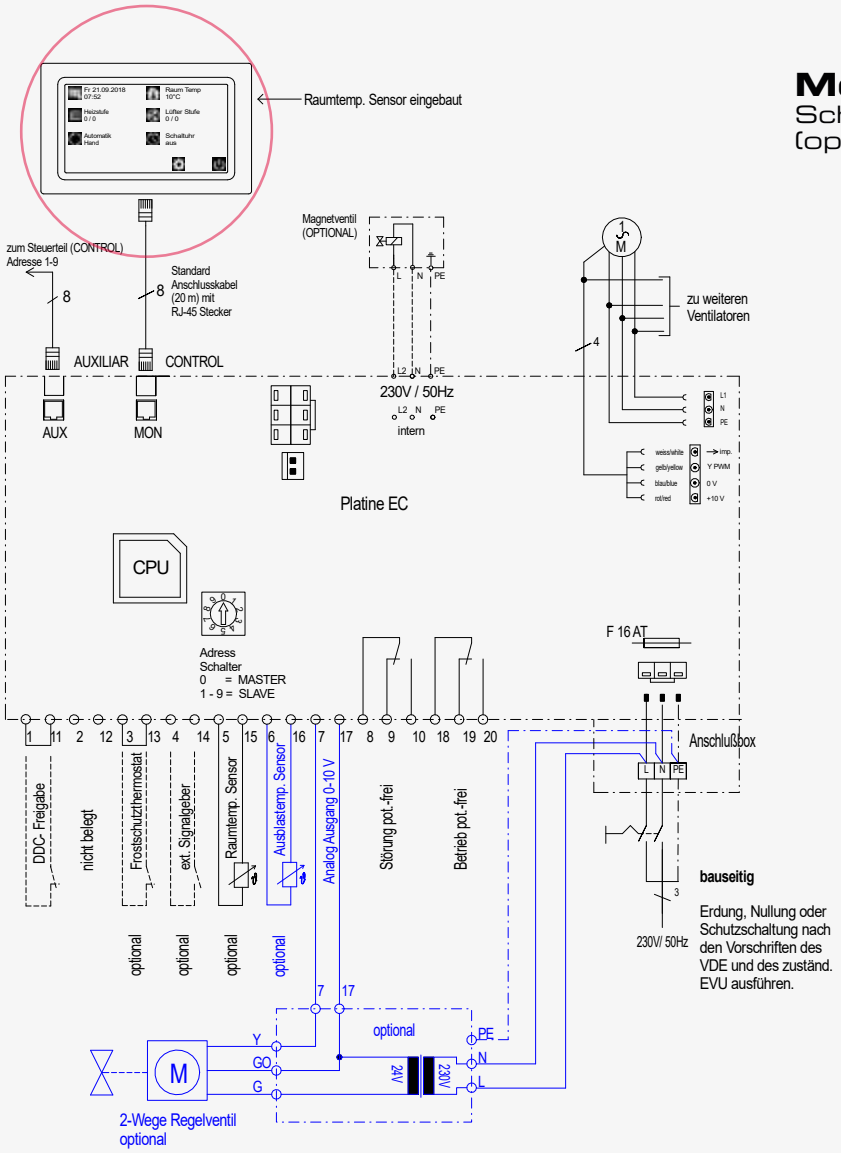
Multilingual, menu-driven electronic control unit for TEKADOOR air curtains with LPHW heating and energy-saving EC fans. 5-stage fan operation or stageless fan control – easy to adjust on the control unit using the touch display. The electric heater can be activated in 3 stages.The relevant operating 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

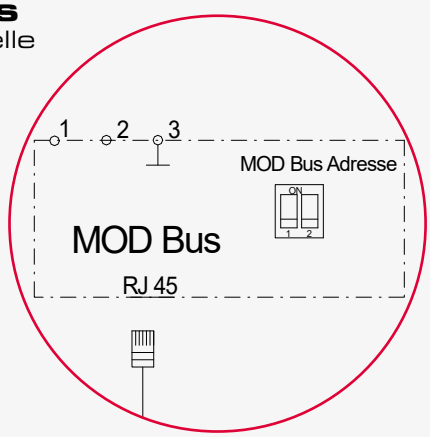
An enabling contact and potential-free operation and malfunction signals are provided for control via an on-site BMS or BEMS. A constant discharge temperature can be set via an optional temperature sensor. This enables optimisation of the shielding performance. A week timer is incorporated as standard, 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.

TIC 3000 EC

CIRCUIT DIAGRAM FOR LPHW (COMFORT)



ModBus
Schnittstelle
(optional)



° WE RESERVE THE RIGHT TO MAKE TECHNICAL CHANGES

EASY-TO-USE CONTROL UNIT GTC 2 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 AT – automatic operation via constant discharge temperature (opt. electronic control valve required)

Auto Kombi – option to combine all individual automatic modes

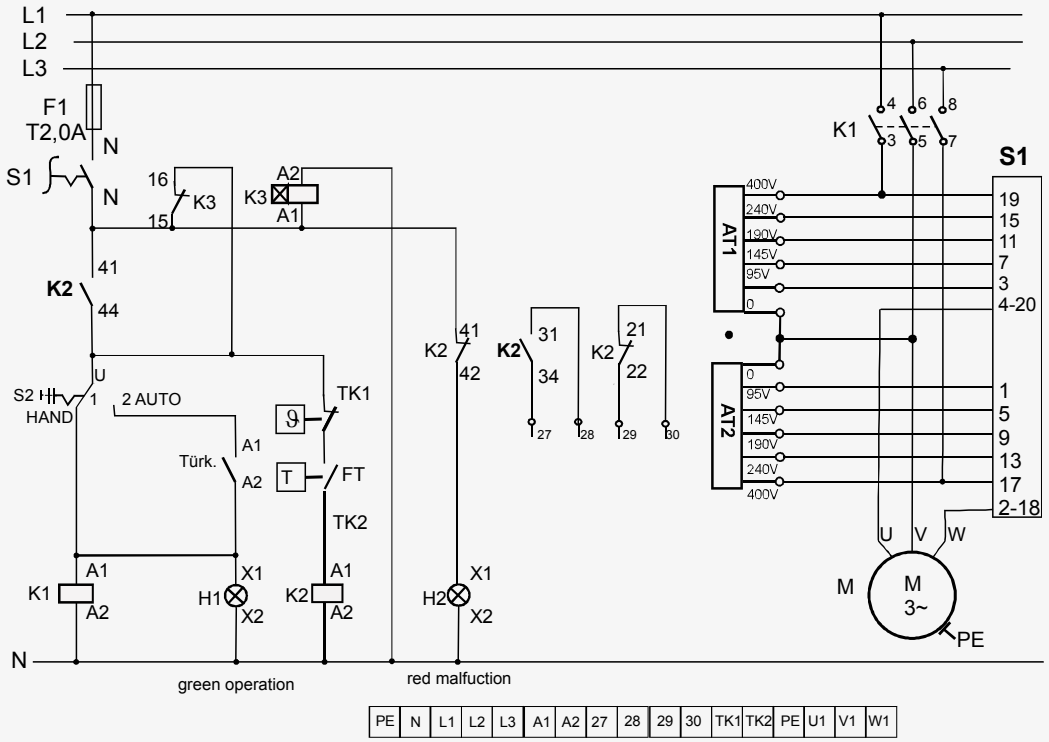
An enabling contact and potential-free operation and malfunction signals are provided for control via an on-site BMS or BEMS. A constant discharge temperature can be set via an optional electronic control valve. This enables optimisation of the shielding performance. A week timer is incorporated as standard, 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.

TIC

STANDARD CIRCUIT DIAGRAM
(NOT FOR PARALLEL CONNECTION
TIC / TIC-S / TIC 3000)

TEKADOOR®



K1- B7-40-00
K2- 55.34.8.230.0040
K3- 80.11.0.240.0000
F1 - Fuse
S1- E12-736-2Na(E16-736-2Na)
S2- E12-11-2
H1- indicating light green
H2- indicating light red

PE,N,L1,L2+L3	= 400V voltage supply
A1+A2	= Door contact / DDC-release (230V50Hz)
27 +28	= pot.-free operation signal
29 +30	= pot.-free malfuction signal
TK1 +TK2	= thermal contact + frost protection
PE,U1,V1+W1	= ventilator

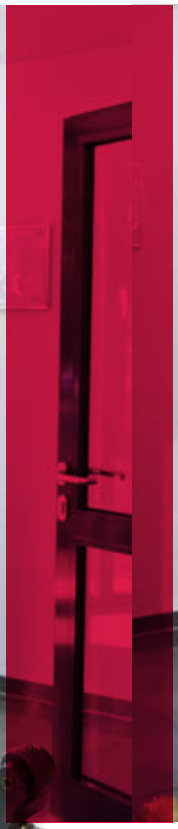
* WE RESERVE THE RIGHT TO MAKE TECHNICAL CHANGES

HATI

5 stage HATI speed controller. 400 V / 50 Hz according to VDE 0550 in the housing, with step switch, fault and operation lights, restart interlock for full motor protection, manual to automatic switching and contactor for external signal encoder (e.g. door contact). Enable contact for on-site BMS, potential-free operation and malfunction signal.

TIC 7000 / TIC-S 6000 / TIC 3000

ACCESSORIES OPTIONAL



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.

Door contact solenoid switch

Scolded the air curtain in the automatic modus in the prese-lected step.

Thermo-electric shut-off valve

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.

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

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.

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

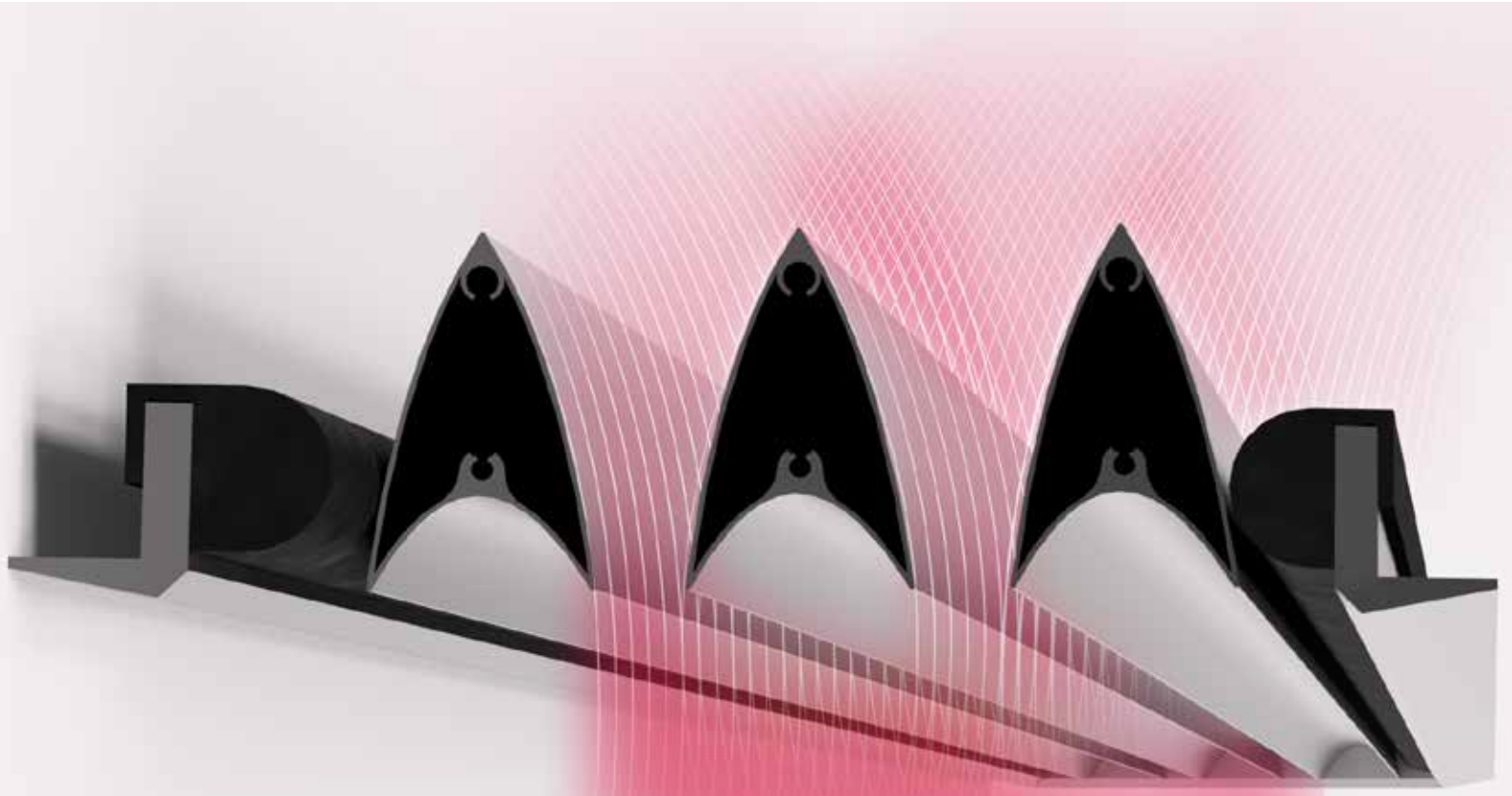
Electronic valve with 0-10V impulse and blow-out temperature sensor completely installed and wired. In combination with the GTC 2 control, a preselected blow-out temperature is kept constant.

Room temperature sensor

Room temperature sensor - RT-FD (only in combination with GTC and GTC E)

* only for devices with 230V motors

TIC 6000
COANVARA FLOW DISCHARGE NOZZLE



PROFILES
INFINITELY ADJUSTABLE
UP TO 40°

The optimised and intentionally long profiles act as a flow straightener to ensure a wide and uniform flow of air, and create the necessary low stream mixing factor.

Compared to conventional discharge systems, the selected discharge temperature is maintained all the way to the ground area, preventing the room from cooling.

TIC 7000
TECHNICAL DATA

Design based on:

recommended operating point
intake temperature tLE = +18 °C
discharge temperature tLA = +30 °C
discharge height = up to 6.00 m

TIC 7000			7001,44	7002,16	7002,88
Total air quantity		m^3/h	10000	15000	20000
Heating capacity rated[1]	LPHW 70 / 50 °C	kW	40,39	60,59	80,78
	LPHW 60 / 40 °C	kW	40,39	60,59	80,78
Flow rate	LPHW 70 / 50 °C	m^3/h	1,77	2,65	3,54
	LPHW 60 / 40 °C	m^3/h	1,76	2,64	3,52
Water resistance	LPHW 70 / 50 °C	kPa	8,25	8,58	4,70
	LPHW 60 / 40 °C	kPa	8,43	8,71	6,16
Nominal connection sizes	Internal thread	Zoll	2 x 1	2 x 1	2 x 1 1/4"
	Flow/return	DN	25	25	32
Fans	Voltage	V		400 / 3 / N / PE	
	Frequency	Hz		50	
	Current consumption	A	2,8	4,2	5,6
	Motor power	kW	1,42	2,13	2,84
Sound pressure level [2]	Highest setting	dB (A)	71	73	75
Drawing dimension	Unit length / height (A)	mm	1440	2160	2880
	Unit length / width	mm	530	530	530
	Depth	mm	730	730	730
Weight	TIC 7000 W[3]	kg	118	163	207
	TIC 7000 NTR[4]	kg	132	184	236
	TIC 7000 K[5]	kg	87	116	142

* 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. W - Normal temperature LPHW 70/50 °C
4. NTR - Low temperature LPHW 60/40 °C
5. K - Recirculating air operation without heat exchanger

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

TIC 6000 / TIC-S 6000

TECHNICAL DATA

Design based on:

recommended operating point
intake temperature tLE = +18 °C
discharge temperature tLA = +30 °C
discharge height = up to 5.00 m

TIC 6000 / TIC-S 6000			6001.2	6001.8	6002.4	6003
Total air quantity		m^3/h	7000	10500	14000	17500
Heating capacity rated[1]	LPHW 70 / 50 °C	kW	28.27	42.41	56.55	70.68
	LPHW 60 / 40 °C	kW	28.27	42.41	56.55	70.68
Flow rate	LPHW 70 / 50 °C	m^3/h	1.23	1.85	2.47	3.08
	LPHW 60 / 40 °C	m^3/h	1.24	1.86	2.48	3.10
Water resistance	LPHW 70 / 50 °C	kPa	6.03	5.41	2.96	4.89
	LPHW 60 / 40 °C	kPa	5.1	4.45	2.64	4.30
Nominal connection sizes	Internal thread	Inches	2 x 1"	2 x 1"	2 x $1^{1/4}$"	2 x $1^{1/4}$"
	Flow/return	DN	25	25	32	32
Fans	Voltage	V	400 / 3 / N / PE			
	Frequency	Hz	50			
	Current consumption	A	1.4	2.1	2.8	3.5
	Motor power	kW	0.68	1.02	1.36	1.70
Sound pressure level [2]	Highest setting	dB (A)	67	69	71	72
Drawing dimension	Unit length / height (A)	mm	1200	1800	2400	3000
	Unit length / width	mm	730	730	730	760
	Depth	mm	465	465	465	465
Weight	TIC 6000 W[3]	kg	76	112	148	180
	TIC 6000 NTR[4]	kg	82	125	165	205
	TIC 6000 K[5]	kg	72	106	140	170

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3. W - Normal temperature LPHW 70/50 °C
4. NTR - Low temperature LPHW 60/40 °C
5. K - Recirculating air operation without heat exchanger

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TIC 3000
TECHNICAL DATA

TEKADOOR®

Design based on:

recommended operating point
intake temperature tLE = +18 °C
discharge temperature tLA = +30 °C
discharge height = up to 4.00 m

TIC 3000			3001,5	3002	3002,5	3003
Total air quantity		m³/h	4600	6150	7650	9200
Heating capacity rated [1]	LPHW 70 / 50 °C	kW	18,6	24,8	30,9	37,2
	LPHW 60 / 40 °C	kW	18,6	24,8	30,9	37,2
Flow rate	LPHW 70 / 50 °C	m³/h	0,81	1,09	1,36	1,63
	LPHW 60 / 40 °C	m³/h	0,81	1,08	1,35	1,62
Water resistance	LPHW 70 / 50 °C	kPa	1,00	2,01	5,11	4,05
	LPHW 60 / 40 °C	kPa	0,97	1,96	2,25	5,14
Nominal connection sizes	Internal thread	Zoll	2 x 1"	2 x 1"	2 x 1"	2 x 1"
	Flow/return	DN	25	25	25	25
AC-Ventilatoren* 5-stage	Voltage	V	400 / 3 / N / PE			
	Frequency	Hz	50			
	Current consumption	A	1,2	1,5	2	2,4
	Motor power	kW	0,48	0,53	0,8	0,96
AC-fans 5-stage	Voltage	V	230 / 1 / N / PE			
	Frequency	Hz	50			
	Current consumption	A	2,2	2,9	3,6	4,4
	Motor power	kW	0,5	0,7	0,85	1,00
EC-fans 5-stage and stepless	Voltage	V	230 / 1 / N / PE			
	Frequency	Hz	50			
	Current consumption	A	4,05	5,4	6,75	8,1
	Motor power	kW	0,49	0,66	0,83	0,99
Electric heater 3-stage	Voltage	V	400 / 3 / N / PE			
	Frequency	Hz	50			
	Heating capacity	kW	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)	58	60	62	63
Drawing dimension	Unit length (A)	mm	1500	2000	2500	3000
	Unit height	mm	640	640	640	640
	Unit depth	mm	430	430	430	430
Weight	TIC 3000 W [3]	kg	90	110	140	170
	TIC 3000 NTR [4]	kg	100	125	160	190
	TIC 3000 K [5]	kg	80	95	120	155

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