

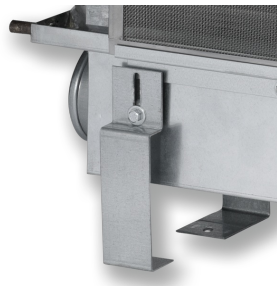
IDB



TESTED TO VDI 6022



EUROVENT
CERTIFICATION



LEVELLING FEET



ROW OF NOZZLES

IDB

BRÜSTUNGSINDUKTIONSDURCHLASS FÜR NENNLÄNGEN VON 600, 900, 1200, 1350 MM MIT VERTIKALEM WÄRMEÜBERTRAGER UND KONDENSATWANNE

Under sill induction unit with 2-pipe or 4-pipe heat exchanger, of compact height, for installation under a sill or on a wall. The condensate drip tray is useful if the temperature temporarily falls below the dew point.

- High heating and cooling capacity with a low conditioned primary air volume flow rate and low sound power level
- High comfort levels due to low airflow velocity in the occupied zone
- Four nozzle variants to optimise induction based on demand

Optional equipment and accessories

- Control equipment
- Lint screen to protect the heat exchanger from contamination
- Powder coating in many different colours, e.g. RAL CLASSIC

Application



Application

- Type IDB under sill induction units of compact height, for installation on an external wall, e.g. under a sill.
- Inducing displacement flow
- 2-pipe or 4-pipe heat exchangers enable good comfort levels with a low conditioned primary air volume flow rate
- Energy-efficient solution since water is used for heating and cooling

Special characteristics

- Supply air discharge as inducing displacement flow
- Vertical heat exchanger as 2-pipe or 4-pipe system, optional condensate drip tray including condensate drain that can be connected to a condensate pipe (to be provided by others)
- Water connections at the narrow side, Ø12 mm Cu pipe, with plain tails or with G½" external thread, or with a G½" union nut; with flat seal

Nominal sizes

- 600, 900, 1200 mm

Description



Variants

Heat exchanger

- 2: 2-pipe systems
- 4: 4-pipe systems

Nozzle variants

- M: Medium
- G: Large
- U: Extra large
- 2U: Two nozzle rows, extra large nozzles

Construction

- Galvanised

- P1: Powder-coated RAL 9005, black, gloss level 70 %

Attachments

- Water connection A1: G½" external thread and flat seal
- Water connection A2: G½" union nut and flat seal
- Condensate drip tray
- Lint screen

Accessories

- Wall and floor fixing

Useful additions

- Connecting hoses
- Control equipment consisting of a control panel including a controller with integral room temperature sensor; valves and valve actuators; and lockshields
- X-AIRCONTROL control system

Construction features

- Spigot is suitable for circular ducts to EN 1506 or EN 13180
- Four nozzle variants to optimise induction based on demand
- Vent valves on the heat exchanger

Materials and surfaces

- Casing, primary air plenum and feet made of galvanised sheet steel
- Lint screen made of stainless steel
- Heat exchanger with copper tubes and aluminium fins
- Exposed surfaces either untreated or powder-coated black (RAL 9005)
- Heat exchanger also in black (RAL 9005)

Standards and guidelines

- Products are certified by Eurovent (no. 09.12.432) and listed on the Eurovent website
- Declaration of hygiene conformity to VDI 6022

Maintenance

- No moving parts, hence low maintenance
- The heat exchanger can be vacuumed with an industrial vacuum cleaner if necessary
- VDI 6022, Part 1, applies (Hygiene requirements for ventilation and air-conditioning systems and units)

TECHNICAL INFORMATION

Function, Technical data, Quick sizing, Specification text, ORDER CODE, Related products



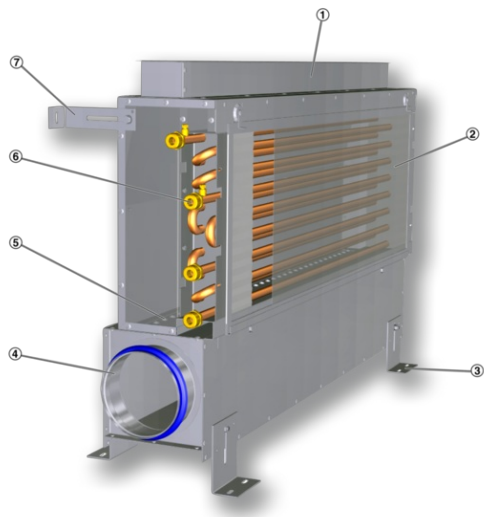
Functional description

Under sill induction units provide centrally conditioned primary air (fresh air) to the room and use heat exchangers for cooling and/or heating.

The primary air is discharged through nozzles and induces secondary air (room air), which passes through the heat exchanger.

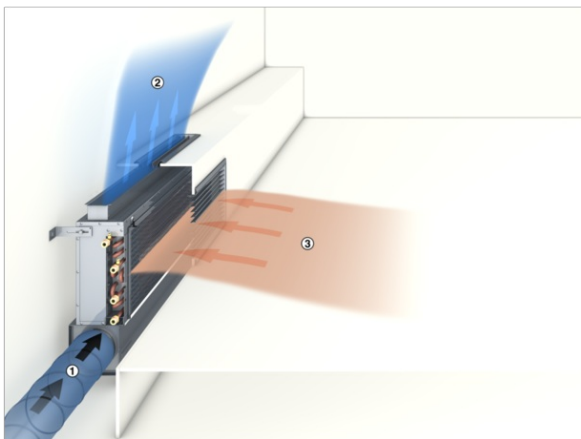
Primary and secondary air mix and are then supplied to the room as an inducing displacement flow.

Schematic illustration of the IDB



- ① Supply air spigot
- ② Lint screen (optional)
- ③ Bracket for floor fixing (optional)
- ④ Primary air spigot
- ⑤ Nozzles
- ⑥ Water connections, Ø12 x 1 mm Cu pipe, either with plain tails or with optional G½" external thread or with G½" union nut, flat seal
- ⑦ Bracket for wall fixing (optional)

Principle of operation - IDB



- ① Conditioned fresh air (primary air)
- ② Supply air
- ③ Room air (secondary air)

Nominal length	600, 900, 1200 mm
Length	643, 943, 1243 mm
Height	Min. 555 mm, max. 605 mm
Width	155 mm
Primary air volume flow rate	4 – 40 l/s or 14 – 144 m ³ /h
Cooling capacity	Up to 950 W
Heating capacity	Up to 470 W
Max. operating pressure, water side	6 bar
Max. operating temperature, water side	75 °C

The quick sizing table contains operating points for defined reference units.

Quick sizing - spigot diameter 100 mm

LN	①	Primary air			②	Cooling				Heating		
		V _{Pr}		Δp _t		L _{WA}	2-pipe and 4-pipe systems				4-pipe system	
LN	①	l/s	m ³ /h	Pa	dB(A)		Q _{tot}	Q _{wk}	Δt _w	Δp _w	Q _{wh} = Q _{tot}	Δt _w
						W	K	kPa		W	K	kPa
600	M	3	10.8	71	<20	193	157	-1.2	2.44	180	3.1	0.19
		5	18.0	199	22	275	214	-1.7	2.44	246	4.2	0.19
600	M	7	25.2	389	32	346	262	-2.0	2.44	301	5.2	0.19
	G	5	18.0	51	<20	238	178	-1.4	2.44	203	3.5	0.19
600	G	9	32.4	166	23.5	365	256	-2.0	2.44	294	5.1	0.19
		12	43.2	295	32	450	305	-2.4	2.44	351	6.0	0.19
600	U	10	36.0	67	<20	346	226	-1.8	2.44	259	4.5	0.19
		15	54.0	152	27	473	292	-2.3	2.44	336	5.8	0.19
600	U	20	72.0	270	35	590	349	-2.7	2.44	403	6.9	0.19
900	M	5	18.0	83	<20	304	243	-1.9	3.13	279	4.8	0.24
		7.5	27.0	187	24	399	308	-2.4	3.13	355	6.1	0.24
900	M	10	36.0	333	32	484	362	-4.8	3.13	420	7.2	0.24
	G	10	36.0	86	<20	427	307	-2.4	3.13	353	6.1	0.24
900	G	15	54.0	194	29	570	389	-3.0	3.13	449	7.7	0.24
		20	72.0	345	38	699	458	-3.6	3.13	531	9.1	0.24
900	U	15	54.0	64	<20	505	324	-2.5	3.13	374	6.4	0.24
		20	72.0	115	28	628	386	-3.0	3.13	446	7.7	0.24
900	U	25	90.0	180	35	743	441	-3.4	3.13	511	8.8	0.24
1200	M	5	18.0	45	<20	326	266	-2.1	3.83	306	5.3	0.29
		10	36.0	182	25	516	395	-3.1	3.83	457	7.9	0.29
1200	M	15	54.0	410	37	674	493	-3.9	3.83	572	9.8	0.29
	G	10	36.0	47	<20	453	332	-2.6	3.83	383	6.6	0.29
1200	G	15	54.0	107	23	601	320	-3.3	3.83	486	8.4	0.29
		20	72.0	190	32	735	494	-3.9	3.83	573	9.9	0.29
1200	U	20	72.0	64	25	656	415	-3.2	3.83	480	8.3	0.29
		30	108.0	145	37	886	524	-4.1	3.83	609	10.5	0.29
1200	U	40	144.0	257	46	1097	614	-4.8	3.83	717	12.3	0.29

① Nozzle variant ② Air-regenerated noise

Quick sizing - spigot diameter 125 mm

L _N	①	Primary air			②	Cooling				Heating		
		V _{Pr}		Δp _t		L _{WA}	2-pipe and 4-pipe systems				4-pipe system	
L _N	①	l/s	m ³ /h	Pa	dB(A)	Q _{tot}	Q _{Wk}	Δt _w	Δp _w	Q _{WH} = Q _{tot}	Δt _w	Δp _w
						W	K	kPa	W	K	kPa	
600	2U	20	72.0	71	<20	496	255	-2.0	2.44	254	4.4	0.19
		28	100.8	139	30	652	315	-2.5	2.44	316	5.4	0.19
600	2U	35	126.0	218	36	783	361	-2.8	2.44	364	6.3	0.19
900	2U	20	72.0	30	<20	525	283	-2.2	3.13	283	4.9	0.24
		30	108.0	67	26	726	364	-2.8	3.13	367	6.3	0.24
900	2U	40	144.0	120	35	915	432	-3.4	3.13	439	7.5	0.24
1200	2U	26	93.6	28	20	674	360	-2.8	3.83	362	6.2	0.29
		30	108.0	38	25	753	391	-3.1	3.83	395	6.8	0.29
1200	2U	40	144.0	67	34	946	463	-3.6	3.83	472	8.1	0.29

① Nozzle variant ② Air-regenerated noise

Reference values

Parameter	Cooling	Heating
t _R	16 °C	22 °C
t _{Pr}	26 °C	22 °C
t _{wV}	16 °C	50 °C
V _W	110 l/h	50 l/h

Induction units of Type IDB, for under sill or wall installation, with one-way discharge and high thermal output, providing high thermal comfort levels.

For installation under the sill or on a wall.

The units consist of a casing with a primary air plenum, spigot, non-combustible nozzles, and vertical heat exchanger; a condensate drip tray is optional.

Special characteristics

- Supply air discharge as inducing displacement flow
- Vertical heat exchanger as 2-pipe or 4-pipe system, optional condensate drip tray including condensate drain that can be connected to a condensate pipe (to be provided by others)
- Water connections at the narrow side, Ø12 mm Cu pipe, with plain tails or with G½" external thread, or with a G½" union nut; with flat seal

Materials and surfaces

- Casing, primary air plenum and feet made of galvanised sheet steel
- Lint screen made of stainless steel
- Heat exchanger with copper tubes and aluminium fins
- Exposed surfaces either untreated or powder-coated black (RAL 9005)
- Heat exchanger also in black (RAL 9005)

Construction

- Galvanised
- P1: Powder-coated RAL 9005, black, gloss level 70 %

Technical data

- Nominal length: 600, 900, 1200 mm
- Length: 643, 943, 1243 mm
- Height: Min. 555 mm, max. 605 mm
- Width: 155 mm
- Primary air volume flow rate: 4 - 40 l/s or 14 - 144 m³/h
- Cooling capacity: up to 950 W
- Heating capacity: up to 470 W
- Max. operating pressure: 6 bar
- Max. operating temperature: 75 °C

This specification text describes the general properties of the product.

IDB-2-G-RE-SL/1200×123

Heat exchanger	2-pipe
Nozzle variant	Large
Arrangement of the water connection	Right side
Arrangement of the air connection	Left side
Nominal length	1200 mm
Spigot diameter	Ø123 mm

IDB-4-U-LI-SL-KW/1200×123/WB/G1/FS/VS

Heat exchanger	4-pipe
Nozzle variant	Extra large
Arrangement of the water connection	Left side
Arrangement of the air connection	Left side
Condensate drip tray	With
Nominal length	1200 mm
Spigot diameter	Ø123 mm
Wall and floor fixing	With
Surface of casing and heat exchanger	Black
Lint screen	With
Valves and actuators	With

IDB - 2 - G - RE - A1 - SL - KW / 1200x123 / WB / G3 / FS / VS

1 2 3 4 5 6 7 8 9 10 11 12 13

1 Type

IDB Under sill induction units

2 Heat exchanger

2 2-pipe
4 4-pipe

3 Nozzle variants

M Medium
G Large
U Extra large
2U 2 rows, extra large

4 Arrangement of the water

connection
RE Right side
LI Left side

5 Water connections

No entry: Ø12 mm pipe with plain tails
A1 With G½" external thread and flat seal
A2 With G½" union nut and flat seal

6 Arrangement of air connections

SL Left side
SR Right side
VM Front, centre

7 Condensate drip tray

No entry: none
KW With

8 Nominal length [mm]

600
900
1200
1350

9 Spigot diameter [mm]

98
123

10 Fixing material (supplied separately)

No entry: none
W0 Wall fixing
B0 Floor fixing
WB Wall and floor fixing

11 Surface of casing and heat

exchanger
No entry: untreated
G1 RAL 9005, black
G3 RAL 9005, black, heat exchanger only

12 Lint screen

No entry: none
FS With

13 Valves and actuators

No entry: none
VS With

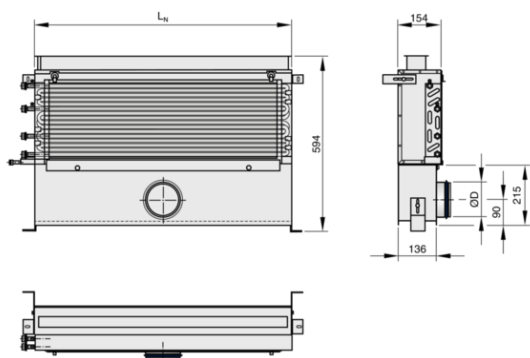
Weight [kg]

L_N [mm]	600	900	1200
Unit	9	15	21
Contained water	1.2	1.8	2.4
Condensate drip tray	0.6	0.9	1.2
Lint screen	0.8	1.1	1.4

Dimensions [mm]

L_N	$\varnothing D$
600, 900, 1200	98
	123

IDB



Installation example



Installation and commissioning

- Under sill or wall installation
- Side entry primary air spigot at the narrow side or front
- Installation and connections to be performed by others; fixing, connection and sealing material to be provided by others
- The unit can be fixed to the floor and/or to the wall with the fixing material supplied (accessory)
- Heat exchangers are fitted with water flow and water return connections at the narrow side

L_N [mm]

Nominal length

L_{WA} [dB(A)]

Sound power level

t_{Pr} [°C]

Primary air temperature

t_{WV} [C°]

Water flow temperature - cooling/heating

t_R [C°]

Room temperature

t_R [C°]

Room temperature

t_{AN} [C°]

Secondary air intake temperature

Q_{Pr} [W]

Thermal output – primary air

Q_{tot} [W]

Thermal output – total

Q_w [W]

Thermal output – water side, cooling/heating

V_{Pr} [l/s]

Primary air volume flow rate

V_{Pr} [m³/h]

Primary air volume flow rate

V_w [l/h]

Water flow rate – cooling/heating

V [l/h]

Volume flow rate

Δt_w [K]

Temperature difference – water

Δp_w [kPa]

Pressure drop, water side

Δp_t [Pa]

Total pressure drop, air side

Δt_{Pr} = t_{Pr} - t_R [K]

Difference between primary air temperature and room temperature

Δt_{RWV} = t_{WV} - t_R [K]

Difference between water flow temperature and room temperature

Δt_{Wm-Ref} [K]

Difference between mean water temperature and reference temperature

L_N [mm]

Nominal length

Inducing displacement flow

The supply air is discharged near the external wall and with a medium velocity between 1.0 and 1.5 m/s. Due to the induction effect the supply air velocity is rapidly reduced such that, in cooling mode, the supply air displaces the room air over the entire floor area. The convection from people and other heat sources causes the fresh air from the pool to rise and create comfortable conditions in the occupied zone.

Heat exchanger

The maximum water-side operating pressure for all heat exchangers is 6 bar.

The maximum water flow temperature (heating circuit) for all heat exchangers is 75 °C; if flexible hoses are used, the water flow temperature should not exceed 55 °C. Units for other pressures and temperatures are available on request.

The water flow temperature (cooling circuit) should be at least 16 °C such that it does not permanently fall below the dew point. For units with a condensate drip tray the water flow temperature may be reduced to 15 °C.

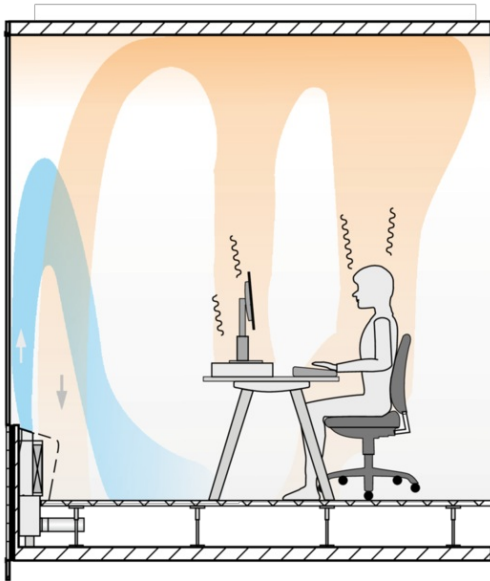
Heat exchanger as 2-pipe system

Air-water systems with a 2-pipe heat exchanger may be used for either heating or cooling. In changeover mode it is possible to use all units within a water circuit exclusively for cooling in summer and exclusively for heating in winter.

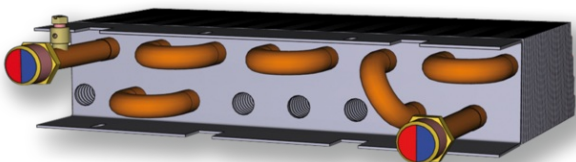
Heat exchanger as 4-pipe system

Air-water systems with a 4-pipe heat exchanger may be used for both heating and cooling. Depending on the season, i.e. especially in spring and autumn, it may be possible that an office has to be heated in the morning and cooled in the afternoon.

Schematic illustration of inducing displacement flow ventilation



Wärmeübertrager 2-Leiter-System



Heat exchanger as 4-pipe system

