

Air Eco₂nomy[®]



Heating + cooling – quiet, safe, and efficient

GEA Base Convectors

Ideal for buildings with large glass façades

[21°C]

37 dB(A)

At work for efficient HVAC climate control

GEA under-floor convectors SBQ and SBI



**GEA base convectors –
for outstanding setup:**

- Heating and cooling – quiet, safe, and efficient
- Ideal for facilities with large-area glass façades
- Highly effective temperature control, with low consumption of resources
- 24-volt technology, certified by TÜV
- Optimal installation features thanks to small installed heights and footprints

GEA base convectors enable energy-efficient and comfortable HVAC climate control of offices, museums, public buildings, and sales rooms – and of large, modern flats and other residential facilities.

With sophisticated concepts and practical orientation

Development engineers at GEA have a sure hand for highly effective room HVAC control and for low consumption of resources. And precisely that is what they achieved when they developed the GEA SBQ and SBI base convectors. These units are particularly well suited for facilities with large-area glass façades.

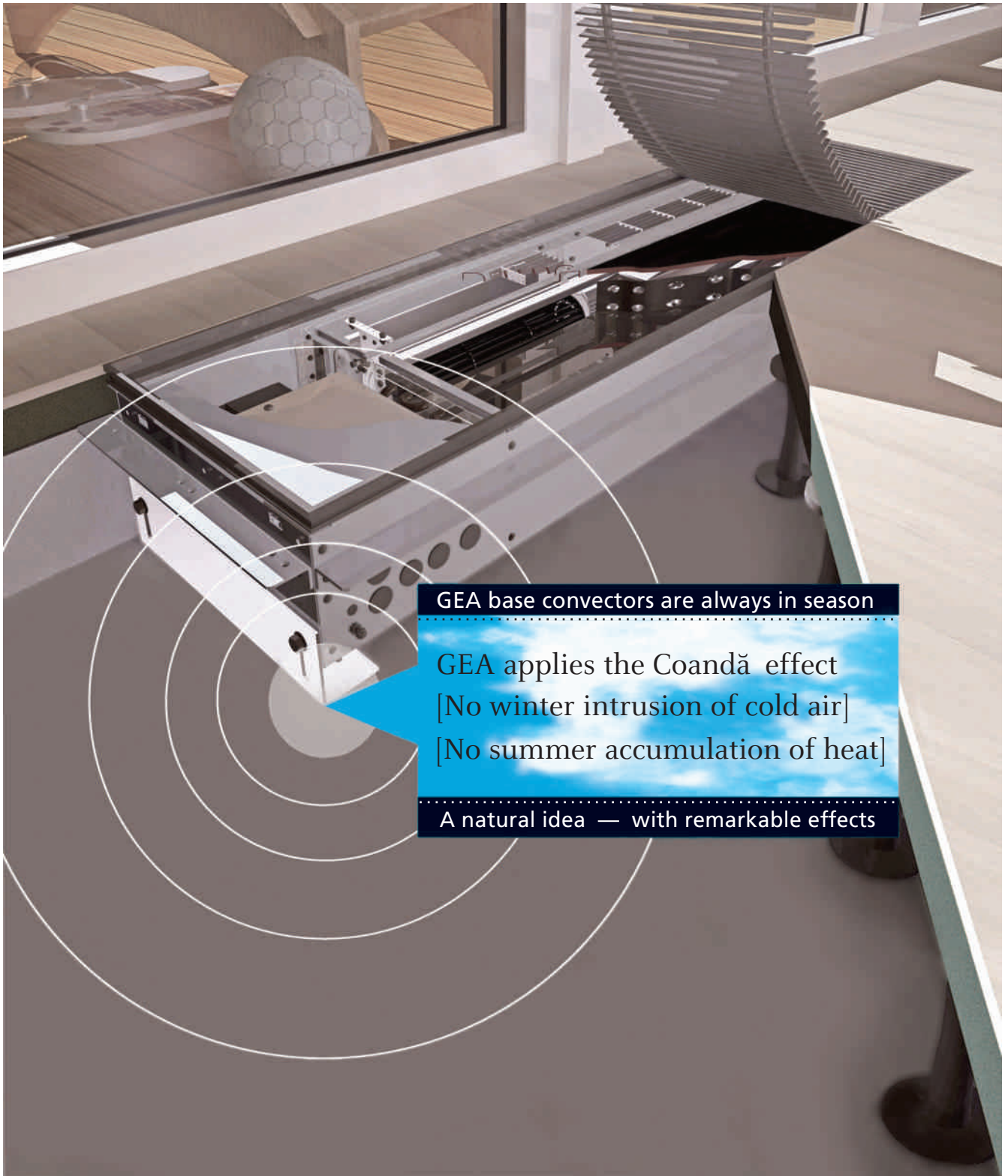
Despite the 230-volt power supply, their end-to-end 24-volt technology assures safety: the cross-flow fans and the valve servo-drives operate at this low voltage. As a result, no danger to staff can arise even if water penetrates the units, or if a person touches these electric components.

Unobtrusive and TÜV-certified

The SBQ base convector by GEA has furthermore earned the TÜV-CE certificate in accordance with the Low Voltage Directive 2006/95/EC. This certificate confirms that the SBQ satisfies the German Act for New Regulation of the Safety of Technical Equipment and Consumer Products” (GPSG).

Both the SBQ and SBI base convectors operate on the basis of a 4-pipe system. With their very low installation height of 166 mm, they are highly effective for use in conventional raised floors. With a length of 1250 mm and a depth of 345 mm (outside dimensions of the cover grille), these models take up little space and also inconspicuously fit into the interior design of buildings with large glazed areas.

This cut-away representation of a GEA base convector in a raised floor allows a good view of the configuration of the convector.



Homogeneous temperature distribution

SBQ assures greater climate comfort in user zones

The GEA base convector with cross-flow fan passes room air over the heat exchanger and blows it out and upward to the façade at an oblique angle.

As a result, cool or warm air rises at the window surface, with application of the Coandă effect. This prevents intrusion of cold air in winter, as well as any unpleasant accumulation of heat in summer on the interior of the façade. The air rising along the window is diverted at the ceiling and flows throughout the entire room.

The low air speed in the user zones avoids drafts, but room air is effectively mixed and homogeneous temperature distribution prevails.

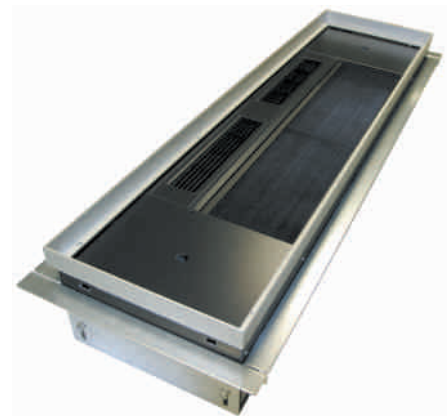
By end-to-end application of the Coandă effect, it is possible to significantly enlarge the comfort zone in comparison to conventional base convectors. In addition, this prevents an air short circuit in the intake area, with the associated reduction in output.

The principle of dry cooling (with the supply temperature of the cold water around 16°C) eliminates the need for condensate trays and pumps, and prevents any collection of moisture. This assures the essential basis for hygienic operation.



Benefits at a glance:

- No intrusion of cold air in winter, no accumulation of heat on the façade in summer
- No drafts, despite good mixing of the room air and good temperature distribution
- No necessity for condensate trays and pumps, thanks to dry cooling
- Extremely quiet operation and fast conditioning of room air by cross-flow fans
- Ideal options of combining convector modules
- Simple installation and maintenance



**Quiet and powerful:
cross-flow fans with five speed levels**

The installed cross-flow fan operates very quietly and offers a total of 5 speed levels, for air flow of 150 – 320 m³/h. This assures fast and simple temperature adjustment of the room air (for example, after a weekend).

At the highest speed, the fan passes up to 320 m³ of room air per hour over the heat exchanger. With a maximum cooling capacity of 660 W and a heating rating of 1140 W per base convector, these models offer sufficient power to efficiently regulate the temperature of typical offices without further support.

By combination of SBQ circulating-air units with the new SBI base induction convectors (also see page 8), it is also possible to ensure hygienic change of air in rooms.

**Benefitting from the advantages of
various base convectors**

Since these two base convectors have the same exterior dimensions, they can be ideally combined. This enables achieving optimal room climate with respect to hygienic change of air.

The two units can be installed with connecting elements in a strip configuration. The cover grills, which are supported by a stable plug-in frame system that is easy to install, can uniformly cover different models.

Safe, easy to install and to service

GEA base convectors are supplied with the required valve control groups (2- or 3-step valves, servodrives, and threaded shutoff fittings).

With variable installation heights of approx. 170 to 290 mm, and an optional peripheral angle frame to be installed onto a raised-floor, the units can be easily integrated in raised-floor systems.



- Media connections for the hot- and cold-water pipe networks extend from the unit for easy connection
- Connection to existing hot- and cold-water pipe networks is simply possible with threaded connections
- As a result of hygienic operating conditions (made possible by dry cooling), any dirt or debris can as a rule be simply vacuumed up.



Effectiveness and feel-good room climate

SBI induction models for optimal room climate control



Benefits at a glance:

- Optimal temperature distribution despite low air speeds
- Use of primary and secondary air for room temperature control
- No disturbing drafts, despite high output levels
- Quiet and efficient operation thanks to the induction principle
- Easy integration and simple installation in raised-floor systems

Primary and secondary air

Induction models from the SBI range assure optimal temperature distribution at low air speeds in user zones.

The units are installed near the façade in raised floors, and are connected to a central air-handling system.

Unlike other systems, SBI units use not only the primary air flow for room temperature control. In addition, primary air – when it leaves the nozzles – pulls secondary air out of the room behind it, and directs it together with primary air back into the room (the induction principle). This secondary air flows through the heat exchanger before it mixes with the primary air flow.

The heat exchangers are connected to the hot- and cold-water piping networks (four-pipe system), which means that they assure pleasant room temperatures both in summer and winter.



Powerful and quiet

Despite the GEA Air Treatment heating and cooling capacities, no drafts occur in user zones.

The flow of air rises directly at the façade side to the ceiling and is redirected from there into the room. The result is an effective air recirculation zone, at low air speeds, in the user zones: a guarantee for pleasant room climate.

This type of room climate control is easily implemented in accordance with the stipulations set forth in DIN EN 13779.

Since GEA SBI convectors operate in accordance with the induction principle, and since they do not require fans for air circulation, these convectors are gentle and very quiet.

Easy to install

In addition, these models are highly appealing owing to their simple installation. Like the SBQ, they are delivered with the required valve control groups.

With a range of installation heights within the range of approx. 170 – 290 mm, and with a peripheral angle frame to be installed onto a raised-floor, these models can be easily integrated into all raised-floor systems available on the market.

SBI with comb grill, protruding valve-piping set, and height-adjustment feature. For quick installation and connection.



- The media connections for the hot- and cold-water piping networks protrude from the unit. Connection to the piping is simple and easy with threaded fittings.



For the sake of good ambience

Where fine design is a must

Exquisite grill covers for slender convectors

The cover grills are supported by a sturdy plug-on frame system that enables realization of an architecturally appealing strip configuration.

The grills are available in anodized finishes: natural aluminum, brass, bronze, or black. We gladly provide stainless steel and other variations upon request.

Connection elements available as accessories (straight and mitered angles) simplify optically appealing installation. The cover grills can be easily removed for cleaning and service work.

Both models can be flexibly integrated into architecturally sophisticated ambience, by means of straight and mitered-angle connecting elements. As a result, the combination of various models achieves optical climate in appealing room ambience.

If requested, these connection elements can be provided so as to be removable. This makes the user's façade mounts easy to access.



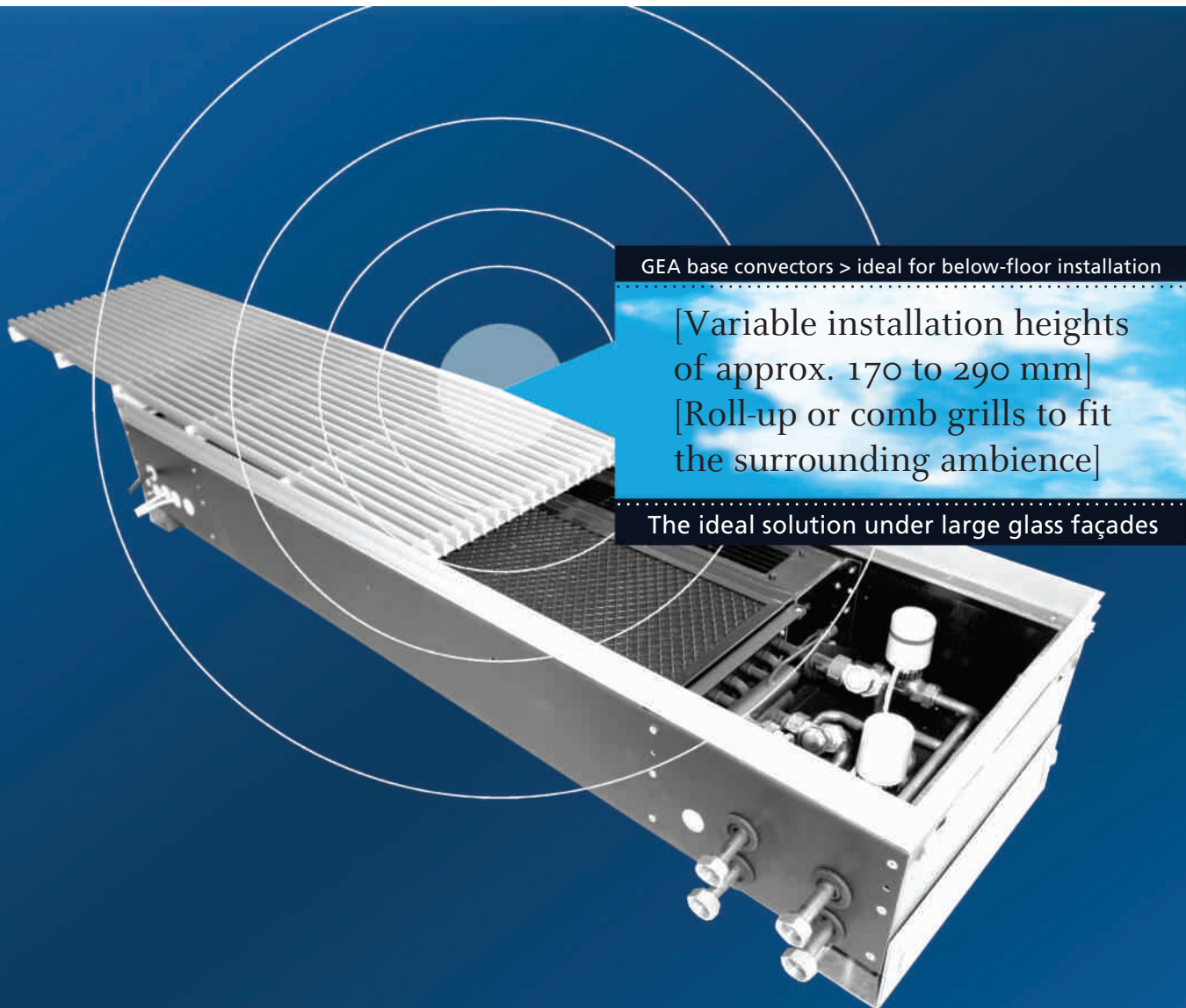
At a glance:

- Exquisite cover grills for sophisticated architecture
- Variable strip configuration
- Optional installation versions
- Optically appealing installation as well



Various cover grills are available as so-called roll-up grills that are rolled up and down from the units. Or, so-called comb grills can be installed, which are laid down as rigid units over the models (as in the illustration below).

The special-finish heat exchangers, the air-deflection vanes, and the electrical-system and valve covers are all harmonized in their appearance, with the result of an additional highly appealing optical impression made by the unit under the cover grills.



GEA base convectors > ideal for below-floor installation

[Variable installation heights
of approx. 170 to 290 mm]
[Roll-up or comb grills to fit
the surrounding ambience]

The ideal solution under large glass façades

This is how it works

Safety, control system, and technical data

A 24-volt system for a very high level of safety

Despite 230-volt power feed, the end-to-end 24-volt systems ensure high levels of safety:

The cross-flow fans as well as servodrives operate with this low voltage, so that even the ingress of water into the unit, or physical contact with the electrical components, represents no danger for building users.

These models accordingly conform to the German Act for New Regulation of the Safety of Technical Equipment and Consumer Products (GPSG). This legislation serves to implement existing Directives of the European Union. The filter in the SBQ system also represents no danger: it satisfies Fire Protection Class B2 in accordance with DIN 4102.

Optimal control with GEA MATRIX®

The control module for these new base convectors is the GEA MATRIX® 500, which can provide control for up to 4 of these units in one networked group. The control system is also optionally available with a dewpoint-monitoring feature.

The user sets the required temperature and fan speed for the SBQ by using the GEA MATRIX® OP5C operator control unit.

Furthermore, the GEA MATRIX® 500 also serves the 2-step valve control groups. The 3-step servodrives, available as option, can be controlled via the user's building-services management system.

The benefits:

- Very safe 24-volt technology with certificate from the German Technical Inspection Agencies (TÜV)
- Filters with fire-safety features
- Optimal operation, control, and monitoring of the units, also in a network



The GEA MATRIX® OP5C control system enables convenient control of up to 4 units in a network.

Technical Data

GEA SBQ under-floor convectors

Fan speed	Air flow in m ³ /h	Cooling capacity ¹ in W	Heating capacity ² in W	Dimensions l x w x h (in mm)	Weight ³ in kg	Sound power ⁴ in dB(A)
1	150	355	790	For roll-up grills:	43	33
2	175	405	860	1250 x 345 x 166	43	36
3	200	460	930		43	39
4	235	520	1000	For comb grills:	43	43
5	320	660	1140	1250 x 345 x 183	43	51

1 At 26°C room air and 16/18°C water inlet/return temperature for cold water (dry cooling)

2 At 20°C room air and 70/55°C water inlet/return temperature for hot water

3 With roll-up cover grill

4 Measured in accordance with ISO 3741: the sound pressure level, depending on room size and furnishings, will lie appreciably below the sound power level

Technical Data

GEA SBI under-floor convectors

Primary air in m ³ /h	Pre-pressure in Pa	Cooling capacity ¹ in W	Heating capacity ² in W	Dimensions l x w x h (in mm)	Weight ³ in kg	Sound power ⁴ in dB(A)
50 - 100	150	500 - 770	410 - 520	For roll-up grills: 1250 x 345 x 166	37	27 - 30
				For comb grills: 1250 x 345 x 183	37	37

1 At 26°C room air and 16/18°C water inlet/return temperature for cold water (dry cooling); primary air = 18°C

2 At 20°C room air and 70/55°C water inlet/return temperature for hot water; primary air = 22°C

3 With roll-up cover grill

4 Measured in accordance with ISO 3741: the sound pressure level, depending on room size and furnishings, will lie appreciably below the sound power level



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Customer proximity, sales structures

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- A** GEA Klimatechnik GmbH & Co KG
A-4673 Gaspoltshofen
Tel. +43 / 7735 / 8000-0
- B** GEA Happel Belgium N. V.
B-1130 Brussels
Tel. +32 / 2 / 2406161
- BG** EVISS Ltd.
BG-7000 Rousse
Tel. +359 / 82 / 81000
- BIH** GEA Klimatechnik GmbH & Co KG
RS-11070 Novi Beograd
Tel. +381 / 11 / 3193955
- BY** GEA Klimatechnik UAB
LT-01141 Vilnius
Tel. +370 / 5 / 2106060
- CH** ATC Klimatec Schweiz AG
CH-3065 Bolligen-Station
Tel. +41 / 31 / 9171919
- CZ** GEA LVZ, a.s.
CZ-46312 Liberec
Tel. +420 / 48 / 5225-111
- CZ** GEA Klimatizace spol. s r.o.
CZ-46312 Liberec
Tel. +420 / 48 / 5225-303
- D** GEA Happel Klimatechnik GmbH
D-44625 Herne
Tel. +49 / 2325 / 468-00
- D** GEA Happel Wieland GmbH
D-44625 Herne
Tel. +49 / 2325 / 468-754
- D** GEA Deichmann Umwelttechnik GmbH
D-36179 Bebra
Tel. +49 / 6622 / 504-0
- D** GEA Delbag Lufttechnik GmbH
D-44625 Herne
Tel. +49 / 2325 / 468-700
- D** GEA Delbag-Luftfilter Vertriebsgesellschaft mbH
D-10709 Berlin
Tel. +49 / 30 / 43592-3
- DK** GEA Klimatechnik ApS
DK-2610 Rødovre
Tel. +45 / 38 / 887070
- E** GEA Air Treatment Marketing Services Int. GmbH – oficina España
ES-28028 Madrid
Tel. +34 / 91 / 3837701
- EST** GEA Klimatechnik UAB
LT-01141 Vilnius
Tel. +370 / 5 / 2106060
- F** GEA Delbag Filtration de l'air
F-77450 Montry
Tel. +33 / 1 / 60043355
- F** GEA Happel France sarl
F-59436 Roncq Cedex
Tel. +33 / 3 / 20689020
- FIN** OY TEKNOCALOR AB
FIN-01300 Vantaa
Tel. +358 / 10 / 8201100
- GB** GEA Denco Ltd.
UK-HR4 8DS Hereford
Tel. +44 / 1432 / 277 277
- H** GEA Klimatechnika Kft
H-1037 Budapest
Tel. +36 / 1 / 4393200
- HR** GEA Klima-rashladna tehnika d.o.o.
HR-10000 Zagreb
Tel. +385 / 1 / 6064900
- IE** Aspect Environmental Ltd.
Ardee, Co. Louth Ireland
Tel. +353 / 41 / 6858983
- IS** Rafn Jensson
IS-110 Reykjavik
Tel. +354 / 56 / 780-30
- L** GEA Happel Luxembourg
L-4940 Bascharage
Tel. +352 / 26 / 502970
- LT** GEA Klimatechnik UAB
LT-01141 Vilnius
Tel. +370 / 5 / 2106060
- LV** GEA Klimatechnik UAB
LT-01141 Vilnius
Tel. +370 / 5 / 2106060
- MWE** GEA Klimatechnik GmbH & Co KG
RS-11070 Novi Beograd
Tel. +381 / 11 / 3193955
- N** GEA Klimaprodukter AS
N-0484 Oslo
Tel. +47 / 220 / 27990
- NL** GEA Happel Nederland B.V.
NL-2909 LL
Capelle a/d IJssel
Tel. +31 / 10 / 2350606
- P** Nónio, Lda.
P-1269-090 Lisboa
Tel. +351 / 21 / 3826160
- PL** GEA Klimatyzacja Sp. z o.o.
PL-54610 Wrocław
Tel. +48 / 71 / 3737952
- RO** GEA Klimatechnik s.r.l.
RO-300222 Timisoara
Tel. +40 / 356 / 423703
- RUS** GEA Klimatechnik GmbH & Co KG
RU-105094 Moskva
Tel. +7 / 495 / 9566674
- S** GEA EXOS Ventilation AB
S-74528 Enköping
Tel. +46 / 171 / 85530
- SK** GEA Klimatizácia s.r.o.
SK-83104 Bratislava
Tel. +421 / 7 / 44457917
- SLO** GEA Klimatizacijska Tehnika d.o.o.
SI-1000 Ljubljana
Tel. +386 / 1 / 2573850
- SRB** GEA Klimatechnik GmbH & Co KG
RS-11070 Novi Beograd
Tel. +381 / 11 / 3193955
- TR** GEA ISISAN
TR-80700
Balmumcu Istanbul
Tel. +90 / 212 / 2757171
- UA** GEA Ukraina t.o.v.
UA-01135 Kyiv
Tel. +38 / 044 / 4619356
- UAE** GEA Air Treatment Middle East
UAE-Dubai
Tel. +971 / 4 / 887 3881

The complete addresses are available on the Internet under: www.gea-air-eco2nomy.com



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