

A comfortable climate and energy saving. For low-energy/passive house standard, multi-storey buildings and commercial applications.



The compact wall units KWL EC 200 W to KWL EC 500 W and the ultra-flat ceiling units KWL EC 220 D and

standard for the operation of KWL® devices.

Thanks to the integrated web server and LAN connection, the ventilation devices can be integrated into the PC network and conveniently controlled via a user interface in the web browser using a laptop or Internet while you're on the go.

Building control system interfaces and optional controls and air quality sensors provide additional options. The clever, modular design of the appliances allows for custom configurations according to the property requirements.

The new KWL EC "S" range for standing, space-saving floor installations is available with ventilation system performances of 800 to 2600 m3/h. Ideal for use as central systems

Certified according to the including special control technology for constant volume regulation or constant pressure regulation. Optionally with builtin PWW heat register.

## Helios KWL® added value

The universal, perfectly coordinated Helios KWL® systems solutions guarantee simple planning, secure assembly and

cialist seminars and practical self-explanatory online softfurther simplify the design, planning and installation of the

Ask for more information now!











MARD KWLeasyPlan.de





**SELECTION MATRIX** 

**ENTHALPY EXCHANGER** 



**EASY CONTROLS** 





WALL INSTLLATION, WALL MOUNTING "W



KWL EC 45, KWL EC 60 for flush wall mounting in single rooms, ideal for

The "W" range Compact wall units from 200 to 500 m<sup>3</sup>/h. KWL EC 270, 370 W with passive house certificates. All models are equipped with easyControls as standard and optional enthalpy exchanger.

**CEILING MOUNTING "D"** 



The "D" range

2000 m<sup>3</sup>/h for space-saving ceiling installation. With ultra-efficient heat exchanger, EC technology and passive house certificate. KWL EC 220, 340 D with easyControls as stan-

STAND MOUNTING "S"



The "S" range

With units ventilation system performances from 800 to 2600 m<sup>3</sup>/h for standing floor installation. Ideal as central systems in residential, commercial and industrial applications.

changer, EC technology and passive house certificate.

**96<sup>on</sup>** 106<sup>on</sup>

PERIPHERY



Ideally coordinated additional appliances such as geothermal heat exchangers and active humidification system HygroBox to enhance the functions of the KWL® system as a whole. Innovative air distribution systems for all installation types and areas of application. Designer ventilation valves and much more.









Nonumber   Note   Not	
RWL EC 200 W   O	
KWL EC 200 W ET	
KWL EC 200 W ET	
KWL EC 370 W ET	
KWL EC 220 D	
KWL EC 220 D	
KWL EC 220 D	
KWL EC 2000 D   • • •	
KWL EC 2000 D   • • •	
KWL EC 2000 D   • • •	
KWL EC 2000 D   • • •	
KWL EC 1200 S • • • • KWL EC 1800 S	
KWL EC 1200 S  KWL EC 1800 S  • • •	
KWL EC 1800 S	
KINI EO COO C	
KWL EG 2000 S	
HygroBox • •	
Ground heat exchang.	
IsoPipe® • • • RenoPipe •	
RenoPipe •	
FlexPipe®plus • • •	
Flat duct  * See KWL* unit product pages for deta	













KWL EC 45 from Helios: Decentralized apartment ventilation with heat recovery in switchover mode. 5 ventilation levels in 3 operating modes, ideal for new construction and renovation.

Easily installed – with minimal installation effort in a few simple steps.

Easily configured thanks to unique setup software. Also in combination with extract air systems – an all-round success!





KWL EC 45 belongs to the category of regenerative switchover ventilation units with heat recovery.

It is designed for installation in the building outer wall. The air passage takes place on the outside wall via a facia from high-grade steel.

On the wall inside a closable facia made from high quality polymers is used, in which a fibre fleece air filter of the class G3 and a sound insulation are integrated.

The KWL EC 45 has an EC axial fan, which is operated periodically in reverse mode. In this way, supply air phases alternate with extract air phases continuously.

The regenerative heat exchange is carried out using of a ceramic heat accumulator. This takes up heat from the interior air (storage charging) during the extract air mode to transfer it in the next supply air mode to the incoming fresh air (storage discharging). Efficiency up to 85 % (according to the current DIBt test method). To protect it from dirt a fly-screen is fixed on the outside of the ceramic heat accumulator.

To ensure a balanced ventilation operation, a minimum of 2 units is required for an apartment, which in its operational phase (supply air/extract air) work phase-shifted. Depending on the total air demand of the apartment more than 2 units are usually installed, whose individual flow rates are adjusted with the controller automatically on each other.

#### ■ Highlights KWL EC 45

- Economical and silent EC-axial fan.
- Elegant and timeless design.
- Tool-free, easy assembly and dismantling of components.
- Integrated sound insulation.
- Integrated G3 air filter, easily accessible and replaceable without tools.
- Simple, intuitive operation via two buttons.
- LED display for current operating mode and fan speed.
- Up to 8 ventilation units can be controlled.
- 5 ventilation levels:
   14, 24, 32, 37, 45 m³/h.
- 3 operating modes: Heat recovery (= Reversing mode), cross ventilation and supply air mode.
- Possibilities of external activation of standby, cross ventilation, supply air or boost mode (highest ventilation level) by using an external contact.
- Intelligent integration of e.g. demand-controlled extract air fans like Helios ELS or M1 via an extension module (accessory).
- Filter change indicator.
- Programming via PC.

#### ■ Contro

The controller enables the control of up to 8 ventilation units. At the controller 5 ventilation levels and 3 operating modes can be adjusted: Heat recovery (= Reversing mode), cross ventilation and supply air mode. After a preset time period the user is reminded of the filter change by flashing LEDs on the controller.

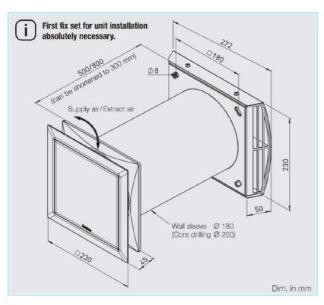
- GUI Graphic User Interface
  With the Helios software it is
  possible to connect the controller via the USB interface
  with a PC or laptop,
  This way the settings of the
  control can be easily and comfortably accessed.
- ☐ The implementation of the startup procedure and the input of required values (such as filter change interval or minimum fan speed) can thus be made in the shortest possible time. All provided settings can be changed fast with the program interface and be supported by the respectively suitable help texts user-friendly.
- □ The configurations made can be stored directly on the PC or laptop and loaded or copied when required into the control system. In a larger object the installation costs can be reduced to a minimum.

If several identical ventilation systems are installed, the required configuration will be established once for a ventilation system and can then be transferred to any number of con-









#### Accessories

#### Switching power supply UP

To extend the controller set KWL 45 STS-UP to up to 8 ventilation units

Input 230 V AC, 50/60 Hz. Output 12 V DC / 1,9 A for flush mounting in insulated walls. Output voltage to SELV protection class 3.

According to DIN EN 60335-1.

Type KWL 45 SNU No. 3008

#### Switching power supply HS To extend the controller set KWL

45 STS-HS to up to 8 ventilation units.

Input 230 V AC, 50/60 Hz. Output 12 V DC / 1,5 A for installation in the distribution box (2 TE). Output voltage to SELV protection class 3.

According to DIN EN 60335-1.

Type KWL 45 SNH No. 3001

#### Extension module

For the combined operation of an extract air system, e.g. Helios ELS or M1 with KWL EC 45 (hybrid ventilation)

Type KWL 45 EM No. 3012

#### Casing for surface-mounting For the included controller in the control set KWL 45 STS-UP.

Dimensions mm (W x H x D) 83 x 83 x 41

Type KWL-APG No. 4270

#### Room sensor

Electromechanical humidity controller for connection to the external contact of the control unit. Adjustable function using Helios software or control unit. Attention: Parallel use with KWL-EM is not possible.

For surface installation

dim. mm (W x H x D) 76 x 76 x 34

Type HY 3 No. 1359 with internal scale

Type HY 3 SI No. 1360

#### Ordering and delivery Coordinated with the assembly steps the following elements are packed separately and have to

be ordered individually:

☐ First fix set facade (500 mm) Robust wall sleeve made of plastic material, including plaster protective cover for indoor and outdoor. External facia from high-grade steel. Additional aids for the mounting of the wall sleeve with incline included in delivery

KWL 45 RSF No. 3005 with additional coating

for use in environments with severe air pollution or high salt concentrations in the air (near the coast)

KWL 45 RSF-B

First fix set facade (800 mm) KWL 45 RSF-L No. 3070 with additional coating KWL 45 RSF-LB

#### Ventilation unit

Consisting of design inner panel with filter, ceramic heat exchanger, flow straighteners, fly screen, EC axial fan with guard, pull-out tool (cord) and EPP half shell heat insulation elements. KWL EC 45 No. 3011

☐ Control set UP

Consisting of controller KWL 45 BEU and switching power supply KWL 45 SNU for installation in flush-mounted socket (depth 61 mm).

Allows the connection of up to 6 ventilation units.

With more than 6 ventilation units an additional 45 KWL SNU is required.

Max. 8 ventilation units possible per controller.

According to DIN EN 60335-1. KWL 45 STS-UP No. 3006

Consisting of controller KWL 45 BEU and switching power supply KWL 45 SNH for DIN rails (2 TE).

Allows the connection of up to 4

With more than 4 ventilation units an additional KWL 45 SNH is required.

Max. 8 ventilation units possible

According to DIN EN 60335-1

KWL 45 STS-HS No. 3007









#### ☐ Control set HS

ventilation units.

per controller.

### Replacement air filter

- 2 pcs. G3 filter

#### Technical data Ventilation unit 1) KWL EC 45 1) Ref. no. 3011 Air flow volume on speed step 0 0 Supply/Extract air V m3/1 45 37 32 14 Sound pressure LpA dB(A) 34 29 27 21 14 Sound insulation D<sub>n,e,w</sub> dB 44 Power consumption W 45 3.4 28 21 1.6 up to 88 % Heat recovery efficiency2) Input 230 V~, 50/60 Hz / Output 12 V-Operating voltage power supply 32 27 21 Nominal current mA NYM-0 2 x 1.5 mm<sup>2</sup> El. lead power supply unit3) NYM-0 2 x 1.5 mm2 El. lead supply control<sup>(3)</sup> El, lead to fan4) J-Y (ST) Y 3 x 0.8 mm Wiring diagram no. 1091 / 1093 4.3 Weight approx. kg

The first fix set required for this (types KWL 45 RSF) must be ordered separately (see above for details). ording to latest DIBt-test methods. 3) Use of NYM-J 3 x 1.5 mm<sup>2</sup> permitted.

CT) Y 2 x 2 x 0.8 mm permitted.

A flush-mounted socket (depth 61 mm) is requiredFor the controller KWL 45 BEU and for each installed switching power supply KWL 45 SNU.

Information

ELF-KWL 45/3/3 No. 3069





Compact wall unit with heat recovery for ventilation of single rooms.

KWL EC 60 is the proven solution for comfortable indoor climate and energy saving in single rooms.

Ideal to bring existing buildings up to modern standards in the course of a renovation and to EnEV standard.

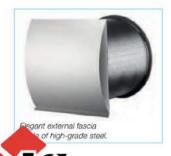
KWL EC 60 supplies small and larger single rooms. For a medium-sized flat the installation of several units is recommended.

# Installed in no time - ideal for renovation

KWL EC 60 is the optimal renovation solution, also for additional installation. The access to the outside air is simply made by a core drilling in the outer wall in which the wall sleeve is inserted.

This can be done simply during the facade renovation. Two protection cover plates close the openings. The installation of the elegantly designed external facia which is made from high grade-steel takes place with the final plastering works. During the interior work the





\* External components such as external fascias, spacer frames and guards are made of high-grade steel.

Alternatively available in coated version (Type - B) for use in environments with high levels of air pollution or high salt concentrations in the air (near coast).

unit is inserted into the wall sleeve and connected electrically. Only the elegant facia is seen inside the room. Therefore the KWL EC 60 blends in everywhere beautifully and the facia shields the view of the fan interior completely.

Aluminium plate heat exchanger with efficiency of more than 70 % Expensive heating energy is saved with KWL EC 60 and its efficient large heat transfer area aluminium plate heat exchanger with efficiency of more than 70 %.

#### ECgreenVent® by Helios

Efficient energy-saving ventilation units with EC-technology including the Helios KWL EC 60 are given the ECgreenVent\*® label.

KWL EC 60 allows the demand ventilation with heat recovery of individual rooms; several units can be controlled independently.

Regulating is not necessary.

#### Operating mode of the KWL EC 60 ventilation with heat recovery

Two highly efficient fans with energy-saving EC-motors move the supply and extract air. Smells and stale room air are extracted outside, fresh and preheated air is supplied into the room.

The heat of the extracted air is recovered by the large heat transfer area aluminium plate heat exchanger and transferred through the plates to the incoming fresh external air, so both air flows remain separated.

## ■ Delivery/Ordering

Efficiency class

В

D

Coordinated with the assembly steps the following elements are packed separately and have to be ordered individually:

KWL EC 60 Pro FF

KWL EC 60 Eco / Pro

□ First fix set, consisting of wall sleeve (length 349 mm), two protection cover plates and external facia made from highgrade steel (Type RS-B with additional coating\*).

Type KWL 60 RS No. 0708 Type KWL 60 RS-B No. 1961

Ventilation unit, in Eco or Pro.

#### Similarities

#### Heat exchanger

Large heat transfer area aluminium plate heat exchanger with efficiency of more than 70 %.

#### ■ Fans

Two highly efficient fans with energy-saving EC-motors move the supply and extract air with minimum power consumption.

# Condensation spigot

Condensation is led directly to the outside via the ext. facia.

#### Air filter

KWL EC 60 Pro with additional room sensor

Two efficient air filters of class G4 in the supply and extract air stream guarantee the best air purity.

A pollen filter (class F7) is available for the supply air as an accessory.

#### KWL EC 60 Eco

The energy saving solution with favourable price/performance ratio for all applications.

Ventilation unit Eco, consisting of indoor facia from high quality polymer with integrated 3-speed controller.

Type KWL EC 60 Eco No. 9950

#### Speed control

Three-speed operation via controller, integrated in the indoor facia (can be positioned alternatively on top or bottom by 180° turn of facia). Disconnection via on/off switch on site.

Electrical connection Via plug-in connector.

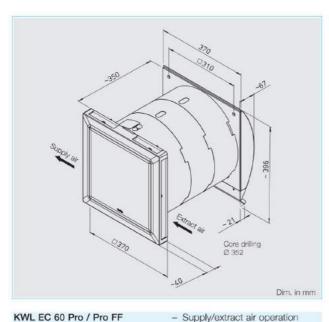
Ventilation unit <sup>1)</sup>	KWL EC 60 Eco 1)	Ref. no. 9950		
Air flow volume on step <sup>2)</sup> Supply/extract V m <sup>3</sup> /h	<b>❸</b> 60	<b>⊘</b> 30	<b>O</b> 17	
Sound level dB(A) Case breakout L <sub>PA</sub> in 3 m	30	22	18	
Fan power 2xW	4	2	1	
Sound insulation D <sub>n,e</sub> dB(A)	39-41			
Voltage/Frequency	230 V-, 50 Hz			
Nominal current A	0.05			
Protection to IP	X4			
Electric supply	NYM-J 3 x 1.5 mm <sup>2</sup>			
Wiring diagram no.	949			
Temperature operating range	- 20 °C to + 40 °C			
Weight approx. kg	6.5			

<sup>1)</sup> The necessary first fix set (Type KWL 60 RS) is to be ordered additionally (see details above).

2) Volume reduction by approx. 10 % when using the F7 filter.







separately adjustable.

ventilation.

Shutters

delivery).

error messages.

- Boost ventilation, intensive

Display of required filter change,

operating state, operating hours,

Several units can be controlled

with one comfort controller.

be connected to one unit.

Several comfort controllers can

Two shutters seal airtight to the

outside when the unit is off

(holiday or downtimes), one

Electrical connection

shutter seals individually with

Via plug-in connector (incl. in

supply or extract air operation.

KWL EC 60 Pro / Pro FF Fulfils even highest demands in comfort, with many useful functions.

- Ventilation unit Pro, consisting of indoor facia from high quality polymer and comfort controller (KWL-BCU, 1 pc incl. in delivery). See details on the right. Type KWL EC 60 Pro No. 9951
- Ventilation unit Pro FF, KWL EC 60 Pro, however with additional integrated humidity sensor for ventilation as needed. Adjustable humidity level. KWL EC 60 Pro FF No. 9957

#### Power control

The comfort controller with graphic display and user-friendly menu navigation (included in delivery) makes the following functions possible:

- Four-speed manual operation or with digital timer.
- Control via intelligent CO2- and humidity sensors (accessories, in each case up to 4 controllers can be installed).

# Delivery / Ordering

Coordinated with the assembly steps the following elements are packed separately and have to be ordered individually:

First fix set,

as described on the left page. No. 0708 Type KWL 60 RS Type KWL 60 RS-B No. 1961

Ventilation unit, in Eco or Pro.

#### Similar accessories Extension sleeve

For wall thickness 349 to 571 mm. Length 111 mm can be shortened to any length with partition element. Type KWL 60 WV No. 0884

#### Sound insulation set

Consisting of sound insulation frame and mat, white, 100 mm depth. Sound reduction up to 6 dB. Type KWL 60 SDS No. 3059

#### Spacer frame

from high grade steel for outside wall, length 100 mm, with partition element. For wall thickness from 249 to 349 mm.

Type KWL 60 DR No. 0888 Type KWL 60 DR-B No. 1962

#### Guard

from high grade steel (2 pieces), for installation to outside facia.

Type KWL 60 SG No. 9978 Type KWL 60 SG-B No. 9976

#### Accessories for KWL EC 60 Pro Comfort controller (addit.)

Display and function as described on the left, One piece KWL-BCU included in delivery. Up to 4 controllers can be connected. 3 m connecting cable included in delivery. Dim. mm (WxHxD) for flush mounting up 80x80x37

KWL-BCU (flush) No. 9955 Dim. mm (WxHxD) 83x83x51 KWL-BCA (surface) No. 9956 Casing for surface installation Dim. mm (WxHxD) 83x83x41 **KWL-APG** No. 4270

### Room sensor

Measures CO<sub>2</sub> concentration and transfers data to the ventilation unit to arrange for an optimal CO<sub>o</sub> level in all 4 speeds, 3 m connecting cable included in delivery. Up to 4 sensors can be plugged in. In this case, the sensor with the highest measurement is used for setting the unit.

Dim, mm (WxHxD) 95 x 97 x 30 KWL EC-CO<sub>2</sub> No. 9988

## Connecting cable

For distances > 3 m, with 2 RJ 12 plugs. For connection between controller and KWL EC 60 Pro and / or between several ventilation units. KWL-SL 6/5 (5 m) No. 9980

KWL-SL 6/10 (10 m) No. 9444 KWL-SL 6/20 (20 m) No. 9959 Basic installation kit is absolutely necessary.

Replacement air filters

- 2 pcs. G4 filter ELF-KWL 60/4/4 - 2 pcs. F7 filter

ELF-KWL 60/7/72)

No. 9445 No. 9446





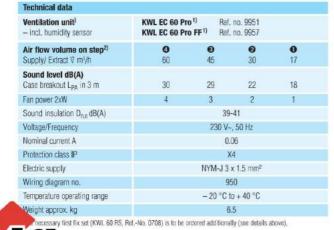




#### Wye junction board

To connect further units or controllers and accessory components which are not included in delivery (each 1 piece required).

Type KWL-ALA No. 9960



2) Allow a volume reduction of about 10 % when using a F7 filter

# **Helios**



Heat and humidity recovery for a comfortable climate.

KWL® units with combined heat and humidity recovery by enthalpy exchanger provide for a comfortable, healthy room climate, without additional energy consumption and without use of an atmospheric humidifier.

#### Ideal room climate provides a healthy environment.

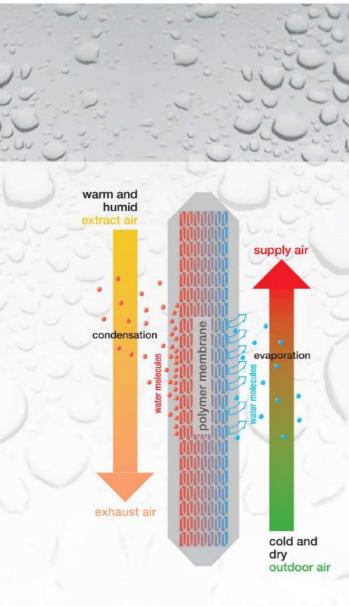
In living quarters the relative room humidity should lie between 35-60%.

With too low humidity mucous membranes, dry dust and electrostatic charges increase.

These effects become apparent in the cold season. During this period, the absolute moisture content in the outside air is much less in comparison to summer.

If the used air with a high absolute humidity content is replaced by fresh but dry air with a smaller absolute humidity content, the humidity in the room will decrease noticeably.

Ventilation units with enthalpy heat exchanger recover, in addition to the heat, up to 70% of humidity from the extract air. This is used to warm the outside air, which flows into the living and reception rooms with a comfortable, healthy moisture content.



# Operating mode of enthalpy heat exchanger:

The water molecules of the extracted room air condense on contact with surfaces of the enthalpy heat exchanger. They move the water in a similar way to plants, through the membrane.

At the membrane surface of the supply airside the water molecules are absorbed by dry outside air.

The polymer membrane of the enthalpy heat exchanger guarantees hygiene and efficiency with the humidity transmission process.

It ensures the water retains its molecular configuration to enter the supply air flow. Extract and supply air flows are hermetically separated from each other, so that an overall transfer of organic particles or odours is excluded.

### Ventilation units with enthalpy heat exchanger offer convincing advantages:

- Twofold benefit through energy-saving heat recovery and hygienic humidity recovery in the cold season.
- Humidity recovery from the extract air up to 70%, depending on the interior air humidity.
- Additional humidifiers are unnecessary.



#### KWL® control concept Helios easyControls

Helios easyControls revolutionises with integrated web server and LAN connection the ease of use of KWL® units. The models equipped with easyControls as standard (see product pages) can be easily and fast integrated into the PC network and operated via the convenient interface in any web browser. Whether with PC or laptop, tablet or smart phone.

At any time, in any room.

#### Highlights

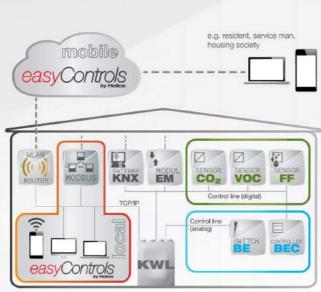
- □ Web browser operation whether from home or on the road, in the home net- work or via the Internet, from any terminals.
- Including building control interface (integrated Modbus, KNX optional.)

#### Options

- □ Automatic, demand responsive operation using CO₂-, mixed gas- (VOC) or humidity sensor.
- Manual operation via comfort controller with graphic display or step switch.







www.easyControls.net

#### ■ Basic functions of the local Helios easyControls web server

- Start-up assistant
- Selection/setting of speed step
- Setting of clock timer Ventilation / Heating
- Activation of intensive-/ whisper-/vacation mode
- Selection of access rights
- Locking controllers
- Setting of CO<sub>2</sub>-, VOC- and humidity control
- Software-Updates (via Internet)
- Display of filter change,
   Operating conditions/hours,
   error messages etc.

#### Additional features of the Helios easyControls web portal (on the road via the Internet)

- Password-protected access to the KWL<sup>®</sup> ventilation system (e.g. via Smartphone or laptop)
- Graphic temperature analysis
- Remote maintenance (housing society or craftsman)
- Storage of the last three configurations
- Error message per e-Mail
- Error history
- Support by Helios service via Remote Access Control

■ Location-independent access

EasyControls provides direct access on the KWL® unit regardless of where you are.

Whether from home or on the road via the Internet, active connection presumed.

Authorised users, service engineers or housing societies can comfortably change unit settings or query status information via the Helios easyControls web portal at any time.

# Central building control systems

The KWL® unit simply can be integrated into a network of the central building control system over the standard Modbus interface (TCP/IP) or an optionally available KNX module.

■ Simply configured and quickly taken into operation During the operation the advantages of the comfortable interface for the system configuration and start-up are demonstrated.

Even without a PC network: simply connect the KWL® unit via LAN cable to the laptop and open the menu of easyControls in the browser.

### ■ Always up-to-date

With Helios easyControls the ventilation unit updates itself simply and quickly over the Internet with the latest software.

#### Demand-driven and energy-saving

Using easyControls and optionally connected CO<sub>2</sub>-, mixing gas-(VOC) or humidity sensor the KWL® unit provides automatically for an optimum living space climate and extracts the air pollution which originate, e.g., while cooking or showering reliably. This saves energy.

## Manual operation

If no PC network available or is a manual access preferred, easyControls can be controlled via a comfort control with graphic display or a step switch.

