MAX!

Flexible heating control via smartphone and Internet

The most efficient way to reduce energy costs and protect the environment is to use an intelligent heating control system.

MAX! users only need to turn the heating on when the heat is actually needed. Greater convenience and flexibility while on the move using a smartphone.

eQ3

Editorial

Dear Readers,

Energy costs have more than doubled over the last ten years. The incidental costs of running a home are now almost like a "second mortgage", with the lion's share being made up of heating costs. And yet, this burden can be drastically reduced with just a small amount of effort. So why not give your customers a helping hand?

We'd like to invite you to read the pages of this brochure in order to discover exactly what the MAX! system has to offer. It is a system that combines the best of two worlds by drawing on more than three decades of experience in the development and production of home control solutions plus the competence of a true market leader in the field of electronic radiator thermostats.

The market potential of this new technology is absolutely staggering: In Germany alone, there are well over 100 million radiators that could easily be fitted with it in order to achieve significant savings in next to no time. Read this brochure to find out how you can take a share in this market while at the same time building a new form of customer loyalty.

Happy reading!

Yours

Bernd Grohmann
Director of Marketing & Business Development

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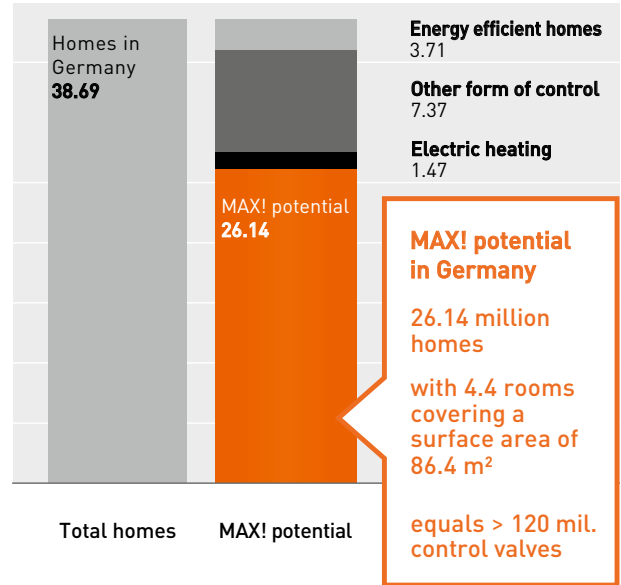
Market potential

Two thirds of all German homes were built before 1978, which was the year when the first energy saving regulations were introduced. This means that there are 120 million radiators in German households that are just waiting to have an energy saving solution installed.
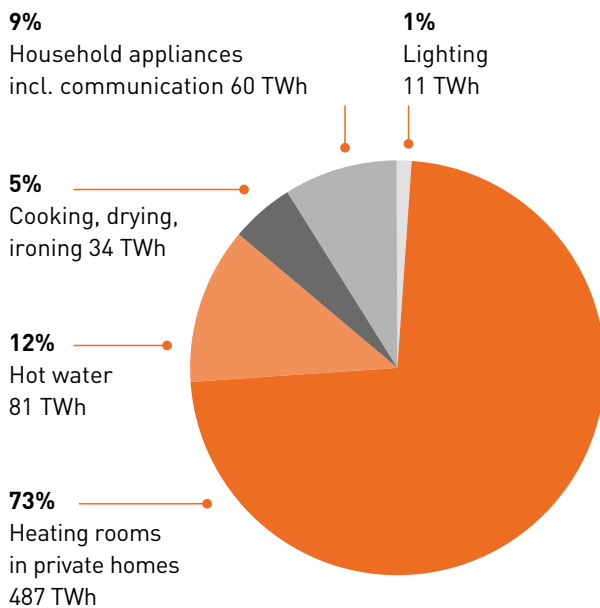
■ Heating requirements of homes built today:
  Approx. 50 kWh/m^2 per year
■ Heating requirements of homes built before 1978:
  Typically more than 250 kWh/m^2 per year

Buildings with immediate potential:
• Built between 1919 and 1986
• 3 to 6 rooms
• Partially renovated

Homes in Germany
38.69

Energy efficient homes
3.71

Other form of control
7.37

Electric heating
1.47

MAX! potential
26.14

MAX! potential in Germany

26.14 million homes

with 4.4 rooms covering a surface area of 86.4 m²

equals > 120 mil. control valves

Total homes   MAX! potential

German energy market - private households

9%
Household appliances
incl. communication 60 TWh

1%
Lighting
11 TWh

5%
Cooking, drying,
ironing 34 TWh

12%
Hot water
81 TWh

73%
Heating rooms
in private homes
487 TWh

Only 22% of the total energy consumed by private households in Germany comes in the form of electricity. Approximately one quarter of this is used to heat rooms, e.g. using heat generated by electrical heating appliances. The amount of energy that can potentially be saved in terms of electricity is not nearly as high as people often think it is. In fact, it stands at just 5% (or thereabouts).

By contrast, 85% of the energy supplied to private households in all its various forms goes on heating rooms and water.

And this is exactly where MAX! comes into play: The greatest potential for saving energy in private households has to do with heat generation for rooms. With the easy installation of our products, energy consumption in private households can considerably be reduced.

Source: Statistisches Bundesamt, Verband der Zentralheizungswirtschaft, IVD (German Federal Office of Statistics, German Central Heating Association, German Property Association)

Benefits for partners

The MAX! heating control system provides partners from the following sectors with a whole host of opportunities and options:

- Telecommunications service providers
- Service providers
- Energy suppliers
- Municipal utilities
- Building societies
- Housing associations
- Mail order companies

These range from the opportunity to break into a new and highly profitable market and to position themselves as a service-oriented company, right through to the ability to leverage the products as an effective customer loyalty tool.

With MAX!, partners can offer their customers a new service that starts providing a ROI as of the very first month.

The partner stands to benefit even more by building a profile as a service-oriented provider: Simply by connecting new telephone or Internet hardware, the engineer can be deployed to the site quickly and can install the MAX! components with hardly any effort at all. No special tools or knowledge of heating/plumbing are required.

What's more, rental or service models that do not involve initial costs save customers hard cash right away - and this creates a powerful incentive for long-term customer loyalty.

As far as the company itself is concerned, it has an opportunity to break into a new market where there is lots of customer interest using its existing service teams.

But what is it exactly that your customers want and need?

Benefits for end customers

... Greater convenience

- Increased comfort at home
- No frustration caused by technical problems
- Quick and easy "do it yourself" installation
- Installation service available if required
- Integration of "anywhere" control

... Money savings

- Affordable, won't break the purse strings
- Transparent and traceable ROI that can be achieved in next to no time

... Being green

- Ability to reduce individual CO_2 footprint

... And the possibility to buy from a trusted brand

Customers can look after their well-being and save money at the same time thanks to the greater convenience and heating profiles that are tailored to their personal routines.

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Benefits for users

Enable your customers to increase the level of comfort in their own homes, to save on energy costs and still do their bit for the environment – all with the MAX! system, the energy efficient heating control solution.

Heating costs account for the largest share of what private households spend on energy. Annually, they are three times higher than the amount of expenditure that goes on lighting, electrical appliances and hot water combined. Although there are regulations in place to ensure the construction of energy efficient buildings, the vast majority of homes in Germany were actually built before these regulations came into force. This means that there are more than 26 million households that are needlessly burning away their cash.
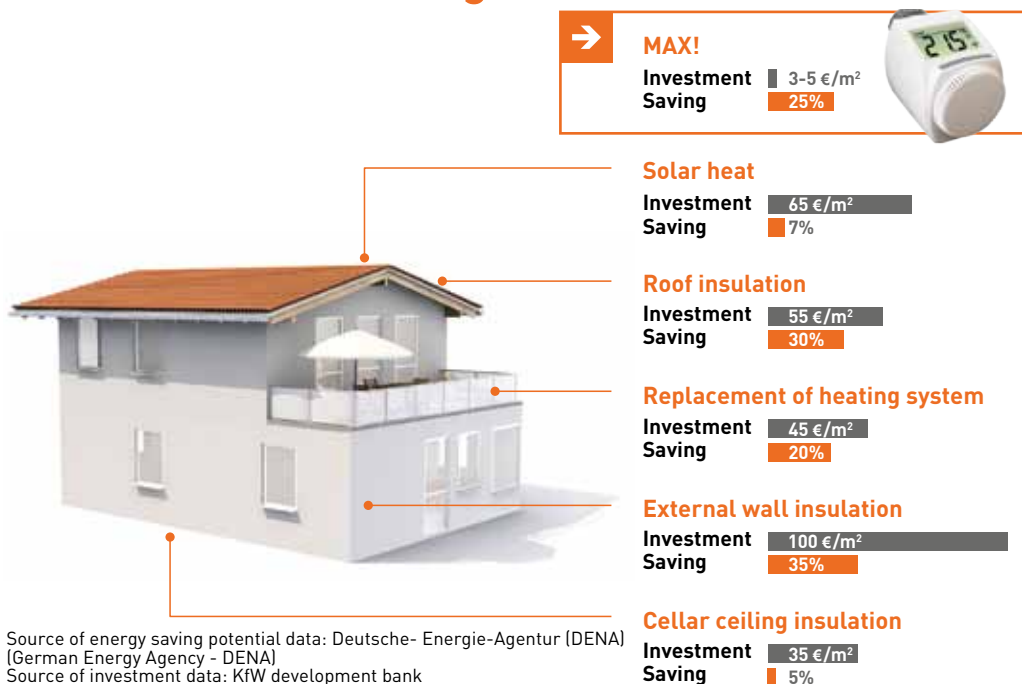
There are plenty of countermeasures, whether it be fitting roof and wall insulation or installing a new heating system. But these all require a high level of initial investment. All, apart from the MAX! heating control system that is! For an investment of just 3 to 5 euros per square metre, customers can cut their energy costs by a quarter, with the CO_2 emissions for a multiple dwelling unit such as a block of flats being reduced by several tonnes.

This means that after approximately two years most users will have saved more money than the solution actually cost them in the first place. If the customers were to hire the technology rather than purchasing it, they could start making savings as of the very first month.

But that's not all. MAX! users are not just able to save money and help protect the environment; they can also, and perhaps most importantly from their perspective, improve the level of comfort in their own home. Instead of feeling guilty about heating their home all day to achieve an average temperature and then just turning the system down slightly at night, they can now heat specific areas at the times that suit them best. For example, they can turn the heat up slightly in the bathroom when it's time to get up and lower the bedroom temperature in the evening while still keeping the living room nice and cosy - fully automatically.

The technology is easy to understand, install and operate, which is REALLY important from the point of view of customer acceptance. It is with this in mind that the modular and expandable system offers solutions for individual rooms right through to complete houses.

Direct comparison of energy efficiency measures and the associated savings

MAX!
Investment | 3-5 €/m²
Saving | 25%

Solar heat
Investment | 65 €/m²
Saving | 7%

Roof insulation
Investment | 55 €/m²
Saving | 30%

Replacement of heating system
Investment | 45 €/m²
Saving | 20%

External wall insulation
Investment | 100 €/m²
Saving | 35%

Cellar ceiling insulation
Investment | 35 €/m²
Saving | 5%

Source of energy saving potential data: Deutsche- Energie-Agentur (DENA) (German Energy Agency - DENA)
Source of investment data: KfW development bank

# MAX! system components

PORTAL
Max! Portal Software

- The MAX! portal allows the customer to control the MAX! system over the Internet without having to undertake any complex configuration work first.
- Partners can easily adapt this solution in line with their own branding requirements and integrate it into more complex portal solutions.

OPERATION
Max! Client Software
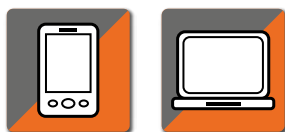
- The browser-based operation and configuration using HTML/rich Internet application offers a high level of user friendliness.
- The software can be used locally on a PC or laptop even without an Internet connection or access to the portal.

DEVICE INTERFACE
Max! Cube LAN Gateway

- Connects the MAX! devices to the portal without any need for access router or firewall configuration and without compromising security.
- Enables encrypted communication in the network (AES 128)
- Can also be integrated into other devices on behalf of partners (in the case of larger quantities).
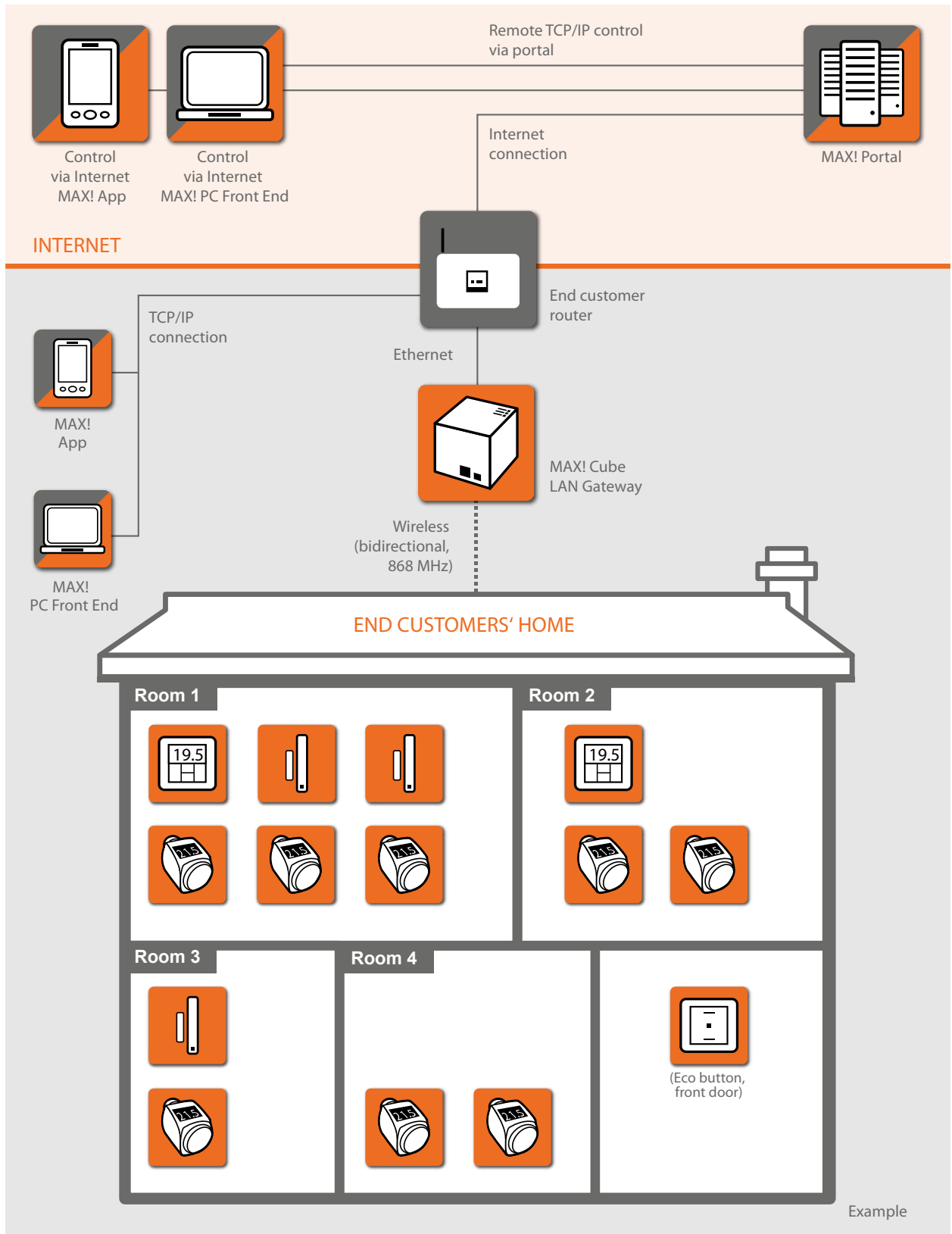
DEVICES
MAX! actuators and sensors
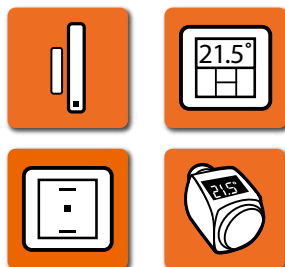
- Easy to install heating control of the highest standard in a price bracket that will appeal to consumers on the mass market.
- Packaging, branding and design of devices can be coordinated with the CI of partners for optimum integration into their existing marketing and sales concepts.

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MAX! architecture

Remote TCP/IP control via portal

Control via Internet MAX! App

Control via Internet MAX! PC Front End

Internet connection

MAX! Portal

INTERNET

TCP/IP connection

MAX! App

MAX! PC Front End

End customer router

Ethernet

MAX! Cube LAN Gateway

Wireless (bidirectional, 868 MHz)

END CUSTOMERS' HOME

Room 1

Room 2

Room 3

Room 4

(Eco button, front door)

Example

MAX! Portal Software

The MAX! Portal can be used to control MAX! devices in the home via any Internet connection. Users can control their MAX! solution from anywhere in the world using the handy MAX! Web Client, MAX! Smartphone Apps or even the MAX! Mobile Client.

No complex configuration work (e.g. involving DynDNS) is required before the MAX! Cube LAN Gateway can communicate with the MAX! Portal. Similarly, there is no need to open a user firewall for the purpose of letting in communication from the outside world. The MAX! Portal communicates with the MAX! Cube LAN Gateway using an encrypted and authenticated communication method.

The local MAX! client is supplied together with the portal software. The rich Internet application, which is based on HTML and JavaScript, combines a high level of user friendliness with easy maintenance. The MAX! Web Client and local client are based on a standardised JavaScript framework, meaning that branding-related and customer-specific adjustments only need to be made once.

The clear structure of the MAX! Portal makes it easier for partners to integrate the solution without making their life difficult in terms of maintenance or introducing future versions. MAX! can easily be coordinated with partner branding concepts; the operating logic can even be modified on request and it is also possible for the system to be integrated into other portals that are more complex.
The MAX! Portal features an integrated user administration facility that can also be integrated into higher-level portal solutions or single sign-on systems.

The MAX! Portal is implemented in Java on the basis of modern frameworks and can easily be ported to and integrated in the data centre environments of partners. Careful consideration has been given here to the issue of allowing scalability for hundreds of thousands of households. MAX! has been optimised to allow highly cost-effective operation. Therefore, it will also be of interest to business models that finance the operation of their servers through advertising, branding, advertising grants and customer loyalty instead of by charging a basic monthly fee.

The MAX! licence model is based on the number of households or installations to be supported. There is no recurring monthly fee and the licence is available on a single or a multi-brand basis.

The front end components of the MAX! Portal are supplied as part of the source code. In addition, complete licences can be included in the source code on request. The MAX! Portal licence incorporates an Internet-based reference platform that can be used for support and maintenance as well as tests and initial pilots.

The MAX! Apps for iPhone and Android are also included in the licence for the MAX! Portal Software.

A ready-to-use Web-based reference implementation is included in the scope of supply (e.g. for tests or pilots).

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MAX!

Art.-No. 990-04

MAX!
Cube LAN Gateway

PRODUCT FEATURES

- Heating control via Internet, can be controlled from anywhere and with smartphone apps while on the move
- Encrypted, authenticated Internet communication (AES 128)
- Easy adjustment and control of all MAX! components and rooms on the home network
- Quick and easy configuration of all components using the MAX! software
- Secure bidirectional wireless communication with all components and devices for maximum operational reliability and for displaying the operating status (status display)
- Easy to install and use without any need for network know-how
- All individual device settings and parameters are stored locally so the system can even be operated independently of a PC or the Internet
- Heating thermostats can also be controlled independently and without the MAX! Cube LAN Gateway

TECHNICAL SPECIFICATIONS

Supply voltage:	230 V, USB powered
Housing dimensions (W x H x D):	Approx. 80 x 80 x 80 mm
Range of transmission in the open air:	100 m
Connection:	Ethernet
Radio frequency:	868.3 MHz

SCOPE OF SUPPLY

Assembly bracket for wall mounting
Plug-in USB power supply
USB cable
Network cable
Operating manual in G, F, EN and NL

eQ3

MAX!
Radiator Thermostat

Art.-No. 990-17

PRODUCT FEATURES

- Easy to mount without having to drain any water or intervene in the heating system; no special tools required
- Suitable for universal use; compatible with the products of the most popular manufacturers e.g. valves from Heimeier (M30 x 1.5), Oventrop type A (M30 x 1.5) and type AV6 (M30 x 1.5), Comap D805 (M30 x 1.5), Danfoss RA, RAV and RAVL
- Adapts to the radiator dimensions thanks to adaptive control and optional valve limiting; no need for hydraulic adjustment on the radiator
- Automatic temperature reduction when the windows are opened for ventilation and adjustment of the temperature when they are closed thanks to window sensors that can be taught in
- Automatic frost protection and temperature fall detection
- Automatic limescale protection: automatic protection against calcification thanks to regular opening and closing of the valves
- Changes to one device are applied to all the devices in the room
- Boost button for heating up the radiator instantly
- Ready to use straight away thanks to preset programming
- Can be individually tailored to personal routines thanks to the freely programmable heating phases (13 switching times per day for temperature switchover)
- Precise temperature adjustment (to the nearest 0.5°C)
- Large illuminated display with easy-to-read numbers
- Operating block can be activated to prevent tampering
- Theft protection available as an option

TECHNICAL SPECIFICATIONS

Supply voltage:	3 V
Max. current consumption:	100 mA
Batteries:	2 x LR6 (Mignon/AA)
Battery life:	Approx. 2 years (2 heating cycles)
Display:	LCD, approx. 45 x 32 mm (W x H), illuminated
Housing dimensions (W x H x D):	90 x 64 x 70 mm (incl. connecting flange)
Connection:	M30 x 1,5 (e.g. for Heimeier)
Housing colour:	White (similar to RAL 9016)
Radio frequency:	868.3 MHz

PERFORMANCE FEATURES

Control range:	5.0°C – 30.0°C, plus On (heat pause) or Off (valve closed, frost protection)
Control response:	Adaptive control algorithm with quasi-analogue control
Adjustment sensitivity:	0.5° C
Smallest switching interval:	5 minutes
Daily switching programs:	13 freely selectable switching points using any settable temperature for up to 13 control phases a day
Operating modes:	Automatic, manual, holiday/party mode

SCOPE OF SUPPLY
2 x LR6 (Mignon/AA) batteries
3 x adapters for Danfoss valves (RA, RAV, RAVL)
Operating manual in G, F, EN and NL

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MAX!
# Wall Thermostat

Art.-No. 991-07

PRODUCT FEATURES

- Comfort throughout the entire room at the touch of a button: convenient control of up to 8 radiator thermostats
- Boost button for heating up all the radiators in the room instantly
- Large, easy-to-read display (LCD)
- Room/setpoint temperature permanently displayed
- Can be configured using MAX! Cube
- Programming of comfort and reduction temperatures
- Switch between automatic and manual operation
- Integrated holiday/party function
- Easy to integrate into existing switches from the following manufacturers:
  Berker (S.1, B.1, B.3, B.7 Glas)
  GIRA (System 55, Standard 55, E2, E22, Event, Esprit)
  Merten (1-M, Atelier-M, M-Smart, M-Arc, M-Star,M-Plan)
  JUNG (A 500, AS 500, A plus, A creation)
  ELSO (Joy)
- Can also be mounted in the clip-on frame supplied

TECHNICAL SPECIFICATIONS

Supply voltage:	3 V
Max. current consumption:	30 mA
Batteries:	2 x LR03 (micro/AAA)
Battery life:	Approx. 2 years
Housing dimensions (W x H x D):	Approx. 86 x 86 x 21.5 mm
Display dimensions (W x H):	LCD, 27.5 x 55 mm
Range of transmission in the open air:	100 m
Radio frequency:	868.3 MHz

SCOPE OF SUPPLY

2 x LR03 (micro/AAA) batteries
Clip-on frame
Mounting plate
Operating manual in G, F, EN and NL
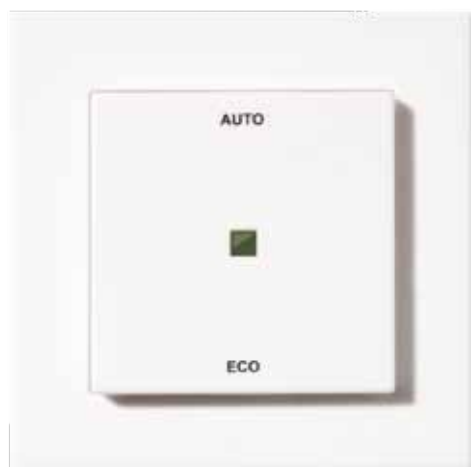
MAX!
Eco Switch

Art.-No. 990-11

PRODUCT FEATURES

- Save energy in every room at the touch of a button: Whenever you leave home, all rooms can be brought down to a special reduction temperature
- Long battery life of up to 5 years (alkaline batteries)
- Easy to integrate into existing switches from the following manufacturers:
  Berker (S.1, B.1, B.3, B.7 Glas)
  GIRA (System 55, Standard 55, E2, E22, Event, Esprit)
  Merten (1-M, Atelier-M, M-Smart, M-Arc, M-Star, M-Plan)
  JUNG (A 500, AS 500, A plus, A creation)
  ELSO (Joy)
- Can also be mounted in the clip-on frame supplied

TECHNICAL SPECIFICATIONS

Supply voltage:	3 V
Max. current consumption:	30 mA
Batteries:	2 x LR03 (micro/AAA)
Battery life:	Approx. 5 years
Housing dimensions (W x H x D):	Approx. 86 x 86 x 21.5 mm
Range of transmission in the open air:	100 m
Radio frequency:	868.3 MHz

SCOPE OF SUPPLY

2 x LR03 (micro/AAA) batteries
Clip-on frame
Mounting plate
Operating manual in G, F, EN and NL

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MAX!

MAX!
Window Sensor

Art.-No. 990-23

PRODUCT FEATURES

- Lower energy costs thanks to automatic ventilation detection when windows are opened and closed. During ventilation, the room temperature is reduced. As soon as the window is closed, the thermostat resumes its heating program.
- Long battery life of up to 5 years (alkaline batteries)
- Transmits the battery status to the MAX! Cube
- Window status detection and indication (open/closed)
- Both white (RAL 9010) and brown (RAL 8014) covers and spacers are included in the scope of supply
- Understated design suitable for universal use

TECHNICAL SPECIFICATIONS

Supply voltage:	3 V
Batteries:	2 x LR03 (micro/AAA)
Battery life:	Approx. 5 years
Housing dimensions:	
Electronic unit (W x H x D):	18.5 x 103.5 x 24.5 mm
Magnet (W x H x D):	11.5 x 48 x 12 mm
Heating thermostats that can be taught in:	No limit
Range of transmission in the open air:	100 m
Radio frequency:	868.3 MHz

SCOPE OF SUPPLY

2 x LR03 (micro/AAA) batteries
Electronic unit with white (RAL 9010) and brown (RAL 8014) covers
Magnetic contact with white (RAL 9010) and brown (RAL 8014) covers and spacers
Fixing accessories
Operating manual in G, F, EN and NL

MAX!
Packaging

GENERAL

- The products are packaged in plastic film and then placed in a sturdy cardboard box suitable for use by mail order companies
- The application of a seal on the opening side makes bulk storage possible
- The packaging can be supplemented by means of individual set boxes to allow division of the products as required (5000 sets or more). For example: 1 Cube, 2 Radiator Thermostats, 2 Window Sensors, 1 Eco Switch
- The key customer benefits are printed on the packaging in 4 languages (G, F, EN, NL).
- On request (and assuming that a certain quantity is ordered), custom packaging can be provided, e.g. display racks for retail stores
- The base dimensions (L x W) are always the same for all Max! products, making it easier to use set packaging in different sizes

PACKAGING DATA

- Cardboard box suitable for use by mail order companies
- Sealed Base area of packaging for all items: W x D = 110 x 110 mm

Cube height	150 mm
Radiator Thermostat height	75 mm
Eco Switch height	37.5 mm
Wall Thermostat height	37.5 mm
Window Sensor height	37.5 mm

4c printing (for an example, see eQ-3 packaging)

MAX!