Now it's getting smart!

KNX building automation

smart · innovative · intelligent

European - Technology
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BRIGHT CONSULTANTS
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MDT® technologies

Welcome to MDT –
your KNX specialists

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Dear readers,

Everyone is talking about the "smart home", but how can this be achieved reliably and sustainably? The best solution is a KNX system, which offers stable communication via the bus line and provides investment security as there are over 500 different manufacturers.

When I was asked some time ago whether I wanted to move from a major corporation to the medium-sized MDT, the main thing that excited me was the specialisation. I have already grappled with the subject of intelligent building automation once before in my career, and I have long been convinced that KNX will be the leading system of the future. Then when I discovered that MDT can offer speed and customer proximity due to development, production and support being from one site and "Made in Germany", the decision was made.

Over the following pages we would like to show you everything that is possible with KNX products. The extraordinary functionality of our products will give you a sense of the enthusiasm and application expertise of our developers. The aim is always to offer our customers true added value, making everyday life in the smart home even more convenient.

Let us inspire you!

Yours, Roger Karner
CEO

We offer more!

The founding idea behind the MDT KNX range emerged on a private building site: "A KNX actuator like this must be able to do more!". This was followed by laborious development, after which our own first KNX range was launched onto the market. To this day, the core idea of offering the user more functionality runs throughout the entire product range at MDT.

Made in Germany

MDT had already been operating for more than 25 years before it started producing KNX components. Since its foundation in 1983, the company had produced personal computers and working memory trading under the name MCI. Computer production was ceased at the end of 1996 and from then on MDT exclusively produced working memory for PCs. During this phase, extremely flexible production processes were established because the company aimed for an order placed in the morning to be delivered the same evening.

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Variety with added value

MDT offers over 300 varied KNX products, including many with unique selling points. It is one of the biggest and most innovative product ranges on the market. One of the first products in 2009 was a binary input, which had an integrated logic function. What is now a widespread and common function was revolutionary at the time, and meant the information from the window and door contacts could be bundled and used together. Even now, MDT products always have useful added value, and the latest product in the long line is the Shutter Actuator with travel time measurement. This saves time as the installer now no longer needs to manually measure and save the travel time for every shade, and instead this can be done automatically with a click.

There will definitely be even more exciting product developments in future. At the same time, MDT places great importance on short and quick paths.

Made in Germany

MDT develops and produces the products in Engelskirchen near Cologne in Germany. Thousands of products leave the plant every day, and the products are usually available from stock. This is made possible thanks to the flexibly organised production, which is flexibly geared towards demand. More than 100 employees at the site manufacture the KNX components in various production levels.

Obviously, product quality is the top priority for the employees. Each individual product is put through several different quality tests during the production process. By doing this, MDT ensures that the customer gets the best possible result. The three-year extended warranty that applies for all MDT products shows how confident we are in our own product.

Close to the customer

Should a customer need help once in a while, the MDT telephone support service can provide assistance and advice. Usually a short conversation will solve the problem, and if this is not possible then the MDT employees can also look at the customer's ETS programming or connect their monitor via Teamviewer. No matter what action is needed, the support service will be available until all areas of uncertainty have been resolved and the customer is completely satisfied.

The support service employees are also always happy to hear about customer requests for the products. There have been many occasions in the past when customer requests have resulted in new product functions. This innovative strength has resulted in MDT winning multiple prizes, for example the company was awarded the TOP 100 innovation prize for the sixth time in succession in 2021.
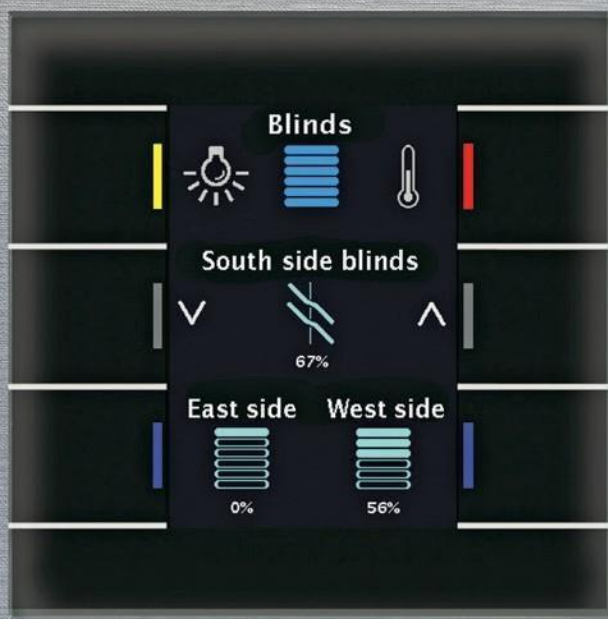
The control unit

Lots of functions are set up automatically in the smart home, but the users must always be able to control their system individually. Push buttons in the rooms offer much more than the standard on/off: dimming the lighting, heating control and calling up scenes are just some examples of the almost unlimited functionality.

Glass Push Button II Lite, 2-fold (BE-GTL2TW.C1)

GLASS PUSH BUTTON II LITE

Functions such as switching/dimming lighting, shutter control, value control, scene control, and the slap function can be operated with the Glass Push Button II Lite. The basic functions for the room are saved for a simple push of a button, meaning that even guests will be able to switch on the lighting intuitively. In order to be able to use more functions, the Push Button II Lite offers the multi-touch function, which can be used to place up to four functions on each individual push button. In this case, for example, the user calls up a light scene by pressing twice – allowing them to surprise their guests.

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The Glass Push Button II Smart allows for quick and simple operation of various functions such as lighting, scene, shutter, heating and colour control. The large active colour display is used to display the function and status and can be freely configured.

Everything under control

If everything has been set up for the room, then lots of things run automatically via the KNX system. Nonetheless, the user must be able to intervene in the system if he wants to make individual settings once in a while. The Glass Push Button II Smart not only looks good, it can also be assigned up to 12 functions. This allows the user to control lighting, scenes, shutters, heating and light colour. In addition, in standby mode the display can show the time and room temperature.

Switch off quickly

Throughout the day, the users activate a wide range of functions, and these need to be able to be switched off quickly in the evening. When they want to do this, the user simply places their hand fully on the Glass Push Button and, for example, all of the lighting is switched off. This "slap function" also works the other way around and if you do not want to look for the individual buttons in the dark, the slap function can be used to switch on predefined lights.

Glass Push Button II Smart (BE-GT2TW.01)

The Glass Push Button II Smart, the Push Button II Lite and the Glass Central Operation Unit Smart are also available with temperature sensors, meaning there is no need for an additional sensor.
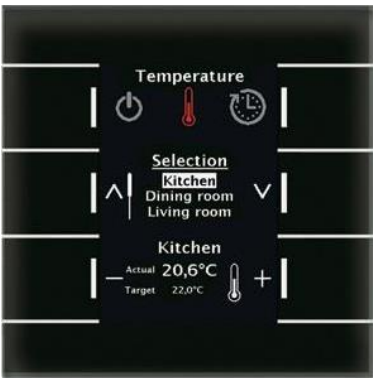
Glass Central Operation Unit Smart (BE-GBZS.01)

The Glass Central Operation Unit Smart is the heart of any smart home. The integrated astronomical timer tells the system the time. Indoor/outdoor temperature, target temperature values, date/time, sunrise/sunset, text and alarm messages are clearly shown on the large active colour display.

Off and out you go

We all know what it is like when you leave home and wonder whether everything is switched off. You can confidently put this thought out of your mind with a Glass Central Operation Unit in the hallway. This unit is used to set up a "Central Off" function, which disconnects all critical consumers. Obviously other functions such as the lighting can also be switched off at the same time, depending on the individual building requirements. This allows you to leave the building without worrying.

The building gets smart

The user can use the Glass Central Operation Unit Smart to set up switching times in order, for example, to raise the shutters as the sun rises throughout the week, and lower them again at sunset. This is made possible by the integrated astronomical timer with functions such as setting weekend times, exceptions for public holidays and much more. In order to ensure that nobody changes the settings in the Glass Central Operation Unit Smart without authorisation, the unit can be protected with a numeric code. Alternatively, the numeric code can also be used to activate a KNX alarm system.

The shading

Modern buildings have excellent insulation and large windows. This means that rooms heat up very quickly when the summer sun shines in. Therefore an intelligent sunshade is now one of the basic features of a new house. Shutter actuators with comprehensive functions are used to control it.

Shade according to the level of the sun

Shade is really smart if it adjusts automatically to the current weather conditions. Then at the appropriate time the sunshade is only lowered on the windows that are currently in the sun. In order to implement this, the compass point direction of each window is saved.

The MDT shutter actuator uses the date and time, for example from a time switch, to calculate the current level of the sun. For optimum control, the actuator also needs the strength of the solar radiation from a weather station. The shutter actuator uses this information to move the roller shutters automatically depending on the level and strength of the sun, and for shutters the slats can also be repositioned automatically. This means that the rooms are protected against overheating due to the sun at all times. For optimum energy use, the shade function can be controlled depending on the room temperature. If the room temperature is below a set target value, the shade remains open until the room temperature is reached.

With the new Shutter Push Button Smart (BE-JTA5504.01), the user can control the sun shading manually and always see the current status of the shutter on the display.

Shutter Actuator 4-fold with travel time measurement (JAL-0410M.02)

Ventilate quickly too

Now the shutter has been lowered already, but you need to ventilate the room quickly too. Instead of raising the shutter again manually, the user can simply tilt the window and the shutter will automatically move up a few centimetres into the ventilation position. This is possible due to a contact in the window and the functions of the MDT Shutter Actuator. If the window or the patio door is fully opened, then the shutter moves right up.

The function goes even further for the patio door. If it is open, the lockout protection will be activated. However, the user can override this at the touch of a button.

Configured to save time

With standard shutter actuators, the travel time for the shade needs to be measured manually and set for each shutter. MDT has found a better solution for this and the new Shutter Actuator has an automatic travel time measurement function, which only needs to be activated once when setting up the system. Then the actuator independently measures the travel time for the sun shading for each channel, which makes commissioning much easier for the installer. Ongoing travel time correction in the background ensures permanent and optimal runtime setting for the shutter motors.

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Automatic material protection

In frosty temperatures and with high humidity, the roller blinds and roller shutters may freeze up. If the automatic control unit tries to move the sun shading, this may cause costly damage. The MDT Shutter Actuator therefore blocks the shutters when the temperature is below 3 degrees and it is also raining. When the temperature rises above 5 degrees, they are released again after a set time.

Roller blinds can also be damaged during wind and heavy rain. Therefore as a precaution they are raised and blocked until the weather gets better again. The information from a weather station is used to implement the wind, rain and frost alarm.

<div style="text-align:right">The shading</div>
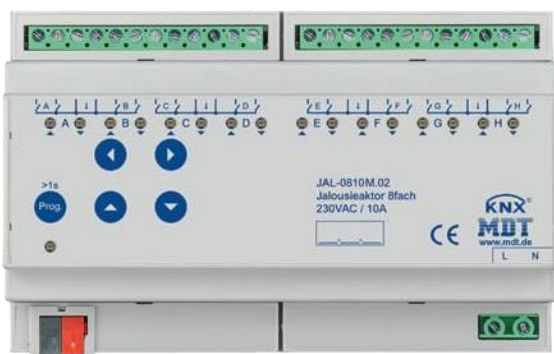
The Shutter Actuators (JAL-0x10M.02) can be used to control both shutters and roller shutters. The MDRC devices are available in 4-fold/8-fold variants. Each channel can be configured adjusted to the respective shutter/roller shutter. The channels can both be set manually to certain process times, and move to absolute positions.

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The lighting

The LED has revolutionized the lighting sector. It saves energy, is small and yet still extremely bright and has become established as the illuminant of choice over the last 10 years. The possibilities in terms of brightness, colours and shades of white produce the right mood in every room.

BE-TAL5501.A1   BE-TAL55T2.B1   BE-TAL55T4.01
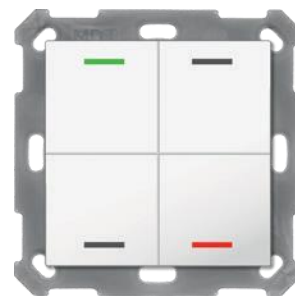
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SWITCH ACTUATOR

Convenient home automation

In the evening it is too dark and the light goes on or in summer it gets too warm and the air conditioning switches on automatically. A home automation system is seen as being smart it reacts independently and appropriately for the inhabitants' needs. Therefore MDT Switch Actuators have a threshold function on each channel. These can be used to switch the connected consumers (air conditioning, light, ventilation) when reaching, for example, a temperature, brightness or moisture level. This means that the building reacts automatically to the situation in the rooms.

Space-saving installation

The bigger the KNX system, the more space is needed in the switch cabinet. This means that for planning purposes it is important to have as many functions in as few components as possible. The 20-fold and 24-fold Switch Actuators of the MDT AKS series cut space requirements by up to 30% compared with other manufacturers.
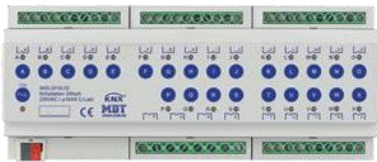
*24-fold Switch Actuator (AKS-2416.03)
The AKS series Switch Actuators are equipped with bistable relays and a C-load of up to 140 µF. They have lockable manual operation and the LED status display can be transferred into a standby mode after a set time.*

The Dimming Actuator (AKD-0401.02) is optimised for dimmable LED lights and can switch 250 W on each channel. Parallel operation of two channels with 500 W total power output is possible.

DIMMING ACTUATOR

Automatic dimming

If the children are already in bed in the evening, a light switched on in the hallway might seem too bright. In the smart home, the light is therefore dimmed during the evening so that instead of 100 % lighting, only 20% will illuminate your path. This is enough to see where you are going and will not disturb the neighbouring rooms. This is made possible by the MDT Dimming Actuator, where you can save percentage values for the lighting. Either one value each is defined for day/night, or it is possible – and this is only true with MDT – to set up time-dependent dimming.

LED CONTROLLER

Atmospheric moods

In addition to switching and dimming, the possibilities of light colours are the main thing that make LEDs so attractive. With indirect LED lighting, the room can be gently illuminated in the right colour for the mood.

With the MDT LED Controllers, it is possible to control 12/24V RGB/RGBW LED stripes very conveniently via the HSV colour space (recommended) or the RGB/RGBW colour space.

The MDT AKD LED Controller 4-channel (AKD-0424R2.02) dims 12/24V CV LEDs. The LEDs can be controlled as four individual channels, as Tunable White, RGB and RGBW.

The heating

In an era when energy costs are increasing, it is particularly important for home automation to support effective energy use. For example, the MDT Heating Actuator can block the heating mode and activate the frost protection mode if a window is opened. Obviously a window contact will need to be installed on the window in order to do this. As soon as the window is closed, the heating mode is activated again.

Warmth when needed

In order to make optimum use of energy, the heating is set so that it only supplies heat when it is actually needed. This includes saving a comfort temperature for the day and a night-time reduction so that there is less heating at night, thus saving a bit of energy. However, if the residents need warmth for a bit longer sometimes then at the touch of a button the Heating Actuator can be switched back into the comfort mode temporarily if it was already in night mode. Alternatively, the comfort mode can also be linked to presence detection using a presence sensor. In this case the comfort temperature will be maintained as long as there are people present.

MDT allows for even more energy saving thanks to the custom modulation of the heating via a communication device. If only 10 % warmth is required, then the heating is reduced to 10%.

Material protection

If heating valves are not used for an extended period, then there is a risk that they will get stuck. In order to avoid this, a protection function is integrated into the heating actuator. If this is activated then every six days the heating valve is opened/closed for five minutes. This keeps the valves moving and means they cannot get stuck.

Individual room control is implemented quickly with the Glass Push Button Plus with temperature sensor (BE-GTT4S.O1).

Easy set-up

Complicated configuration is a thing of the past, and a comprehensive PI temperature controller is integrated into the MDT Heating Actuator. This ensures that only the target and actual temperature of the room are needed to control the room temperature, and the rest is done by the Heating Actuator.

For example, the temperature values are provided by a Push Button with temperature sensor. The combination of MDT Heating Actuator and MDT Push Button with temperature sensor therefore allows for low-cost individual room control without additional components.

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Obviously it is also possible to make individual settings. For example, lots of people want the bathroom to be warmer than the rest of their home. In order to achieve this, it is possible to set a comfort temperature for the underfloor heating. For this purpose the floor temperature is measured with an additional floor sensor and held at, for example, 18 degrees. This means that the floor always feels pleasantly warm underfoot.

The heating

The MDT Heating Actuators (AKH-0800.03) with integrated temperature controller (heating and cooling) control up to eight control circuits independently of each other. Each channel has its own LED display and can control up to four actuating drives (230 VAC). The Heating Actuator can be activated with PWN (1 bit) or continuous 1 byte actuating variables. In addition, there is the possibility to control the integrated temperature controller directly with KNX temperature sensors. Comfort, night and frost protection mode, as well as summer and winter mode can be selected on the controller. The MDT Heating Actuator has a 230 VAC mains voltage failure detection, emergency operation if the cyclic actuating variables fail, a cyclic movement function and a 14 byte clear text diagnostic function. Electrical control valves for 24 VAC or 230 VAC can be connected.

The sensors

In order for the home automation to be able to react to the situation in the rooms, the KNX system needs to gather information. For example, temperature sensors, air sensors, motion detectors or brightness sensors are used indoors. Even the push buttons and controllers which the users use to make settings effectively provide information to the system. For outdoor areas, the weather station is the central source of information.

Glass Presence Detector with three sensors (SCN-G360K3.03)

PRESENCE/MOTION   DETECTOR

Control via presence

Everyone is familiar with the most common application of presence detectors: someone enters a room and the light goes on automatically if there is not sufficient natural light available. When they leave the room again, the light automatically goes off again after a short time. The rooms become really smart if other areas can also be linked to presence. For example, the comfort temperature for the heating can remain active until

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nobody is in the room, even if in terms of the settings it should long since have switched to the night-time reduction. Or the ventilation system is switched on when someone is present, and as an extension this can also be linked to an air quality sensor. Or the motion detection is linked to an alarm system, meaning that an alert is issued if unauthorised people are in the premises.

A symphony of light

These days light involves much more than just switching on and off. With dimmable lights, the system can be set up to combine natural light with just enough artificial dimmed light so that the room always has the same brightness level. During the evening, subdued lighting can be used to create a feeling of cosiness. The system is set up so that the lighting is dimmed to just a percentage of the daytime lighting. Late in the night, the main light is then no longer activated at all and instead the LED in the wall motion detector is used to provide a gentle light to help you get your bearings. If necessary, for example for small children or for security reasons in commercial buildings, this light can even be activated for the entire night. In a well set up KNX system, the finely adjusted lighting will precisely follow the users' routines.
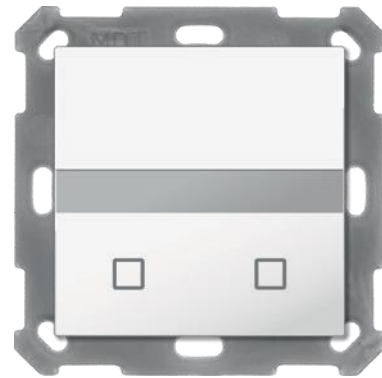
The Motion Detector (SCN-BWM55T.G2) uses two sensors to register even the smallest movements. With a horizontal detection angle of 180° and a coverage diameter of 6-10 m, it switches the lighting depending on the room brightness and motion.

Room Temperature Controller Smart (SCN-RTR55S.O1)

Individual setting

If you are sitting for long periods of time, for example in the office or when working from home, you gradually get cold. So it is good that users can then look at the display of the Room Temperature Controller Smart to see how warm the room is. The controller also provides information on the current humidity at the same time. If the automatic control is not right for the user, he can adjust the controller to the desired temperature or even set targets for the ventilation. The KNX system then controls the heating and ventilation based on the desired values.

Sunny to cloudy

The sunshade goes down when the sun is shining on the windows and is automatically secured if there is a storm. In order to be able to set this up, a weather station needs to be installed on site. This detects how strong the sun is and the direction from which it is shining. It also measures the wind speed and the outdoor temperature.
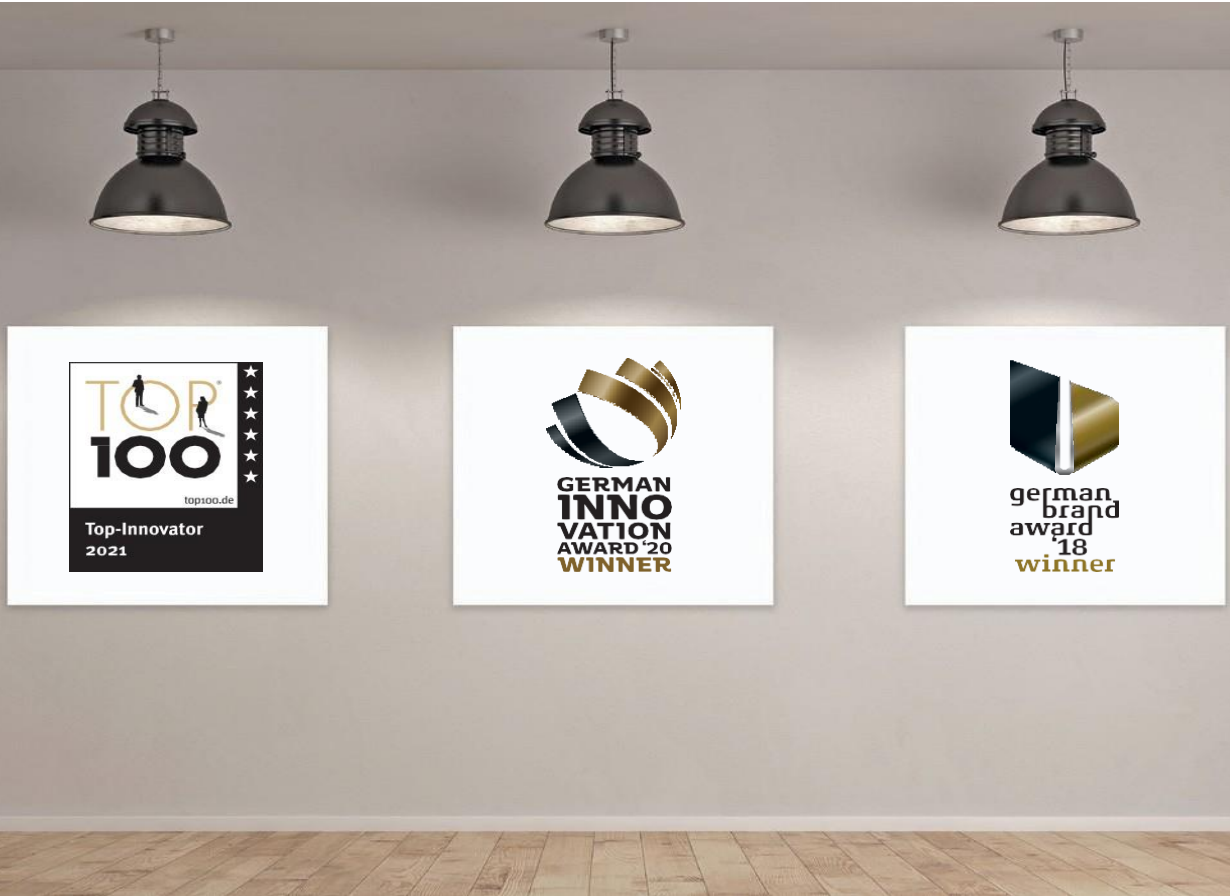
It uses this data to independently control the shading on three sides of the house. The information collected can also be used by lots of other system components, for example the outdoor temperature is used for the heating control.

The MDT Weather Station Home (SCN-WS3HW.O1) includes three brightness sensors for the compass points east, west and south, as well as a twilight sensor. The adjustable wind sensor and the temperature sensor, which can be configured with threshold values, round off the Weather Station's range of services.

Award-winning innovations

MDT always has its finger on the pulse and considers customer needs, and in 2021 it was recognised as a top innovator among medium-sized companies in Germany for the sixth time in a row.