CREATING MEASUREMENT SOLUTIONS

B+B SENSORS

Product overview

B+B Thermo-Technik develops and manufactures innovative product and industry solutions with the highest quality expectations for your precise measuring tasks.

B+B Thermo-Technik has been developing and manufacturing high quality temperature probes since 1984. Closely associated with temperature measurement are the fields of humidity and pressure. This resulted in the company´s programme to be expanded in 2011 to include solutions for both these specialist fields.
Simply take advantage of B+B´s extensive experience and professional knowledge. B+B Thermo-Technik is located at Donaueschingen in south west Germany, and from here, its increasingly reputable products are sold all over the world.
With the aid of the latest research, development and production technologies and coupled with the certifications in accordance to DIN EN ISO 9001 : 2015 and DIN EN 61340-5-1, we are able to manufacture our products to the highest possible standards. Of course, we also offer our customers the added service of issuing test certificates within our own calibration laboratory.

Both quality and working closely together with the customer are integral parts of B+B ´s corporate philosophy. This is why B+B temperature probes, thermocouple connectors, Humidity probes and pressure sensors are predominantly manufactured in Germany or in 100% owned subsidiaries worldwide.

This assures continual quality control, flexible reactions to both the customer´s requirements and modifications, and being able to deliver promptly.

Customer - specific construction
Please specify your application and we shall supply you the right product for measuring and controlling the temperature, pressure or humidity. Special emphasis is always placed on professional and close cooperation with you, thus allowing for the optimal development of your product. Our experience shows that this partnership also creates innovative concepts and fresh ideas, thereby providing new energy for the future, which is vital for both parties.

CERTIFICATIONS

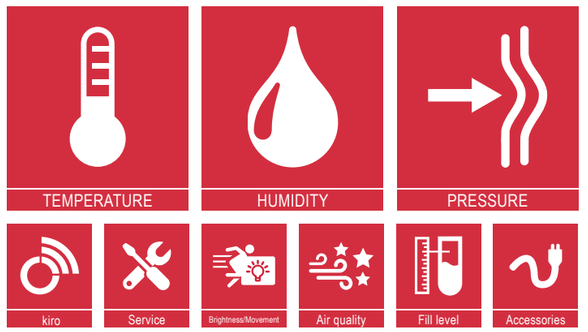
Certificate DIN EN ISO 9001 : 2015

ESD-Certificate DIN EN 61340-5-1

Accredited calibration laboratory to DIN EN 17025
Deutsche Akkreditierungsstelle D-K-21102-01-00

Scan directy to the B+B online shop. Secure the products online with just a few clicks.

DELIVERY PROGRAMME



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TEMPERATURE MEASUREMENT TECHNOLOGY

As a specialist of temperature measurement technology B+B produces temperature probes for more than 30 years. Whether customer specific solutions or standard probes, temperature probes of B+B measure quick, accurate and reliable in nearly every medium, true to the slogan „CREATING MEASUREMENT SOLUTIONS“.

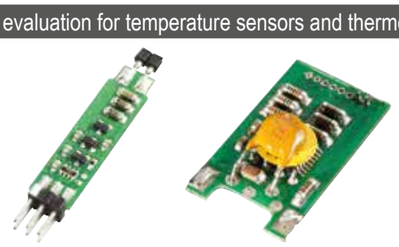
Temperature sensors

- Pt100 / 200 / 500 / 1000 with accuracies according to the IEC 60751 norm
- Digital sensors like DS18S20 / LM35DZ / etc.
- Variety of NTC / PTC and KTY (in all common characteristics)
- Ni100 / 120 / 1000 with a very high long-term stability
- Temperature ranges from -200 to 800 °C

Mineral insulated thermocouples

- Type K, J, S, T, N, R, E according to DIN EN 60584 norm
- Diameter from 0,5 to 8 mm
- Up to a nominal length of 10.000 mm
- Connection types: open ends, thermocouple connectors, cables, Industrial heads or molded B+B mini thermocouple connector
- Sheath material like stainless steel or Inconel
- Junction styles like grounded, ungrounded or exposed
- Temperature ranges from -270 to 1.600 °C

Electronic evaluation for temperature sensors and thermocouples



- Temperature transmitter with ASIC-technology
- Input: all common temperature sensors and thermocouples
- Output: 0…5 V, 0…10 V, 4…20 mA, or I²C
- Temperature ranges standard or calibrated on customer request
- Suitable for all B+B housings

Cable probes

- Configuration variants like standard cable probes, angled cable probes, immersion probes or solar panel probes
- With all common temperature sensors and thermocouples
- Protection tube made from high-alloyed stainless steels, aluminum or plastics
- Cable material like PVC (up to 125 °C), silicone (up to 180 °C), PTFE (up to 260 °C) or fiberglass-insulated (up to 350 °C)
- Connection variants: open ends, customer-specific connectors or moulded B+B mini thermocouple connector

Penetration and core temperature probes

- With all common temperature sensors or thermocouples
- Probes with multiple measuring points are possible
- Straight or angled handgrip
- Handgrip made from PTFE (up to 260 °C) or PEEK (up to 300 °C)
- Food compatible and steam resistant cast

TEMPERATURE MEASUREMENT TECHNOLOGY

Screw-in probes

- Available in different lengths (up to 500 mm), straight or angled protection tube and different process fittings like G1/4”, G1/2”, R1/2”, ½”-Npt, etc.
- With all common temperature sensors and thermocouples
- Protection tube and process fitting made from high-alloyed stainless steels, brass, aluminum or plastics
- Optimized response through tapered protection tube
- Measuring temperature in liquid and gaseous media from -40 to 400 °C

Probes for pipes / Pipe clip-on probes

- With all common temperature sensors or thermocouples
- For pipe diameters up to 500 mm
- Temperature-resistant up to 350 °C
- Selectable cable and connectors
- Easy to install and safe bonding

Temperature probes with connection head

- Connection head type A, B, BUZ, BUZH and MA (J) according to DIN EN 50446 norm
- Connection head BINOX designed and manufactured by B+B for food industries
- With all common temperature sensors and thermocouples
- Protection tube and process fitting made from high-alloyed stainless steel
- Protection tube in different lengths according to DIN EN 43772 norm
- With exchangeable measuring inserts

Outdoor temperature probes

- With external or internal temperature sensors or thermocouples
- High long-term stability and fast response time
- Optionally with output signals 0…5 V, 0…10 V, 4…20 mA, or I²C
- B+B design housing made of high quality and impact resistant plastic
- Field of application in industry and building automation

Bayonet probes

- With thermocouples type K and type J or RTDs Pt100 and Pt1000
- Installation lengths from 5 mm to 150 mm
- Measuring tip plane or with 120 °C
- Suitable for blind-holes
- Cable lengths from 2.500 mm
- Screw-in fittings with different mounting thread sizes optional available

PC measuring systems

- Up to 20 temperature measuring points -55...125 °C
- Compatible temperature probes with DALLAS – sensors DS18S20 and DS18B20
- Resolution 0,06 °C
- Probe cable lengths up to 60 meters possible
- USB or RS232 interfaces with easy to use Windows® software

Data loggers

- Measurement range -200...530 °C
- Accuracy up to ±0,5 °C and resolution of 0,1 °C
- Measurement interval between 5 sec and 18 hours
- Storage capacity up to 32 000 measuring points
- Measurement data evaluation in tabular or graphic form

Stationary infrared systems

- Infrared measurement for process temperatures up to 900 °C
- Response times starting at 1 ms (T90)
- Customer specific emissivity configuration possible
- Programmable output signals as 0(4)...20 mA, 0...10 V, 0...5 V or equivalent signals to thermocouple type K or J
- Industrial execution for heavy duty environments with ingress protection IP65
- Comprehensive accessories programme such as pre-lens, mirrors, air purge systems and mounting accessories

Infrared thermo camera

- Easy to use device in a compact , light and robust construction
- Infrared detector with 160 x 120 pixels real resolution, realtime thermography with up to 120 Hz frame rate
- Exchangeable obejektives 6°, 23° or 48° FOV
- High system accuracy in the range of -20...900 °C
- Thermo-Cam software for Windows® 7, vista and XP

Hand-held measuring devices

- Wide variety of hand held measurement instruments for B+B temperature probes
- For most common temperature sensors and thermocouples in B+B standard or customer specific versions
- Penetration, surface, or air probes with measurement ranges -200...350 °C
- Min-/Max value storage, hold-function and digital interfaces such as USB or RS232 for evaluations on PCs
- HACCP certified infrared thermometer for measurement spots starting from 1 mm and process temperatures up to 900 °C

TEMPERATURE MEASUREMENT TECHNOLOGY

Gas sampling probe - Eco

- For flue gas analysis devices
- Available either with fix mounted or exchangeable probe shaft
- As standard equipped with thermocouple type K for temperature measurement
- Standard tube length: 250 mm or customer specific
- Cable and hose length 3.000 mm
- With injection moulded miniature plug
- Temperature range up to +800 °C

Gas sampling probes - Standard

- Stainless steel probe tube, available with or without inner pipe
- For flue gas analysis devices
- Available either with fix mounted or exchangeable probe shaft.
- Available lengths: from 250 mm – 1.500 mm
- As standard equipped with thermocouple type K for temperature measurement
- Temperature range up to +800 °C
- TÜV approved response time T98 and soot level

Gas sampling probes - Automotive

- For measurements on cars and large vehicles
- With flexible stainless steel tube for measurements on large vehicles i.e. trucks, busses, tanks
- With condensate trap
- Different nominal lengths from 300 mm and diameter from 8,0 mm

Air probes

- For measuring the ambient temperature
- Type K, type J and many others
- Shock and vibration proof, long-term stability, ergonomic design, compact dimensions
- Fast response time
- Customer-specific colours are possible

Accessories - Gas sampling probes

- Different fixation cones with knurled screw to implement and fix into test holes
- Condensate trap with filter insert made of glass microfibre, separation efficiency >99,5 %, nominal length 155 mm, outer dimension 30 x 155 mm
- Double and triple hose with a longitudinal slot rubber-double and –triple hose
- Miniature thermocouple connector
- Compensation cable type K 2- or 4-wire, core cross-section 2 x 0,22 mm²

HUMIDITY MEASURING TECHNOLOGY

B+B produces innovative products for humidity measurement. We offer you the optimal solution for your application and lead you competent and reliable from the idea to the development and the serial production.

Humidity sensors

- Capacitive and resistive humidity sensors
- Small drift (<0,5 % RH / a) and water resistant
- Types: wired or SMD
- High chemical resistance
- Operating temperature range -80…190 °C

Digital humidity and temperature sensors

- Measuring range 0…100 % RH and -40…125 °C
- Accuracy ±1.8 % RH, Temperature ±0.2 °C
- Types: wired or SMD
- Fully calibrated, I2C 14-bit digital output
- Resistant to pressure up to 16 bar
- Customer-specific design

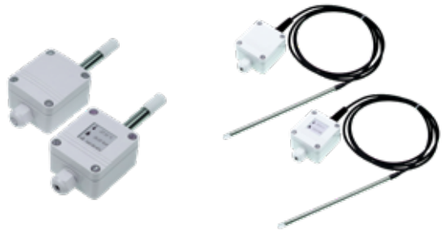
Humidity transmitter modules

- Calibrated module for humidity and temperature measurement and also for determining dew point
- Adapted for capacitive and resistive humidity sensors
- Soldered pins for direct mounting on printed PCB
- Miniaturised dimensions and optimum price performance ratio
- Customer-specific calibration of measurement range

Humidity probes

- Humidity measurement linearised, temperature compensated and high long term stability
- Output scaling 0…5 V, 0…10 V, I²C
- Compact design with standard or customer-specific connection variants
- High long term stability and innovative technique
- Optional with integrated temperature sensor

Combined temperature, humidity and pressure sensors



- Types with separate or integrated temperature sensors, combined humidity/ temperature sensors or compact temperature, humidity and pressure sensors
- Humidity measurement linearized, temperature compensated, long-term stable
- Output signal 0…10 V or 4…20 mA
- Integrated sinter protection filter
- B+B design housing of high quality plastic or aluminium
- Optional: 1.54“ white paper display: stable viewing angley, flicker-free, low-energy

HUMIDITY MEASURING TECHNOLOGY

Dew point control switches

- Calibrated condensation control with switch point at 90 % RH
- Humidity resistant sensor with dust filter
- Waterproof IP 65
- Small installation effort on plain surfaces and pipes (up to ø 150 mm)
- Maintenance-free, no wear and tear

Rain detectors

- Large, heated sensor area for faster dry off and winter mode
- Detect precipitation such as rain and snow
- Sensitivity and switching characteristics adjustable
- Operating voltage 12 or 24 V AC/DC
- Potential-free relay output 30 V / 4 A

Leakage detectors

- Two integrated, gold plated and spring-loaded measuring tips (electrodes)
- Adjustable screw feet for the permitted liquid level (0…15 mm)
- Sensitivity and switching characteristics adjustable
- Operating voltage 12 or 24 V AC/DC
- Potential-free relay output 30 V / 4 A

Hand-held measuring devices

- For measuring relative humidity and temperature
- Absolute humidity and dew point calculation
- Min. / Max. value storage and hold function
- USB interface for evaluation at PC, software optional available
- Measurement range 0…100 % RH and -40…+80 °C (standard probe)
- Customer-specific products are possible on request

PC measuring systems

- Up to 3 humidity-/temperature probes are connectable
- Different types of humidity-/temperature probes are available
- Accuracy up to ±1,8 % RH / ±0,2 °C and a resolution of 0,01 % RH / 0,01 °C
- For individual software the ASCII protocol is available
- USB interface with simple evaluation software for Windows and Linux

HUMIDITY MEASURING TECHNOLOGY

Humidity controller

- Mechanical hygrometer (humidity controller) does not require auxiliary energy
- Suitable for air dryer, humidifier, air conditioner
- Measurement range: 10…90 % RH, control range: 10…80 %
- The adjustment of the switching point is made via rotary knob
- Temperature range: +10…+40 °C, Contact rating: Open 240 V / 5 A - Closed 240 V / 2,2 A

Level controller

- Level controller (level indicator) for conductive liquids
- Simultaneous monitoring of 4 levels
- Level and status indication via LED signal
- Two high rating potential free relays with NO/NC contacts (NO contact: 230 V AC / 5 A, NC contact: 230 V AC / 2 A)
- Two independent circuits for fill and empty
- Operating temperature: 0…+50 °C, operating voltage: 230 V AC / 50 Hz, switching capacity: 230 V AC / 5 A

Absolute humidity controller

- Drying of new-buildings, old-buildings, cellar, living rooms, canteen kitchens, churches and monuments
- Airing time/-break, humidity-/temperature limits adjustable in four steps
- Values recorded on SD card and evaluated on the PC
- Automatic window opener/closer and connection to a fan
- 2 humidity-/temperature sensors supply the measured values for regulation
- Operating temperature: 0…+50 °C, operating voltage: 230 V AC / 50 Hz, switching capacity: 265 V / 2 A

Humidity reference cells

- Calibration and review of hygrometers and humidity probes
- Defined humidity storage of probes
- Comprising of high-quality and saturated saline solution
- Humidity values from 11,3 % RH to 97,4 % RH
- Optional with thermobox

Humidity controller for sanitary facilities

- Automatic humidity regulation for bathrooms, sanitary rooms and kitchens
- Fast response time, direct control of ventilator
- Integrated turn-on delay and follow-up time
- Input relay for the light switch and ON/ OFF switch for humidity control
- Humidity sensor with 3 m connection cable, measurement range: 0…100 % RH
- Operating temperature: 0…+40 °C, operating voltage: 230 V AC / 50 Hz, switching capacity: 230 V / 1 A

PRESSURE MEASURING TECHNOLOGY

Due to the pressure measurement of B+B, the precise pressure measurement in fluid and gaseous media is possible. Pressure modules as well as pressure transmitters are „made in Germany“ and are pinpoint calibrated at the in house laboratory. Because of the wear-free measuring method, the sensors are long-time stable and designed of high load alternation resistance.

Pressure measurement cells

- Absolute and relative pressure measurement
- For static and dynamic pressures from -1 to 1000 bar
- Suitable for pressure measurement in gases and liquids
- Monolithic and piezoresistive measuring cells made of ceramic and stainless steel
- Operating temperature -40…+125 °C

Electronic evaluation for ceramic pressure sensors

- Transducer with ASIC technology
- For all ceramic measurement cells from B+B
- Output signals 0…10 V or 4…20 mA
- A manual and digital adjustment of Offset and Gain is possible
- Suitable for B+B housings

Pressure transmitter modules

- Absolute, relative and differential pressure measurement
- Measurement ranges from -1 to 16 bar
- Hose connections 6/4 mm
- Output signals: 0…5 V and I²C
- Operating temperature range: -40…+100 °C

Pressure transmitter, stainless steel, valve connector

- Absolute and relative pressure transmitter
- Measurement range from -1 to 140 bar
- Output signal 0…10 V, 4…20 mA, I²C
- Process connections G1/4”, G1/2”
- Electrical connection: valve connector type A

Pressure transmitter, stainless steel

- Absolute and relative pressure transmitter
- Measurement range from -1 to 140 bar
- Customized measuring ranges >140 bar available on request
- Output signal 0…10 V, 4…20 mA, I²C
- Process connections G1/4”, G1/2”
- Electrical connection: M12 plug socker or cable

BRIGHTNESS / MOVEMENT

Brightness – measurement, movement – detection. B+B provides suitable probes and module solutions not only for classic building automation but also for agriculture. B+B brightness and movement sensors can be simply integrated in your automation or measurement value monitoring and are suitable for indoor as well as for outdoor areas.

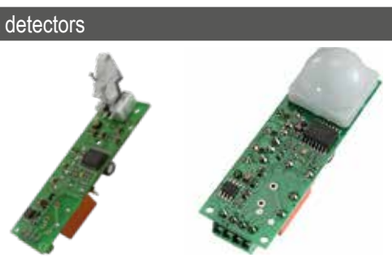
Brightness sensors

- Measuring range 0…100.000 Lux
- Customer-specific measuring ranges are calibrateable
- Output signals 0…5 V, 0…10 V, 4…20 mA, I²C
- Protection class up to IP67
- Operating temperature from -20 to 70 °C

PIR motion detectors

- Motion detector with fresnell-lense in compact design
- Detection range 4…12 m adjustable through four solder bridges, optional up to 20 m
- High sensitivity
- Digital and analogue outputs
- Optional as low power version (0,04 mA) for battery operation available

PIR motion detectors



- Motion detector module with ASIC technology and digital evaluation filter
- Adjustable detection range: freesnell-lense (4…20 m), mirror-optics (2…8 m)
- Adjustable sensitivity
- Day / Night operation via integratedlight sensor
- Potential-free relay output 40 V / 3 A DC

RADAR sensors

- Innovative radar sensors with separate sending and receiving antenna
- Standard sending frequency 24…24.25 GHz
- Compact outside dimensions
- High movement sensitivity
- Vandal-proof, penetrates certain material (f.e. plastic)

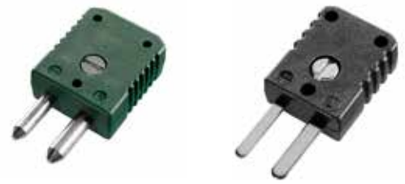
RADAR motion detector modules

- Innovative radar functional principle with high sensitivity on slightest movements
- Detection range from 4 to 15 m
- Covered, invisible mounting possible: safe against vandalism
- Adjustable sensitivity
- Open collector output up to max. 90 mA

ACCESSORIES / CALIBRATION SERVICES

You need suitable accessories or spare parts? B+B disposes an extensive and high quality programme of accessories. From thermocouple connectors on cables up to controllers, the programme is most available for you ex stock.

Thermocouple connectors and miniature plugs by B+B



- Standard and miniature connectors
- Protected against polarity and can be used, depending on the execution reversal, up to 900 °C
- Contact pins are made exclusively out of solid thermocouple alloys
- Directly moulded B+B miniature plugs are available
- Vast range of accessories

Cables

- Two-core or multi-core copper cable made of PVC (up to125 °C), silicone (up to 180 °C), PTFE (up to 260 °C) or glass fibre insulated (up to 350 °C)
- High diversity of conductor cross-section and sheath diameter
- Thermo cables (alloy like thermocouple) type K and J up to 260 °C – glass fibre insulated to 400 °C – according to IEC 584-3
- Compensation cables (compensation alloy) type K and J up to 260 °C according to DIN EN 60584-3
- Mineral insulated cable

Indicators and Controllers

- Indicator with two relay outputs and five programmable alarm features
- Configurable inputs for thermocouples, Pt100, mA, mV or V
- Controllers can be configured as ON/OFF or PID controller
- Multipurpose application, reliable, multi-function and cost-efficient

Turned parts

- Clamp connection
- Protective sleeve
- Connection head
- Screw in nipple
- and much more
- Customer-specific designs possible

Calibration services / Accredited laboratory

- For temperature, humidity and pressure
- High-quality equipment and fully air conditioned calibration laboratory
- The measuring and testing equipment is regularly calibrated to national and international norm
- Complete documentation of the measurement results
- ISO-certificate (works certificate) according to ISO 9001:2015
- **DAkkS calibrations according to DIN EN 17025**

FLOW / AIR QUALITY

Control your air quality with the innovative solutions of B+B Thermo-Technik. Whether business or private, the products provide precise solutions and will help to improve the air quality sustainable.

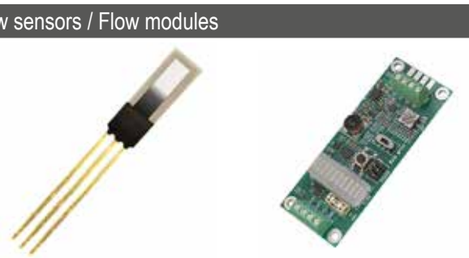
VOC sensors

- For measurement of air quality and the presence of volatile organic compounds (VOCs)
- Measuring range 450 … 2000 ppm
- Optical display recommends fresh air (red/green)
- Included temperature and humidity control
- With relay for direct control of 250 V AC / 8 A

CO2 traffic light kiro air

- For measuring air quality, humidity and temperature
- CO2 concentration using the VOC measuring method, display of the CO2 equivalent
- 1,54“ paper white display
- Traffic light function via LED
- Acoustic signal when CO2 concentration of 1000 ppm is exceeded
- Including stand and power supply

Flow sensors / Flow modules



- Simple calibration and signal evaluation
- Excellent long-therm stability
- Excellent reproducibility
- For evaluation of flow sensors with analogue
- Measuring range 0 m/s … 100 m/s
- Simple gain setting output signal
- Plug & play module (n.c.)
- Customer-specific solutions on request

Dust sensor modules

- Based on the light-scattering method
- For detection of particles from 1 µm (approx.)
- Easy installation, maintenance and sustainable high sensitivity
- Voltage output (pulse width modulation output signal PWM)
- Customer-specific solutions on request

CO modules

- For measurement of absolute carbon monoxid in ambient air
- Electrochemical measurement up to 1000 ppm (+-5 %)
- Long-therm stability (5 years)
- Suitable for smoke and fire detectors
- Combinable with kiro solo for permanent monitoring

KIRO

No matter whether you need individual measurement probes or large networks of several hundred sensors: B+B kiro is the correct solution to retrieve your data precise and reliable at every time by our cloud. You miss no alarms and notifications any more.

For example, with the wireless data logger kiro, temperature, humidity and air pressure can be measured reliably. These sensors can be equipped with various radio technologies and, depending on the application, can be correspondingly energy-saving. Various ranges from a few meters to large ranges of several hundred meters can also be achieved without any problems. The measuring interval can still be set individually. The probe‘s battery can be recharged at any time using a USB cable. Solutions with batteries, permanent power supply or solar cells are also possible.

A suitable kiro app or cloud is available to the user for evaluation, which provides measurement tables and graphs.

In order to adapt the sensors exactly to the respective requirements, they can take almost any shape. Regardless of whether the application requires a hand probe or a probe the size of a pin board magnet, B+B Thermo-Technik designs and manufactures the probes for your application.

For further information, please contact the internal sales team at B+B Thermo-Technik GmbH.

No matter how much has developed in industry and technology in the last few decades, the basic principle of data acquisition has always remained the same: An interpretation unit receives the signal from a sensor and an output unit makes the measured value interpretable for humans or another device. In recent years and decades, however, communication channels have changed dramatically. Wireless data transmission such as broadcast, cellular and directional radio, GPS, WLAN, WPAN, RFID, NFC, satellite TV and infrared is used by all of us every day.

Typical applications:

- Hospitals
- Vine cellars
- Laboratory facilities
- Food controls
- Vaccine testing
- Clean room monitoring
- Machine monitoring
- Agriculture
- Transport monitoring
- Cold Chains
- Printing industry
- Museums
- Server rooms
- Warehouses
- Large building complexes
- a.m.m.

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Druckfehler, eventuelle Änderungen und Irrtümer vorbehalten. Ausgabe 11/2021 0141 0318-00