# meteocontrol Cabinets

# User manual

## For item numbers

| | |
|---|---|
| *580.020 – 580.200* | *Monitoring Cabinets* |
| *590.020 – 590.200* | *Power Control Cabinets* |
| *593.724, 570.020, 570.120* | *Monitoring Cabinets Compact* |
| *593.727, 570.040, 570.140* | *Power Control Cabinets Compact* |
| *201.042 001-008* | *Monitoring Cabinets Universal* |
| *201.042 009-015* | *Power Control Cabinets Universal* |
| *592952- 592955* | *Compact Housing* |

Version 2026-07-30

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### Details regarding the user manual

The language of the original operating manual is German. All other language versions are translations of the original operating manual and are hereby marked as such.

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All information in this user manual has been compiled and checked with the greatest care and diligence. Nevertheless, the possibility of errors cannot be entirely excluded. Nevertheless, the possibility of errors cannot be entirely excluded. meteocontrol GmbH therefore cannot accept any liability for errors or any circumstances resulting from errors.

Subject to technical alterations.

# Release notes

| Date | Changes |
|---|---|
| 20260730 | • Monitoring Cabinets Commercial are replaced by Monitoring Cabinets Compact<br>• Power Control Cabinets Commercial are replaced by Power Control Cabinets Compact<br>• See the respective data sheets for details: Downloads.<br>• Item numbers updated. |
| 20250318 | Cabinets and their contents have changed. See the respective data sheets for details: Downloads.<br>Name changes:<br>• Data Station X-Series Indoor/Outdoor is now Monitoring Cabinet Standard/Temp<br>• Power Control Station X-Series Indoor/Outoor is now called Power Control Cabinet Standard/Temp.<br>• Data Station X-Series Commercial is now Monitoring Cabinet Commercial<br>• Power Control Station X-Series Commercial is now Power Control Cabinet Commercial<br>• Cooling unit is now called climate control unit.<br>Updated product description<br>Updated Installation & mounting<br>Updated CE certificates |
| 20241024 | Added information about "Residual Current Device"<br>Adjusted footer<br>Added links to the declaration of conformity and RoHS statement on meteocontrol website |
| 20240822 | Specific item numbers of stations added. |
| 20240730 | Note added regarding functional earthing for sensor cables. |
| 20230301 | Format and safety instructions updated.<br>Updated cable and wire types<br>Updated care and maintenance. |

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# 1. General notes

## 1.1 Safety instructions

Safety instructions warn of dangers when using the devices and explain how they can be avoided.

The safety instructions are classified according to the severity of the risk and are subdivided into four groups:

**DANGER**

**Imminent danger**

Failure to comply with the warning notice will lead to an imminent risk of death or serious physical injury!

**WARNING**

**Possible danger**

Failure to comply with the warning notice may lead to a risk of death or serious physical injury!

**CAUTION**

**Hazard with low risk**

Failure to comply with the warning notice may lead to minor injuries!

**NOTICE**

**Hazard with a risk of material damage**

Failure to comply with the warning notice will lead to material damage!

## 1.2 Warning notices

Particular dangers are highlighted using warning symbols.

**RISK OF ELECTRIC SHOCK**

**Electric shock hazard! Danger to life and limb!**

Danger to life and limb! Failure to comply with the warning notice will lead to an imminent risk of serious injury or death.

## 1.3 Additional information

This symbol can be found next to notices, additional information and tips.

# 2. Advice on using the user manual

## 2.1 Purpose of this user manual

This user manual is an essential aid for the proper operation of meteocontrol Cabinets. It will help to avoid dangers, to reduce repair costs and downtimes, and to increase the reliability and service life of the Cabinets and their built-in components.

Read this user manual carefully and attentively before you start work on the Cabinets.

The user manual is continuously updated. The current version can be found on our website: www.meteocontrol.com

## 2.2 Target group and qualification

This user manual is intended for individuals responsible for the planning, installation, commissioning, operation, and maintenance of the Cabinets.

It is assumed that the reader has basic knowledge of electrical engineering, cabling, electrical components and the use of symbols in circuit diagrams.

**DANGER**

**Danger through improper handling**

- The responsible personnel for the installation, operation, and maintenance of the system must have read and understood this user manual before the Cabinets can be used safely!
- The description and documents must be available at all times.

meteocontrol GmbH accepts no liability for personal injury, damage to property, or system malfunctions and their consequences, insofar as these result from non-observance of this user manual.

## 2.3 Warranty and liability

The scope, period and form of the warranty are specified in the general terms and conditions of meteocontrol GmbH.

meteocontrol rejects any liability for damage arising from the non-observance of the user manual. This applies, in particular, for damage from:

- Unintended use
- Faulty operation
- Wrongly chosen materials and tools
- Faulty or non-executed maintenance and repairs

In cases of control and regulation (“Power Control”), meteocontrol GmbH accepts no liability for events and occurrences outside of its control, such as:

- The correctness of control commands given by an energy supply company or failure to implement control commands
- Hardware and/or software faults on the part of the system operator
- Switching operations at the end consumer's site.
- Any liability for damages caused by events and occurrences such as lost profits, grid instability, damage to parts of the customer’s system, for instance of an inverter, shall remain expressly excluded.

## 2.4 Additional documentation

Reading this user manual does not exempt you from observing the documentation of the components installed in the Cabinet! Read the following documents:

- Included user manuals, data sheets, safety instructions, circuit diagrams, etc. for the installed components
- If applicable, the documents for the inverter and the sensors that will be connected to the Cabinet
- If necessary, the user manual for blue'Log and MX add-on modules

# 3. Product description

The meteocontrol Cabinets contain measurement technology devices for the central collection and processing of all system data (“Monitoring Cabinets”) and, depending on the version, for the implementation of grid feed-in management (“Power Control Cabinets”) in photovoltaic power plants. Temp variants are intended for an extended temperature range and are equipped with a climate control unit for heating and cooling the installed components.

*Fig. 1: Example of a Cabinet interior. The Cabinet interior and housing will differ depending on the variant.*

# 4. Transportation

Every product leaves our factory in perfect electrical and mechanical condition. On delivery, unpack the Cabinet and all accessories and check it for any damage.

**WARNING**

A damaged Cabinet must not be put into operation!

Transport the Cabinet using a forklift or pallet truck. During transport, ensure the Cabinet is sufficiently secured in place in order to prevent overturning or movement. Do not put weight on top of the Cabinet.

**NOTICE**

**Do not transport the Cabinet using a crane**

Transporting by crane can damage the Cabinet.

**NOTICE**

**Do not transport Cabinets upright.**

Transporting the Cabinet upright can cause damage to the cable glands.

**NOTICE**

**Do not transport Cabinets lying on the front panel**

Transporting the Cabinet lying on the front panel can cause damage to the cabinet.

**NOTICE**

**Do not transport Temp Cabinets lying on the clilmate control unit**

Never transport Temp Cabinets lying on the clilmate control unit! This can damage the clilmate control unit.

The following illustrations show possible options for transport of the Cabinet.

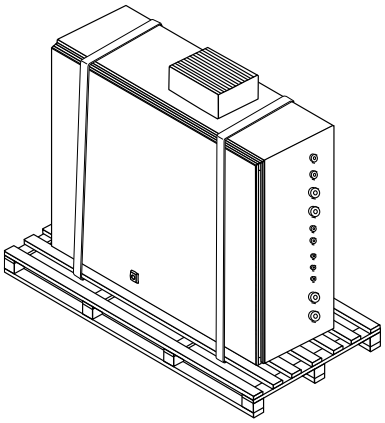

*Fig. 2: Transportation lying on the side*

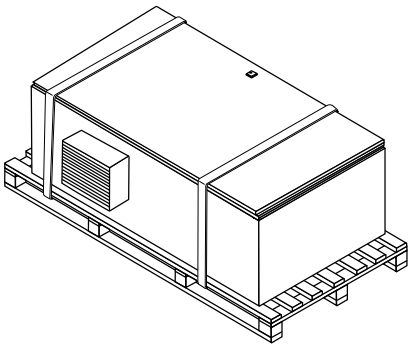

*Fig. 3: Transportation lying on the rear panel*

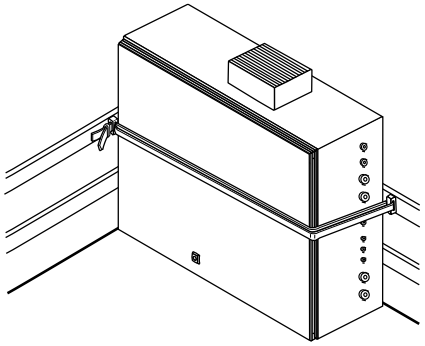

*Fig. 4: Transport without a pallet*

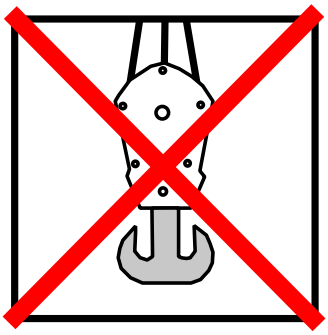

*Fig. 5: Do not transport by crane*

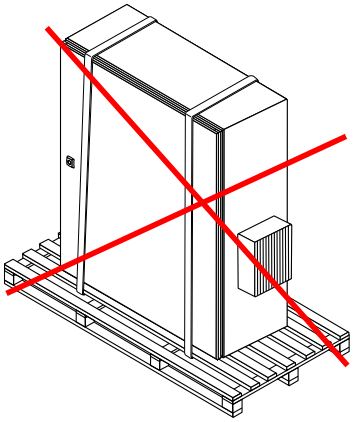

*Fig. 6: Do not transport upright*

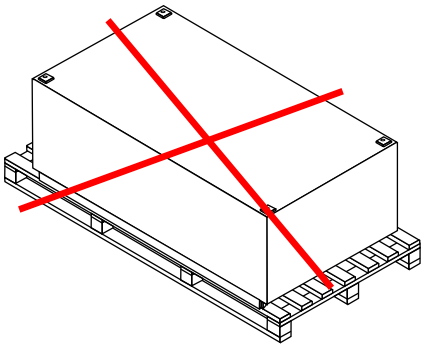

*Fig. 7: Do not transport lying on the front panel*

# 5. Safety

This chapter contains general safety regulations that must be followed during installation, operation, and maintenance of the Cabinet. Failure to do so can result in injury or death and/or damage the Cabinet. Read these safety regulations before working on the Cabinet.

## 5.1 Intended use

The connections for the Cabinets and modules used here may only be loaded with the signals and signal strengths permitted for this purpose. Customary national regulations apply.

Only Cabinets equipped with a cabinet climate control unit are suitable for installation in areas with an extended temperature range. For specific information about the individual Cabinets, please refer to the respective data sheet.

## 5.2 Personnel

Installation, commissioning and maintenance of the Cabinet may only be performed by a qualified electrician.

Given their specialist training, knowledge, experience, and familiarity with the relevant standards and regulations, a qualified electrician is in a position not only to carry out work on electrical systems but also to recognize and avoid possible dangers unaided.

The qualified electrician must comply with the occupational health and safety laws in force. In particular, all national regulations for the commissioning of electrical Cabinets must be observed as a matter of priority.

Please note in particular:

- All national installation and set-up regulations (e.g. VDE in Germany)
- The generally accepted codes of practice
- Information on transport, installation, operation, service, maintenance and disposal given in this user manual
- Specific values, limit values and information relating to operating and ambient conditions on type plates and in data sheets

**RISK OF ELECTRIC SHOCK**

**Electric shock hazard! Danger to life and limb!**

- Never work on the Cabinet or its input and output lines while the Cabinet is still connected to the grid.
- The Cabinet must be disconnected from the power supply before you start work on it or its components. This applies particularly to the uninterruptible power supply (UPS)! Pay particular attention to possible sources of external voltage and potential-free wiring of the Cabinet!

## 5.3 General precautionary measures

- Read the safety regulations for the operating range and components installed in the Cabinet you are working on. Read the specific user manuals for the individual components!
- Turn off all possible power sources.

- All other possible live parts must be protected from contact.
- Special precautionary measures are required when working close to bare conductors.
- Ensure that the Cabinet is disconnected from the power supply. Always perform measurements to ensure the Cabinet is in a de-energized state.
- Depending on the variant, different components are installed in the Cabinets, such as power supply units, DC/DC converters, power storage, etc. A complete list of all the components installed in your Cabinet can be found in the circuit diagram of the Cabinet included in the scope of delivery. Be sure to also observe the user manuals and safety instructions for the installed components.

# 6. Mounting and installation

## 6.1 Safety instructions for installation

**DANGER**

**Electric shock hazard!**

Danger to life and limb! Fatal injuries or death from contact with lines and terminals.

- Only connect or disconnect lines while they are de-energized. Take measures to prevent the power line from being reactivated.

**CAUTION**

**Hazard with a risk of personal injury**

- Be careful of hot surfaces. Some parts within the Cabinet, such as the power supply clilmate control unit, remain hot for some time after the power supply has been switched off.
- Ensure no drilling or grinding dust can penetrate the Cabinet during installation. Electrically conductive dust inside the Cabinet can cause damage or malfunction.
- Do not mount the cabinet using riveting.
- If possible, route all lines into the Cabinet directly from below via the cable glands provided.
- Properly seal unused cable glands with dummy plugs. Tighten the glands using the appropriate tools to seal them.

**NOTICE**

**Damage due to improperly connected wires and cables!**

Incorrectly connected cables can lead to damage or destruction of the measuring inputs and the device.

- Connect cables only to the sockets provided for this purpose.
- Observe the polarity while connecting cables.

**NOTICE**

**Damage due to overvoltage!**

Overvoltage or voltage peaks damage or destroy the device.

- Protect the power supply against electrical surges.

Voltages of more than 10 V DC and currents of more than 50 mA on the analog inputs can destroy the respective measuring inputs.

- Ensure that voltages only up to 10 V DC and currents up to 20 mA are applied.

Voltages of more than 60 V DC and currents of more than 50 mA on the digital inputs can destroy the respective measuring inputs.

- Ensure that voltages only up to 60 V DC and currents up to 50 mA are applied.

## 6.2 Workflow for mounting, installation, and commissioning

| Step | Action | Comment |
|---|---|---|
| 1. | Unpack the Cabinet and check it for damage. | For more information, see Chapter 4 Transportation. |
| 2. | Check whether all necessary modules and devices are provided and in perfect condition. | Only devices in perfect condition may be put into operation. |
| 3. | Mount the Cabinet. | For more information, see Chapter 6.3 Mounting the Cabinet |
| 4. | Lay the cables and lines. | For more information, see Chapter 6.5.1 Cables and wires. |
| 5. | Connect the power supply. | For further information about terminal assignment, refer to the circuit diagram of the Cabinet.<br>For further information on the blue'Log and MX add-on modules, refer to the respective user manuals. |
| 6. | Connect the bus cabling, sensor cable and network cables. | |
| 7. | Commission the Cabinet. | For more information, see Chapter 7 Commissioning. |

## 6.3 Mounting the Cabinet

Depending on the variant, the Cabinet is suitable for installation in indoor and outdoor areas. Observe the following instructions for wall installation:

- Ensure that the mounting surface is horizontal and as level as possible to prevent leakage due to warping of the enclosure.
- To mount the Cabinet on the wall, use the supplied mounting material and attach the Cabinet using the distances indicated in the relevant diagram.
- Ensure that the mounting brackets, screws and dowels (if needed) are dimensioned properly, such that they can carry the weight of the Cabinet.
- Cabinets that are installed outdoors must be mounted at a minimum distance of 40 cm from the ground. This does not apply to Cabinets mounted on an earthing base.
- Ensure that the cabinet door(s) can be freely accessed.
- For further information on dimensions and details on mounting the Cabinet, refer to the manufacturer's documentation.

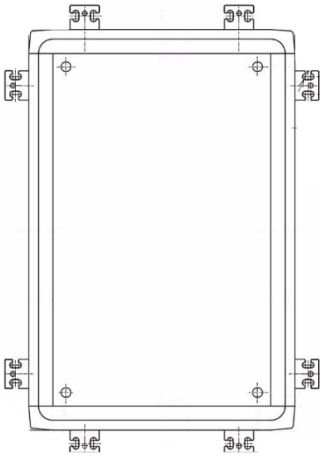

*Fig. 8: Diagram of a Cabinet (example, may vary according to the variant)*

**CAUTION**

**Hazard due to improper mounting**

Improperly mounted Cabinets can result in personal injury!

**NOTICE**

**Hazard due to overheating and moisture**

Direct sunlight may cause the components in the Cabinet to overheat. The build-up of moisture due to precipitation or proximity to the ground can also damage the components in the Cabinet.

- Cabinets installed outdoors must not be exposed to direct weathering. Cabinets which are mounted on a roof or outdoors must be protected from sun and rain by means of separate rain roofs.

## 6.4 Installing the network cable

To install a network cable in the Cabinet, there are two cable glands in the enclosure with a split sealing insert.

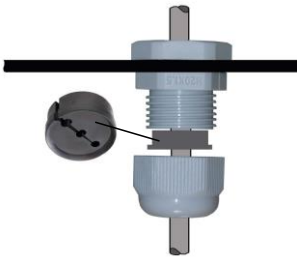

Fig. 9: Cable gland with split sealing insert

| Step | Action |
|---|---|
| 1. | To lay the network cable, first remove the cable gland from the Cabinet. |
| 2 | Remove the dummy plug from the cable gland of the Cabinet. |
| 3. | Loosen the cap nut and remove the sealing insert. |
| 4. | Place the cap nut over the sealing insert on the network cable. While positioning the sealing insert, allow for sufficient length of lines within the Cabinet. |
| 5. | Feed the network cable with the sealing insert back into the cable gland of the Cabinet. |
| 6. | Fasten the network line by tightening the cap nut. |

**NOTICE**

**Hazard due to open cable glands**

- Always keep the dummy plug in unused screw connections.

## 6.5 Installation

### 6.5.1 Cables and wires

Recommended wire and cable types for wiring the individual system components are given below. Wiring restrictions are also listed.

| Type | Product designation | Item number | Max. permissible length |
|---|---|---|---|
| Bus cabling (inverter)<br>• Recommended: Data cable (twisted and shielded)<br>• Data cable RS485 | UNITRONIC Li2YCYv (TP) data cable 2x2x0.5 mm² [2) 1)] | 200.116 | 1200 m[2) 3)] |
| | UNITRONIC Li2YCYv (TP) data cable 3x2x0.50 mm² [2) 1] | 200.117 | |
| | UNITRONIC Li2YCYv (TP) data cable 4x2x0.50 mm² [2) 1] | 200.118 | |
| Analog signals (irradiance sensor, temperature sensor)<br>• Sensor cable<br>• Voltage signal 0 V – 10 V | UNITRONIC Li2YCYv (TP) data cable 2x2x0.5 mm² [2) 1)] | 200.116 | 100 m |
| | UNITRONIC Li2YCYv (TP) data cable 3x2x0.50 mm² [2) 1] | 200.117 | |
| | UNITRONIC Li2YCYv (TP) data cable 4x2x0.50 mm² [2) 1] | 200.118 | |
| Digital signals (energy meter, telecontrol systems)<br>• Sensor cable<br>• Current signal 4 mA – 20 mA | UNITRONIC Li2YCYv (TP) data cable 2x2x0.5 mm² [2) 1)] | 200.116 | 600 m[4)] |
| | UNITRONIC Li2YCYv (TP) data cable 3x2x0.50 mm² [2) 1] | 200.117 | |
| | UNITRONIC Li2YCYv (TP) data cable 4x2x0.50 mm² [2) 1] | 200.118 | |
| Temperature sensor (PT 1000)<br>Meter with S0 (digital pulse) signal | UNITRONIC Li2YCYv (TP) data cable 2x2x0.5 mm² [2) 1] | 200.116 | 30 m |
| Ethernet network<br>• Network (shielded) | At least CAT 5/6 S/FTP | n/a | 100 m[3)] |

[1)] This cable is suitable for laying in the ground.

[2)] Repeaters must be used for longer cable lengths.

[3)] A hub is required if multiple separate cables of this length are used.

[4)] Power supply of 24 V DC is required.

Data lines must be separated from live cables by means of a metal cable support system in accordance with DIN EN 50174-2: 2018-10.

### 6.5.2 Shielding

The shielding of the cable must be grounded at one end of the connection. If this is not feasible or desired, the customer must choose another suitable measure for EMC protection.

# 7. Commissioning

This chapter describes the commissioning procedure for the Cabinet.

Installation, commissioning and maintenance of the Cabinet may only be performed by a qualified electrician.

**RISK OF ELECTRIC SHOCK**

**Electric shock hazard! Danger to life and limb!**

- Observe the safety instructions during installation and commissioning! See Chapter 5 Safety.

| Step | Action |
|---|---|
| 1. | Check that the Cabinet is properly mounted. |
| 2 | Check that all cables are correctly connected.<br>For this, refer to the circuit diagram and, if relevant, the user manuals for blue'Log and MX add-on modules that were included in the scope of delivery. |
| 3. | Check that the temperature for commissioning is within the limits. |
| 4. | Check the set switching points on the thermostat and, if necessary, adapt them to the requirements of your location. For factory settings, refer to the circuit diagram for the Cabinet included in the scope of delivery. |
| 5. | Switch on the power supply for all components |
| 6. | If relevant: Wait until the blue'Log has completed the start-up phase (Power LED and Status LED light up). |
| 7. | If relevant: Configure and operate the blue'Log and MX add-on modules in accordance with the respective user manuals. For terminal assignment, refer to the circuit diagram for the Cabinet included in the scope of delivery. |

If the Cabinet is brought from a cold environment into the operating environment, condensation can form. For this reason, wait two hours before commissioning to ensure that the Cabinet has reached the ambient temperature and is completely dry.

For outdoor Cabinets, depending on the prevailing ambient temperature, it may be necessary to run the clilmate control unit continuously for a longer period prior to commissioning. This will regulate the internal temperature of the Cabinet to the required values.

By setting the cooling switching point, you significantly affect the power consumption of the Cabinet and the service life of the rechargeable battery module. Increasing the cooling switching point (higher temperature) lowers the power consumption, but also reduces the service life of the rechargeable battery module. Reducing the cooling switching point (lower temperature) increases power consumption, but also increases service life of the rechargeable battery module.

# 8. Care and maintenance

The Cabinet only requires minimal maintenance when installed in a proper environment. meteocontrol recommends an annual inspection of the Cabinet to ensure optimal operation.

Furthermore, a periodic verification must be carried out in accordance with IEC 60364-6 – "Low voltage electrical installations – Part 6: Verification".

If necessary, the cabinet interior can be cleaned using a soft brush and a vacuum cleaner. For this, observe the safety instructions in Chapter 5 Safety!

## 8.1 Cleaning the Cabinet clilmate control unit

In environments with normal levels of soiling and low levels of dust, the exterior of the Cabinet clilmate control unit only needs to be cleaned every 6 months. For this, remove dust from the cooling fins and the fan.

When used in rooms with high levels of soiling or dust, this interval must be shortened accordingly. If the Cabinet is not dustproof, the interior of the Cabinet clilmate control unit must also occasionally be checked for soiling.

Follow the procedure below for cleaning the Cabinet clilmate control unit:

| Step | Action |
|---|---|
| 1. | Disconnect the Cabinet clilmate control unit from the power supply. |
| 2 | Secure the fan by mechanically blocking the rotors. |
| 3. | Remove coarse soiling using a brush. |
| 4. | Remove fine dust with compressed air or compressed air spray. |
| 5. | Release the blockage from the fan wheel. |
| 6. | Reconnect the Cabinet clilmate control unit to the power supply. |

## 8.2 Checking the residual current device

If a residual current device (RCD) is installed in the Cabinet, it must be tested by pressing the test button on the RCD every 6 months. This ensures the mechanical function of the residual current device. The test can also be conducted by a layperson.

**CAUTION**

**Hazard due to moving rotors**

There is a risk of injury if the fan wheel of the Cabinet clilmate control unit moves during maintenance!

- Secure the fan by mechanically blocking the rotors. For this, the fan must be secured by means of a pencil or similar tool; this is to prevent the fan from being set in motion at a high rotational speed by compressed air or water.

# 9. Technical data

For technical data, please refer to the circuit diagram for the Cabinet included in the scope of delivery.

# 10. Dimensional drawings

For dimensional drawings, refer to the circuit diagram for the Cabinet included in the scope of delivery.

# 11. Environmental protection and disposal

Older Cabinets that are no longer in a serviceable condition must be disposed of in accordance with national and local regulations for environmental protection and raw material recovery. Electronic components may not be disposed of along with household waste.

# 12. Appendix

## 12.1 CE certificate

The EC Declaration of Conformity can be found on our website under ***Downloads***.

## 12.2 RoHS statement

The RoHS statement can be found on our website under **Quicklinks** > **Certifications and declarations**.

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