

For other languages, please go to sensecheck.grohe.com

GROHE SenseCheck

YOUR GUIDE TO THE GROHE SENSE GUARD INSTALLATION

For safety advices, please see the product manual included in the packaging (sensecheck.grohe.com/manual)

The GROHE SenseCheck is designed to help installers and end users with the installation of the GROHE Sense Guard. We recommend that the SenseCheck is done by an installer together with the inhabitant of the house/end user where the Guard is being installed.



CAN THE GROHE SENSE GUARD BE INSTALLED AT THE LOCATION?

PLEASE NOTE THAT THE GROHE SENSE GUARD HAS BEEN DEVELOPED FOR THE FOLLOWING SITUATIONS:

- single family houses
- only one person is able to decide to shut off the water supply, without negative impact on other inhabitants

BE AWARE THAT THE GROHE SENSE GUARD CANNOT BE INSTALLED:

- on hot water pipes
- outside the house
- in rooms with frost risk
- when flow pressure is below 0.05 Mpa/0.5 bar/7 psi
- when flow pressure is higher than 1 Mpa/10 bar/145 psi (can be solved by pressure reducer)
- in high pressure gravity pumped water systems

General remark: The micro-leakage test is limited to the cold water pipe. Smaller leakages on the hot water pipe may not be detected.

1. PLAN

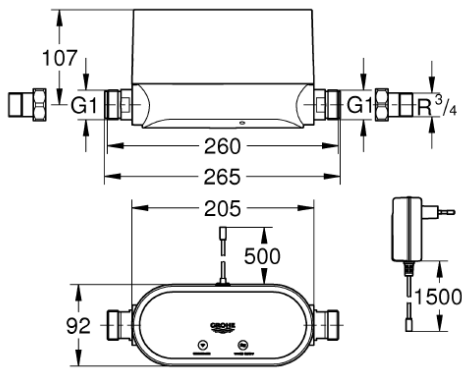
1.1 Is there enough room? (between water meter and where pipe splits to the heating system)

The GROHE Sense Guard needs to be installed between the water meter and the junction between hot and cold water. GROHE Sense Guard needs to be installed as close to the water meter as possible for maximum water security. Please consider the dimensions below and make sure that there is enough room to install the device downstream. Please note that room for 2 stop valves (to be installed before and after the GROHE Sense Guard) is needed. We recommend to install the GROHE Sense Guard with a wall mount set to ensure an easy and stable installation (product # 22501000).

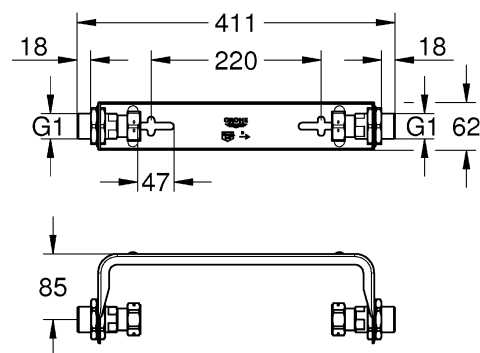
Material needed for installation:

- ☐ Adapter for different pipe sizes
- ☐ Other material: _____.

GROHE Sense Guard dimensions:



GROHE Sense Guard Wall Mount Set dimensions:



1.2 Is there a power outlet available to power the GROHE Sense Guard, located above the water pipe?

The power plug needs to be installed above the level of the water pipe. The provided cable has a length of 70cm. If the length is too short, please make sure to order the extension cable (product #22521LNO) or have an extra power plug installed.

1.3 Is there a stable Wi-Fi signal at the potential location of the GROHE Sense Guard?

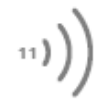
First, make sure that:

- your smartphone is connected to the internet via Wi-Fi or mobile data.
- your router doesn't have any offline times or shifts to battery saving mode during night.

Please check the Wi-Fi connectivity at this location with your smartphone:

- OPTION 1: Download a Wi-Fi analyzer app (e.g. Android: Wi-Fi analyzer, iOS: Wi-Fi SweetSpot) and check for connectivity stability for 5 minutes on the app.
- OPTION 2: Use a mobile phone's connectivity indicator. Check for connectivity stability for a period of 5 minutes.

What to do if Wi-Fi connection is weak?

PROBLEM	TEST	SOLUTION	
 The distance from the router is too long	Check the Wi-Fi performance while walking away from the router	To solve this issue, either a repeater or a new router with a better performance can be installed	
 Obstacles such as thick walls and liquids weaken the Wi-Fi signal	Test the Wi-Fi performance on the one side of the wall and compare it to the other side	Use powerline adapters, which can carry the Wi-Fi signal over the electric system of the house	
 Overlapping Wi-Fi networks in one area	Routers use channels from 1 to 11. Wi-Fi analyzer apps show how frequently the channels are used.	Change the channel on the router manually to a channel that is not overloaded. Please refer to the manual of the router for changing the channel	
 Too many devices use the same Wi-Fi network	The app shows how fast the Wi-Fi is	Install a router with a larger capacity or use meshed Wi-Fi routers	

1.4 Which of the following main heating devices for heating water is installed in the house?

Devices in the water system?	What to do?
☐ Flow heater 	<p>⇒ ✗ Turn off the micro-leakage test later in the device settings of the GROHE ONDUS app. With flow heater, the micro-leakage test that is done via pressure measurement might not work properly.</p> 
☐ Central heating 	<p>⇒ Only install GROHE Sense Guard on a cold water pipe.</p> <p>⇒ With a central heating system, separate hot and cold water pipes enter the apartment. GROHE Sense Guard cannot be installed on the hot water pipe. Therefore, any leakage on the hot water pipe cannot be detected.</p>
☐ Hot water boiler 	<ul style="list-style-type: none"> Hot water boiler with pressure compensation container: <ul style="list-style-type: none"> ⇒ No further changes needed. Hot water boiler without pressure compensation container: <ul style="list-style-type: none"> ⇒ ✗ Turn off the micro-leakage test later in the device settings of the GROHE ONDUS app. With a hot water boiler without a pressure compensation container, the micro-leakage test that is done via pressure measurement might not work properly. 

1.5 Check if the flow pressure is between 0.05 and 1 MPa (0.5 and 10 bar/7 and 145 psi).

GROHE Sense Guard operates ideally with an incoming flow pressure between 0.1 and 0.5 MPa (1 and 5 bar/7 and 145 psi). If you are not sure about the water pressure in the house, please contact your water utility.

Flow pressure	What to do?
Pressure is between 0.05 and 1 MPa (0.5 and 10 bar/7 and 145 psi)	No further actions are needed or no limitations apply. But please note that GROHE recommends a flow pressure between 0.1 and 0.5 MPa (1 and 5 bar/7 and 145 psi). If pressure is higher than 0.5MPa (5 bar/72 psi) a pressure reducer is recommended.
Pressure is below 0.05 MPa (0.5 bar/7 psi)	GROHE Sense Guard cannot be installed.
Pressure is higher than 1 MPa (10 bar/145 psi)	A pressure reducer has to be installed upstream the GROHE Sense Guard location.

1.6 Are any pressure-influencing devices installed downstream of the potential GROHE Sense Guard location?

The GROHE Sense Guard measures the downstream water pressure in the system. All pressure-influencing water appliances need to be installed upstream of GROHE Sense Guard. In case these appliances cannot be installed upstream of the GROHE Sense Guard, the Micro-Leakage detection might be influenced and therefore needs to be turned off. **Exception: Upstream the hot water system**, backflow preventers / pressure compensation containers are needed to ensure functionality of the GROHE Sense Guard.

Please check for any appliances downstream the potential location of the GROHE Sense Guard that might affect the water pressure.

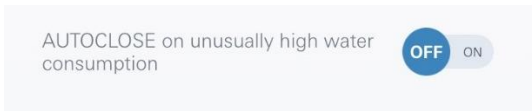
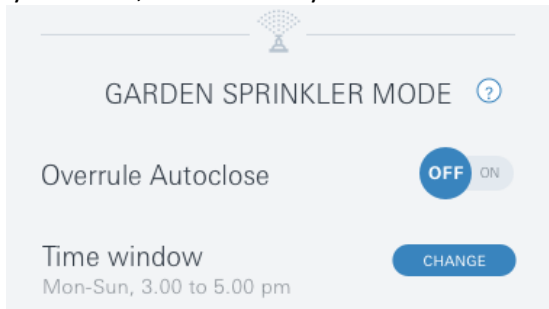
Devices in the water system?	What to do?
☐ Pressure reducers	⇒ OPTION 1: Branch off pressure affecting devices upstream of GROHE Sense Guard
☐ Water filters	
☐ Backflow preventers	⇒ OPTION 2: ✗ No micro-leakage test possible, turn micro-leakage test off
☐ Booster pumps	⇒ OPTION 3: Install pressure-influencing devices upstream
☐ Water softeners	
☐ Others	

1.7 Are any devices installed that have a cyclic or permanent flow of water? (downstream of the potential location of the GROHE Sense Guard)

GROHE Sense Guard measures water flow to detect leakages. If appliances permanently or cyclically consume water this functionality cannot work properly.

Devices in the water system?	What to do?
☐ American fridges/permanent ice makers	⇒ OPTION 1, for devices with cyclic water draw off:
☐ Aquariums with permanent fresh water flow	⇒ Modify the GROHE Sense Guard settings, see instructions below ¹ .
☐ Permanent garden drop sprinklers	
☐ Drinking water sprinklers	⇒ OPTION 2, for devices with permanent water draw off:
☐ Descaling devices	
☐ Other devices that have a cyclic or permanent flow of water	⇒ Branch off devices with permanent flow of water upstream of the GROHE Sense Guard or the GROHE Sense Guard cannot be used. Please note that leakages in pipes that bypass the GROHE Sense Guard cannot be detected.

¹Instructions on modifying the GROHE Sense Guard settings for devices with cyclic water draw off:

Type of water device	Impact on GROHE Sense Guard	What to do?
One individual draw off consumes large volumes of water (>100l)	GROHE Sense Guard might detect this as a leakage.	<p>⇒ OPTION 1:</p> <ol style="list-style-type: none"> ✗ Adjust maximum outflow of water to a value higher  <ol style="list-style-type: none"> ✗ Turn off AUTOCLOSE on unusual water consumption in the first month. Warnings will still be sent.  <ol style="list-style-type: none"> Ignore "Unusually high water consumption" warnings during the first weeks. ✗ Turn on AUTOCLOSE on unusual water consumption again later. <p>⇒ OPTION 2: ✗ Turn on garden sprinkler mode, so that auto-shutoff does not happen. Please note that during this cyclic event, water security is reduced.</p> 
The appliance draws off water more than 10 times per hour	GROHE Sense Guard pressure tests might be influenced or interrupted by the draw offs.	<p>⇒ OPTION 1: Reduce the number of individual draw offs of the appliance</p> <p>⇒ OPTION 2: Branch off these devices upstream of the GROHE Sense Guard</p>
The appliance draws off water during the night between 2:30 am and 4 am	GROHE Sense Guard runs extensive micro-leakage tests during the night between 2:30 am and 4 am.	<p>⇒ OPTION 1: Configure the appliance so that it does not consume water between 2:30 am and 4 am.</p> <p>⇒ OPTION 2: ✗ Turn micro-leakage test off</p> <p>⇒ OPTION 3: Branch off those devices upstream of GROHE Sense Guard</p>

1.8 Are any devices installed that have a high water consumption? (downstream of the potential location of the GROHE Sense Guard)

If a device with a high water consumption is installed, the GROHE Sense Guard might detect such consumptions as a leak and will shut off the water. Please note that devices that consume more than 50 liters per minute must be installed upstream of the GROHE Sense Guard or the GROHE Sense Guard cannot be used.

Devices in the water system?	What to do?
☐ Swimming pools	⇒ X For devices that have a projectable usage or are not used frequently – to fill a swimming pool or water the garden for example – the sprinkler mode allows you to override the automatic shut-off function. That way the GROHE Sense Guard will not shut off the water.
☐ Time-based garden sprinklers	⇒ For garden sprinklers that turn on every day from x to y, turn on the Garden Sprinkler Mode and set the day and time (start & end) properly.
☐ Showers with high water consumption (e.g. GROHE AquaSymphony)	⇒ If the usage of devices is not projectable or the devices are not used frequently, the GROHE Sense Guard cannot be used.
☐ Other devices with a high water consumption	

1.9 Are any devices installed that ensure safety? (downstream of the potential location of the GROHE Sense Guard)

Devices in the water system?	What to do?
☐ Fire sprinkler system	The GROHE Sense Guard can have an impact on water security devices. To guarantee safety in case of an emergency, branch off all safety devices upstream of the GROHE Sense Guard.
☐ Thermal process safeguards	
☐ Eye showers	In case water security devices are connected to the main water supply and the security devices cannot be branched off, the GROHE Sense Guard cannot be installed.
☐ Safety/emergency showers	
☐ Other safety devices	

1.10 Are any toilets &/or urinals with flushing valves installed? (downstream of the potential location of the GROHE Sense Guard)

Very high flow rates when using flushing valves can cause GROHE Sense Guard to detect flushing as a water pipe break. This risk is given especially in the simultaneous operation of several flush valves.

Devices in the water system?	What to do?
☐ Toilets and urinals with flushing valves	⇒ Branch off all toilets & urinals with flushing valves upstream GROHE Sense Guard. Otherwise GROHE Sense Guard cannot be used.

1.11 How many water consuming appliances are installed in the house?

This information is needed in order to set the maximum outflow of water according to the individual household situation. Based on the water appliances in the house, we recommend setting the maximum outflow to the following recommendations:

- 1 shower: 100 l
- 1 bath tub & 1 shower: 200 l
- 2 bath tubs & 1 shower: 300 l
- more: min 400 l

For information on how to change the maximum outflow of water, see chapter 4 test number 2.

2. CONNECT

2.1 Install the GROHE ONDUS App on the Smartphone.

To use the GROHE Sense Guard, the GROHE ONDUS App needs to be installed on your smartphone. Please download the app from either the Apple iTunes or Android Google Play stores. Once downloaded, please follow the registration and initiation procedure within the app.

2.2 Connect the GROHE Sense Guard to the home Wi-Fi.

Add the GROHE Sense Guard to a house by tapping on the (+) and connect it to the home Wi-Fi by following the steps in the app.

What can I do in case I can not connect to my home Wi-Fi?



Is your home Wi-Fi secured with WPA / WPA2?

GROHE Sense does not work with open Wi-Fi Networks, it needs a WPA or WPA 2 secured Wi-Fi Network. That means your home WIFI needs to be password protected with minimum 8 digits.



Is MAC filtering activated?

MAC filtering is a protection method for Wi-Fi networks. WIFI router give only permission to known/registered devices. Normally MAC filtering is not activated by default, it needs to be set up manually. In case you have activated MAC filtering please deactivate it or add the MAC address of the GROHE Sense to your router. To find out the MAC address of your GROHE Sense, download the WIFI testing app, start the integration mode (blue blinking LED) of the device by entering the batteries and then connect to the appliance with your Smartphone. The app shows you the MAC address of the device.



Do you use a Wi-Fi network with a frequency of 2,4 GHZ?

To be able to integrate the Sense to your Wi-Fi Network has to use a frequency of 2,4 ghz. It does not work with a 5,0 ghz frequency. You can see and change this in the Settings of your router.



Is DHCP activated on the router?

DHCP, a communication protocol for the communication between the WIFI network and devices, needs to be activated to use the GROHE Sense. Normally DHCP is activated by default on routers. You can find an explanation how to figure whether it is activated and how to activate here: <http://www.wikihow.com/Configure-a-Router-to-Use-DHCP>



Does the router support IPV4?

IPV (Internet Protocol Version) is a communication method of your router and connected devices, which has different types: IPv4 and IPv6. The GROHE Sense uses IPv4 for communication, which means that the Wi-Fi router also needs to be set up with IPV4. In most of the cases routers support both IPV4 and IPV6. You can check and change this in the settings of your router. Please find an explanation for this here: <http://testingfreak.com/change-enabledisable-ipv4-ipv6-computer-windows/>



Are ports 433 (HTTPS) and 80 (HTTP) opened?

Ports are connections of your network that enable the communication of your Wi-Fi network and other services. To create a connection between the GROHE Sense and your Wi-Fi network port 433 and port 80 need to be opened. In most cases these are open by default. In case they are not, please check the manual of your router.

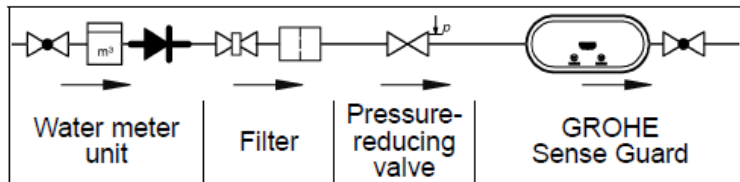
3. INSTALL

3.1 The GROHE Sense Guard physical installation

For instructions on installation, please refer to:

- ⇒ the installation movie: grohesenseguard.grohe.com
- ⇒ the general manual and safety advices: sensecheck.grohe.com/manual

Observe the fitting sequence for other components:



Important information

Always use original GROHE parts to ensure proper installation and usage including adapters, the GROHE Sense Guard Wall Mount set (product# 22501000), the GROHE Sense Guard extension cable (product# 22 521 LN0) sealing and filter (do not use a fiber sealing).

3.2 Check water system tightness

Tightness has to be checked by a pressure test according to current standards (e.g. DIN EN 806). Please check cold and hot water pipes for pressure drops.

To check the cold water piping system for pressure drops, shut off the hot water supply upstream of the heating system and test. Please also check the hot water piping system (downstream of hot water boiler) for pressure drops. If one or both piping systems are not tight, either there is a leak or the system is not compliant. As a consequence, **micro-leakage testing will not work and needs to be turned off until fixed.**

3.3 Adjust the GROHE Sense Guard functions settings

In order to ensure that the GROHE Sense Guard works properly, please change the settings based on the individual household situation for:

- Micro-leakage test on/off
- Maximum outflow
- Auto-close on/off

Please see chapter 1 where individual recommendations are marked ✕

3.4 Check hot water pipes

By manually triggering the cold water shut-off with the help of the GROHE Sense Guard please check after the installation whether hot water is still leaking from any points of discharge in the house. Hot water leakages can be prevented with the use of GROHE thermostat fittings.

3.5 Inform family & household members

Please make sure to inform all persons living in the household about the GROHE Sense Guard and its functionality. Add other persons as emergency contacts to make sure they are informed in case of an alarm, as soon as this functionality is implemented. We recommend to share the ONDUS account with other family members of the house. Keep in mind that push-notifications will only be sent if your smartphone is connected to the internet and push-notifications have been activated for your GROHE ONDUS app in your smartphone settings. In case you are not connected to a Wi-Fi network, make sure to activate push-notifications being received through mobile data.

Please note that push notifications are sent in any case and in any alarm situation. Additional e-mail notifications are only sent for the following highest alert levels:

- Flooding (when a GROHE Sense is installed)
- Pipe break
- Max. water consumption volume has been reached

4. TEST

Safety advice

The following tests are created to make sure that the system is properly understood. These tests should be done only once as the house installation may suffer from closing and opening the valve in the GROHE SENSE GUARD repeatedly.

Environmental advice

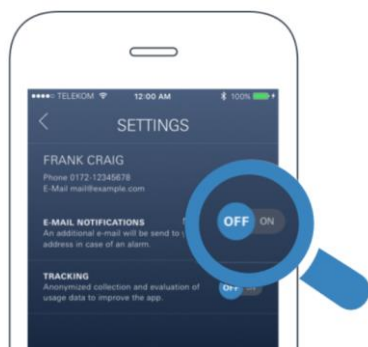
At GROHE we take the environmental impact of our behavior very seriously and always strive to make our products and processes as sustainable as possible. Therefore, we ask you to make sure, that the water needed during the test is properly used and does not just run into a drain. For example, combine the tests with taking a bath or using the water for watering plants or filling a rainwater storage tank to be reused later.

To understand the functionality of the GROHE Sense Guard, please test the following test cases. Please turn email notifications on. Please note that up to 3 emergency contacts can be included. These will receive an e-mail notification in case of an alarm. In case only the functionality is tested, please inform your emergency contacts beforehand or turn off notifications being sent to emergency contacts*. For the critical items that are tested in the next steps, an e-mail will be sent additionally to the push-notification:

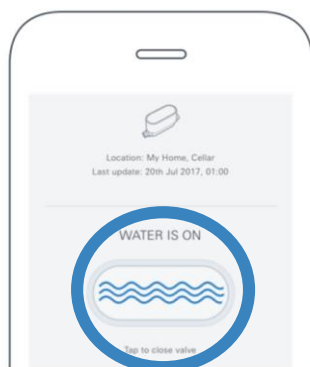
- Flooding (Sense)
- Pipe Break
- Max. Water Consumption Volume Reached

Other messages are only sent via push-notification, not via email.

*function available from April 2018

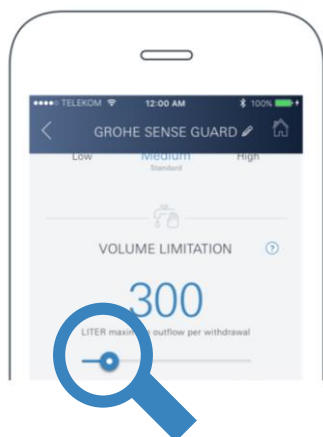


		How to test	Expected behavior
1	Water on/off	Turn the water on/off in the GROHE ONDUS app or on GROHE Sense Guard.	<ul style="list-style-type: none"> ▪ When tapping the button in the GROHE ONDUS app or the button on the GROHE Sense Guard, the water supply will be shut off. <p>Note: In case the status of the button in the GROHE ONDUS app is not correctly indicating whether the valve is opened or closed, please go</p>

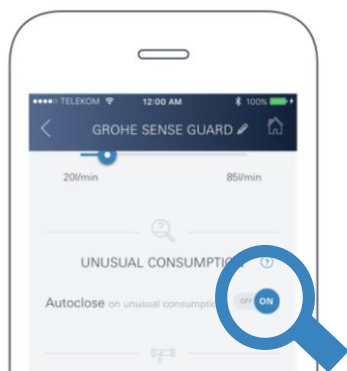


to the home screen of the ONDUS app and pull down the screen to refresh the overview.

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| 2 Installations with Sense for increased water security: GROHE Sense triggers GROHE Sense Guard | <ul style="list-style-type: none"> ▪ Install a GROHE Sense in the same House. ▪ Make sure that it is integrated in the same “virtual” house in the GROHE ONDUS app. ▪ Activate the Setting Control via GROHE Sense in the GROHE Sense Guard Settings. ▪ Gently dip the bottom of the GROHE Sense in water. | <ul style="list-style-type: none"> ▪ GROHE Sense Guard reacts to the flooding, beeps and blinks and automatically shuts off the water supply. |
| 3 Maximum volume limitation | <ul style="list-style-type: none"> ▪ Set the maximum water volume limitation setting to 100 l. ▪ Turn on AUTOCLOSE when limit is reached. ▪ Open the bathtub faucet. ▪ Please check the water meter as some bathtubs have a filling capacity below 100 l. | <ul style="list-style-type: none"> ▪ Automatic shut-off when reaching maximum volume limitation. ▪ A push notification “Max volume reached, water was shut off” will be shown and an email will be sent. |



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| 4 Pipe break / unusual water consumption | <ul style="list-style-type: none"> ▪ Shift max volume limitation back to a higher threshold. ▪ Turn on AUTOCLOSE on unusual water consumption. ▪ Open multiple/all tap points. ▪ Wait for auto shut-off. | <ul style="list-style-type: none"> ▪ Automatic shut-off by GROHE Sense Guard <ul style="list-style-type: none"> ▪ when reaching automatically defined unusual water consumption threshold (notification: “Unusually high water consumption”), or ▪ exceeding a very high flow rate that triggers push notification “Pipe burst, Water supply was shut off”. |
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|------------------------|---|
| 5 Micro Leakage | <ul style="list-style-type: none"> ▪ The micro-leakage test is conducted automatically overnight and multiple times a day ▪ The GROHE Sense Guard closes the valve for this ▪ In order to avoid high water consumption and as a micro-leakage cannot be easily tested, GROHE recommends not to conduct a micro-leakage test. |
|------------------------|---|

HELP

In case of further questions, contact the GROHE ONDUS customer service at the following addresses, based on your country:

Country	Contact	Country	Contact
Austria	ondus_at@grohe.com	Lithuania	ondus_lt@grohe.com
Belarus	ondus_by@grohe.com	Netherlands	ondus_nl@grohe.com
Belgium	ondus_be@grohe.com	Norway	ondus_no@grohe.com
Bulgaria	ondus_bg@grohe.com	Poland	ondus_pl@grohe.com
Czech Republic	ondus_cz@grohe.com	Portugal	ondus_pt@grohe.com
Denmark	ondus_dk@grohe.com	Romania	ondus_ro@grohe.com
Estonia	ondus_ee@grohe.com	Serbia	ondus_rs@grohe.com
Finland	ondus_fi@grohe.com	Slovakia	ondus_sk@grohe.com
France	ondus_fr@grohe.com	Slovenia	ondus_si@grohe.com
Germany	ondus_de@grohe.com	Spain	ondus_es@grohe.com
Hungary	ondus_hu@grohe.com	Sweden	ondus_se@grohe.com
Ireland	ondus_ie@grohe.com	Switzerland	ondus_ch@grohe.com
Italy	ondus_it@grohe.com	Ukraine	ondus_ua@grohe.com
Latvia	ondus_lv@grohe.com	Other countries	Check www.grohe.com