waterguard®

INSTALLATION INSTRUCTIONS
USER MANUAL

SMART STOP

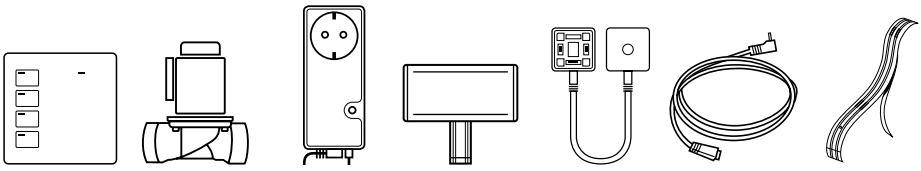
Version May 25, 2020

SINTEF FG

This information is valid for these Smart Stop types:

1 valve 1/2”	**ART NO 5648191**
1 valve 3/4”	**ART NO 5648193**
1 valve 1/2” NC	**ART NO 5648195**
1 valve 3/4” NC	**ART NO 5648197**

Included components



1 2 3 4 5 6 7

1 **CENTRAL UNIT WTG-38A** (ART NO 5648329)
The unit doubles as central unit and control panel.

2 **SOLENOID VALVE (1 OR 2 PCS.)**
Danfoss® solenoid valve comes in 1/2" to 2" dimensions.

A3 WTG-36C WIRELESS VALVE CONTROL (NC)
Activates the solenoid valve when a leak is detected by the system.

4 **WIRELESS SENSOR** (ART NO: 5648275)
Battery powered wireless sensor

5 **SPLIT CABLE FOR 2 VALVES** (ART NO: 5648199)

6 **JACK-ADAPTER** (ART NO: 5648221)
For connecting sensor tape to valve controller

7 **SENSOR TAPE** (ART NO: 5648223)
3 m sensor tape with glue. Is taped to the underlay in places where water is likely to gather.

About the system

Waterguard® Smart Stop is a wireless system for stopping water leaks. It has a central unit that works together with wireless sensors and the wireless valve control.
All wireless components must be connected to the wireless central unit/control panel.

The unit has a function for delayed water stop. By activating DELAY, the water will be closed after 4 hours.

The wireless valve control has a 230V AC 10A socket for dishwashers etc. In case of a leak the valve control will interrupt the power to this socket.*

*** NB! THIS SOCKET IS NOT DESIGNED FOR CONNECTING WATER HEATERS.**
Ref. NEK 400 - Norsk Elektroteknisk Komite (NEK)

The unit has a 1.5 meter cable with a 3-poled contact that is connected to the solenoid valve.
When two valves are used, install the split cable with the original fastening screw for the solenoid valve contact on the valve control that is being switched over to the split cable contact. The enclosed long screw is used to fasten the valve control contact on the split cable male contact.

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New functionality in this version

SAFETY FUNCTION
The wireless valve control uses an internal safety function to prevent extracting the sensor cable by accident. Should this happen, a repeating 0,5 second signal will be heard, the LED indicator in the reset switch will flash with a red light and the solenoid valve will close the water. When the contact is put in place again, the alarm will stop and the valve will open the water again.

If the wired sensor port is not in use, this function is deactivated.

If the sensoe cable by accident is connected, and you later do not wish to use it (you need to disconnect it), this safety feature can disabled by disconnecting the power, extracting the sensor cable, and reconnect the power.

NB! Only the contact is monitored, if the sensor cable breaks - that will not trigger the alarm.

AUTO-EXERCISING VALVE
The wireless valve control is equipped with a function that automatically exercises the valve. This will prevent the pilot valve from being stuck due to particles in the water.
1 second after it is powered, the unit will go through an exercising sequence where the pilot valve will open and close very fast, without influencing the waterflow.

The unit comes pre-preogrammed with one exercising cycle every 24 hour.
This can be changed to the following frequency:
1 time every 24 hour - 1 time every week - no excersing of the valve.

Reprogramming the exercising cycle
Hold in the Reset-button before the unit is powered, and keep holding it. After 20 seconds an audio signal/ beep will be heard, and this will loop in 3 different steps until the Reset-button is released after the seqence you prefer.

If the Reset button is let go after 1 beep, the valve will exercise every 24. hours.
If the Reset button is let go after 2 beeps the valve will exercise every 7. days.
If the Reset button is let go after 3 beeps the valve will not exercise.

To control the exercise status
Disconnect the power, and after 10 seconds put contact back.
The unit will now emit a number of beeps that corresponds to the chosen exercise frequence.
If you wish to change the exercise cycle, repeat the above explained programming sequence.

NB! When exercising is performed, the voltage wil be cut in the units 230V port. This cut lasts for abt. 300 ms, and might cause connected appliances to change their operating status. Should this happen, it is not regarded a error on the valve control from Waterguard.

Registrating/pairing wireless units

WIRELESS UNITS

Prior to assembly, the wireless units must be registred in the central unit!

Connect the wireless central unit to power.
Connect the wireless valve control to power, connect the solenoid valve(s)s to the valve control.
Open up the wireless sensor and insert batteries, do not put back the lid.

1 On the central unit push and hold RESET for abt. 2 seconds. The panel at first will emit one beep and then two beeps, the unit is now ready for registration in the wireless unit.
2 On the valve control, push and hold the RESET button until two beeps are heard. In a few seconds the units are registred, and they will emit another audio signal to confirm the registration.
3 Repeat part 1.
4 Push the small swith on top of the circuit board (ill. 2 page 11) on the first wireless sensor for abt. 1 second. The central unit will emit audio signals, and a small light diode will flash for abt. 1,5 seconds. This indicates a successful registration/pairing.
5 If more wireless sensors or wirless valve controls are to be paired, repeat the above described process.
. If a unit is registered more than once, it will be given an new ID every time.

If a unit is registered so many times that the number of beeps are too high, you can tidy up in this by erasing registrations. That is done this way:
On the wireless central unit press and hold RESET for abt. 5 seconds – until you hear 5 short beeps.
By re-registrating a previously registerated unit, they will get a new ID-number starting on 1.

By failing to re-register, you risk having two wireless units wih the same ID-number. While not corrupting functionality, you will not be able to identify the triggered unit based on the number of beeps.

Installation instructions

WIRELESS CENTRAL UNIT/CONTROL PANEL

1 The wireless central unit should be mounted in a concealed wallbox so that the enclosed power supply can be placed inside the box. This willl ensure a good looking installation and stable power supply. It can also be placed inside one of the underlaying swithces' wallboxes, running the wires up from below the swithches frame. Alternatively use a multibox, ex. Elko Multibox PFXP - Elnummer 1223740.

2 The enclosed plugable power supply can be used instead of the internal one, but be aware that if this is unintentionally disconnected from the socket, the wireless units will no longer function!

SOLENOID VALVE

The solenoid valve must be installed by a professional plumber, in frost-free invironments.

1 The solenoid valve is preferably mounted on the cold water intake after the main stopcock. If a fire hose is installed, the solenoid valve MUST be installed after that.

2 Filter MUST be installed where water can be contaminated by dirt or particles.

3 See to that sealing material used does not enter the valve by assembly.

4 The solenoid valve can be installed horisontally or vertically. When installed horisontally, the electric coil must never face downwards. When mounted vertically the electric contact must allways be on top of the coil.

5 The solenoid valve must be installed in the direction of waterflow, see arrow on the housing.

WIRELESS VALVE CONTROL AND SENSORTAPE

1 The valve control is installed in a 230V grounded socket close to the valve and the monitored area.

2 Connect the Jack-adapter to the valve control, and fasten it with cable fasteners to the floor.

3 The sensor tape is fastened to the Jack-adapter with the blue tape-strip on the end.

4 Remove the protective cover from the sensor tape underside, and glue the tape to the floor/underlay where water from a leak may gather.

5 Conncect the solenoid valve contact to the valve control using the enclosed screw. Tighten carefully to slightly sqeeze the contact to the valve coil.

Installation instructions

WIRELESS SENSOR

On the floor

Can lay loose on the floor below washing machine, refridgerator etc. Remove the wall bracket to let the sensors get in touch with the underlay. Insert batteries according to instructions. The loose sensor tip can be folded under the sensor before sensor is placed on the floor.

On wall

Using the enclosed wall bracket, the sensor is easily mounted on the wall. Fasten the wall bracket so that the sensor tip just touches the floor. Insert battery according to instructions. Insert sensor tip in the bracket opening and click the sensor in place.

Using sensortape

Open the wireless sensor by removing the top lid. Remove batteries. Pull out the flat sensortape. Push the new sensor tape all the way in, the blue plastic facing down. Check that the small plastic pin in the sensor fits the hole in the tape. Insert batteries and put the lid back. Remove the protective cover from the sensor tape and fasten it to the floor/underlay. The sensor tape can be cut to desired lengths. Cutting it in two it can be connected to 2 units. Test the functionality by moisting some of the sensor points before you start using the system.

START AND TEST

Test the system before placing it out, using the central units ON/OFF switch. The valve should emit a distinctive clicking sound when it is being powered from the valve control..

Also test the wireless sensors by moistening the sensor points.
When these sensors sound an alarm, the central unit (when in ON) will go to OFF, and the valve control will close the valve. The central unit and the valve control are reset by pushing RESET.

If the sensor cable on the valve control is activated, push RESET on the valve control once before the central unit can be reset by pushing its RESET button twice.
To reset the system, the moist that caused the alarm must be removed.

NB! After the system is tested, thorough user instruction is mandatory.

1. Mount all units in their proper place, and connent them to power. No signals should sound, except the start-up sound.
2. Open a tap to make sure the water is flowing. In the following tests, confirm that the water stops flowing from the open tap when the valve(s) close.

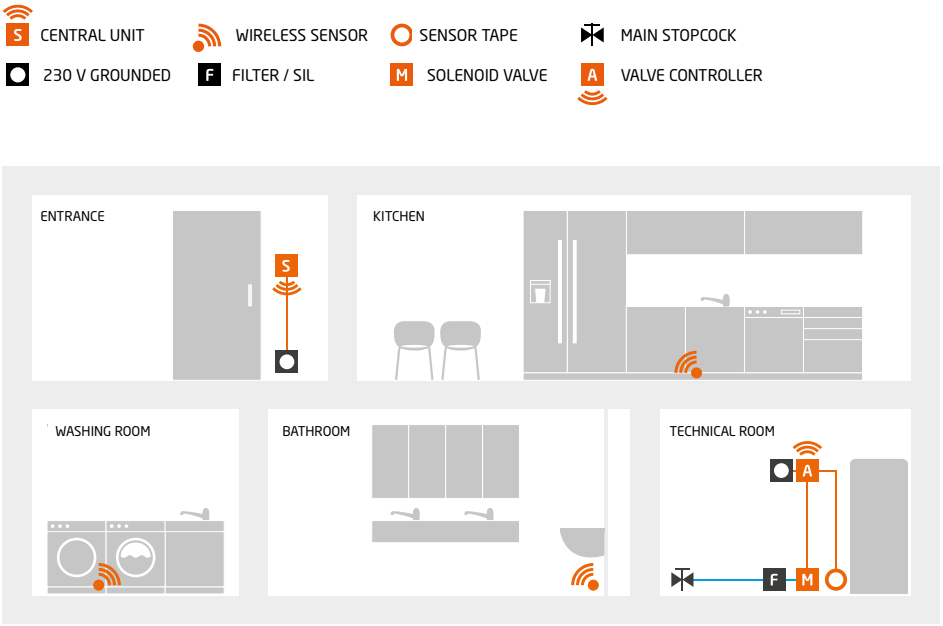
Installation instructions

3 If you use the sensor port on the wireless valve control:
Test the safety function for the sensor cable by pulling it out.

- A quick approx. 0.5 sec repeating audio signal is heard.
- The LED indicatior in the RESET button vil alternate red and green.
- Water in the tap will stop flowing. Control that the water starts flowing again when the sensor cable is put back in.

4 With a moist cloth wet one of the sensor points on the sensor tape.
5 The valve control will now indicate a leak with repeating audio signals approx every secont. The LED-indicator in the RESET button will emit a red light, and the valve will close the water.
6 Check that water stops flowing from the open tap.
7 Push RESET once to stop the audible alarm, the water should remain closed.
8 Wait one minute while thoroughly drying the moist sensor point.
9 Now, stop the alarm by pushing the central unit's RESET button twice.
The audio signal from the central unit will stop, and LED-OFF will change to LED-ON.
10 Control that the water still flows from the open tap.
11 Moisten the sensor point on the first wireless sensor. The drop in the Waterguard logo will light up red when moist i detected, and an alarm signal is being sent.
12 The water in the tap shall close, and the central unit will emit the number of beeps that corresponds with the triggered sensor. Now, wipe the sensor's moist parts thoroughly!
13 The wireless central unit can now be reset by pusing the RESET button twice.
14 Check that the water starts flowing from the tap.
15 Repeat the procedure with the other wireless sensors, and be sure to dry all sensor points thoroughly after the test.

Principal sketch



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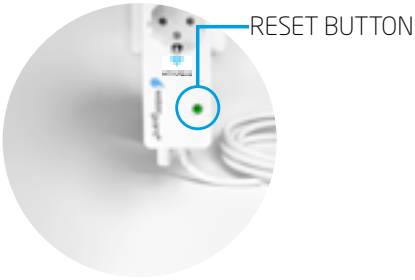
IN CASE OF ALARM



1 The system has two types of alarms when detecting a leak:
2 A wireless sensor detection will only be alarmed in the wireles control panel.
3 A leakage detected by the valve control's sensor cable will be alarmed both on the valve control and on the control panel.
4 A leak alarm from a wireless sensor can only be reset/ cancelled on the control panel. An alarm from the valve control's sensor cable must be reset/cancelled first on the valve control, then on the control panel.
5 If there is water on the valve control's sensor cable, the control will emit repeating 1-second alarm signals, and the Reset-button will display a red light. The solenoid valve now has closed the incoming water. Also the central unit will sound an alarm, and LED OFF will light up.
6 If there is water on a wireless sensor, only the control panel will sound an alarm and light up LED OFF. Also, the solenoid valve will close the water supply.
7 When an alarm is triggered, this is either due to a water leak or other factors such as cleaning with water etc.
8 Localize the water leak or spill, and dry up thoroughly.
9 The alarm signal from the units can be stopped by pushing the RESET-button once. The solenoid valve will still be closed.
10 In case of a real water leak, close the main stopcock and contact a plumber.
11 When the damage or spill is taken care of, be sure to carefully wipe off the wet parts of the sensor.
12 Push the RESET-button and the light will change from red to blue. The solenoid valve will open.

TESTING THE SYSTEM (at least twice a year)

1 Open a tap and let the water run.
2 With a wet cloth, moist one of the sensor-points. The valve should now close the water flow.
3 Make sure the water in the open tap has stopped.
4 With a dry cloth, dry the moist sensor point thoroughly. Push the RESET-button on the central unit to cancel the alarm. The alarm signal should now stop, and the LED should change from red to blue. The valve will open again.
5 Test all wireless sensors and sensor cables. NB: If the sensor port on the valve control is activated, the valve control must be reset before the central unit ca be reset!

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Battery change

The enclosed sensor batteries has an expected life of approx. 5 years.

We recommend a battery change after max 5 years. Sensors with weak batteries may, if placed far away, not connect with the central unit.

In case of low batteries, the central unit will warn with an audio signal only. The unit will remain in its initial state without closing the solenoid valve. The number of audio signals from the central unit will correspond with the sensors registration number when installed. The alarm is repeated every 25 seconds.
Reset the alarm with a brief push of RESET. Take note of the number of signals/which sensor has triggered before you reset the alarm.

1 Remove the sensor from the wall bracket by pulling it approx. 5mm upwards and then pulling it straight out. Remove the top lid by using the small slots on the side.

2 Remove the batteries and insert new of the same type (AAA). Push the switch (marked with red on pic 2) and check that the LED on the right side starts flashing. Put the lid back on.

3 *Test the sensor: (see also 4 below)*
Place a moist cloth or finger on one of the sensor points, the alarm should immediately be released. After cancelling the alarm, carefully dry the moisted sensor point.

4 Put the sensor back where it was. This test can advantageously be run also after having mounted the sensor in place, by moistening the sensor cable.

Confirmed installation

THE SYSTEM IS INSTALLED AND TESTED BY

name _____

Date _____

Firm _____

Phone _____

Valve control is mounted _____

Wireless sensor 1 is mounted _____

Wireless sensor 2 is mounted _____

Wireless sensor 3 is mounted _____

Wireless sensor 4 is mounted _____

Wireless sensor 5 is mounted _____

Wireless sensor 6 is mounted _____

Wireless sensor 7 is mounted _____

Wireless sensor 8 is mounted _____

Wireless sensor 9 is mounted _____

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