

ETO2 Controller



ETO2-4550



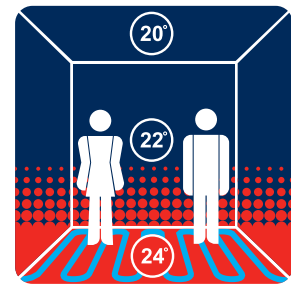
ETF-744/99



ETOG-55



ETO2-BOX
ETO2 Mountingbox



GS UNDERFLOOR
HEATING



Intelligent Control
Maximum comfort with
low energy consumption

Save up to 66% CO²*

CONTROLLER FOR HYDRONIC OR ELECTRICAL SNOW MELTING

Energy efficient control of ice and snow melting

An intelligent all-in-one solution for ice- and snow melting usable for all applications within hydronic as well as electrical heating. Optimal operation is ensured due to output control which makes the system both effective and economical. ETO2 offers you the possibility of snow melting - the green way.

- Control of hydronic or electrical ice and snow melting.
- Up to 2 individually controlled zones.
- Control of supply water temperatures by motorized mixing valve
- Control of idle water temperature for faster heat up times in hydronic mode.
- Economical control through both detection of temperature and moisture
- Display and "knob wheel" for easy programming
- Alarm relay for external signal
- Language options

PRODUCT PROGRAMME

TYPE	PRODUCT
ETO2-4550	Thermostat incl. cover for surface wall mounting
ACCESSORIES	
ETOG-55	Ground sensor for detection of temperature and moisture, 10 m cable
ETF-744/99	Outdoor sensor for detection of temperature
ETO2-BOX	UL-mounting box for ETO2
ETT8	Spacer plate for ETO2-4550

WE CANNOT CHANGE THE WEATHER - BUT WE DO CONTROL THE CONSEQUENCES

We have developed the ETO2 controller for ice and snow melting. By using readings from temperature and moisture sensors, the controller ensures economical control of energy consumptions when keeping areas free of ice and snow.

The moisture sensor is installed in the surface of the outdoor area.

As soon as moisture is detected below the critical temperature level, the ETO2 controller activates the snow melting system. Once the sensor has dried out, the controller switches off the heating system.

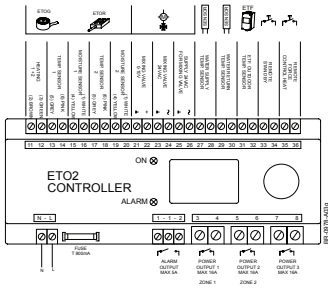
CONTROLLER FUNCTIONS ENSURING MINIMAL ENERGY CONSUMPTION

The sensor type ETOG is designed for embedding into the surface of the outdoor area. The ETOG detects ground temperature and moisture and as an option the air sensor type ETF-744/99 additionally can be used for measuring rapidly air temperature changes.

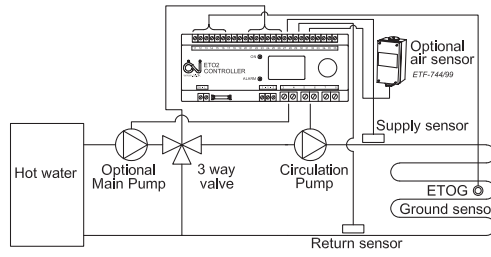
In electrical mode the ETO2 can control up to two zones by activating an individual output for each zone. For 2-zone hydronic applications these outputs are connected directly to circulation pumps.

In 1-zone hydronic mode, the ETO2-4550 ensures a desired supply water temperature by controlling a motorized mixing valve depending on the supply water sensor temperature. At the same time a return water sensor controls that the water temperature is kept at a minimum temperature (idle temp) to ensure faster melting times when the need occurs.

ETO2 Controller

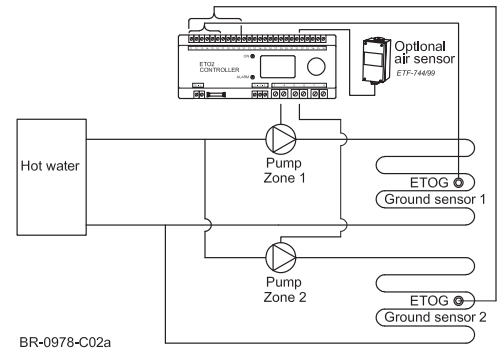


Connections



BR-0978-C01a

Example: Advanced 1-zone hydronic application



BR-0978-C02a

Example: Simple 2-zone hydronic application

Remote control possibilities:

The ETO2 can be controlled from external signals like a day/week timer, a GSM-module or other signal sources. It can be set into standby mode (off) and the heating system also temporarily can be manually forced on (for the time set in the afterrun menu), even if no snow is detected.

SENSORS

Ground sensor type ETOG:

Designed for embedding into the surface of the outdoor area.

Detects temperature and moisture and up to two sensors can be installed.

Outdoor sensor type ETF:

Additionally the outdoor sensor can be used along with the ETOG ground sensor. The outdoor sensor detects rapidly changes in air temperatures reducing the risk of icy areas.

MOUNTING

Mounting of ETO2:

DIN-rail mounting in switchboard, mounting box or on wall surface.

Mounting of ground sensor ETOG:

Must be level mounted where the worst snow and ice problems normally occurs. The sensor must be mounted on a hard foundation, in a concrete base, leveling the top of the sensor.

Where an asphalt surface is used, it should be placed in a concrete recess.

HYDRONIC MODE:

In hydronic mode the supply sensor ensures a desired supply water temperature while the system is active.

When there is a demand, the circulation pump activates and the valve is set to 20% open for 1 minute to let the system stabilize. Hereafter the Main pump is activated (hereby the main pump also can be used as demand signal to a boiler or heat pump)

When there is no need for melting, the system activates the circulation pump for 1 minute every 15. minute to check that the return water does not get below the desired "idle temp". If this is the case, the system fully activates to increase the return water temperature to the desired level.

TECHNICAL DATA

ETO2-4550:

Supply voltage	120-240V ±10%, 50-60 Hz
Temperature setting range	0/+10°C
Built-in timer for manual snow melting / afterrun	0 - 18 hours
Output relay	3 x 16A potential free relay
2 zone application	Output is 2 x 16A potential free relay
Water based system	1 zone, connection for supply & return water sensor, control of 3 or 4 way valve, primary pump, secondary pump.
Mixing valve output	24Vac 6VA, 0-10Vdc,
Water sensor input	ETF-1899A (strap on type)
Display	Graphical with backlight
Ambient temperature	0/+50°C
Housing / incl. cover	IP20
Weight	495 g
Dimensions excl. cover	(H/W/D) 90/156/45 mm
Dimensions incl. cover	(H/W/D) 170/162/45 mm
LED's indications:	
ON / Green	Supply voltage to the thermostat
Error / Red	Fault indication

Ground sensor ETOG-55:

Detecting	Moisture and temperature
Mounting	Outdoor area
Housing	IP68
Ambient temperature	-50/+70°C
Dimensions	H32, Ø60 mm

Outdoor sensor ETF-744/99:

Detecting	Air temperature
Mounting	Wall surface
Housing	IP54
Ambient temperature	-50/+70°C
Dimensions	(H/W/D) 86/45/35 mm