flamco

Flextherm Eco G2

heat battery that converts electricity into heat and stores it for the provision of hot water

that's excellence.

aalberts hydronic flow control

Flextherm Eco G2

Flextherm Eco G2

Compact, high capacity heat battery

The Flextherm Eco G2 is a thermal battery. It converts electricity directly into heat and stores it for the provision of hot water. With its compact design and efficient operation, Flextherm Eco fits in every home and is a very energy efficient appliance.

Multi-purpose

Flextherm Eco is a unique solution especially for house owners, housing associations and installers looking for new ways to store energy. There is a growing need for more efficient solutions that will be needed to store sustainably generated energy. Flextherm Eco is intended for small-scale use, such as in houses and appartments. Thanks to its ultra-compact format and ease of installation, the appliance is also suitable for use in renovation projects. Moreover, the thermal operation of the appliance fits seamlessly into the transition to gas-free homes. In addition, Flextherm Eco renders the heat supply CO_2-neutral when used in combination with, for example, PV panels (for electricity).

Lots of benefits

Suitable for electricity, solar PV, heat pumps, district heating and boilers

- Simple user interface
- Quick and easy to install
- Flexibility of orientation
- High power heat exchanger
- Patented PCM formulation – storing 4x more energy than water

Innovative thermal battery

Flextherm Eco G2 contains inorganic salt as the Phase Change Material (PCM). This salt is heated up to 70 °C by an electric coil. At this temperature, the salt is completely liquid. As soon as there is a call for domestic hot water, the salt cools down again. The released thermal energy is transfered to the domestic hot water when it runs through the heat exchanger.

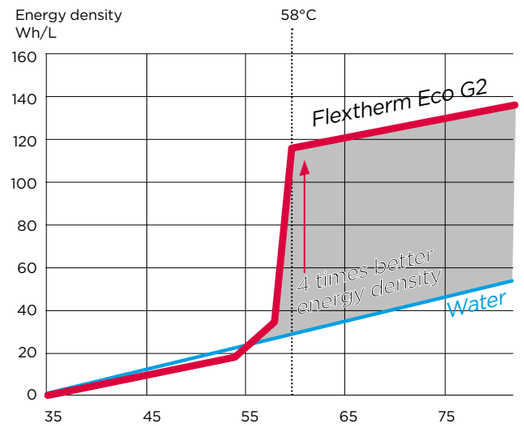
The Flextherm Eco G2 6E deliveres 15 litres of hot water per minute (CW5), sufficient to supply at least 199 litres of hot shower water. Use the Flextherm Eco G2 in combination with PV panels for filling a washing machine or dishwasher with hot water. This results in washing that is 75 to 80% more energy efficient, in an area that will soon account for 11% of the total electricity costs of a household.

Flextherm Eco G2

Phase Change Materials (PCM): how does it work?

Flextherm Eco G2 is filled with Plentigrade® PCM, an inorganic, non-flammable salt. This is heated up by, either the built-in immersion heater or your heat source of choice.

- PCMs absorb, store and release large amounts of latent heat when changing state between solid and liquid. Heat is absorbed on melting and released on freezing
- Melting and freezing the Plentigrade PCM stores up to four times more energy than heating and cooling hot water
- A high-powered heat exchanger or heating element immersed in the patented PCM rapidly charges the Flextherm Eco G2 and heat is just as quickly extracted to provide fresh, mains pressure hot water at a constant temperature only when it's needed
- Reliable, safe, non-toxic, non-flammable
- Lowers energy use and carbon emissions



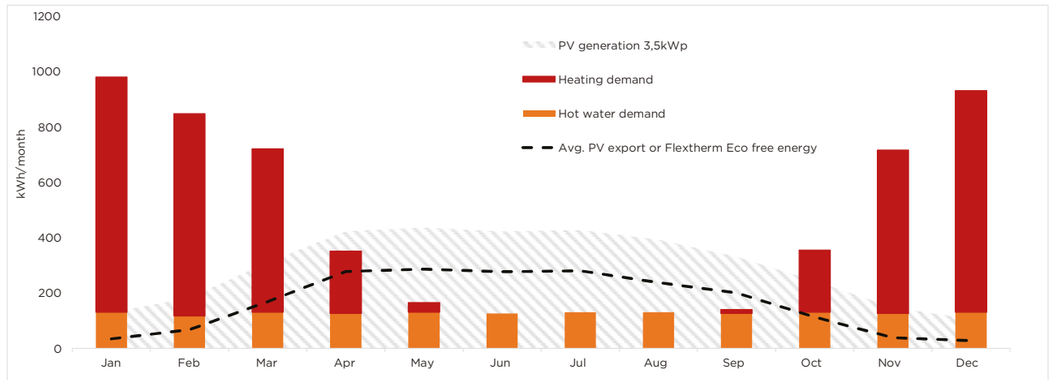
Choose your Flextherm Eco G2

Model	Boiler	24 hour grid supply	Off peak times / variable tariff	PV	Heat Pump	District Heating*	Replaces
Flextherm Eco G2 E (2 pipe)		●	●	●			Direct and Solar PV cylinder
Flextherm Eco G2 D (4 pipe)	●	●	●	●	●	●	Indirect and Solar PV cylinder

● Possible energy sources that can be used to heat the Flextherm Eco G2.

* For District Heating using LogoEco Hybrid: please contact your Flamco specialist.

Harvesting your free energy from your PV system



Up to 70% of your solar energy generated by your solar PV panels could be exported back to the grid. Take advantage of this free energy by storing it in your high-capacity heat battery like the Flextherm Eco G2.

The graph above shows a typical household energy demand profile and how much hot water could be covered by using otherwise exported PV electricity in a Flextherm Eco G2 throughout the year.

Flextherm Eco G2

Flextherm Eco G2 E (2 pipe)

A direct cylinder alternative that delivers hot water more efficiently from solar PV. Grid electricity provides greater flexibility when needed.

PV ready heat batteries optimise self consumption of electricity generated for free. For even greater flexibility, Flextherm Eco G2 E (2 pipe) heat batteries can use off peak electricity when a timer is correctly used.

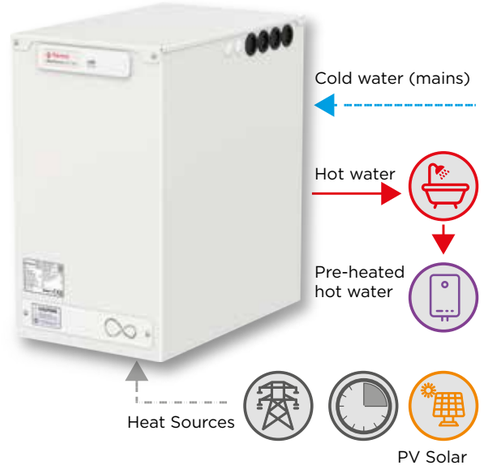
The Flextherm Eco G2 E (2 pipe) can also keep costs down by pre-heating water for a combi boiler or it can be used as a highly efficient stand-alone water heater to ensure instant, mains pressure hot water for all household taps and showers.

Super-compact to free up valuable storage space, these products are the ideal replacement for traditional vented and unvented hot water cylinders and hot water only thermal stores.

Key features

- Space-saving – up to 4x smaller
- Free hot water from surplus solar
- Low heat losses
- High flow rate hot water
- Instantaneously heated for hygiene and freshness
- Fast and easy to install
- No mandatory annual maintenance

How it works



Flextherm Eco G2

Flextherm Eco G2 E (2 Pipe)

	Unit	3E	6E	9E	12E
Fresh water content[1]	L	3.2	3.2	6	12.8
Equivalent Hot Water Cylinder Size[1]	L	74	140	212	306
Volume of hot water available at 40°C (V40)3	L	105	199	301	436
Heat loss	kWh/24h (W)	0.48 / (20)	0.67 / (28.1)	0.77 / (32.1)	0.84 / (34.9)
Energy label class[1]	-	C	C	C	C
Maximum HW flow rate[1]	L/Min	6	15	20	25
Minimum supply pressure at Heat Battery inlet	MPa (Bar)	0.15 (1.5)	0.15 (1.5)	0.15 (1.5)	0.15 (1.5)
Recommended operating pressure/PRV set point	MPa (Bar)	0.3(3)	0.3(3)	0.3(3)	0.3(3)
Maximum operating pressure/PRV set point	MPa (Bar)	0.5(5)	0.5(5)	0.5(5)	0.5(5)
BERV recommended set point	MPa (Bar)	0.6 (6)	0.6 (6)	0.6 (6)	0.6 (6)
Maximum design pressure / BERV maximum set point	MPa (Bar)	1.0(10)	1.0(10)	1.0(10)	1.0(10)
Recommended TMV setting	C	45-55			
Connected load at ~ 230 V, 50Hz	W	2800			
Power supply | Standby consumption 50Hz	W	1 PH AC 230 V | 7			
Electrical efficiency (ηelecwh)[1]	%	81.4	89.6	93.8	93.3
Annual electricity consumption (AEC)[1]	kWh/yr	542	1,398	2,690	2701
Tapping cycle[1]	-	S	M	L	L
Part No.		23010	23011	23012	23013

[1] Water content of the Heat Battery for sizing expansion vessels.

[2] Calculated from the storage capacity of the Heat Battery and assuming that the equivalent hot water cylinder thermostat is set at 60°C, mains cold water inlet temperature is at 10°C and the stored energy utilisation factor of the cylinder is 0.85.

[3] The hot water volume available from the Heat Battery normalised to an average outlet temperature of 40°C when it is fully charged by the electric heating element.

[4] When installed as an alternative to an electric water heater.

[5] While the Heat Battery can deliver higher flow rates than those listed, doing so will result in reduced performance in terms of duration of discharge and energy provided.

[6] Based on standard: BS EN 50440:2015

Mandatory components for safe installation*

Airfix Potable Water Expansion Vessel

Flamcomix Thermostatic Mixing Valve

Flexofit Super Water Shock Arrestor

Prescor IC Safety Group

* See overview mandatory components and manual for full installation instructions

Flextherm Eco G2

Flextherm Eco G2 D (4 pipe)

Delivers hot water efficiently from Solar PV, heat pumps and boiler as an indirect cylinder alternative. With grid electricity backup for greater flexibility when required.

Marrying a solar PV system with a Flextherm Eco G2 D (4 pipe) provides households with cascades of hot water, even when the sun doesn't shine. It works by storing surplus electricity from solar PV that would otherwise be lost to the grid, giving an abundance of hot water for free when it's needed. A secondary heat source, such as a boiler, is always ready to take over when the sun is not shining.

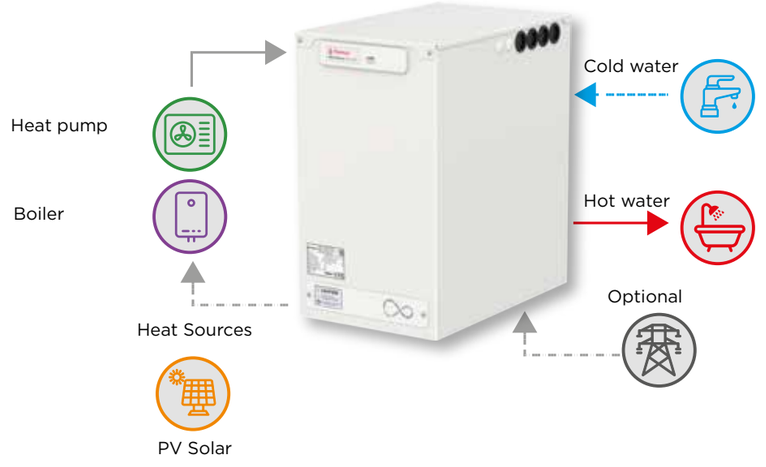
Super-compact to maximise space in the home, these products are the ideal replacement for traditional vented and unvented hot water cylinders and hot water only thermal stores.

To make the Flextherm Eco G2 D work in non-electric mode (i.e. to connect it to an external heat source) a Flextherm Eco Key must be used *(see page 14)*.

Key features

- Space-saving – up to 4x smaller
- Modular – easily combined to increase storage capacity
- A+ energy rating, saves up to 1000 kWh a year
- High flow rate hot water
- Instantaneously heated for hygiene and freshness
- Fast and easy to install
- No mandatory annual maintenance

How it works



Flextherm Eco G2

Flextherm Eco G2 D (4 Pipe)

	Unit	6D	9D	12D
Water content Primary Circuit	L	3.7	5.3	6.4
Fresh water content Secondary Circuit[1]	L	3.7	5.3	6.4
Equivalent Hot Water Cylinder Size[1]	L	142	212	284
Volume of hot water available at 40°C (V40)[1]	L	199	301	402
Equivalent Hot Water Cylinder Size[1]	L	128	192	256
Volume of hot water available at 40°C (V40)[1]	L	167	271	333
Heat loss	kWh/ 24h (W)	0.67 / (28.1)	0.77 / (32.1)	0.84 / (34.9)
Energy label class[1]	-	A+	A+	A+
Recommended maximum charging flow rate	L/Min	15	20	25
Recommended maximum HW flow rate[1]	L/Min	15	20	25
Minimum supply pressure at Heat Battery inlet	MPa (Bar)	0.15 (1.5)	0.15 (1.5)	0.15 (1.5)
Recommended operating pressure/PRV set point	MPa (Bar)	0.3 (3)	0.3 (3)	0.3 (3)
Maximum operating pressure/PRV set point	MPa (Bar)	0.5 (5)	0.5 (5)	0.5 (5)
BERV recommended set point	MPa (Bar)	0.6 (6)	0.6 (6)	0.6 (6)
Maximum design pressure/BERV maximum set point	MPa (Bar)	1.0 (10)	1.0 (10)	1.0 (10)
Maximum Heat source flow temperature[1]	°C	80		
Minimum Heat source return temperature[1]	°C	63		
Recommended TMV setting	°C	45-55		
Connected load at ~ 230 V, 50Hz	W	2800		
Power supply | Standby consumption	W	1 PH AC 230 V | 7		
Part No.		23014	23015	23016

[1] Water content of the Heat Battery for sizing expansion vessels.

[2] Calculated from the storage capacity of the Heat Battery when charged to maximum set points and assuming that the equivalent hot water cylinder thermostat is set at 60°C, mains cold water inlet temperature is at 10°C and the stored energy utilisation factor of the cylinder is 0.85.

[3] The hot water volume available from the Heat Battery normalised to an average outlet temperature of 40°C when it is fully charged by the back-up electric heating element.

[4] Calculated from the storage capacity of the Heat Battery when charged to heat pump set points and assuming that the equivalent hot water cylinder thermostat is set at 60°C, mains cold water inlet temperature is at 10°C and the stored energy utilisation factor of the cylinder is 0.85.

[5] The hot water volume available from the Heat Battery normalised to an average outlet temperature of 40°C when charged to heat pump set points.

[6] When heated by an External Heat Source.

[7] While the Heat Battery can deliver higher flow rates than those listed, doing so will result in reduced performance in terms of duration of discharge and energy provided.

[8] DO NOT exceed this temperature value when charging the Heat Battery using an External Heat Source. A thermal regulating or cut-off device MUST be present on the external heat source to prevent this.

[9] The External Heat Source MUST be able to reach this temperature on the Return back to the External Heat Source from the Heat Battery Outlet at the end of the charging cycle.

Mandatory components for safe installation*

Airfix Potable Water Expansion Vessel

Flamcomix Thermostatic Mixing Valve

Flexofit Super Water Shock Arrestor

Prescor IC Safety Group

* See overview mandatory components and manual for full installation instructions

Flextherm Eco G2

Flextherm Eco G2 - Key

The easier and more affordable way to transition to renewable heating by enabling upgrades to an installation without the need to replace your Flextherm Eco.

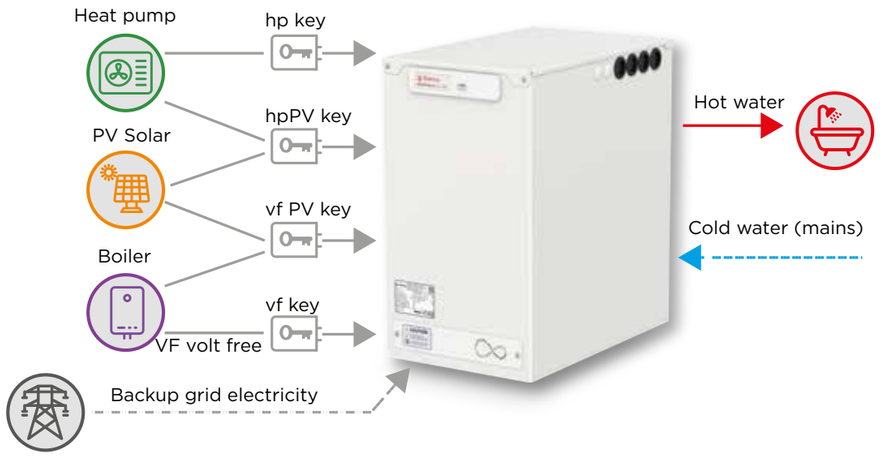
Designed to future-proof the investment in Flextherm Eco heat batteries, homeowners and landlords can make the switch from fossil fuels to renewables at their own pace and budget.

To replace hot water cylinders with a more eco-friendly option, choose between **Flextherm Eco G2 E**, a replacement for direct hot water cylinders, or **Flextherm Eco G2 D**, depending on whether you have a heat pump system or not. As a replacement indirect hot water cylinder, the Flextherm Eco G2 D can also be charged by a boiler, spreading the cost of transitioning to renewables further. Start with good thermal storage and build from there.

The great thing is, if adding a heat pump or Solar PV to the system later, there's no need to buy a new heat battery. Just select the corresponding heat pump or heat pump & PV key to make sure it works seamlessly with the new setup.

How it works

Heat Sources



Flextherm Eco G2

Keys

Energy Source:	Key Type *	Key Color	Part No.
Grid + PV	ePV	Grey	23033
Boiler	Volt-Free	Red	23017
Boiler + PV	Volt-Free + PV	Red	23025
Heat Pump	For Vaillant	Black	23020
	For Samsung	Black	23019
	For Daikin	Black	23018
	For Ecoforest	Black	23021
	For Phnix	Black	23022
	For Bosch Compress	Black	23034
Heat Pump + PV	For Vaillant	Black	23028
	For Samsung	Black	23027
	For Daikin	Black	23026
	For Ecoforest	Black	23029
	For Phnix + PV	Black	23030
	For Bosch Compress	Black	23035

Solar PV

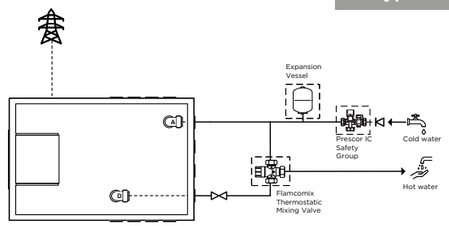
Volt Free Boiler

Heat Pumps

See flamco.aalberts-hfc.com
for a complete overview of
Flextherm Eco keys.

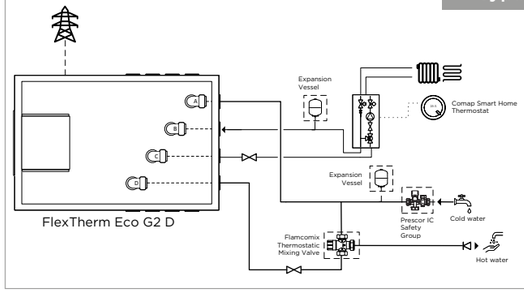
System lay-out (examples)

Type E



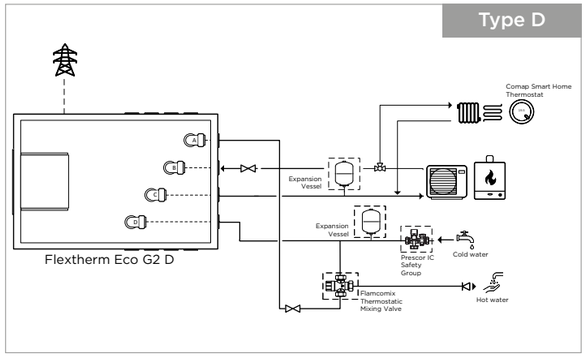
Flextherm Eco G2 E (3-9)

Type D



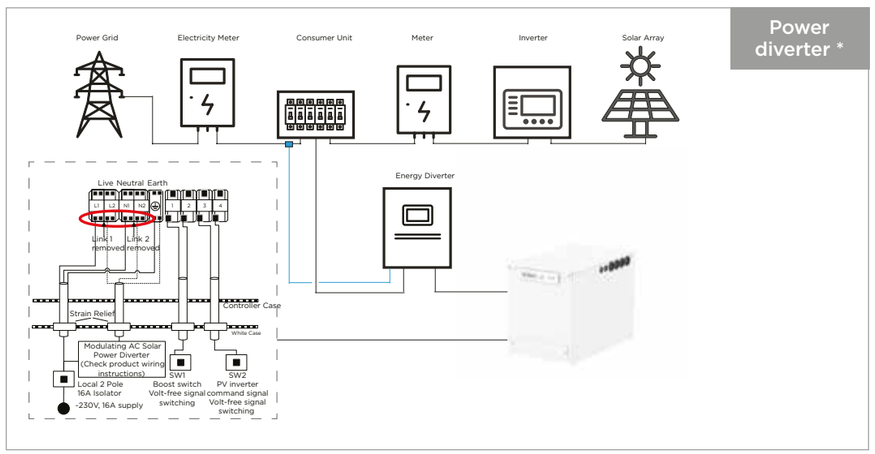
FlexTherm Eco G2 D

Type D

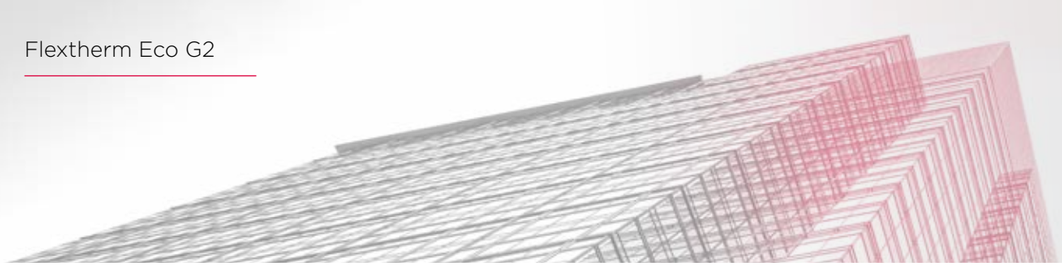


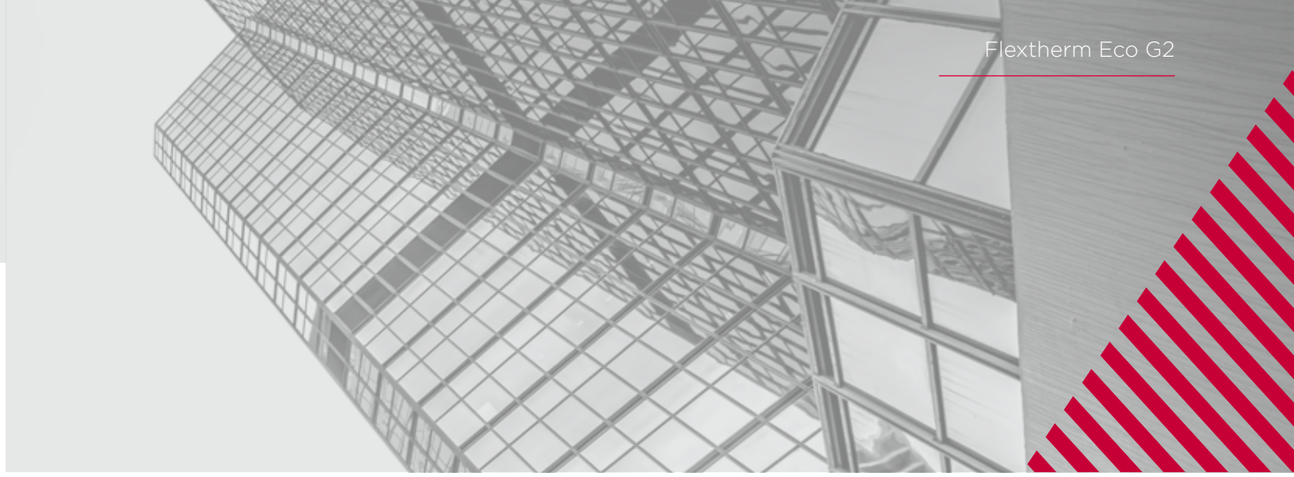
Flextherm Eco G2 D

Power diverter *



** check online compatible solar power diverters*





Complementary products for Flextherm Eco G2

Flamco offers a complete range of products from 'source to emitter' which includes a complete range of Expansion Vessels, Air Vents, Safety valves, Air & Dirt separators, Pump Groups,

Balancing Valves, Hydraulic Balancers, Hot Water Cylinders, System Conditioners and much more.

For more information, please visit our website
or contact your Account Manager.

Flexcon
Premium Expansion Vessels

Flamcomix
Thermostatic Mixing Valve

Airfix
Potable Water
Expansion Vessels

Prescor PRV
Safety Valve

Simplex KFE
Drain Valves

Secos
Selfbalancing Manifold

Flexofit Super
Water Shock Arrestor

Meiflow
Top Pump Groups

Prescor IC
Safety Valve

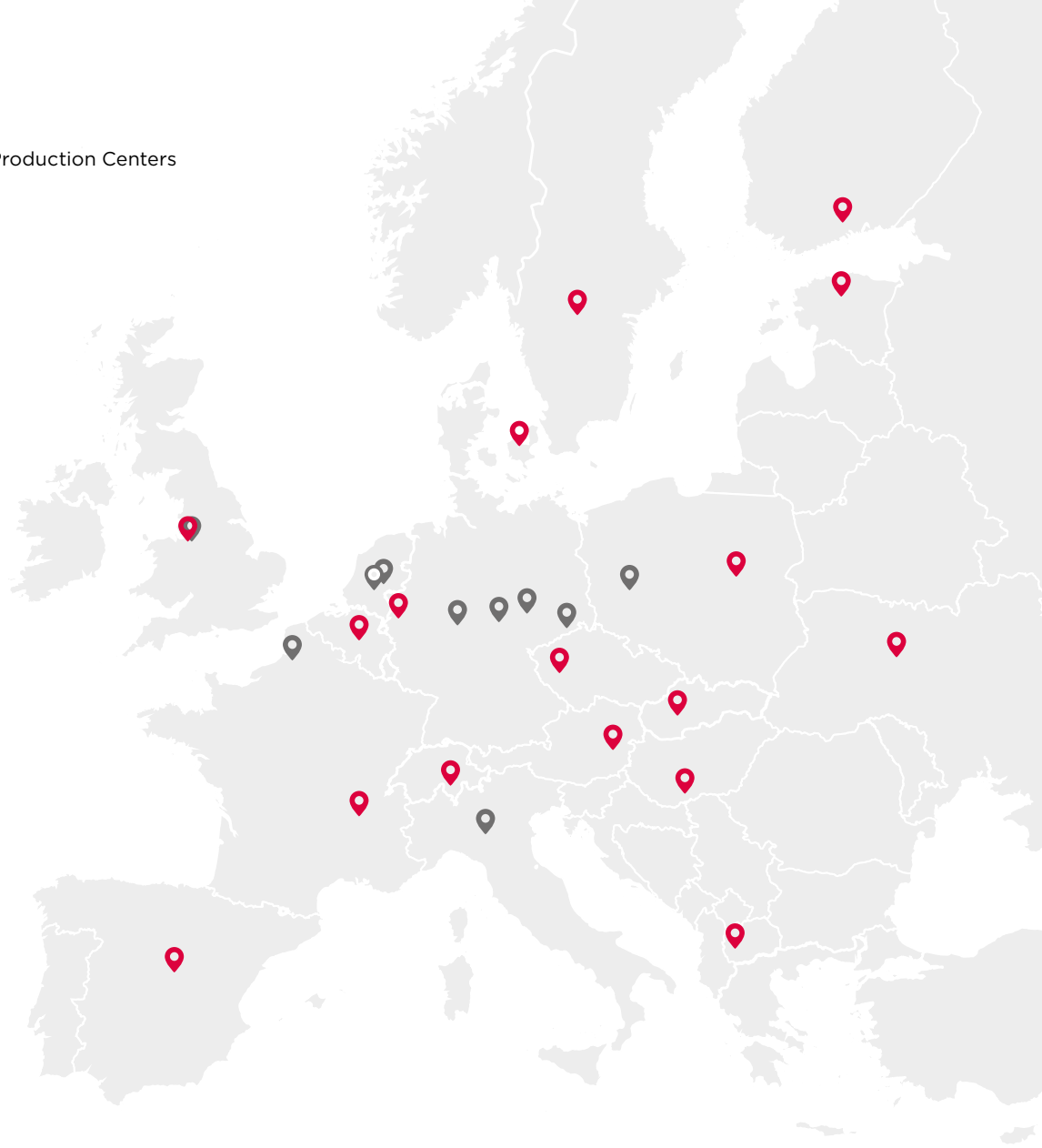
Flexvent
Automatic Air Vents

Comap
MultiSkin system

Comap
Multi-layer pipes

Competence & Production Centers

Sales Offices



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