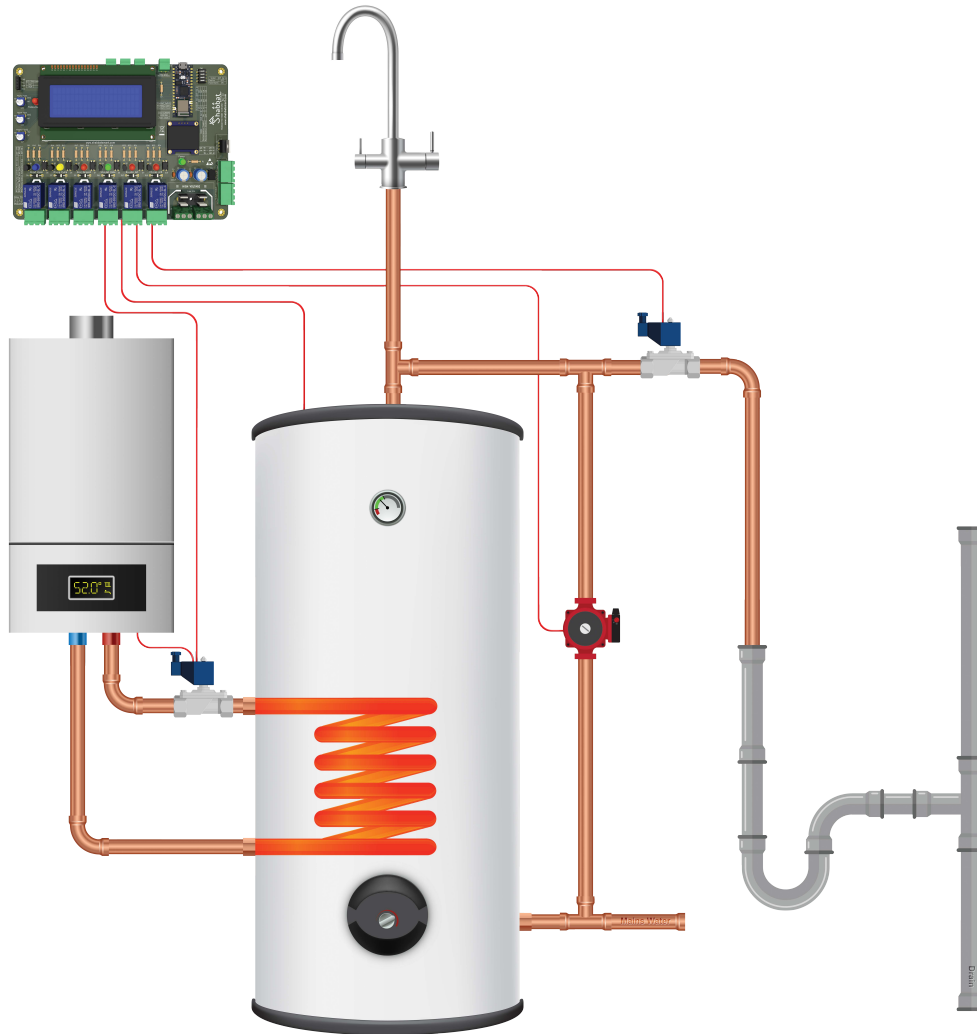


# ShabbatSmart Hot water controller

Smart Controller to allow the use of domestic hot water during Shabbat



 FEDTECH

- ShabbatSmart Hot Water Controller can be used with either a single Hot Water cylinder for both weekday and shabbat, or a dedicated cylinder for shabbat use.
- ShabbatSmart Hot Water Controller can be used with both Boiler and Immersion Heater systems.
- ShabbatSmart Hot Water Controller automatically carries out the required actions to prepare the Hot Water Tank for Shabbat conditions. Once ready, the use of hot water does not influence any activation action (directly nor by means of Grama).
- ShabbatSmart Hot Water Controller incorporates a Wi-Fi activation switch, to allow triggering via online Apps. This can also be set by time relation to Sunset.
- ShabbatSmart Hot Water Controller is supplied with a LED, normally installed in the kitchen. The LED illuminates while the hot water is Shabbat Ready.
- ShabbatSmart Hot Water Controller can also be used to disable a mains water booster and open a bypass (if required).
- ShabbatSmart Hot Water Controller includes an Optional program to pasteurise the hot water cylinder once shabbat mode has been deactivated (used when using a dedicated cylinder for shabbat use).

## ShabbatSmart Hot water controller - Halacha Talk

### Challenge:

**Prohibited action 1:** When the hot water tap is opened, cold water enters the cylinder and is heated by the hot water already in the cylinder. This is considered to be a prohibited action of מבשל - (Cooking).

**Prohibited action 2:** When cold water enters the cylinder, it cools the hot water already in the cylinder and, consequently, the temperature sensor triggers the boiler to start heating.

### Halachic basis for ShabbatSmart solution:

The solution developed is in line with that advised by שמירת שבת כהלכתה (final edition, Chapter 1, note 135).

1. At the commencement of Shabbat, the water in the cylinder is brought to be below יד סולדת בו - "Yad Soledet Bo" (YSB - "Hand Recoil" temperature), which is considered below "Cooking Point".
2. The cylinder is fitted with a controller that ensures the cold water entering the cylinder will not trigger the thermostat to start the boiler. Nevertheless, water entering will continue to heat over Shabbos - but will achieve a temperature which will be below YSB temperature.

### Technical overview of ShabbatSmart Solution:

- When Shabbat Mode is activated, the controller executes a series of actions to ensure the temperature of the water in the cylinder drops to below YSB.
- Once the temperature in the Shabbat cylinder is below YSB, the controller activates the cylinder heating action at pre-set time intervals. The heating operation will stop the operation when the water temperature reached the target.
- When using hot water and therefore causing cold water to enter the cylinder, the user's action does not trigger the prohibited actions related to the starting the boiler on Shabbat and may only change the duration of time the boiler runs.
- The controller is supplied with an LED indicator, which is illuminated when Shabbat mode is active and the water temperature is below YSB. The LED is normally installed in the kitchen.

### Halachic restrictions which apply:

- WATER SHOULD ONLY BE USED WHEN THE LED LIGHT INDICATES THAT THE DEVICE IS IN "SHABBOS MODE"
- DUE TO THE PROHIBITION OF PERSONAL WASHING (בשבת רחיצה בשבת), WATER HEATED USING THIS DEVICE SHOULD BE USED ONLY FOR WASHING DISHES.
- HIS WATER MAY BE USED IN CASES WHERE רחיצה בחמין IS PERMITTED (EG FOR A PERSON WHO IS מצטער OR WHEN WASHING A YOUNG CHILD/ BABY).
- THE WATER MAY NOT BE USED FOR HAND WASHING.

