



**SMART  
ENERGY  
SYSTEMS**

# WWR.U.

Heat recuperator of untreated wastewater

DATASHEET



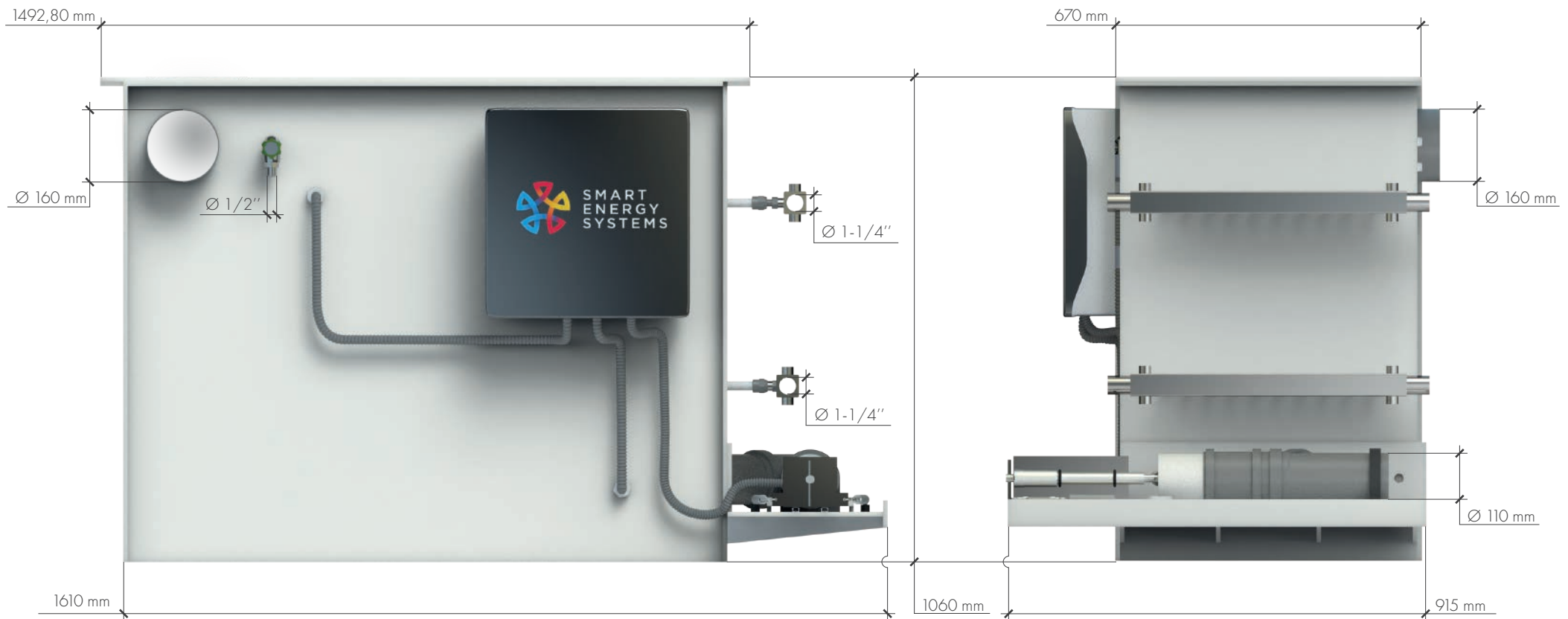
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🌐 [smartenergysystems.ch](http://smartenergysystems.ch)

Parameter	Unit	Value
<b>Recuperation module</b>		
Rated thermal power *	kW	52
Heat exchange area	m <sup>2</sup>	10
Operating temperature of wastewater *	°C	25
Minimum wastewater temperature	°C	12
Maximum wastewater temperature	°C	95
Operating pressure inside the heat exchangers	bar	1,5
Maximum allowable pressure inside the heat exchangers	bar	4
Type of coolant	-	water
<b>Power supply</b>		
Electrical power consumption	kW	0,2
Supply voltage	V	220/230
Current frequency	Hz	50/60
Amperage	A	0,9
Protection class	-	IP 65
<b>Control unit</b>		
Data exchange protocols	-	PLC / RS485
Temperature measurement accuracy	°C	0,1
Frequency of measurements	sec	30
<b>Pipe connections</b>		
The outer diameter of the inlet and overflow pipe of drains	mm	160
Type of connection of the drain inlet	-	bell
The outer diameter of the drain outlet pipe	mm	110
Type of drain outlet connection	-	bell
The difference between the entry and exit levels (along the axis)	mm	720
Outer diameter of the inlet pipe of the working fluid	"	G 1 1/4
Type of connection of the working fluid inlet	-	external thread
Outer diameter of the outlet pipe of the working fluid	"	G 1 1/4
Type of connection of the working fluid outlet	-	external thread
Outer diameter of the flushing connection pipe	"	G 1/2
Type of flushing connection	-	external thread
Operating pressure in the flushing system	bar	3
<b>Other</b>		
Housing material	-	polypropylene
Material of heat exchangers	-	AISI 316
Dry weight	kg	130
Weight in working order	kg	600
Weight in the package	kg	160
Internal volume	l	440

\* The parameters are determined for the optimal operation mode in the waste water heat recovery system for an apartment building



### Heat recuperator of untreated wastewater WWW.U.

WWW.U. designed for the extraction of waste water heat with its subsequent disposal.

This process has the following objectives:

- reduction of wastewater temperature, reduction of thermal emissions, reclamation of the heat trace of human activity;
- selection of thermal energy for its subsequent use in the hot water system of the facility or technological process - recuperation.

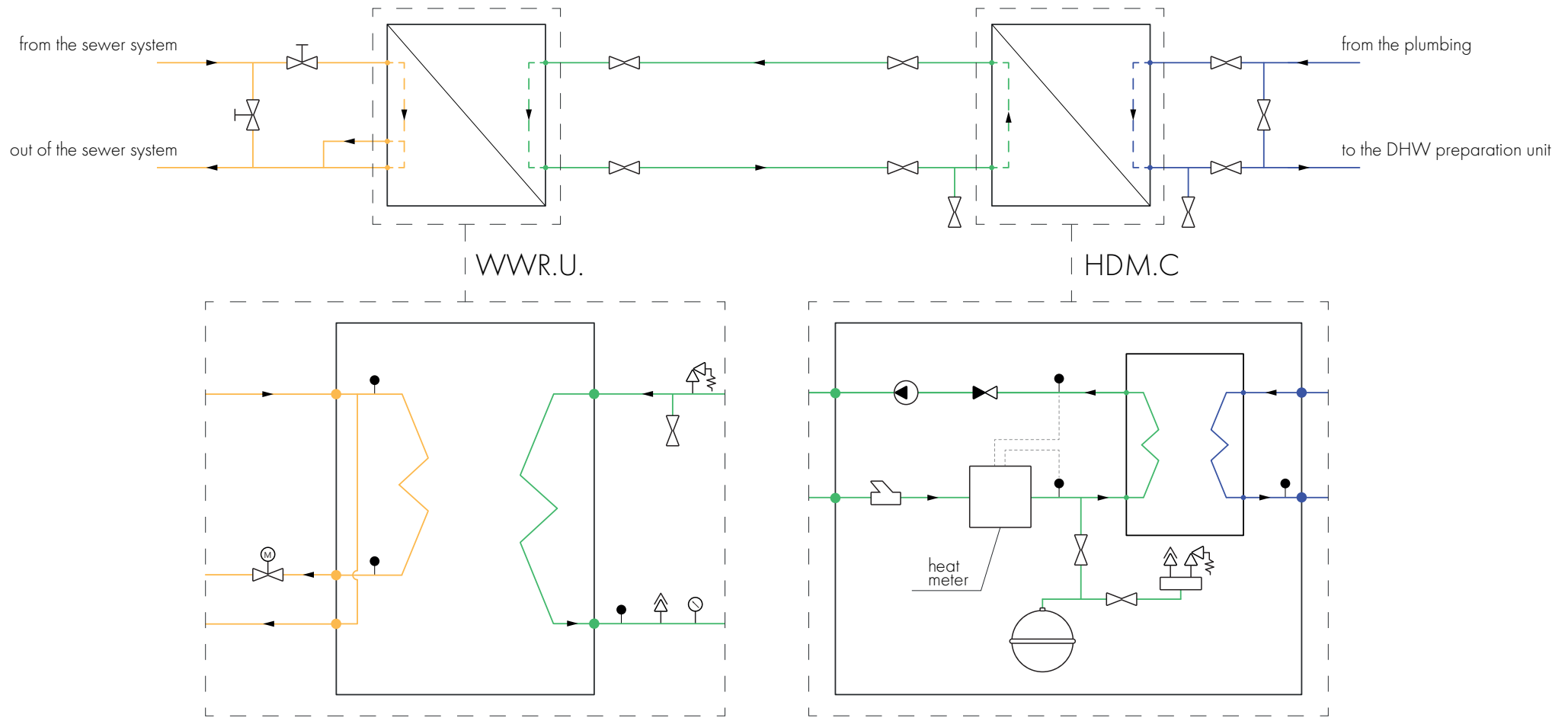
**General requirements for the facility for the installation of a passive recuperation system WWW.U****Private technical requirements for multi-apartment residential buildings for the installation of a passive recuperation system WWW.U .**

- 1 Hot water is prepared at the facility, which means that the facility has its own boiler room.
- 2 There is a technical possibility to organize a drop of sewerage in 700 mm. This means that the sewer pipes are located on the technical floor or in an underground parking and they are separated along the walls at a level above one meter (approximately) from the floor level or are located under the ceiling.
- 3 For each wastewater outlet from the facility, there is a discharge 9 000 - 15 000 m<sup>3</sup> drains per year.
- 4 The difference between the temperature of the cold water supplied to the facility and the temperature of the drains exceeds 7 °C.



















- 3 In the sewerage system, at least 70-100 apartments account for one wastewater outlet to the collector. It is possible to consider two outputs to the collector located side by side.

If at least one of these requirements is not met, the facility is not subject to study.

## SCHEMATIC DIAGRAM OF THE PASSIVE RECOVERY SYSTEM WWR.U.



### Symbols

- |   |                             |   |                     |  |                    |   |                  |   |                |
|---|-----------------------------|---|---------------------|--|--------------------|---|------------------|---|----------------|
|  | the direction of the medium |  | temperature sensor  |  | electric cable     |  | circulation pump |  | expansion tank |
|  | ball valve                  |  | pressure gauge      |  | sewer circuit      |  | check valve      |  | heat exchange  |
|  | disc valve                  |  | threaded connection |  | coolant circuit    |  | coarse filter    |   |                |
|  | motorized valve             |  | safety valve        |  | cold water circuit |  | air vent         |   |                |