




Summary of	EN12977-4	HEAT STORE test results		Licence Number	011-7S2853 H			
Annex to Solar KEYMARK Certificate				Issued	2018-04-10			
Company	Ritter Energie- u. Umwelttechnik GmbH & Co. KG			Country	Germany			
Brand (optional)				Website	www.ritter-gruppe.de			
Street	Kuchenäcker 2			E-mail	info@ritter-gruppe.de			
Postal Code	72135	Dettenhausen		Tel. / Fax	+49	715753591200 / 1289		
Solar heat store - general description								
Application(s)				Hot water + space heating (combi)				
Direct solar loop / heat exchanger				Direct				
Direct hot water loop / heat exchanger				Direct				
Direct space heating loop / heat exchanger				Direct				
Internal auxiliary heating (I)		Direct		Internal auxiliary heating (II)		None		
Store location options		Indoor only		Store geometri		Vertical cylinder		
Heat store parameters and test results								
Parameter		Source ¹	Unit	Aqua EXPRESS O III 800	Store Name2	Store Name3	Store Name4	Store Name5
Weight	Weight of the unit (empty) incl. insulation	L	kg	116	0	0	0	0
Size	Gross height of unit incl. insulation	L	mm	1980	0	0	0	0
	Gross width incl. insulation	L	mm	1000	0	0	0	0
	Gross depth incl. insulation	L	mm	1000	0	0	0	0
Volumes	Nominal - total	M	litres	815	0	0	0	0
	Effective - total	L	litres	812	0	0	0	0
	Auxiliary heated volume (I)	L	litres	422	0	0	0	0
					0	0	0	0
					0	0	0	0
					0	0	0	0
Insulation	Thickness on top	M	mm	90	0	0	0	0
	Thickness on sides	M	mm	95	0	0	0	0
	Thickness on bottom	M	mm	100	0	0	0	0
Others	Max. operation pressure (solar loop)	M	kPa	300	0	0	0	0
	Max. operation pressure (hot water)	M	kPa	300	0	0	0	0
	Max. operation pressure (space heating)	M	kPa	300	0	0	0	0
	Max. operation temperature (solar loop)	M	°C	99	0	0	0	0
	Material of store (water enclosure part)	M	-	steel				
	Corrosion protection	M	-	none				
Notes	¹ Source of information			L: Laboratory test result	M: Manufacturers information			
Testing Laboratory		ITW/TZS University of Stuttgart						
Website		www.itw.uni-stuttgart.de						
Test report id. number		17STO329/1						
Date of test report		2018-02-21						
Comments of test lab laboratoire				 <p>Forschungs- und Testzentrum für Solaranlagen Institut für Thermodynamik und Wärmetechnik Universität Stuttgart Pfaflerwaldring 6, 70560 Stuttgart (Vaihingen)</p>				
No comments								

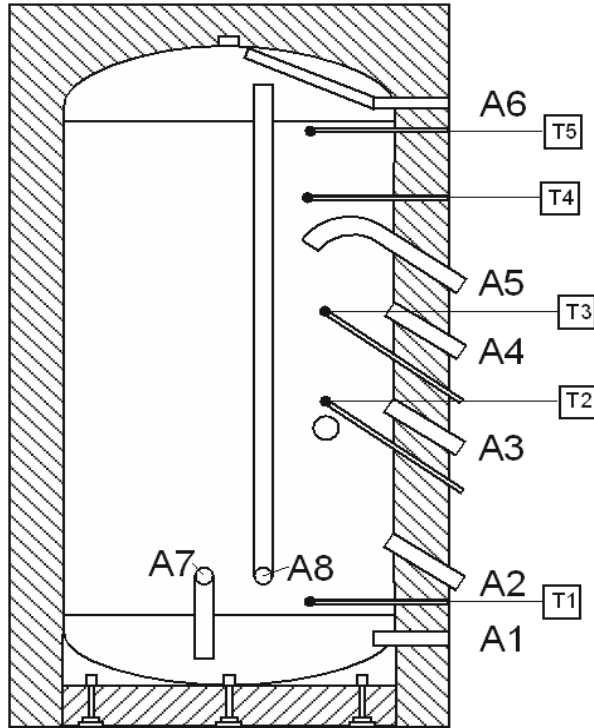


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Measured thermal parameters								
Parameter		Source ¹	Unit	Aqua EXPRESS O III 800	Store Name2	Store Name3	Store Name4	Store Name5
Thermal parameters	Total effective thermal capacity	L	kJ/K	3369.24	0	0	0	0
	Thermal capacity of aux. heated part I	L	kJ/K	1751.01	0	0	0	0
	Thermal capacity of aux. heated part II	L	kJ/K	0	0	0	0	0
	Stand-by heat loss rate	L	W/K	2.63				
	Effective vertical heat conductivity	L	W/(m*K)	1.59				
	Stratification number (during discharge)	L	-	100				
	UA-value, solar heat exchanger at primary loop mean temperature at transferred heat power	L	W/K					
		L	°C					
		L	kW					
	UA-value, hot water heat exchanger at primary loop mean temperature at transferred heat power	L	W/K					
		L	°C					
		L	kW					
	UA-value, space heat exchanger at primary loop mean temperature at transferred heat power	L	W/K					
L		°C						
L		kW						
UA-value, auxiliary heat exchanger at primary loop mean temperature at transferred heat power	L	W/K						
	L	°C						
	L	kW						
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Comments of test lab					Stamp & signature of test lab			
No comments								

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Schematic drawing(s) of heat store (showing positions of inlets, outlets, heat exchangers, sensors etc.)



Parameter	Source ¹	Unit	Aqua EXPRESS O III 800	Store Name2	Store Name3	Store Name4	Store Name5
Absolute Cold water inlet A7	L	mm	360				
positions of inlets, outlets, sensors and other inserts in the store - all related to the indicated reference point	Hot water outlet A8	L	mm	360			
	Collector loop inlet A5	L	mm	1230			
	Collector loop outlet A1	L	mm	220			
	Space heating inlet A2	L	mm	507			
	Space heating outlet A4	L	mm	1230			
	Auxiliary heating inlet A5	L	mm	1230			
	Auxiliary heating outlet A3	L	mm	980			
	Lower point of electrical heater	L	mm	880			
	Temp. sensor 1 wood burner	L	mm	310			
	Temp. sensor 2 lower buffer part	L	mm	980			
	Temp. sensor 3 upper buffer part	L	mm	1230			
	Temp. sensor 4 hot water	L	mm	1460			
	Temp. sensor 5 hot water	L	mm	1690			
	Temp. sensor 6	L	mm	-			
Reference point for all positions above	L	ground					
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