

TÜV NORD TURKEY INDUSTRIAL SERVICES INSPECTION REPORT

INSPECTOR	Ruşan GÜRBÜZ	TÜV NORD Turkey ORDER NO.	2114434727
PLACE & DATE	İSTANBUL , 04.04.2023	REPORT NO	RP-AOC-TUVNORD- 23/0015-R00
CUSTOMER	UTET ARGE ENERJİ HİDROJEN MAKİNE VE KİMYA DAN. SAN. VE TİC. LTD.	MANUFACTURER	UTET ARGE ENERJİ HİDROJEN MAKİNE VE KİMYA DAN. SAN. VE TİC. LTD.
CUSTOMER ORDER NO	-	MANUFACTURER ORDER NO	-
INSPECTION DATES	03.04.2023	MANUFACTURER CONTACT	0216 324 14 77 0216 466 91 91
CUSTOMER CONTACTS	Fikret ÖZÇELİK	HARD STAMP	☐ Yes ☒ No
REPORT TYPE	☐ Initial ☐ Interm ☒ Final		
ANNEXES	☒ Yes ☐ No		

• SUBJECT OF INSPECTION

TITLE AND DOCUMENT REFERENCES	REVISION AND DATE
LV221003-00	-
L0621003	-
2210-ELE-003-00	-

• PROJECT PROGRESS

Boilers with the energy obtained from electricity and water hydrolysis was inspected.

E300 appartment type boiler has the consumption to provide for heating 3KW/h and for hot water 6 KW/h.

E400 Appartment type boiler has the consumption to provide for heating 4KW/h and for hot water 8KW/h.

V200/ V300/ V400/ V500 Villa type boilers has the consumption to provide for heating are 6/8/10/10KW/h respectively and for hot water rare 8/10/12/12 KW/h respectively.

Tests were carried out according to EN 60335-1 and EN 60335-2 standards under the LVD Directive.

Heat Unit & Primary Circuit

	V500	V400	V200	V300	E300 (Test Item)	E400
Electrical input (max)	20 kW @ 400 Vac	15 kW @ 230 or 15 kW @ 400	12 kW @ 230 or 12 kW @ 400	12 kW @ 230 or 12 kW @400	6 kW @ 230 - 240Vac 50Hz	8 kW @ 230 - 240Vac 50Hz
Electrical supply voltage	400Vac	400Vac	230 Vac/ 400Vac	230 Vac/ 400Vac	230 Vac	230 Vac
Electrical supply frequency	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz
Absorbed electrical power	20 kW	15 kW	12 kW	12 kW	6 kW	8 kW
Running Current	28 A per phase @ 400Vac	25 A per phase @ 400Vac	54 Amps @ 230Vac or 20 A per phase @ 400Vac	54 Amps @ 230Vac or 20 A per phase @ 400Vac	28 Amps @ 230Vac	37 Amps @ 230Vac
RCD/ MCB rating	3 Pole 40 Amps per Phase.	3 Pole 32 Amps per Phase.	63 Amps (single phase) or 3 Pole 32 Amps per Phase.	63 Amps (single phase) or 3 Pole 32 Amps per Phase.	32 Amps	40 Amps
Internal fuse rating	2.5 Amps	2.5 Amps	2.5 Amps	2.5 Amps	2.5 Amps	2.5 Amps
Minimum Permitted Cable Diameter	6 mm 3 phase	6 mm 3 phase	6 mm 3 phase, 10mm single phase	6 mm 3 phase, 10mm single phase	6 mm	6 mm
Electrical protection class	IP41	IP41	IP41	IP41	IP20	IP20
Primary system type	Sealed	Sealed	Sealed	Sealed	Sealed	Sealed
Primary system operating pressure minimum	0.1 MPa (1 bar)	0.1 MPa (1 bar)	0.1 MPa (1 bar)	0.1 MPa (1 bar)	0 Mpa (0 Bar)	0 Mpa (0 Bar)
Primary system operating pressure	0.1 MPa (1 bar)	0.1 MPa (1 bar)	0.1 MPa (1 bar)	0.1 MPa (1 bar)	0 Mpa (0 Bar)	0 Mpa (0 Bar)
Primary system max operating temperature	90°C	90°C	90°C	90°C	90°C	90°C
Primary system maximum design pressure	0.6 Mpa (6 bar)	0.6 Mpa (6 bar)	0.6 Mpa (6 bar)	0.6 Mpa (6 bar)	0.2 MPa (2 bar)	0.2 MPa (2 bar)
Primary system pressure relief valve setting	0.3 Mpa (3 bar)	0.3 Mpa (3 bar)	0.3 Mpa (3 bar)	0.3 Mpa (3 bar)	0.1 MPa (1 bar)	0.3 Mpa (3 bar)
Primary system expansion vessel	14 L pre-charged to 0.2 Mpa (2 bar)	14 litre pre-charged to 0.2 Mpa	14 litre pre-charged to 0.2 Mpa (2 bar)	14 litre pre-charged to 0.2 Mpa (2 bar)	F&E Tank	14 litre pre-charged to 0.2 Mpa (2 bar)
Frost Protection	Yes	Yes	Yes	Yes	Yes	Yes

	V500	V400	V200	V300	E300 (Test Item)	E400
Electrical input (max)	20 kW @ 400 Vac	15 kW @ 230 or 15 kW @ 400	12 kW @ 230 or 12 kW @ 400	12 kW @ 230 or 12 kW @400	6 kW @ 230 - 240Vac 50Hz	8 kW @ 230 - 240Vac 50Hz
Electrical supply voltage	400Vac	400Vac	230 Vac/ 400Vac	230 Vac/ 400Vac	230 Vac	230 Vac
Electrical supply frequency	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz
Absorbed electrical power	20 kW	15 kW	12 kW	12 kW	6 kW	8 kW
Running Current	28 A per phase @ 400Vac	25 A per phase @ 400Vac	54 Amps @ 230Vac or 20 A per phase @ 400Vac	54 Amps @ 230Vac or 20 A per phase @ 400Vac	28 Amps @ 230Vac	37 Amps @ 230Vac
RCD/ MCB rating	3 Pole 40 Amps per Phase.	3 Pole 32 Amps per Phase.	63 Amps (single phase) or 3 Pole 32 Amps per Phase.	63 Amps (single phase) or 3 Pole 32 Amps per Phase.	32 Amps	40 Amps
Internal fuse rating	2.5 Amps	2.5 Amps	2.5 Amps	2.5 Amps	2.5 Amps	2.5 Amps
Minimum Permitted Cable Diameter	6 mm 3 phase	6 mm 3 phase	6 mm 3 phase, 10mm single phase	6 mm 3 phase, 10mm single phase	6 mm	6 mm
Electrical protection class	IP41	IP41	IP41	IP41	IP20	IP20
Primary system type	Sealed	Sealed	Sealed	Sealed	Sealed	Sealed
Primary system operating pressure minimum	0.1 MPa (1 bar)	0.1 MPa (1 bar)	0.1 MPa (1 bar)	0.1 MPa (1 bar)	0 MPa (0 Bar)	0 MPa (0 Bar)
Primary system operating pressure	0.1 MPa (1 bar)	0.1 MPa (1 bar)	0.1 MPa (1 bar)	0.1 MPa (1 bar)	0 MPa (0 Bar)	0 MPa (0 Bar)
Primary system max operating temperature	90°C	90°C	90°C	90°C	90°C	90°C
Primary system maximum design pressure	0.6 Mpa (6 bar)	0.6 Mpa (6 bar)	0.6 Mpa (6 bar)	0.6 Mpa (6 bar)	0.2 MPa (2 bar)	0.2 MPa (2 bar)
Primary system pressure relief valve setting	0.3 Mpa (3 bar)	0.3 Mpa (3 bar)	0.3 Mpa (3 bar)	0.3 Mpa (3 bar)	0.1 MPa (1 bar)	0.3 Mpa (3 bar)
Primary system expansion vessel	14 L pre-charged to 0.2 Mpa (2 bar)	14 litre pre-charged to 0.2 Mpa	14 litre pre-charged to 0.2 Mpa (2 bar)	14 litre pre-charged to 0.2 Mpa (2 bar)	F&E Tank	14 litre pre-charged to 0.2 Mpa (2 bar)
Frost Protection	Yes	Yes	Yes	Yes	Yes	Yes
Frost Protection setting	5°C	5°C	5°C	5°C	5°C	5°C

Primary flow & return temperature	80°C Flow & 60°C return	80°C Flow & 60°C return	80°C Flow & 60°C return	80°C Flow & 60°C return	N/A	N/A
Thermal cut-out, Hi Limit Stat	105°C	105°C	105°C	105°C	105°C	105°C
Primary circulating pump	WILO Para KSL7	WILO Para KSL7	WILO Para KSL7	WILO Para KSL7	WILO Para KSL7	WILO Para KSL7
Temporary filling loop	Connection points fitted within unit	Connection points fitted within unit	Connection points fitted within unit	Connection points fitted within unit	Built into Hydro-Block Assembly (PAKKENS HB 112)	Built into Hydro-Block Assembly (PAKKENS HB 112)
Secondary system operating pres. minimum	0.1 MPa (1 bar)	0.1 MPa (1 bar)	0.1 MPa (1 bar)	0.1 MPa (1 bar)	0.2 MPa (2 bar)	0.2 MPa (2 bar)
Secondary system operating pressure max	0.6 MPa (4.5 bar)	0.6 MPa (4.5 bar)	0.6 MPa (4.5 bar)	0.6 MPa (4.5 bar)	0.6 MPa (4.5 bar)	0.6 MPa (4.5 bar)
Secondary flow temp. (radiator model)	70°C Flow & 50°C return	70°C Flow & 50°C return	70°C Flow & 50°C return	70°C Flow & 50°C return	70°C Flow & 50°C return	70°C Flow & 50°C return
Secondary Pressure reducing valve	N/A	N/A	N/A	N/A	0.3 MPa (3 bar)	0.3 MPa (3 bar)
Hydraulic connections	V500	V400	V200	V300	E300	E400
Heating Flow/ Return	3/4 Inch BSP	3/4 Inch BSP	3/4 Inch BSP	3/4 Inch BSP	3/4 Inch BSP	3/4 Inch BSP
Domestic Cold Inlet	1/2 Inch BSP	1/2 Inch BSP	1/2 Inch BSP	1/2 Inch BSP	1/2 Inch BSP	1/2 Inch BSP
Domestic Hot Outlet	1/2 Inch BSP	1/2 Inch BSP	1/2 Inch BSP	1/2 Inch BSP	1/2 Inch BSP	1/2 Inch BSP
Blow-Off (safety valve connection)	10mm Plastic tube connections x 1	10mm Plastic tube connections x 1	10mm Plastic tube connections x 1	10mm Plastic tube connections x 1	10mm Plastic tube connections x 1	10mm Plastic tube connections x 1
Thermostat	V500	V400	V200	V300	E300	E400
Electrical connection (V/N)	Yes, Volt free switch on external stat	Yes, Volt free switch on external stat	Yes, Volt free switch on external stat	Yes, Volt free switch on external stat	Yes, Volt free switch on external stat	Yes, Volt free switch on external stat
Max Distance from boiler if wired	20 meters	20 meters	20 meters	20 meters	20 meters	20 meters
Minimum Permitted Cable Diameter	twin core cable of 0.5 mm2 (CY)	twin core cable of 0.5 mm2 (CY)	twin core cable of 0.5 mm2 (CY)	twin core cable of 0.5 mm2 (CY)	twin core cable of 0.5 mm2 (CY)	twin core cable of 0.5 mm2 (CY)

Complete unit	V500	V400	V200	V300	E300	E400
Unit Weight (empty)	170 kg	140 kg	100 kg	120 kg	35 kg	45 kg
Unit weight (full)	330 kg	260 kg	140 kg	190 kg	45 kg	60 kg
Packaged weight	180 kg	145 kg	105 kg	125 kg	40 kg	50 kg

Components	V200/V300/ V400/ V500		E300/ E400	
	Brand	Model	Brand	Model
BOILER TANK		40/70/120/160 LT - STAINLESS STEEL		10 L - / 15 L. 3 X PLASTIC HOPPER
CONTACTORS	VIKO	VTC-32/10/SA, 3P contactor, 230 V AC	VIKO	VTGR-25/40 AC1 model 25 Amp 16 kw 4 pole
LOW PRESSURE SENSOR	GTE	GEAR TCBA00	GTE	Threaded TCBA00
NTC SENSOR- OUTLET			ITS	4015523- IMMERSION TYPE 100K
NTC SENSOR- BOILER	ITS	Surface Type 3/4 Blue KG0031555	ITS	Surface Type 3/4 Blue KG0031555
WATER FLOW SWITCH	ARISTON	GTE	ARISTON	GTE
PUMP	WILO	Para KSL/7SC	WILO	Para KSL/7SC
LIMIT THERMOSTATE	KSD 301	10BL16		
CABLE GROUP	Alkan Cable	H05VV-F	Irmak Cable	H05VV-F
THREE WAY VALVE			CHUNCHI	220V 50hz 7 ,MM

REPORT NO: RP-AOC-TUVNORD-23/0015-R00

- MAIN CONCLUSIONS & RESULT & REMARKS**

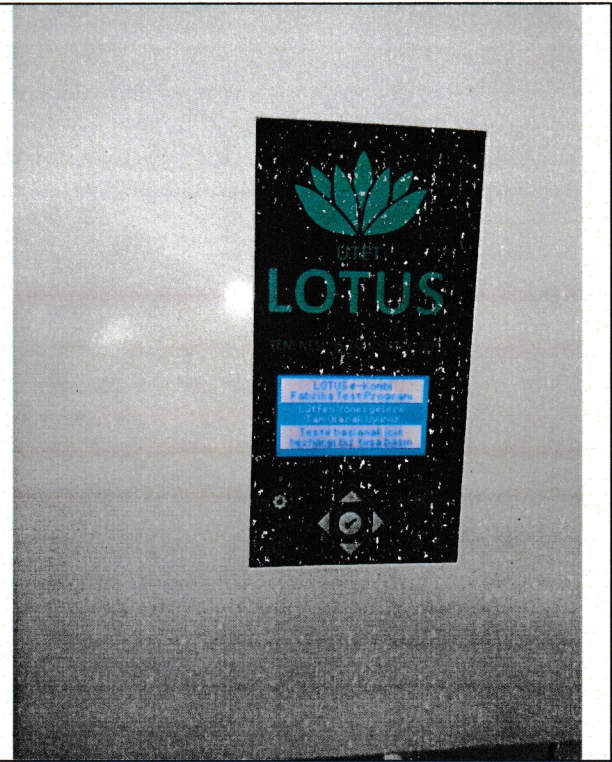
Operation, maintenance and error processes of the E300 Boiler was observed. During the inspection of installation, it was observed to be suitable according to the test instructions.

Tests were observed in accordance with EN 60335-1 and EN 60335-2 standards, which were carried out in accordance with LVD under supervision. Relevant results are shared in the appendices.

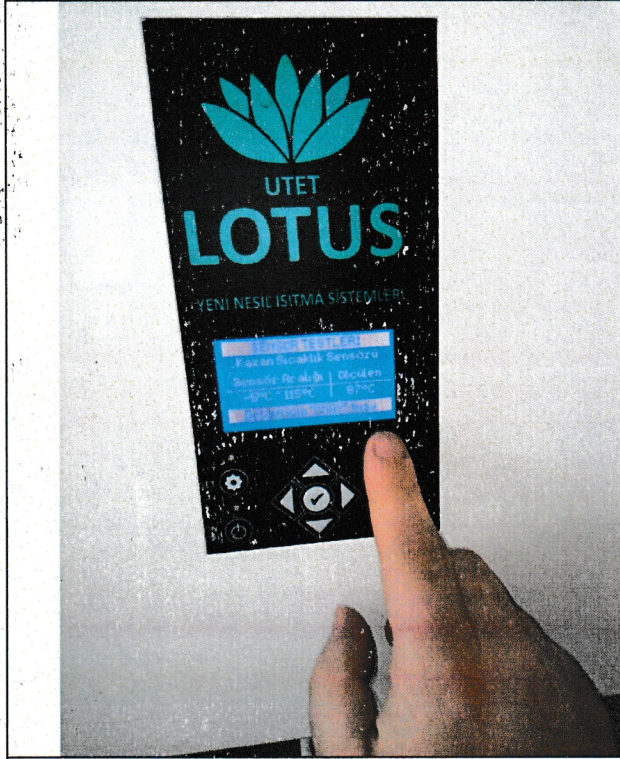
- PHOTOS FROM INSPECTION**



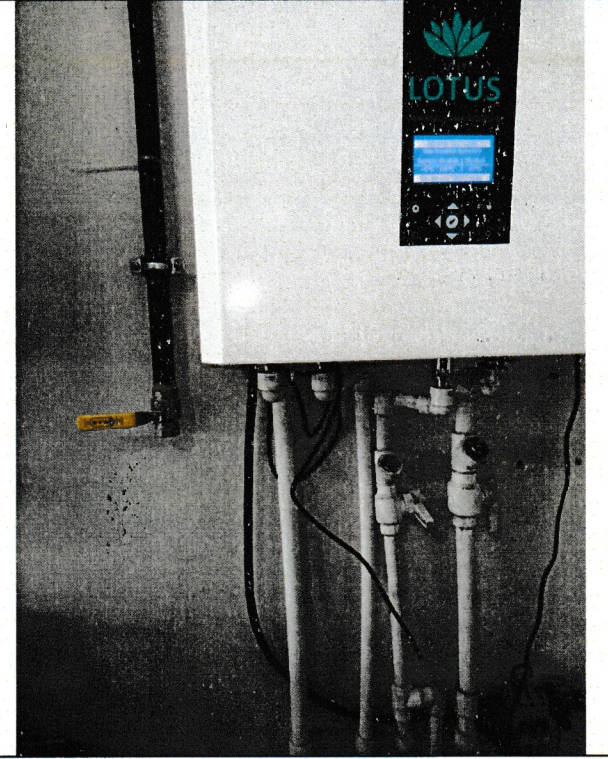
Pic.1 - General view of the E300 boiler.



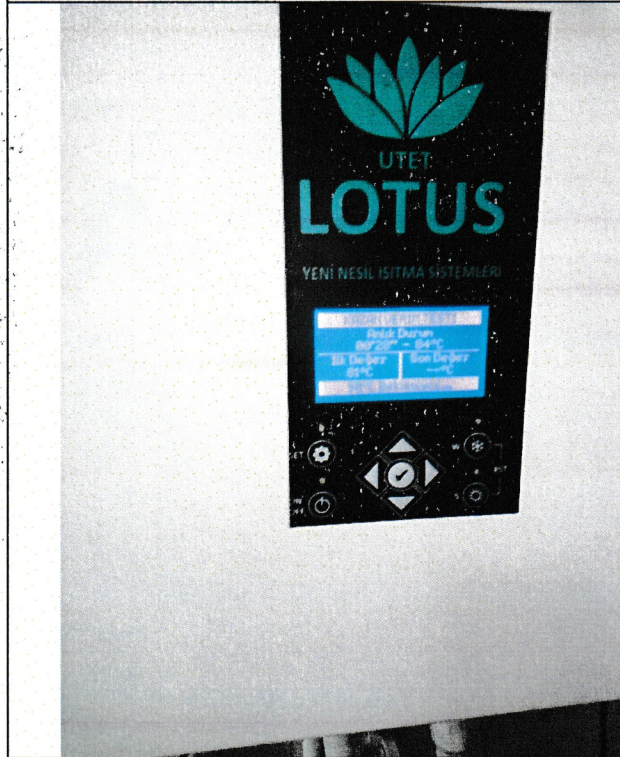
Pic.2- General view of screen before test



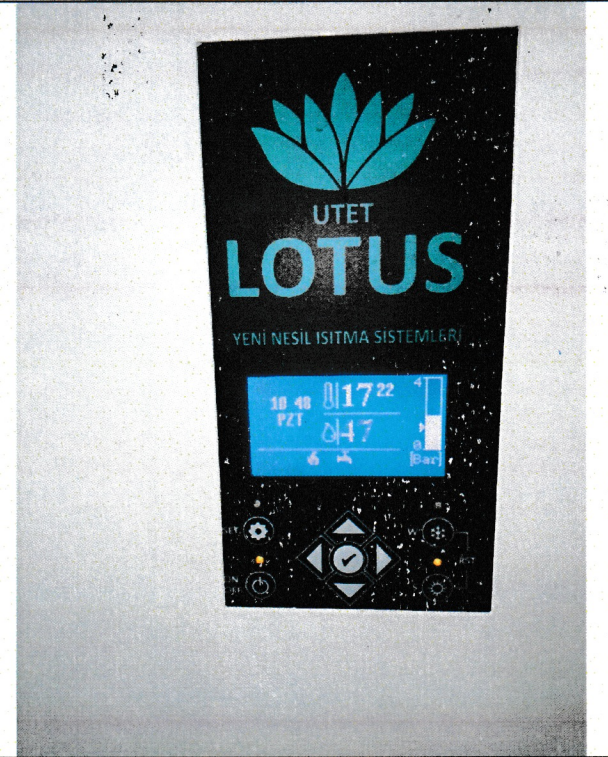
Pic.3 – Test of Temperature Sensor



Pic 4- Temperature Sensor



Pic.5 - Boiler efficiency test

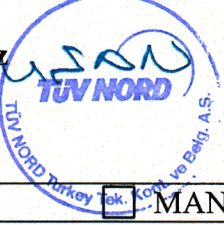
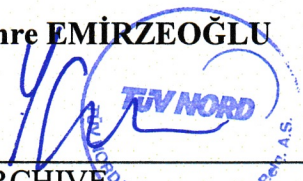


Pic6- Daily-hot water feeding test

REPORT NO: RP-AOC-TUVNORD-23/0015-R00

 Model Reference E300 Serial Number 2015-10-1001 Dry Weight 30 Kg Electrical Supply 230 Vac 50/60 Hz Electrical Current 28 Amp Electrical Input 6 Kw Max. Boiler Pressure 100 Kpa Electrical Safety Class 1 IP Level IP20 Water Capacity 10 Lt Sound Power Level 45-50 dB ERP A+++ UTET ARGE ENERJİ HİDROJEN MAKİNE VE KİMYA DAN SAN.VE TİC.LTD. Ferhatpaşa Mah. 4. Sokak No:28 A3 Ataşehir/ İSTANBUL 0216 324 1477 - 0216 466 91 91 	
--	---

Pic.7- Label of the product which, tested during the inspection.

Inspected by Name: Ruşan Gürbüz Signature:  	Reviewed by: Name: Yunus Emre EMİRZEOĞLU Signature:  
Sent to: ☒ CLIENT ☐ MANUFACTURER ☒ ARCHIVE	