Elginkan

Felis Wall Type Condensing Boilers





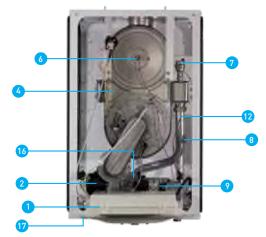




TECHNICAL DETAILS

BLUEJET STEEL HEAT TECHNOLOGY EXCHANGER

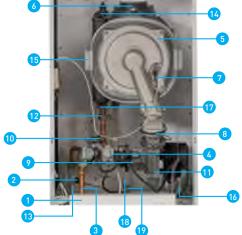
Felis 100/125/150





- Display panel and motherboard box
- Fan
- Siphon hose
- Heat exchanger
- Heat exchanger hanging plate
- Flue gas sensor
- Auto air purger Safety limit thermostat
- Gas valve
- 10 Pressure sensor
- 11 Flue flap
- Boiler outlet pipe (hot) 12
- 13 NTC temperature sensor (output)
- NTC temperature sensor (input)
- Boiler inlet pipe (cold) Venturi
- Siphon cover

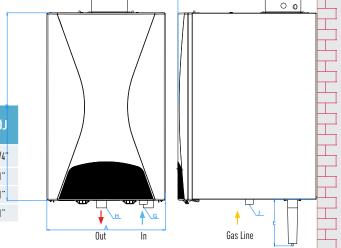
Felis 65



- Display panel and motherboard box
- Pressure sensor
- Gas inlet pipe
- Gas valve
- Heat exchanger
- Flue gas sensor
- Ignition and ionization electrode
- Flue flap
- 10 Safety limit thermostat

- Fan NTC temperature sensor (output)
- 13 Boiler outlet pipe (hot)
- 14 Air purger
- Heat exchanger hanger bracket
- Boiler inlet pipe (cold)
- 17 NTC temperature sensor (input)
- 18 Siphon hose
- Siphon cover

13	3	8 19	-						
Technical Dimensions	A	В	С	D	E	ØF	ØG	ØH	Ø.
Felis 65	501 mm	835 mm	590 mm	145 mm	304 mm	80/125	3/4"	3/4"	3/4
Felis 100	501 mm	835 mm	590 mm	145 mm	304 mm	100/150	1 1/4"	1 1/4"	1'
Felis 125	501 mm	835 mm	660 mm	145 mm	304 mm	100/150	1 1/4"	1 1/4"	1'



Backflow (Flue) Flap

Felis 150

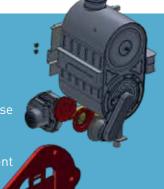
Connection with fan manifolds is performed as shown in the figure. It is integrated as standard in the Felis boilers.

501 mm 835 mm 730 mm 145 mm 304 mm 100/150 1 1/4" 1 1/4"

Closure of the flap prevents the exhaust gases in the main chimney to diffuse through non-operating appliances in the cascade system.

Modulation is more regular in appliances with flue flaps.

Thanks to the flue flap, a suitable environment is created for a more efficient combustion. Low emission values are achieved with the use of a flue flap.



Product Type	Unit	FELİS 65	FELİS 100	FELİS 125	FELİS 150			
General								
Gas Category			12H,					
Flue Types		C13(x), C33(x), C43(x), C63(x), C93(x),B23P						
Room Sealed Type			Tam He	rmetik				
Gas Inlet Pressure (G20)	mbar		2					
Power Supply	V AC-Hz		230 VAC					
Power Consumption	Watt	117	143	228	306			
Protection Class			IPX					
Sound Level	dB	53	53	51	51			
Weight (Net)	kg	53	66	74	89			
Dimensions (LxWxD)	mm	835x501x590	835x501x590	835x501x660	835x501x730			
Packed Dimensions (LxWxD)	mm	1.055x665x650	1.055x665x650	1.055x665x720	1.055x665x790			
Capacity – Efficiency								
Qmin, Minimum Heating Load - (@60°C)	kW	13,5	20,09	24,20	26,57			
Qmax, Maximum Heating Load - (@80/60°C)	kW	68,05	96,70	120,71	140,77			
Pmin, Minimum Heating Power - (@30°C)	kW	14,89	22,34	26,29	29,82			
Pmax, Maximum Heating Load - (@50/30°C)	kW	73,36	102,00	129,01	150,43			
Efficiency - (60°C return water) (max-min)	%	93,4 - 97,1	%97,3 - %96,9	%96,5 - %96,6	%97,0 - %96,4			
Efficiency - (30°C return water) (max-min)	%	106,2 - 108,1	%105,7 - %108,0	%105,4 - %107,6	%105,5 - %107,7			
Gas Consumption								
Natural Gas (@Min-Max Capacity)	m³/h	1,464 - 7,384	2,179 - 10,506	2,513 - 13,100	2,878 - 15,148			
NOx-Annual emission (EN 15502)	mg/kWh	28,13	26,4	42,91	59,83			
NOx Class	mg/kWh		6		5			
Central Heating								
Water Volume	litre	4,5	6,5	8	9,5			
Minimum Water Pressure	bar		0,	8				
Maximum Water Pressure	bar	4,5		6				
Operating Temperature (Central Heating Circuit) °C			30-	90				
Maximum Installation Temperature	oC.		9	5				
Emission Values								
CO @ Maximum Capacity (G20)	ppm	<130	<209	<242	<264			
CO @ Minimum Capacity (G20)	ppm	<2	<12	<9	<12			
CO ₂ @ Maximum Capacity (G20)	%	9,32 ± 0,2	9,38 ± 0,2	9,50 ± 0,2	9,83 ± 0,2			
CO ₂ @ Minimum Capacity (G20)	%	8,54 ± 0,2	8,52 ± 0,2	8,75 ± 0,2	8.89 ± 0.2			
Flue Gas Temperature	OC.	<75,4	<75,6	<76,8	<74,4			
Flue Gas Flow Rate (minmax.)	g/s	5,28 - 22,17	9,35 - 45,08	9,90 - 48,93	7,70 - 34,64			
Flue Distances								
Flue Diameter	ø mm	80 / 125		100 / 150				
C13 – Max. Flue Length (Horizontal)	m	10	11	11	11			
C33 – Max. Flue length (Vertical)	m	12	13	13	13			
B23P – Max. Flue Length	m	11	12	12	12			
Elbow Loss Distances								
Elbow (90°C)	m	1,5	1,5	1,5	1,5			
Elbow (45°C)	m	1	1	1	1			

Water pH range: 7,5 < pH < 9,5

Water hardness range: 5°f< TH <15°f

(If the system to be used contains aluminum components or aluminum radiator, this maximum pH value should not exceed 8,5)



ADVANTAGES OF THE FELIS WALL TYPE CONDENSING BOILER



1. Wide Capacity Range

FELIS boilers, with 4 different capacities in the range of 65 – 150 kW, address your high capacity needs with the cascade opportunity up to 16 items.

2. Compact & Light

The design, which draws attention with its small dimensions compared to the high power it provides, is also in the forefront with its light weight. FELİS boilers offer the advantages of compactness & lightness both in installation and shipment stages.

3. High Operating Pressure for High Buildings

The maximum water pressure value is 6 bar, which eliminates the need to use a floor heat exchange station in the mezzanine floor by dividing the system into two parts.

4. High Efficiency & Low Operating Costs

FELIS boilers with compatible and long-lasting operating components provide high efficiency in 80/60 °C or 50/30 °C operating conditions.

5. Environment and Budget Friendly Design

FELİS boilers are in NOx 6 class, which is the highest level, with annual NOx emission values between 28,13 - 42,91 mg/kWh. (the best class of the new regulations) While it does not pollute the environment with low NOx emissions, which is the indicator of high efficiency, it saves fuel and operating costs. For Felis 150, 59,83 mg/kWh and NOx: 5

6. Wide Modulation Range & High Saving

FELİS boilers have a modulation rate of up to 19%. In this way, according to the heat request, the boiler turns the gas valve down to 19% and prevents overheating. This wide range of modulation, which maximizes energy savings, also extends the life of the boilers. With its wide modulation, FELİS boilers provide you the opportunity to work with the highest efficiency even in low capacities during the season change times.

7. Noise Free Boiler Rooms

Operating at a sound level of only 51 dB at 125 and 150 kW capacity gives you the feeling of working in the library. It operates at a sound level of 53 dB at 65 and 100 kW capacity.

8. Superior Safety Systems

With the safety systems in FELIS boilers, both you and your appliance are fully safe:

- Flame Loss Safety
- Central Heating Circuit Water Overheating Safety (85 °C)
- Flue Gas Overheating Safety (95 °C)
- Overtemperature Safety (105 °C)
- High Water Pressure Safety (6 bar)
- High Water Pressure Safety (0,8 bar)
- Low Voltage Safety (170 VÁC)
- Frost Safety (The electrical connection of your appliance must not be cut-off in order for the frost safety to work)
- Automatic Áir-Purge Valve
- Annual Maintenance Reminder System

9. Large LCD Display & Turkish Menu

Felis boilers provide a full control over appliances with an easy-to-use menu structure, while transmitting a lot of information about the status of the appliances and the installation to the user with a large LCD screen and menus with 10 different language support.

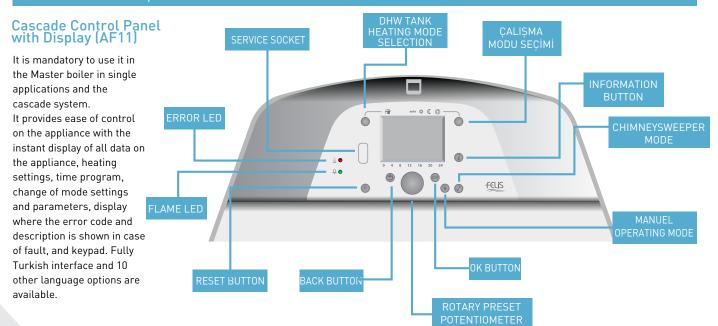
10. Integrated Flue Flap

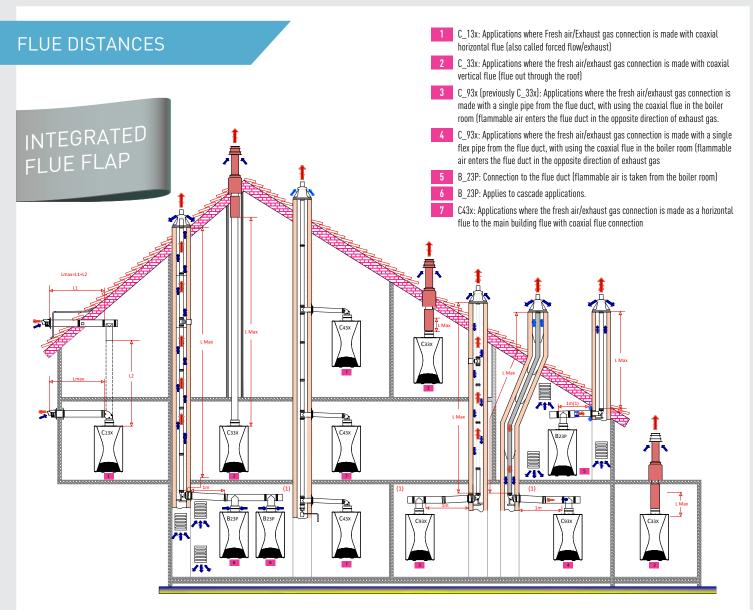
With the closure of the flap, it prevents the exhaust gases in the main chimney to diffuse through non-operating appliances in the cascade system. The flue flap, which is standard in our appliances, regulates the modulation. Thanks to the flue flap, a suitable environment is created for a more efficient combustion.

Bluejet Technology

The bluejet burner, which was developed jointly with the heat exchanger in accordance with the combustion feature of the heat exchanger in the Felis boilers, was adjusted according to the 1:5 modulation rate in our boilers. With this modulation rate, made according to the appropriate capacities as a result of the tests, efficient combustion values, low emission, low NOx value and low carbon emission were achieved. Thus, it has become a more efficient and more environmentally friendly appliance.

The three-dimensional design of the BlueJet burner, the surface structure made of stainless steel and the hole diameters on the burner surface where the fuel emerges and where the flame is formed, and the distances between each other are optimally planned. In this way, the flame on the burner was obtained as the blue flame, the most efficient form of flame, the flame exhibited a stable distribution on the burner. Thus, the combustion efficiency during the combustion increased, thermal and acoustic comfort is presented to the user.





(1) Per 1 meter chimney addition on the horizontal, the maximum length of the vertical chimney is reduced by 1,2 meters.

EXHAUST GAS CONNECTION	FLUE TYPES	FLUE DIAMETERS	FELİS 65	FELİS 100	FELİS 125	FELİS 150
Horizontal flue with coaxial	C13x	ø80/125 mm	10	-	-	-
flue connection	CISX	ø100/150 mm	-	11	11	11
Vertical flue with coaxial flue	000	ø80/125 mm	12	-	-	-
connection	C33x	ø100/150 mm	-	13	13	13
Coaxial flue connection is	C43x	ø80/125 mm	10	-	-	-
made to the main building flue as horizontal flue		ø100/150 mm	-	11	11	11
Coaxial flue connection is made to the main flue in the boiler	C93x	ø80/125 mm	10	-	-	-
room as horizontal flue		ø100/150 mm	-	11	11	11
Flex or rigid flammable air is taken from the environment in		ø80/125 mm	11	-	-	-
the flue . Usually used in cascade flue connections	B23P	ø100/150 mm	-	12	12	12

Maximum flue lengths are given for elbowless connections. The equivalent length for each 90° elbow is 1,5 meters, and for 45° it is 1 meter.

BOILER ACCESSORIES



AF12 Cascade Module Set

- In cascade systems, it provides the communication between the master and slave appliances.
- It is mounted on the motherboard.

AF13 Outside Air Sensor

- It measures the outside air temperature and adjusts the operation of the appliances at the demanded temperature.
- It is connected to the motherboard via dual cable from sensor input. Its connections should be made with 1,5 mm2 copper cable. The maximum allowable cable length is 120 meters.
- It is an NTC type sensor.
- It can operate between -50 / +70 °C.
- It has a tolerance of +1 / -1 K.

AF14 Cascade temperature sensor

- It is an NTC type sensor.
- It can operate in the range of -30 to 125 °C.
- It has a tolerance of +1/-1 K.
- Connections should be made with copper cable in 1 mm cross section and cable length should not exceed 80 meters.

AF15 DHW Tank Temperature Sensor

- The sensor is used to measure the temperature of the DHW tank, solar energy systems and/ or the temperature of the hydraulic separator/heat exchanger.
- The temperature is measured by the immersion type NTC through the DHW tank and the connection is made via the sensor input to the motherboard.
- It can operate in the range 0 95 °C.
- It has a tolerance of +0,5 / -0,5 K.
- It has a length of 2 m.

AF16 Zone Control Kit

- It provides control of pump and sensors of 3-way motor control in applications of heating systems with mixing valves. One AF16 is required for each 3-way motorized valve. With this control board, the operating condition of the heating circuit is adjusted depending on the demanded temperature and the operating principle of the 3-way motor valve.
- Since it is not included in the standard packaging of the appliance, it must be requested separately.

AF17 Room Unit (Digital)

- It is used for programming of the appliance and remote setting of heating requests.
- The operation mode setting, time program and heating setting on the digital display can be set via the room unit.

AF18 Room Unit

- It is used for programming of the appliance and remote setting of heating requests.
- Temperature adjustments are made by means of the rotary switch on the room unit.
- The operating mode is selected by means of the button located in the upper right corner.
- The button located at the bottom right of the appliance is for switching the appliance off when the place is not used. (It is necessary to press the same button again to resume.)
- Wiring of up to 200 meters can be made between the main unit and the room unit.

AF19 Web Server Communication Module

- It enables remote access, reporting and monitoring of appliances from the system, where there is internet connection.
- Online communication between the computer and the module is provided via ethernet cable connection. By logging in to the system with the created username and password, the simulation of the system, instantaneous values, operation/fault status, is monitored through computer.
- At the desired time, a graph can be created about the requested values and the report can be taken.

BOILER INSTALLATION KIT CONTENTS

For 65 kW: Wall hanger bracket, 3 hanger screws, 3 dowels, 3 pieces of " gaskets (for water and gas connections)

For 100-125-150 kW: Wall hanger bracket, 3 hanger screws, 3 dowels, 2 pieces of 1 " gaskets (for water connections), 1 piece of 1" gasket (for gas connection)

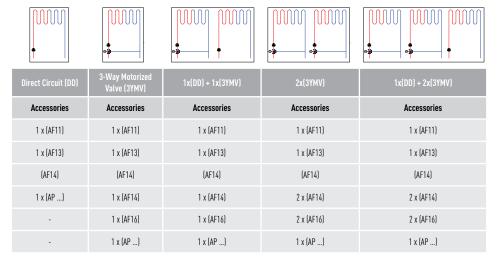
The siphon kit, operating instructions, service lists, etc. are available in standard packaging of all boilers.

BOILER ACCESSORY PREFERENCES

SINGLE BOILER APPLICATION

Cascade Control Panel with Display must be acquired in single boiler applications.





DC: Direct Heating Circuit

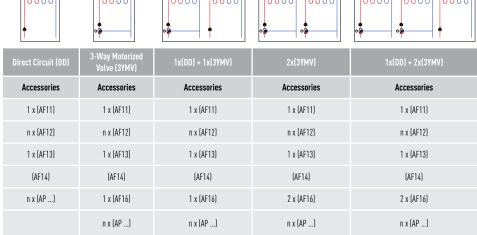
3WMV: 3-Way Motorized Mixing Valve

CASCADE BOILER APPLICATION (Up to 2:16 Boilers)

The AF11 control panel can be acquired as one for each boiler in the system. Thus, individual values of all boilers can be observed and additional control/observation functions can be reached.

The system continues its normal operation even when no panels are acquired for other boilers other than the AF11 control panel acquired for zone control purposes; however, observation of values and access to additional functions of individual slave boilers cannot be obtained.



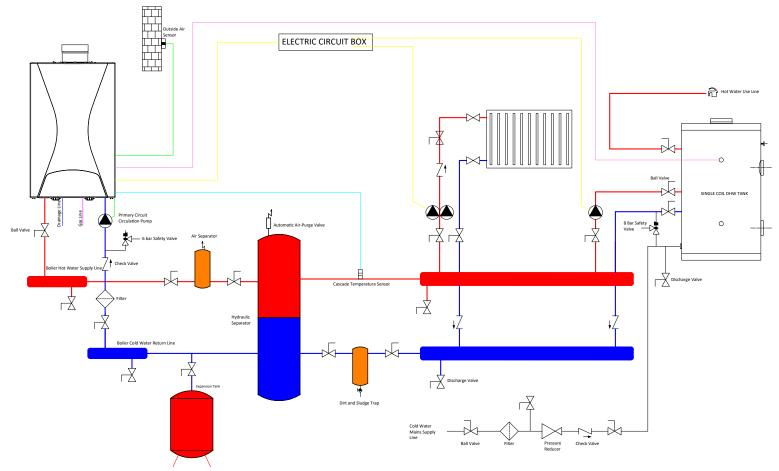


SYSTEMS with DHW TANKS

FELİS boilers have a priority control system for hot water production. For this purpose, the AF15 Immersion type Temperature Sensor must be added as needed.

INSTALLATION APPLICATION SCHEMAS

SINGLE BOILER, HEATING CIRCUIT+ DHW TANK



INSTALLATION EQUIPMENT

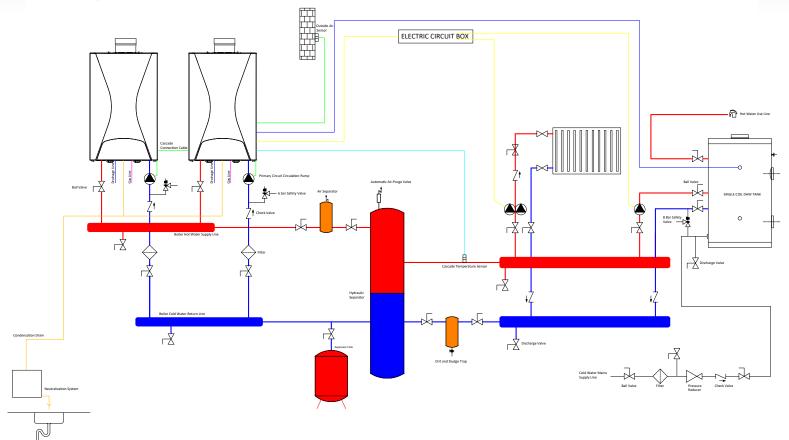
- Heating Circuit Pump (Secondary)
- Expansion Tank
- Safety Valve (Max. 6 bar for boiler)
- Hydraulic Separator
- Safety Valve (Max. 8 bar for DHW tank)
- DHW tank Circulation Pump
- DHW tank Recirculation Pump (Upon request)

- Pressure Reducer (To the boiler mains connection)
- Air-Purge Valve (On the hydraulic separator)
- Air Separator
- Dirt-Sludge Trap
- Electric Panel
- Other Installation Equipment (Check Valve, Filters, Valves)

ACCESSORY EQUIPMENTS						
PRODUCT/ACCESSORY NAME	MODEL	QUANTITY				
Felis Boiler 65/100/125/150	DK 06/ DK 10/ DK 12/ DK 15	(1 piece)				
Cascade Control Panel with Display	AF 11	(1 piece)				
Outside Air Sensor	AF 13	(1 piece)				
DHW tank Temperature Sensor	AF 15	(1 piece)				
Cascade Temperature Sensor (To the supply line of the hydraulic separator-clamp type)	AF 14	(1 piece)				
Energy Efficient Primary Circuit Circulation Pump	AP	(1 piece)				
Single Coil DHW tank		(1 piece)				

INSTALLATION APPLICATION SCHEMAS

CASCADE, HEATING CIRCUIT + DHW TANK



INSTALLATION EQUIPMENT

- Heating Circuit Pump (Secondary)
- Expansion Tank
- Safety Valve (Max. 6 bar per boiler)
- Hydraulic Separator
- Air-Purge Valve (On the hydraulic separator)
- Air Separator
- Safety Valve (Max. 8 bar for boiler)

- DHW tank Circulation Pump
- DHW tank Recirculation Pump (Upon request)
- Pressure Reducer (To the boiler mains connection)
- Dirt-Sludge Trap
- Electric Circuit Box
- Other Installation Equipment (Check Valve, Filters, Valves)

ACCESSORY EQUIPMENTS		
PRODUCT/ACCESSORY NAME	MODEL	QUANTITY
Felis Boiler 65/100/125/150	DK 06/ DK 10/ DK 12/ DK 15	(2 pieces)
Cascade Control Panel with Display	AF 11	(1 piece)
Outside Air Sensor	AF 13	(1 piece)
Cascade Control Module Card	AF 12	(2 pieces)
Cascade Temperature Sensor (To the supply line of the hydraulic separator-clamp type)	AF 14	(1 piece)
DHW tank Temperature Sensor	AF 15	(1 piece)
Single Coil DHW tank		(1 piece)
Energy Efficient Primary Circuit Circulation Pump	AP	(2 pieces)

Plate Heat Exchanger (For the pool system)

Safety Valve (Max. 8 bar for boiler)

DHW tank Circulation Pump

Safety Valve (Max. 6 bar per boiler)Plate Heat Exchanger (For the system)

INSTALLATION EQUIPMENT

Three-Way Motorized Mixing Valve (2 Pieces)

Heating Circuit Pump (Secondary)

Expansion Tank (For the primary circuit)
 Expansion Tank (For the secondary circuit)

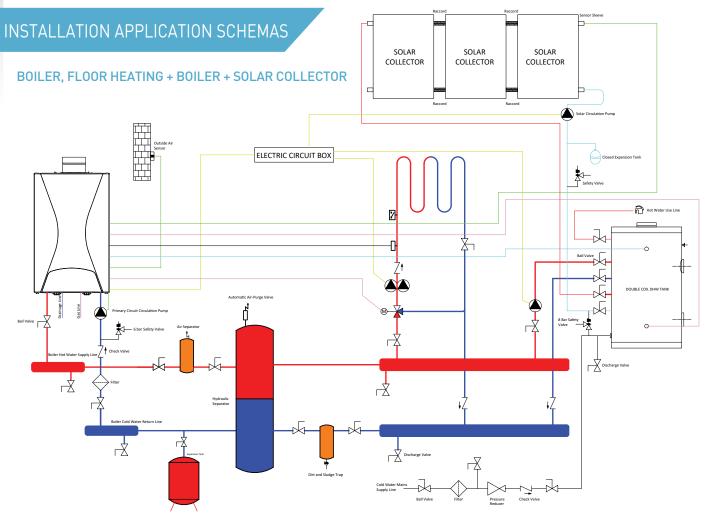
CASCADE, FLOOR HEATING + DHW TANK + POOL CIRCUIT

DHW tank Recirculation Pump (Upon request)
Pressure Reducer (To the boiler mains connection)
Air-Purge Valve (On the hydraulic separator, if exists)

Air SeparatorDirt-Sludge TrapElectric Circuit Box

ACCESSORY EQUIPMENTS	S	
PRODUCT/ACCESSORY NAME	MODEL	QUANTITY
Felis Boiler 65/100/125/150	DK 06/ DK 10/ DK 12/ DK 15	(4 pieces)
Display Cascade Control Panel Group	AF 11	(2 pieces)
Outside Air Sensor	AF 13	(1 piece)
DHW tank Temperature Sensor	AF 15	(1 piece)
Cascade Control Module Card	AF 12	(4 pieces)
Cascade Temperature Sensor (To the system plate heat exchanger supply line-clamp type)	AF 14	(1 piece)
Zone Control Kit	AF 16	(1 piece)
Cascade Temperature Sensor (To the three-way motor supply line-clamp type)	AF 14	(1 piece)
Energy Efficient Primary Circuit Circulation Pump	AP	(4 pieces)
Boiler Temperature Sensor (From the pool to the plate heat exchanger return line)	AF 15	(1 piece)
Single Coil DHW tank		(1 piece)

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INSTALLATION EQUIPMENT

- Heating Circuit Pump (Secondary)
- Three-Way Motorized Mixing Valve
- Expansion Tank
- Safety Valve (Max. 6 bar for boiler)
- Hydraulic Separator
- Safety Valve (Max. 8 bar for boiler)
- DHW tank Circulation Pump
- DHW tank Recirculation Pump (Upon request)

- Solar Power System Circulation Pump
- Expansion Tank (For the solar power system)
- Pressure Reducer (To the boiler mains connection)
- Air-Purge Valve (On the hydraulic separator)
- Air Separator
- Dirt-Sludge Trap
- Electric Circuit Box
- Other Installation Equipment (Check Valve, Filters, Valves)

ACCESSORY EQUIPMENTS		
PRODUCT/ACCESSORY NAME	MODEL	MİKTAR
Felis Boiler 65/100/125/150	DK 06/ DK 10/ DK 12/ DK 15	(1 piece)
Cascade Control Panel with Display	AF 11	(1 piece)
Outside Air Sensor	AF 13	(1 piece)
DHW tank Temperature Sensor AF 15 (1 piece)	AF 15	(1 piece)
Cascade Temperature Sensor (To the supply line of the hydraulic separator-clamp type)	AF 14	(1 piece)
Zone Control Kit	AF 16	(1 piece)
Cascade Temperature Sensor (To the three-way motor supply line-clamp type)	AF 14	(1 piece)
DHW tank Temperature Sensor (For the solar panel)	AF 15	(1 piece)
DHW tank Temperature Sensor (For the return side from solar panel to DHW tank)	AF 15	(1 piece)
Energy Efficient Primary Circuit Circulation Pump	AP	(1 piece)
Double Coil DHW tank		(1 piece)



CONDENSING COMBI BOILERS • SMART ROOM THERMOSTATS

- PELLET STOVE/BOILER CENTRAL SYSTEM BOILERS RADIATORS
 - WATER HEATERS DHW TANKS PUMPS
 - DOMESTIC / COMMERCIAL AIR CONDITIONERS

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