

Felis Wall Type Condensing Boilers

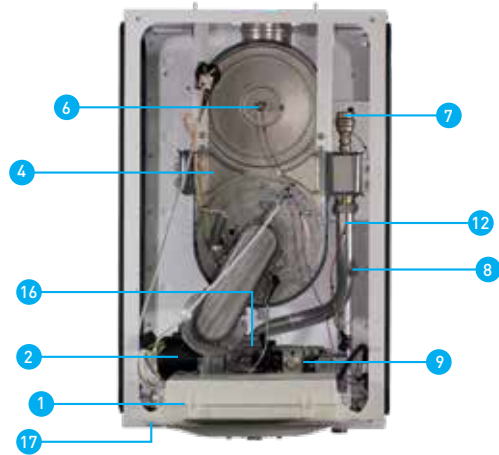


- FELIS 65/100/125/150 Capacity Option
- Stainless Steel Heat Exchanger
- 6 Bar Operating Pressure
- Integrated Flue Flap
- NOx Class: 6
- Class A, In Accordance With The ErP
- Cascade Opportunity Up To 16 Items
- Efficiency Up To 108%
- 19 - 100% Modulation Rate
- 51 dB Sound Level
- Fully Room Sealed Casing



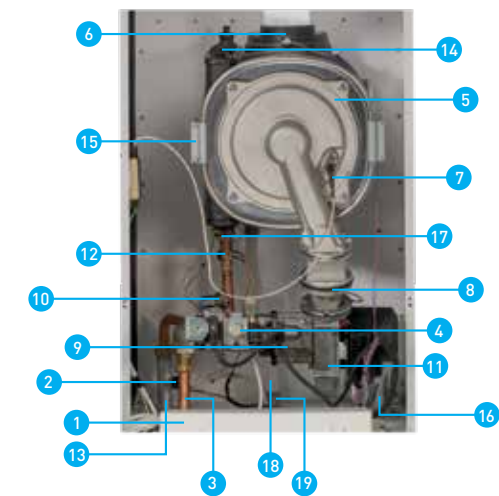
**In accordance with
the ErP Regulation**

Felis 100/125/150



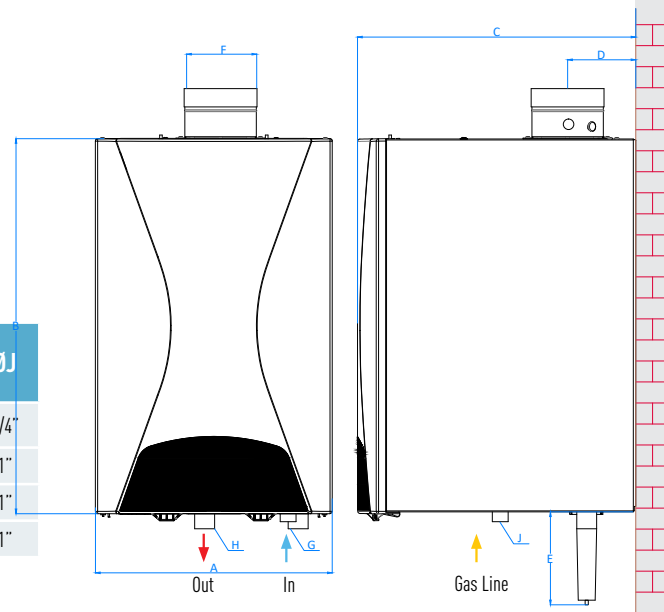
- 1 Display panel and motherboard box
- 2 Fan
- 3 Siphon hose
- 4 Heat exchanger
- 5 Heat exchanger hanging plate
- 6 Flue gas sensor
- 7 Auto air purger
- 8 Safety limit thermostat
- 9 Gas valve
- 10 Pressure sensor
- 11 Flue flap
- 12 Boiler outlet pipe (hot)
- 13 NTC temperature sensor (output)
- 14 NTC temperature sensor (input)
- 15 Boiler inlet pipe (cold)
- 16 Venturi
- 17 Siphon cover

Felis 65



- 1 Display panel and motherboard box
- 2 Pressure sensor
- 3 Gas inlet pipe
- 4 Gas valve
- 5 Heat exchanger
- 6 Flue gas sensor
- 7 Ignition and ionization electrode
- 8 Flue flap
- 9 Venturi
- 10 Safety limit thermostat
- 11 Fan
- 12 NTC temperature sensor (output)
- 13 Boiler outlet pipe (hot)
- 14 Air purger
- 15 Heat exchanger hanger bracket
- 16 Boiler inlet pipe (cold)
- 17 NTC temperature sensor (input)
- 18 Siphon hose
- 19 Siphon cover

Technical Dimensions	A	B	C	D	E	ØF	ØG	ØH	ØJ
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"
Felis 150	501 mm	835 mm	730 mm	145 mm	304 mm	100/150	1 1/4"	1 1/4"	1"



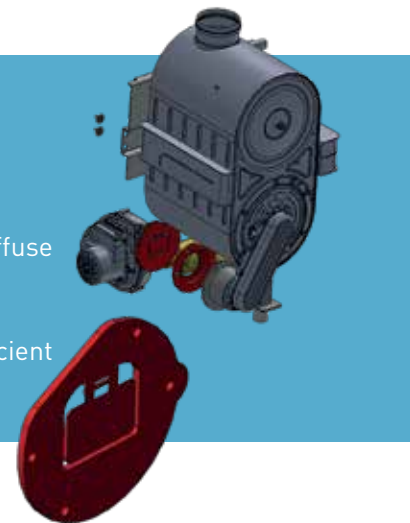
Backflow (Flue) Flap

The flue flap is between the fan and the manifold of the heat exchanger. Connection with fan manifolds is performed as shown in the figure. It is integrated as standard in the Felis boilers.

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	FELIS 65	FELIS 100	FELIS 125	FELIS 150
General					
Gas Category				I2H, I2E	
Flue Types			C13(x), C33(x), C43(x), C63(x), C93(x), B23P		
Room Sealed Type			Tam Hermetik		
Gas Inlet Pressure (G20)	mbar		20		
Power Supply	V AC-Hz		230 VAC-50 Hz		
Power Consumption	Watt	117	143	228	306
Protection Class			IPX4D		
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 - (Ø60°C)	kW	13,5	20,09	24,20	26,57
Qmax, Maximum Heating Load - (Ø80/60°C)	kW	68,05	96,70	120,71	140,77
Pmin, Minimum Heating Power - (Ø30°C)	kW	14,89	22,34	26,29	29,82
Pmax, Maximum Heating Load - (Ø50/30°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 (ØMin-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	°C			95	
Emission Values					
CO (Ø Maximum Capacity (G20))	ppm	<130	<209	<242	<264
CO (Ø Minimum Capacity (G20))	ppm	<2	<12	<9	<12
CO₂ (Ø Maximum Capacity (G20))	%	9,32 ± 0,2	9,38 ± 0,2	9,50 ± 0,2	9,83 ± 0,2
CO₂ (Ø Minimum Capacity (G20))	%	8,54 ± 0,2	8,52 ± 0,2	8,75 ± 0,2	8,89 ± 0,2
Flue Gas Temperature	°C	<75,4	<75,6	<76,8	<74,4
Flue Gas Flow Rate (min.-max.)	g/s	5,28 - 22,17	9,35 - 45,08	9,90 - 48,93	12,10 - 54
Flue Gas Pressure	Pa	30 - 100	30 - 100	50 - 150	60 - 200
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

MAXIMUM 2.400 kW HEATING CAPACITY IN A SINGLE CASCADE SYSTEM

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. FELIS 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

FELIS 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

FELIS 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, FELIS 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 VAC)
- Frost Safety (The electrical connection of your appliance must not be cut-off in order for the frost safety to work)
- Automatic Air-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

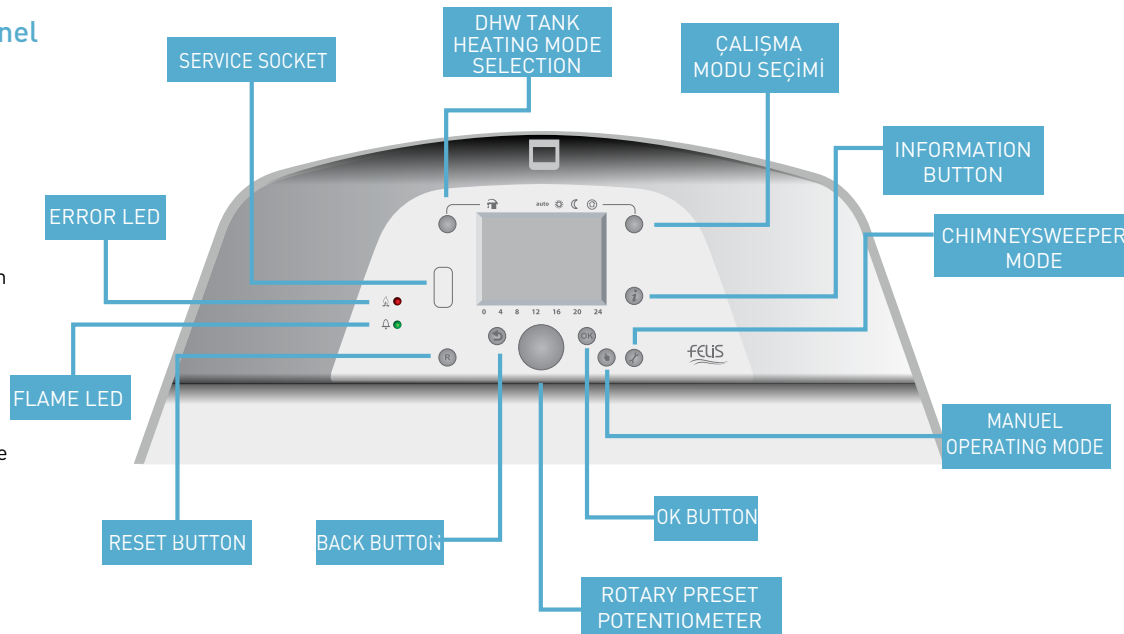
The bluejet burner, which was developed jointly with the heat exchanger in accordance with the combustion feature of the heat exchanger in the Felis boilers, was adjusted according to the 1:5 modulation rate in our boilers. With this modulation rate, made according to the appropriate capacities as a 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.

Cascade Control Panel with Display (AF11)

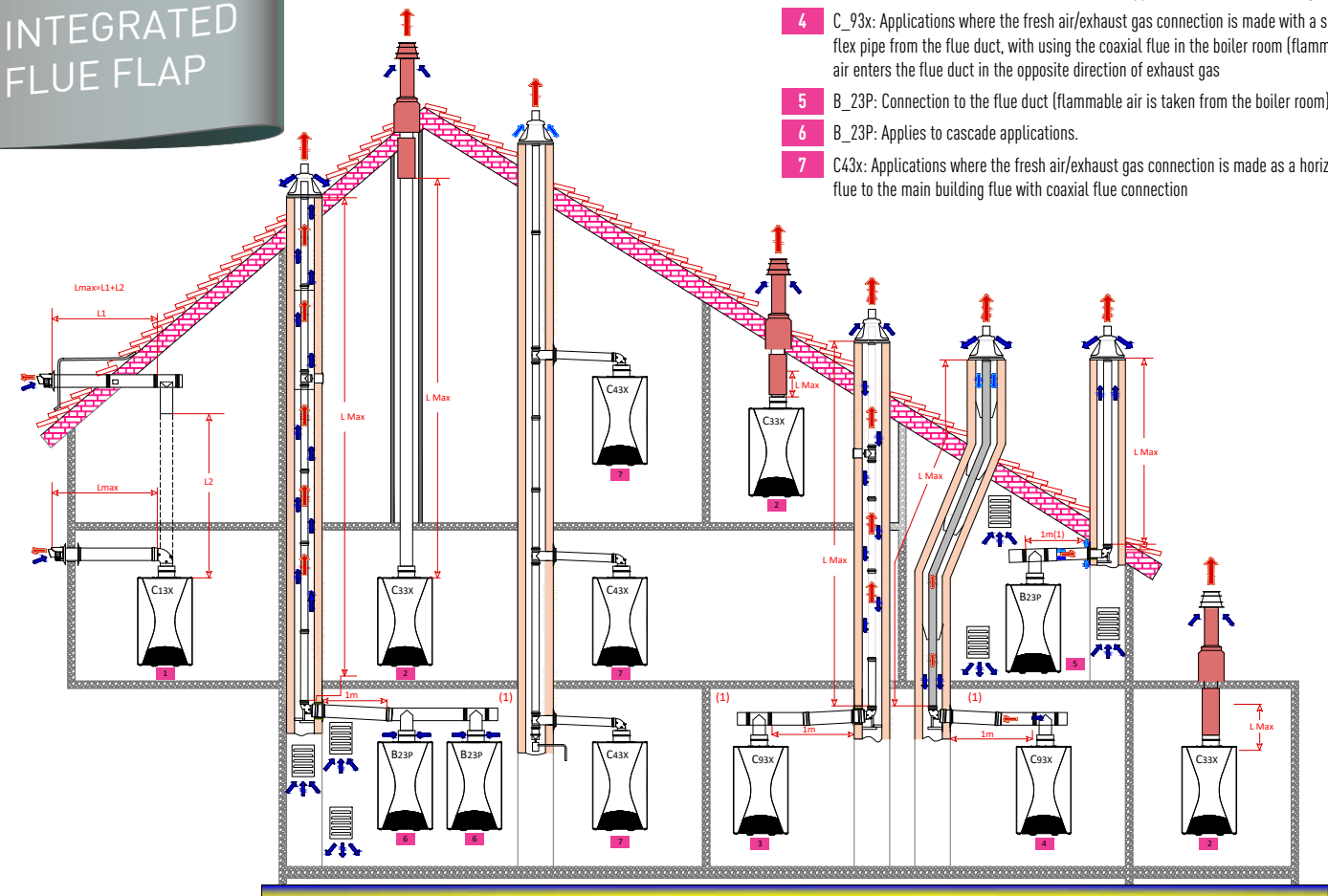
It is mandatory to use it in the Master boiler in single applications and the cascade system.

It provides ease of control on the appliance with the instant display of all data on the appliance, heating settings, time program, change of mode settings and parameters, display where the error code and description is shown in case of fault, and keypad. Fully Turkish interface and 10 other language options are available.



FLUE DISTANCES

INTEGRATED FLUE FLAP



- 1 C_13x: Applications where Fresh air/Exhaust gas connection is made with coaxial horizontal flue (also called forced flow/exhaust)
- 2 C_33x: Applications where the fresh air/exhaust gas connection is made with coaxial vertical flue (flue out through the roof)
- 3 C_93x (previously C_33x): Applications where the fresh air/exhaust gas connection is made with a single pipe from the flue duct, with using the coaxial flue in the boiler room (flammable air enters the flue duct in the opposite direction of exhaust gas).
- 4 C_93x: Applications where the fresh air/exhaust gas connection is made with a single flex pipe from the flue duct, with using the coaxial flue in the boiler room (flammable air enters the flue duct in the opposite direction of exhaust gas)
- 5 B_23P: Connection to the flue duct (flammable air is taken from the boiler room)
- 6 B_23P: Applies to cascade applications.
- 7 C43x: Applications where the fresh air/exhaust gas connection is made as a horizontal flue to the main building flue with coaxial flue connection

(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 flue connection	C13x	ø80/125 mm	10	-	-	-
		ø100/150 mm	-	11	11	11
Vertical flue with coaxial flue connection	C33x	ø80/125 mm	12	-	-	-
		ø100/150 mm	-	13	13	13
Coaxial flue connection is made to the main building flue as horizontal flue	C43x	ø80/125 mm	10	-	-	-
		ø100/150 mm	-	11	11	11
Coaxial flue connection is made to the main flue in the boiler room as horizontal flue	C93x	ø80/125 mm	10	-	-	-
		ø100/150 mm	-	11	11	11
Flex or rigid flammable air is taken from the environment in the flue . Usually used in cascade flue connections	B23P	ø80/125 mm	11	-	-	-
		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.