E.C.A.
FELIS

TOGETHER FOR YEARS

Superior Safety Systems

Technical Design Properties

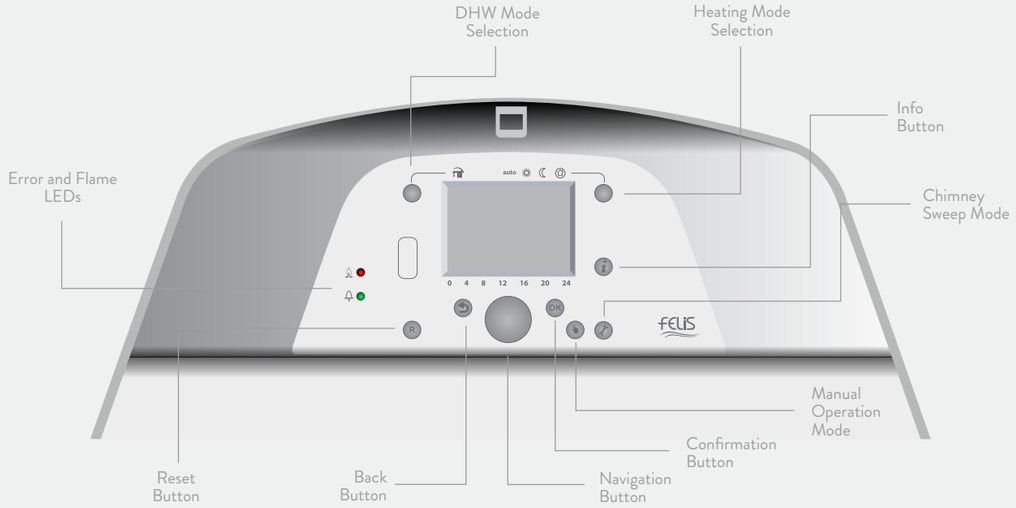
- 50-65-100-125-150 kW capacities
- Usage ability with Natural Gas and LPG
- 108% efficiency
- ErP A energy efficiency class
- %19-100 modulation rate
- Integrated back flow preventer
- Stainless steel heat exchanger
- Storage tank support for DHW heating
- 6 Bar Operation Pressure
- Silent Operation (<51 dB)
- TSE and CE certificates
- Compatible with select room controllers (room thermostat, outdoor temperature sensor)
- Cascade option up to 16 boilers

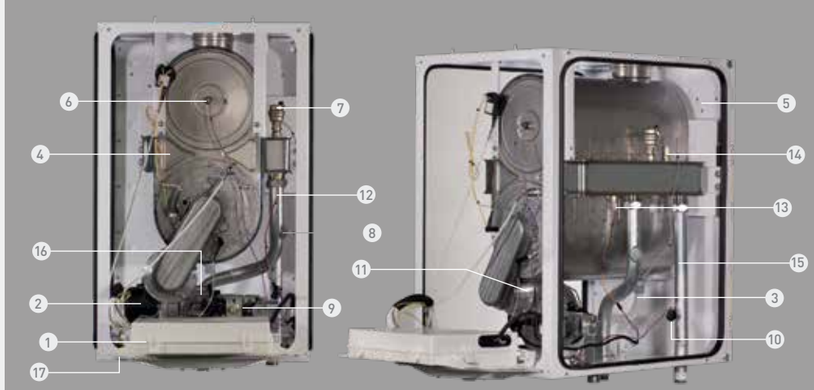
CAPACITY	50-65-100-125-150 kW
MODELS	High Capacity Boiler
FLUE TYPE	C and B Types
GAS TYPE	Natural Gas / LPG

1. High Water Pressure Protection (3 bar for 50 Kw, 4,5 bar for 65 Kw and 6 bar for 100-125-150 Kw)
2. Low Water Pressure Protection (0,8 bar)
3. Flame Loss Protection
4. Over Heating Protection for Flue Gas (95 °C)
5. Over Heating Protection for CH Water Circuit (85 °C)
6. Safety Limit Thermostat for Burner Door (260 °C)
7. Safety Limit Thermostat for Water Side (105 °C)
8. Low Voltage Safety Unit (170 VAC)
9. Anti-Freeze Protection
10. Automatic Air Vent
11. Annual Maintenance Reminding System

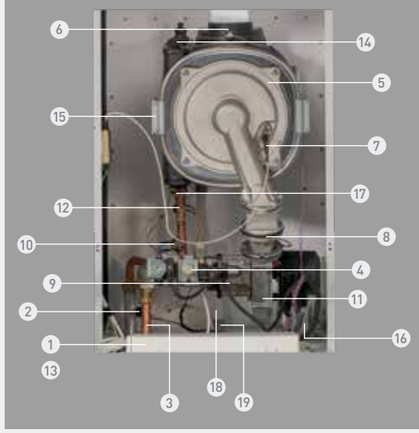
How to Adjust...

E.C.A. Felis condensing boiler gives extensive information to the user about the status of the appliance and system with its wide LCD screen and multi-language support while allowing full control on the appliance.





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



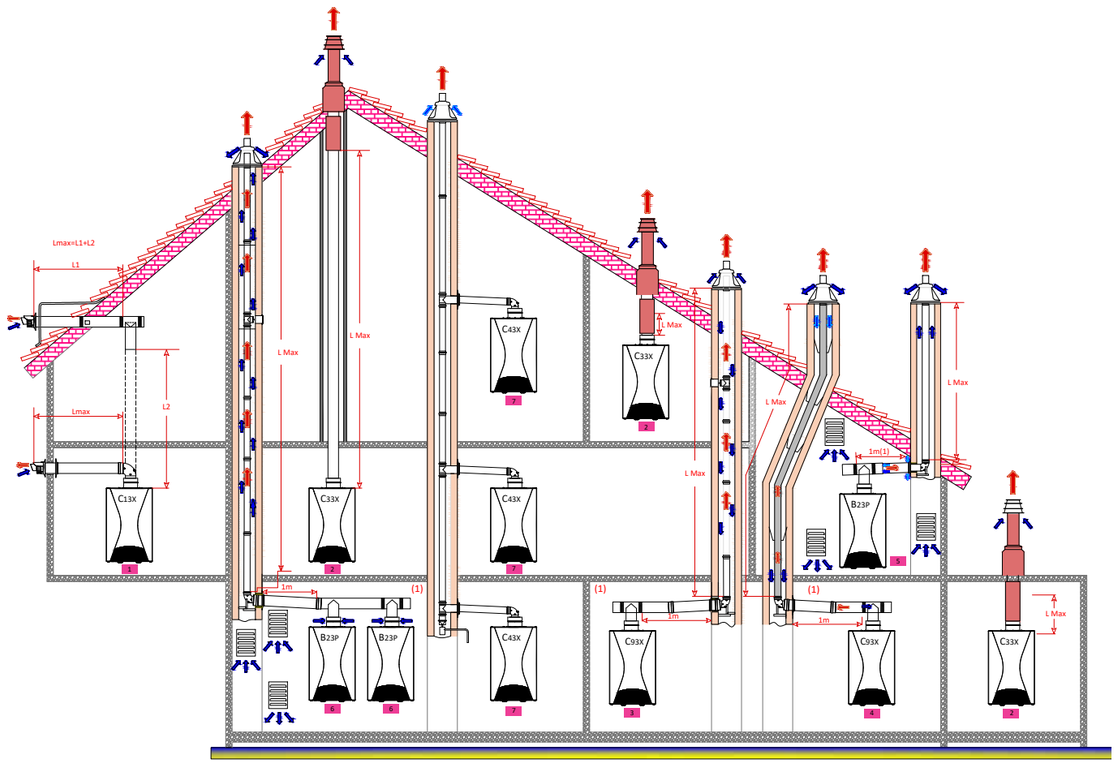
1 Display panel and motherboard box
2 Pressure sensor
3 Gas inlet pipe
4 Gas valve
5 Heat exchanger
6 Flue gas sensor
7 Ignition and ionization electrode
8 Flue flap
9 Venturi
10 Safety limit thermostat
11 Fan
12 NTC temperature sensor (output)
13 Boiler outlet pipe (hot)
14 Air purger
15 Heat exchanger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

Technical Specifications

PRODUCT TYPE	UNIT	FELIS FL 50 HM	FELIS FL 65 HM	FELIS FL 100 HM	FELIS FL 125 HM	FELIS FL 150 HM
General						
Gas Category		I_{2H}, I_{2E}	$II_{2H3B/P}$	I_{2H}, I_{2E}	$II_{2H3B/P}$	I_{2H}, I_{2E}
Flue Types		C13(x), C33(x), C43(x), C63(x), C93(x),B23P				
Hermetic Type		Fully Hermetic				
Gas Inlet Pressure (G20)	mbar	20				
Gas Inlet Pressure (G30)	mbar	-	29	-	29	-
Gas Inlet Pressure (G31)	mbar	-	37	-	37	-
Electric Supply	V AC-Hz	230 VAC-50 Hz				
Electric Consumption	Watt	75	117	143	228	306
Protection Class		IPX4D				
Weight (Net)	kg	42	53	66	74	89
Water Volume	L	3	4,5	6,5	8	9,5
Dimensions (net) (HxWxD)	mm	835x501x525	835x501x590	835x501x590	835x501x660	835x501x730
Dimensions (gross) (HxWxD)	mm	1055x665x595	1055x665x650	1055x665x650	1055x665x720	1055x665x790
Capacity-Efficiency						
Qmax, Max. Heating Load - (@80/60°C)	kW	47,05	68,05	96,70	120,71	140,77
Qmin, Minimum Heating Load - (@60°C) (G20)	kW	8,18	13,50	20,09	24,20	26,57
Qmin, Minimum Heating Load - (@60°C) (G30/G31)	kW	-	14,70	-	31,20	-
Pmin, Minimum Heating Power - (@60°C)	kW	7,84	13,03	19,4	22,54	25,75
Pmax, Max. Heating Power - (@80/60°C)	kW	45,55	66,04	94,05	116,75	135,67
Pmin, Minimum Heating Power - (@30°C)	kW	9,09	14,89	22,34	26,29	29,82
Pmax, Max. Heating Power - (@50/30°C)	kW	49,91	73,36	102,00	129,01	150,43
Efficiency - (60°C return) (max-min)	%	96,8 - 95,8	93,4 - 97,1	97,3 - 96,9	96,6 - 96,6	97,0 - 96,4
Efficiency - (30°C return) (max-min)	%	104,8 - 108,0	106,2 - 108,1	105,7 - 108,0	105,4 - 107,6	105,5 - 107,7
ErP Information						
Seasonal Space Heating Energy Efficiency Class		A				
Seasonal Space Heating Energy Efficiency (ns)		91,8	91,4	91,8	92	91,8
Rated Heat Output (Prated)	kW	45,6	68,05	96,7	120,7	140,8
Sound Power Level	dB(A)	53	53	53	51	51
Efficiency at Rated Output at High Temperature Regime (n4)	%	86,4	84,3	87,8	87,1	87,5
Efficiency 30% Output at Low Temperature Regime (n1)	%	97,2	97,5	97,4	97,1	97,2
Electrical Consumption at Full Load (elmax)	Watt	75	115	139	226	297
Electrical Consumption at Part Load (elmin)	Watt	16	22	33	35	27
Electrical Consumption at Standby (Psb)	Watt	4	4	4	3	4
Standby Heat Loss (Pstby)	kW	0,411	0,939	1,564	0,644	1,6
Yearly NOx Emissions	mg/kWh	37,82	28,13	26,4	42,91	34,06
Space Heating Annual Energy Consumption	kWh	39713	57390	83085	102765	118623
Space Heating Annual Energy Consumption	GJ	143	207	299	370	427
Gas Consumption						
Natural Gas (@Min-Max Capacity)	m³/h	0,882 - 5,120	1,464 - 7,384	2,179 - 10,506	2,513 - 13,100	2,878 - 15,148
LPG - G30 (@Min-Max Capacity)	kg/h	-	0,832-4,038	-	1,817-6,767	-
LPG - G31 (@Min-Max Capacity)	kg/h	-	1,117-5,216	-	2,289-9,143	-
NOx Class		6				
Central Heating						
Min. Water Pressure	bar	0,8				
Max. Water Pressure	bar	3	4,5	6		
Operation Range (@Radiator Heating)	°C	30-85				
Max. Limit Temperature	°C	85				
Emission Values						
CO_2 @ max capacity (G20)	%	9,69 ± 0,2	9,32 ± 0,2	9,38 ± 0,2	9,50 ± 0,2	9,83 ± 0,2
CO_2 @ min capacity (G20)	%	8,60 ± 0,2	8,54 ± 0,2	8,52 ± 0,2	8,75 ± 0,2	8,89 ± 0,2
CO_2 @ max capacity (G30)	%	-	11,63 ± 0,2	-	10,92 ± 0,2	-
CO_2 @ min capacity (G30)	%	-	10,49 ± 0,2	-	10,11 ± 0,2	-
CO_2 @ max capacity (G31)	%	-	10,95 ± 0,2	-	10,12 ± 0,2	-
CO_2 @ min capacity (G31)	%	-	10,31 ± 0,2	-	9,60 ± 0,2	-
Flue Gas Temperature	°C	<82	<75,4	<75,6	<76,8	<74,4
Flue Gas Flow Rate (min-max)	g/s	3,52 - 17,59	5,28 - 22,17	9,35 - 45,08	9,90 - 48,93	12,1 - 54
Flues						
Flue Diameter	mm	80 / 125		100 / 150		
C13 (x) - Max. Flue Length (Horz.)	m	10	10	11	11	11
C33 (x) - Max. Flue Length (Vert.)	m	12	12	13	13	13
B23P - Max. Flue Length	m	11	11	12	12	12

* Maximum flue lengths are given for straight connections. Each 90° elbow equals to 1,5m, each 45° elbow equals to 1m flue length.

Chimney Applications



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

1 C_13x: Applications with fresh air/exhaust gas connection and coaxial horizontal flue (may also called as forced flow/discharge).

2 C_33x: Applications with fresh air/exhaust gas connection and coaxial vertical flue (flue through the roof).

3 C_43x: Applications using fresh air/exhaust gas connection as horizontal flue through the building's main chimney with coaxial flue connection.

4 C_93x (formerly C_33x): Applications with a single discharge duct using fresh air/exhaust gas connection and coaxial flue in boiler room (combusting air enters to in opposite direction of exhaust gas outlet in flue duct).

5 C_93x: Applications with a single flex discharge duct using fresh air/exhaust gas connection and coaxial flue in boiler room (combusting air enters to in opposite direction of exhaust gas outlet in flue duct).

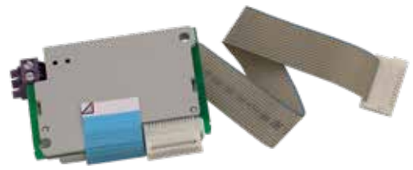
6 B_23P: Connection to flue duct (combusting air is obtained from boiler room)

7 B_23P: Valid for cascade applications.

Optional Control Accessories

AF12 Cascade Module Set

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



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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.

Elginkan

Eleks Dış Ticaret A.Ş. reserves the right to change the appearance, technical details of their products and price.

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