

Electric boiler for the Frequency Containment Reserve for Disturbances markets (FCR-D)

- Electric boiler for the Frequency Containment Reserve for Disturbances
- The device supports FCR-D down and up /mFRR/aFRR/FFR* markets
- For both dynamic and static use: The device monitors the current message of the external provider.
- Models 150-1600 kW
- Power steps 0-27
- Four control methods:
 - 1) Reserve for Disturbances, i.e. SG
 - 2) Outdoor temp. control** + SG
 - 3) Target temp. control** + SG
 - 4) External control + SG
- Works with flow-through technology and requires an external circulation of water through the boiler
- Comprehensive remote monitoring (e.g. Modbus TCP/RTU)
- Safety features built in.



Jäspi FIL SG is a device that can be used to participate in Fingrid's FCR-D market.

The device is primarily an electric boiler made for Frequency Containment Reserve for Disturbances market use (it also works like a normal electric boiler). Jäspi FIL SG can be connected to various heating systems.

The property's electricity connection and water volume must be large enough, min. 30 min* for charge/discharge the amount of energy/power corresponding to the disturbance situation.

* Information according to 04/2024, Fingrid

* FFR with restrictions.

** Possibility of adjusting the heating curve with external spot electrical control.

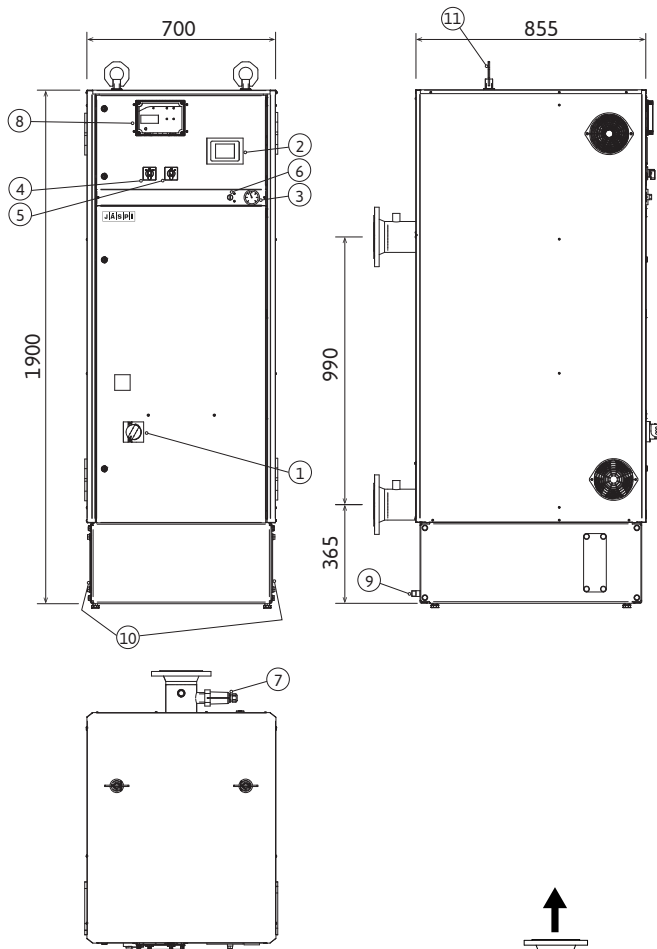


Technical information Jäspi FIL SG 150-400 (medium frame)	
Rated voltage, models 150-400	400 V 3 PE AC 50 Hz
Control unit voltage (Separate supply to control voltage)	230 V 1 N AC 50 Hz
Dimensions H x W x D	1900 x 700 x 855 mm
Power steps (Depending on power/model)	0-20
Pipe connections	DN 100
IP-class	IP 20
Ambient temperature (Higher temp. with special equipment)	5...25 °C
Max temperature	110 °C
Max pressure	10 bar
Operating temp. (electric boiler)	10...99 °C

Technical information Jäspi FIL SG 500-1600 (large frame)	
Rated voltage	400 V 3 PE AC 50 Hz
Control unit voltage (Separate supply to control voltage)	230 V 1 N AC 50 Hz
Dimensions H x W x D (500-800)	1800 x 2022 x 1150 mm
Dimensions H x W x D (900-1200)	2000 x 2022 x 1150 mm
Dimensions H x W x D (1500-1600)	2400 x 2022 x 1150 mm
Power steps (Depending on power/model)	0-27
Pipe connections	DN 125
IP-class	IP 20
Ambient temperature (Higher temp. with special equipment)	5...25 °C
Max temperature	110 °C
Max pressure	10 bar
Operating temperature (electric boiler)	10...99 °C

Built-in safety features
Safety main switch
Temperature limiter
Dry boiling preventer
Standby use with thermostat
Internal temperature monitoring and limiting
Alarm outputs and fault diagnostics
System pressure range monitoring
Sensor values min. and max. control

Jäspi FIL SG 150-400 and 500-1600



	Model / power [kW]	Weight empty [kg]	Recommended fuse [A]	Liquid volume [l]	Power steps
Medium frame	150 / 150	350	3 x 250 2 x (3 x 125)	220	15
	180 / 180	350	3 x 315 2 x (3 x 160)	220	15
	225 / 225	350	2 x (3 x 200)	220	15
	260 / 255	350	2 x (3 x 250)	220	15
	300 / 300	350	2 x (3 x 250)	220	15
	340 / 340	350	2 x (3 x 315)	220	17
Large frame	400 / 400	350	2 x (3 x 315)	220	20
	500 / 510	950	4 x (3 x 250)	480	17
	600 / 600	950	4 x (3 x 250)	480	15
	700 / 680	950	4 x (3 x 315)	480	17
	800 / 800	950	6 x (3 x 250)	480	20
	900 / 900	1350	6 x (3 x 315)	750	15
	1000 / 1020	1350	6 x (3 x 315)	750	17
	1100 / 1080	1350	8 x (3 x 250)	750	18
	1200 / 1200	1350	8 x (3 x 250)	750	20
	1300 / 1320	1500	8 x (3 x 315)	1000	22
1400 / 1380	1500	8 x (3 x 315)	1000	23	
1500 / 1500	1500	8 x (3 x 315)	1000	25	
1600 / 1600	1500	10 x (3 x 315)	1000	27	

Parts: FIL SG 150-400

1. Safety main switch
2. Control panel
3. Temperature gauge
4. Control voltage switch
5. Normal/backup mode selector switch
6. Temperature limiter
7. Dry boiling preventer sensor
8. Dry boiling preventer
9. Drain connection 1/2" et
10. Flanges for supply cables
11. Lifting point

Parts: FIL SG 500-1600

1. Safety main switch
2. Normal/backup mode selector switch
3. Control voltage switch and indicator light
4. Dry boiling preventer
5. Control panel
6. Flanges for supply cables
7. Temperature limiters
8. Drain connection 3/4" et
9. Temperature gauge
10. Door for maintenance of electric heating elements
11. Electric space fans

