

## Technical Data

FCH – Forced Circulation Heater

**Function:** Hose installed heater, designed to pre-heat Applications such as coolant circuits etc.  
Pump forced circulation (230V). PTC heating element and overheating protection.

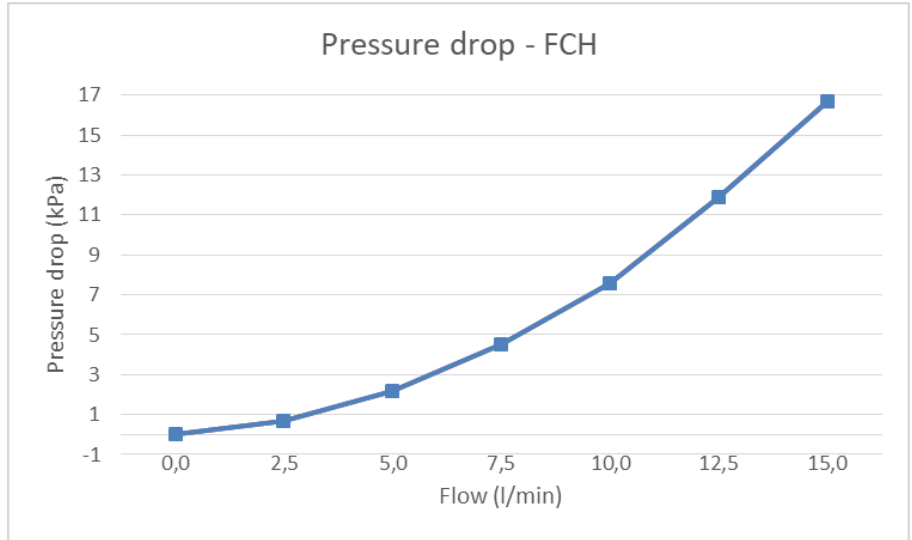


1. General technical data			
Main supply	230 VAC 50-60 Hz		
Coolant pressure	~ 3 bar		
Coolant flow	~ 4 l/min		
Power (-20° C)	550 W (+5% / -10%)		
2. PTC element			
Operating voltage	230 VAC 50-60 Hz		
Inrush current	≤ 5 A	230 VAC	
3. Pump			
Voltage	230 V / 50 Hz		
4. Thermostat			
Nominal open temperature thermostat	+110°C		
Nominal closing temperature thermostat	+80°C		
Electrical rating (ENEC)	10 000 cycles	250 VAC 7 A	DEKRA EN2014531.17
5. Dimension			
Length x width x height	107 x 85 x 113 mm		
Weight	0,4 kg		
6. Temperature range			
Operating temperature	-40°C to +110°C		
Storage temperature	-40°C to +125°C		
7. Climate environment tests			
High temperature	150°C, 2 hours		
Thermal shock	10 cycles of -20° & 150°C alt, 30 min		
Low temperature	-20° C, 24 h		
Damp heat	+40°C, 90~% RH		
8. Vibration			
Vibration	Amplitude 1,5 mm, freq 10-55Hz, 2 h	Intertek SE-S-2100178	
9. Degree of protection (IEC 60529)			
Degree of protection	IEC 60 529:2014, IP46	Intertek 2019382STO-201	
10. Certification			
Electrical safety	EN 60 335-1:2012	Intertek SE-S-2100178	
Engine pre heater	SS 433 07 90	Intertek SE-S-2100178	

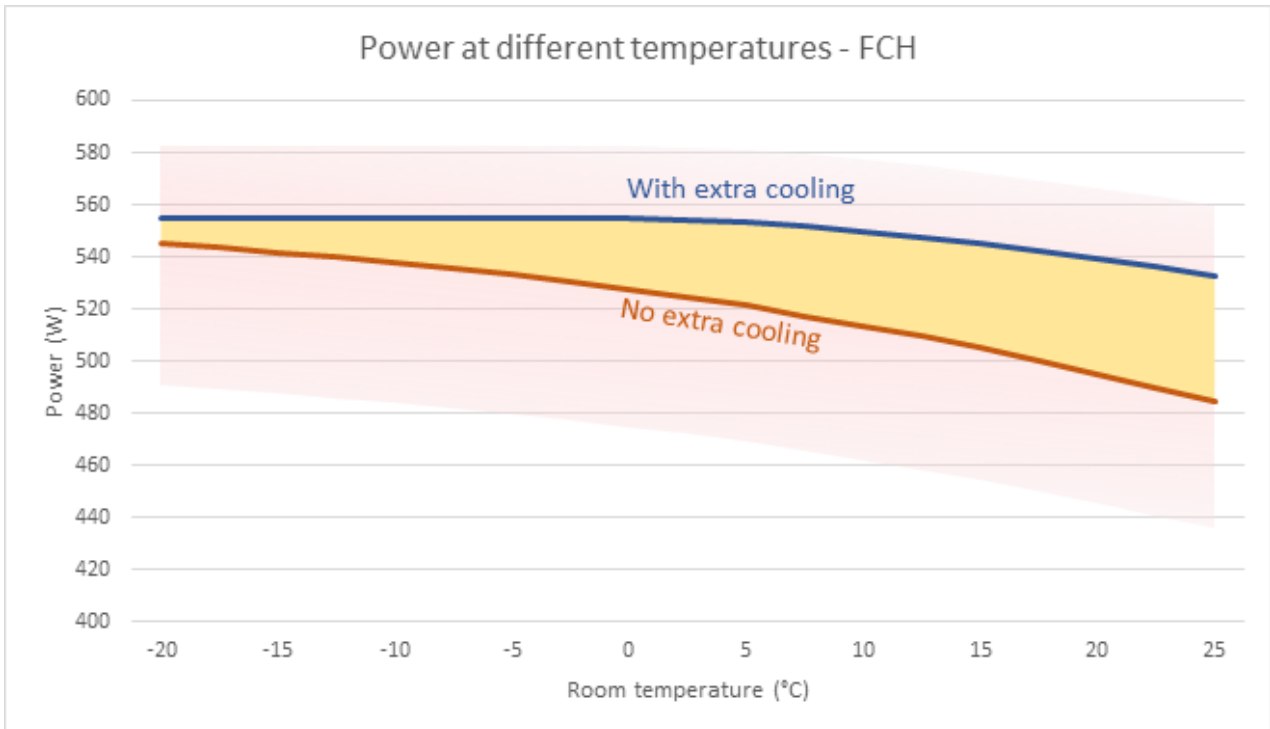
11. Durability		
	9000h	Calix TM 18-047

12. Pressure drop		
Pressure drop in FCH	See table and curve below	All measurements were performed with glycol/water-mix 50/50%, at an ambient temperature of 25°C.

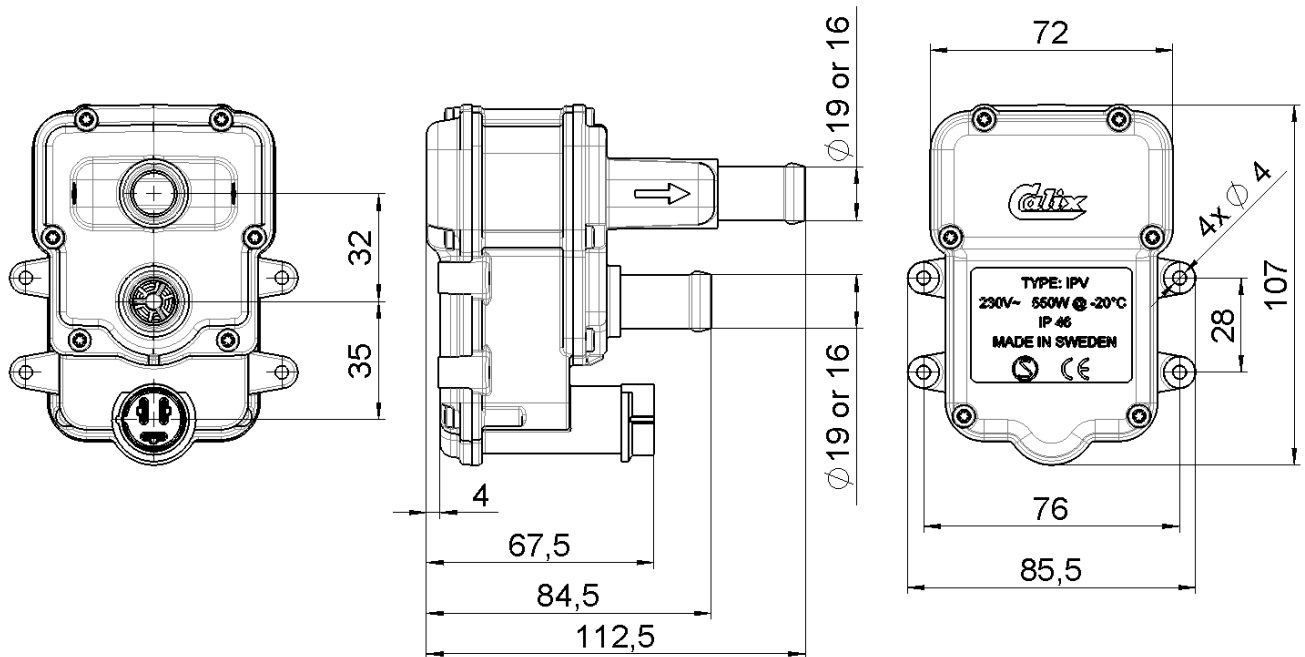
Flow q (L/min)	Pressure drop p (kPa)
0,0	0
2,5	0,7
5,0	2,2
7,5	4,5
10,0	7,6
12,5	11,9
15,0	16,7



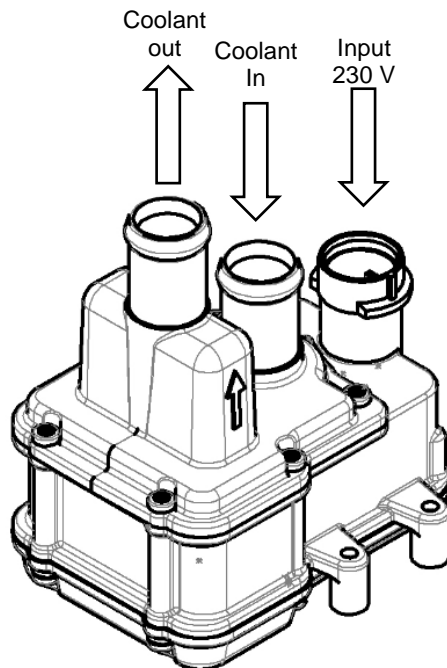
13. Power diagram at different temperatures.



14. Dimensional data



15. Function description



The integrated pump heater is heating the liquid with the PTC element. The upper temperature limit of the thermostat is +110°C and the thermostat is opening the electrical connection. The thermostat is closing the connection again when the temperature decreases to +80°C.



# TECHNICAL DATA

TD 19-074

Issued by  
AC

Date  
2020-06-10

Approved  
PB

Revision  
S4

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## 15. Doc. change record

Date	Change description	Sign	Rev
2022-01-19	Document reworked	LL	S2
2022-04-06	Durability 9000h	RE	S3
2022-11-25	Power diagram at different temperatures	RE	S4

We reserve the right to change technical data without prior notice.