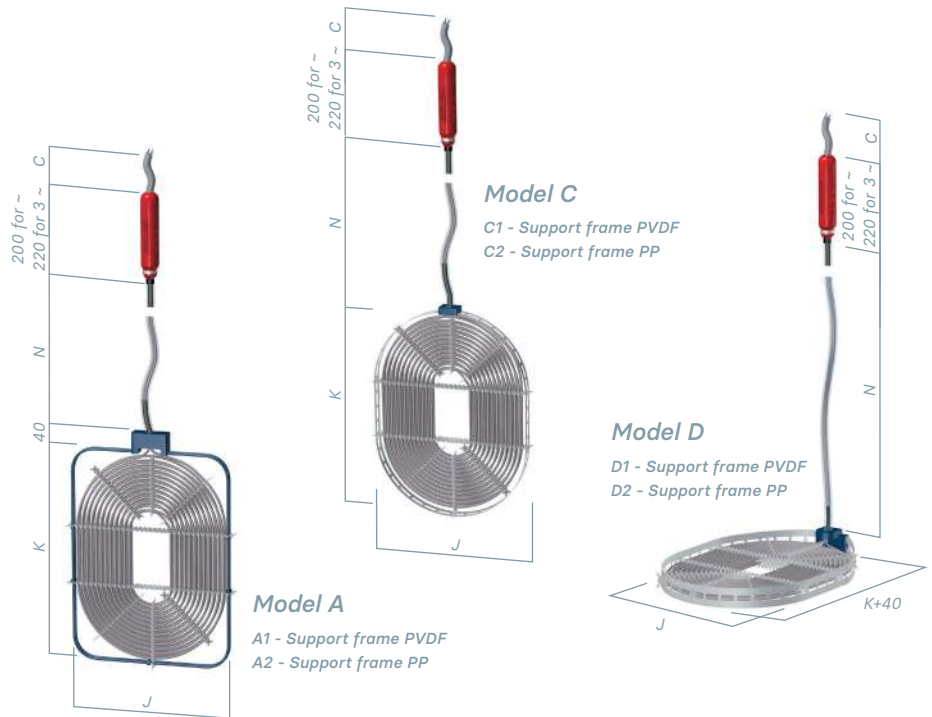


GALMATHERM® Heaters

GALMATHERM heaters are designed specifically for use as direct electric heaters in plants and tanks where space is at a premium and high heating capacities and excellent resistance to aggressive process liquids are required. The very good chemical resistance of the heating cable is achieved by the use of a special sheath made of FEP or PFA. The surface power density is only 1 W/cm².

The PFA sheath should be selected for particularly critical operating conditions in extremely aggressive process liquids (such as mixed-acid chrome electrolyte) and for very high liquid temperatures (max. 100°C). The wide range of different shapes and designs provides simple solutions to even difficult installation problems. Small dimensions, combined with relatively high heating powers, permit space-saving installation. The use of high-quality materials guarantees a long operating lifetime with optimum reliability and thus ensures problemfree operation of the plant.



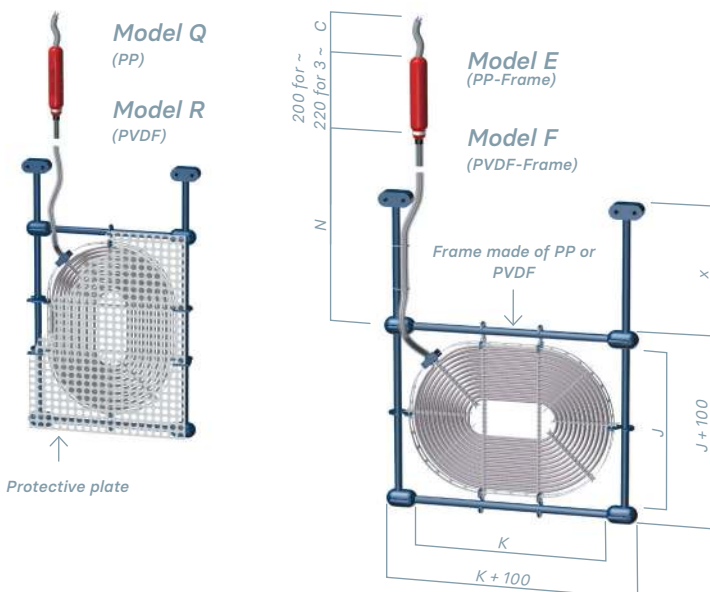
Construction

These heaters consist of a metal heating wire in a FEP/PFA sheath, wound on a flexible PP or PVDF support frame. The mounting elements and the spacers which prevent direct contact between the windings of the heating cable and between the windings and the tank, are also made of PP or PVDF. The mechanical strength can be improved by mounting the heater in a steel frame with PP/PVDF

sheath (Model A) or in a robust PP/PVDF frame (Models E/F).

A protective plate made of PP or PVDF (Models Q/R) protects the heater against mechanical damage.

The unheated connection cable leaving the heater is also sheathed in as far as the connection sleeve and is secured in a PP expandable braided sleeving. This part of the heater can be immersed in the process liquid and carries markings for the minimum and maximum immersion depth. Even in applications with extreme level variations, the liquid level must remain within this range! From the PVC connection sleeve (degree of protection IP 64 to EN 60529), a connection cable leads to the switchgear cabinet. The connection sleeve may not be immersed in the liquid, nor may it be directly exposed to vapours.



Flat Heater GALMATHERM (Type P30 / P40)

Rated power [kW]	Dimensions J x K [mm] for rated voltage		Type designation for rated voltage	
	230 V~	400 V3~	230 V~	400 V3~
1,0	150 x 605	-	P 3003102	-
1,0	170 x 520	-	P 3004102	-
1,0	185 x 365	-	P 3005102	-
1,0	205 x 335	-	P 3006102	-
1,0	220 x 290	-	P 3007102	-
1,0	240 x 250	-	P 3008102	-
1,0	165 x 395	-	P 4003102	-
1,0	185 x 305	-	P 4004102	-
1,0	205 x 255	-	P 4005102	-
1,0	225 x 230	-	P 4006102	-
1,5	165 x 680	170 x 680	P 3004152	P 3004155
1,5	205 x 425	205 x 475	P 3006152	P 3006155
1,5	220 x 355	225 x 440	P 3007152	P 3007155
1,5	240 x 315	240 x 360	P 3008152	P 3008155
1,5	260 x 285	280 x 340	P 3010152	P 3010155
1,5	185 x 375	185 x 380	P 4004152	P 4004155
1,5	205 x 345	205 x 375	P 4005152	P 4005155
1,5	225 x 275	225 x 325	P 4006152	P 4006155
1,5	245 x 245	245 x 275	P 4007152	P 4007155
1,5	245 x 245	270 x 270	P 4008152	P 4008155
2,0	170 x 765	-	P 3004202	-
2,0	185 x 635	-	P 3005202	-
2,0	205 x 565	-	P 3006202	-
2,0	220 x 475	-	P 3007202	-
2,0	240 x 420	-	P 3008202	-
2,0	260 x 380	-	P 3009202	-
2,0	275 x 340	-	P 3010202	-
2,0	295 x 315	-	P 3011202	-
2,0	185 x 515	-	P 4004202	-
2,0	210 x 420	-	P 4005202	-
2,0	225 x 350	-	P 4006202	-
2,0	245 x 305	-	P 4007202	-
2,0	265 x 275	-	P 4008202	-
3,0	205 x 925	205 x 905	P 3006302	P 3006305
3,0	225 x 790	225 x 910	P 3007302	P 3007305
3,0	240 x 690	240 x 700	P 3008302	P 3008305
3,0	260 x 620	260 x 705	P 3009302	P 3009305
3,0	275 x 555	275 x 580	P 3010302	P 3010305
3,0	295 x 510	295 x 575	P 3011302	P 3011305
3,0	315 x 460	315 x 490	P 3012302	P 3012305
3,0	330 x 440	330 x 465	P 3013302	P 3013305
3,0	345 x 410	350 x 450	P 3014302	P 3014305
3,0	365 x 390	370 x 410	P 3015302	P 3015305
3,0	370 x 385	380 x 395	P 3016302	P 3016305
3,0	205 x 685	205 x 735	P 4005302	P 4005305
3,0	225 x 575	230 x 615	P 4006302	P 4006305
3,0	245 x 500	250 x 545	P 4007302	P 4007305
3,0	265 x 445	265 x 470	P 4008302	P 4008305
3,0	285 x 400	285 x 420	P 4009302	P 4009305
3,0	325 x 340	325 x 360	P 4011302	P 4011305
3,0	340 x 340	340 x 340	P 4012302	P 4012305
4,0	225 x 880	-	P 3007402	-
4,0	260 x 700	-	P 3009402	-
4,0	315 x 545	-	P 3012402	-
4,0	330 x 515	-	P 3013402	-
4,0	350 x 475	-	P 3014402	-
4,0	385 x 435	-	P 3016402	-
4,0	405 x 420	-	P 3017402	-
4,0	205 x 810	-	P 4005402	-
4,0	225 x 685	-	P 4006402	-
4,0	245 x 595	-	P 4007402	-
4,0	285 x 475	-	P 4009402	-
4,0	310 x 435	-	P 4010402	-
4,0	325 x 400	-	P 4011402	-
4,0	345 x 375	-	P 4012402	-

Rated power [kW]	Dimensions J x K [mm] for rated voltage		Type designation for rated voltage	
	400 V3~	400 V3~	400 V3~	400 V3~
4,5	240 x 905	-	P 3008455	-
4,5	275 x 750	-	P 3010455	-
4,5	295 x 730	-	P 3011455	-
4,5	315 x 625	-	P 3012455	-
4,5	350 x 535	-	P 3014455	-
4,5	370 x 520	-	P 3015455	-
4,5	385 x 505	-	P 3016455	-
4,5	405 x 460	-	P 3017455	-
4,5	420 x 440	-	P 3018455	-
4,5	265 x 595	-	P 4008455	-
4,5	285 x 535	-	P 4009455	-
4,5	305 x 480	-	P 4010455	-
4,5	325 x 445	-	P 4011455	-
4,5	345 x 425	-	P 4012455	-
4,5	365 x 395	-	P 4013455	-
4,5	380 x 380	-	P 4014455	-
6,0	275 x 990	-	P 3010605	-
6,0	295 x 855	-	P 3011605	-
6,0	310 x 825	-	P 3012605	-
6,0	350 x 720	-	P 3014605	-
6,0	365 x 645	-	P 3015605	-
6,0	385 x 635	-	P 3016605	-
6,0	405 x 625	-	P 3017605	-
6,0	420 x 570	-	P 3018605	-
6,0	440 x 550	-	P 3019605	-
6,0	455 x 545	-	P 3020605	-
6,0	475 x 540	-	P 3021605	-
6,0	265 x 785	-	P 4008605	-
6,0	305 x 635	-	P 4010605	-
6,0	325 x 585	-	P 4011605	-
6,0	350 x 550	-	P 4012605	-
6,0	365 x 505	-	P 4013605	-
6,0	390 x 470	-	P 4014605	-
6,0	405 x 455	-	P 4015605	-
6,0	425 x 425	-	P 4016605	-
9,0	400 x 975	-	P 3017905	-
9,0	435 x 870	-	P 3019905	-
9,0	475 x 800	-	P 3021905	-
9,0	490 x 790	-	P 3022905	-
9,0	525 x 720	-	P 3024905	-
9,0	545 x 705	-	P 3025905	-
9,0	565 x 695	-	P 3026905	-
9,0	600 x 675	-	P 3028905	-
9,0	345 x 890	-	P 4012905	-
9,0	385 x 775	-	P 4014905	-
9,0	405 x 730	-	P 4015905	-
9,0	425 x 685	-	P 4016905	-
9,0	445 x 655	-	P 4017905	-
9,0	465 x 625	-	P 4018905	-
9,0	505 x 575	-	P 4020905	-
9,0	525 x 565	-	P 4021905	-

Rated power [kW]	Dimensions J x K [mm] for rated voltage		Type designation for rated voltage	
	400 V3~	400 V3~	400 V3~	400 V3~
12,0	430 x 1075	-	P 3018125	-
12,0	440 x 1070	-	P 3019125	-
12,0	510 x 885	-	P 3023125	-
12,0	585 x 785	-	P 3027125	-
12,0	385 x 915	-	P 4014125	-
12,0	405 x 860	-	P 4015125	-
12,0	425 x 800	-	P 4016125	-
12,0	465 x 740	-	P 4018125	-
12,0	485 x 705	-	P 4019125	-
12,0	505 x 680	-	P 4020125	-
12,0	545 x 625	-	P 4022125	-
12,0	585 x 595	-	P 4024125	-
15,0	430 x 1245	-	P 3018135	-
15,0	445 x 1235	-	P 3019135	-
15,0	465 x 1140	-	P 3020135	-
15,0	485 x 1125	-	P 3021135	-
15,0	500 x 1045	-	P 3022135	-
15,0	520 x 1030	-	P 3023135	-
15,0	540 x 1035	-	P 3024135	-
15,0	555 x 950	-	P 3025135	-
15,0	575 x 940	-	P 3026135	-
15,0	595 x 925	-	P 3027135	-
15,0	375 x 1125	-	P 4013135	-
15,0	395 x 1055	-	P 4014135	-
15,0	415 x 1000	-	P 4015135	-
15,0	435 x 940	-	P 4016135	-
15,0	455 x 890	-	P 4017135	-
15,0	475 x 850	-	P 4018135	-
15,0	495 x 810	-	P 4019135	-
15,0	515 x 780	-	P 4020135	-
15,0	535 x 750	-	P 4021135	-
15,0	555 x 725	-	P 4022135	-
15,0	575 x 700	-	P 4023135	-
15,0	595 x 690	-	P 4024135	-
15,0	615 x 660	-	P 4025135	-
15,0	635 x 640	-	P 4026135	-

Legend:

Type:

- J = unheated connection cable N on the short side J
- K = unheated connection cable N on the long side K

Sheath material:

- F = Fluorinated ethylene propylene (FEP)
- P = Perfluoralkoxy (PFA)

Type designation	Sheath heater cable		Length of connection cable						Model
	Type	Length of unheated connection cable N	Length of connection cable C						
P.....	J or K	F or P	0 = 1 m	1 = 1,5 m	2 = 2 m	0 = 1 m	1 = 1,5 m	2 = 2 m	A1, A2, C1, C2, D1, D2, E, F, M1, M2, Q, R
			3 = 2,5 m	4 = 3 m	5 = 3,5 m	3 = 2,5 m	4 = 3 m	5 = 3,5 m	
			6 = 4 m	7 = 4,5 m	8 = 5 m	6 = 4 m	7 = 4,5 m	8 = 5 m	
Example:	J	F	2			0			E

P4010402JF20E: Flat heater, 4 kW, dimensions J x K for 230 V~ (310 x 435 mm), connection cable N on short side J, FEP sheath, 2 m connection cable N, 1 m connection cable C, PP frame without protective plate.

