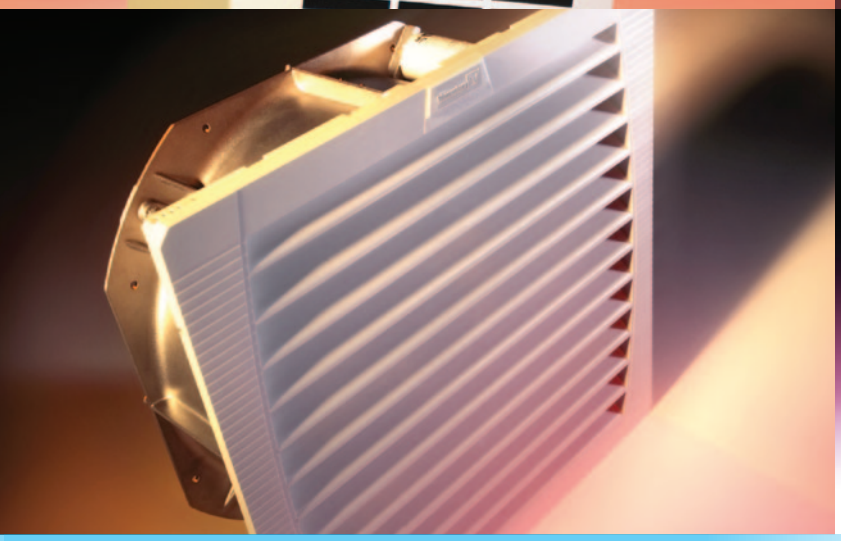
Thermal Management Solutions

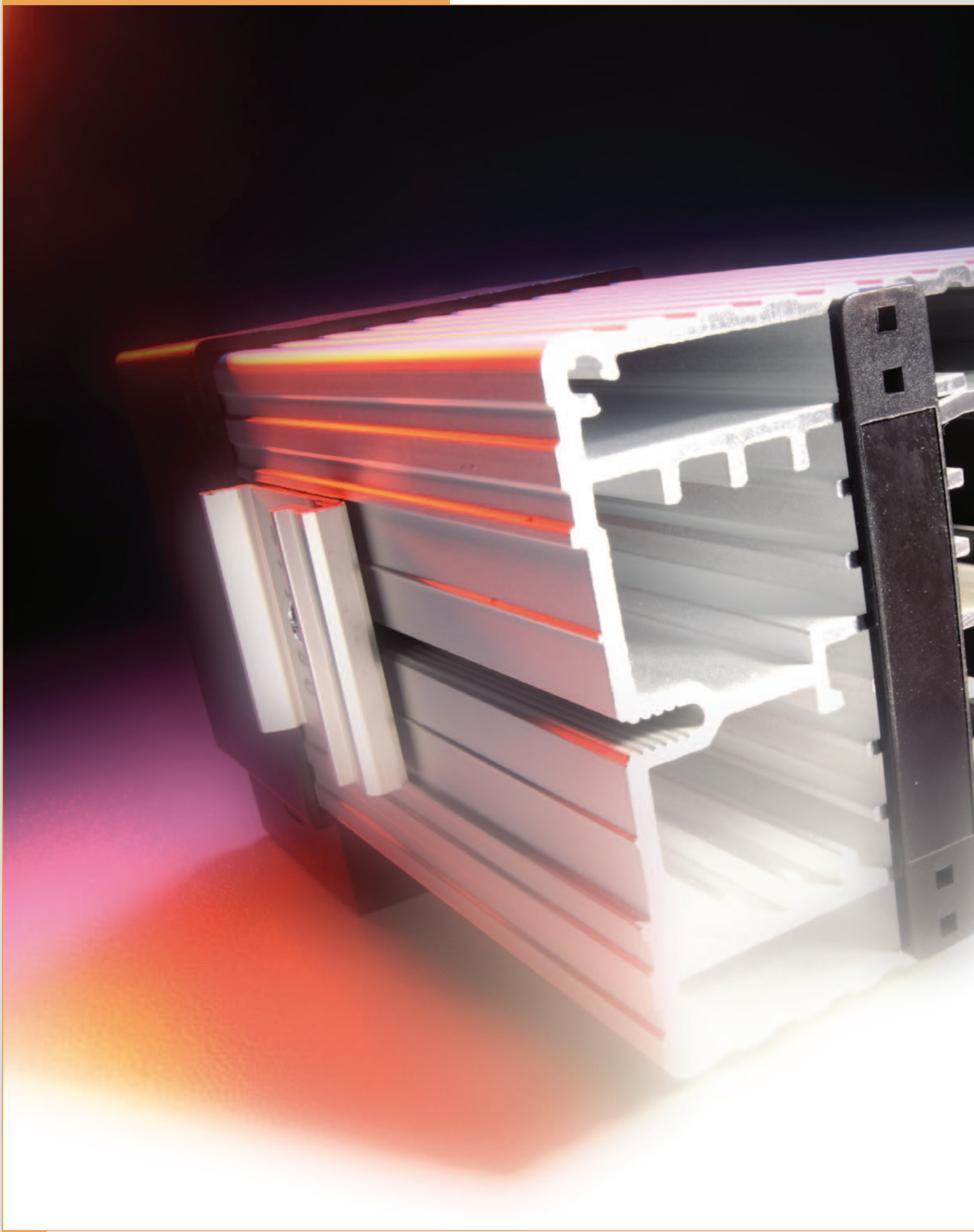
Cooling Units · Air/Water Heat Exchangers · Chillers
Filterfans® · Heaters, Thermostats and Hygrostats

Main Catalog · Edition 11



SHARING COMPETENCE

Pfannenberg
ELECTRO-TECHNOLOGY FOR INDUSTRY



Life insurance for your electronics

The formation of condensation is one of the biggest dangers for electrical enclosures. As long as they are working under load, their own warmth prevents water from condensing. If the process is switched off, the electronics cool down. This is precisely where the function of our control cabinet heaters (radiant heaters and fan heaters) begins to protect.

We offer a wide variety of performance classes of FLH control cabinet heaters which are complemented by thermostats and hygrostats from the FLZ series. As a team, they ensure that the temperature inside the control cabinet is always correct and that the formation of condensation is prevented.

The control of 4th generation Filterfans® by thermostats from the FLZ series represents an intelligent use of Filterfans® for control cabinet air cooling to suit individual needs. It increases energy efficiency, reduces CO_2 emissions and reduces filter maintenance levels.

Accordingly, the combination with thermostats and hygrostats from the FLZ series offers a better environmental balance through higher energy efficiency. It also results in greater reliability of your production process:

- Pinpoint distribution and constant temperature in the control cabinet.
- Reduced energy consumption and optimization of the efficiency of the heaters.
- Additional savings on energy, materials and time.

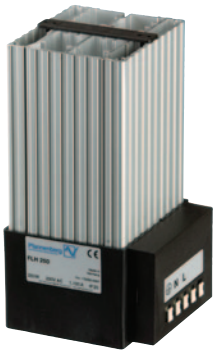
Pfannenberg's heaters, thermostats and hygrostats perfectly complement Pfannenberg's Filterfans®, heat exchangers and cooling units.

The Pfannenberg Thermal Management Team

FLH Radiant Heaters

Radiant heaters are built very compactly and cover a wide operating range. They are used in combination with a thermostat or hygrostat, predominantly for the avoidance of excessively low temperatures or excessively high humidity in the control cabinet and, last but not least, help to avoid the formation of corrosion.

The mini-heaters and surface temperature-limited heaters by Pfannenberg are particularly suitable for use in small housings or for the heating of isolated spots in sensitive areas.



FLH Fan Heaters

This type of heating is ideal for use in larger electrical enclosure. They have an integrated fan that assists the natural convection and provides fast and even distribution of the heat in the electrical enclosure.

The fan heaters are used in combination with a thermostat or hygrostat, for the avoidance of excessively low temperatures or excessively high humidity in the electrical enclosure and also help to avoid the formation of corrosion.

FLH -TF Fan Heaters with Thermostat

The FLH-TF fan heater with thermostat is designed to protect electronics from the effects of low temperatures such as corrosion, freezing or condensation, which can damage critical components within a control enclosure.

FLZ Thermostats

Thermostats are used as temperature controllers and, therefore, for the control of filterfans or electrical enclosure heaters. They are available with N.C. (normally closed) / N.O. (normally open) and changeover contacts. In combination with control cabinet heaters you can ensure, besides temperature control, that the control cabinet is 'artificially' dehumidified, in particular in outdoor applications. That means that the temperature is kept above the dew point so that no water condenses out of the air, which could lead to short circuits due to the formation of condensation.

Hygrostats switch on electrical enclosure heaters or filterfans when a preset relative humidity is exceeded. The relative humidity is kept above the dew point and the condensation of water on electrical components and the corrosion of unprotected sheet metal is prevented. A new electronic combination device unites thermostat and hygrostat in one housing.

Heaters and Thermostats

Type	Heater Power W	Rated voltage	Dimensions HxWxD inches (mm)	Approvals					Page
				UL	cUL	GOST	CSA	CE	
FLH Series Mini-Radiant Heaters									
FLH 010-M	10	115 - 230 VAC	1.77 x 1.97 x 1.16 (45 x 50 x 29.5)	●	●	●		●	165
FLH 020-M	20	115 - 230 VAC	1.77 x 2.95 x 1.16 (45 x 75 x 29.5)	●	●	●		●	165
FLH 030-M	30	115 - 230 VAC	1.77 x 2.95 x 1.16 (45 x 75 x 29.5)	●	●	●		●	165
FLH Series Radiant Heaters									
FLH 045	45	115 - 230 VAC	3.94 x 2.76 x 1.97 (100 x 70 x 50)	●	●	●		●	166
FLH 060	60	115 - 230 VAC	6.89 x 2.76 x 1.97 (175 x 70 x 50)	●	●	●		●	166
FLH 075	75	115 - 230 VAC	6.89 x 2.76 x 1.97 (175 x 70 x 50)	●	●	●		●	166
FLH 100	100	115 - 230 VAC	6.89 x 2.76 x 1.97 (175 x 70 x 50)	●	●	●		●	166
FLH 150	150	115 - 230 VAC	9.84 x 2.76 x 1.97 (250 x 70 x 50)	●	●	●		●	166
FLH Series Surface Temperature-Limited Radiant Heaters									
FLH-LST 020	20	115 - 230 VAC	3.94 x 2.76 x 1.97 (100 x 70 x 50)	○	○	○		●	167
FLH-LST 030	30	115 - 230 VAC	3.94 x 2.76 x 1.97 (100 x 70 x 50)	○	○	○		●	167
FLH-LST 050	50	115 - 230 VAC	3.94 x 2.76 x 1.97 (100 x 70 x 50)	○	○	○		●	167
FLH Series Fan Heaters									
FLH 250	250	115 V / 230 V AC	7.34 x 3.34 x 4.09 (186.5 x 85 x 104)	●	●	●		●	168
FLH 400	400	115 V / 230 V AC	8.92 x 3.34 x 4.09 (226.5 x 85 x 104)	●	●	●		●	168
FLH 250 SL	250	230 V AC	7.34 x 4.98 x 4.06 (170.5 x 126.5 x 103)	○	○			●	168
FLH-TF Series Fan Heaters with Thermostat									
FLH-TF 125	125	115 V or 230 V AC	5 x 4.1875 x 5.5 (127 x 106 x 140)	●			●		169
FLH-TF 200	200	115 V or 230 V AC	5 x 4.1875 x 5.5 (127 x 106 x 140)	●			●		169
FLH-TF 400	400	115 V or 230 V AC	7 x 6.1875 x 7.5 (178 x 157 x 191)	●			●		169
FLH-TF 800	800	115 V or 230 V AC	7 x 6.1875 x 7.5 (178 x 157 x 191)	●			●		169
FLZ Series Thermostats									
FLZ 510	-	AC / DC	2.52 x 1.46 x 1.81 (64 x 37 x 46)			●		●	170
FLZ 520	-	AC / DC	2.83 x 1.57 x 1.42 (72 x 40 x 36)	●	●	●	●	●	170
FLZ 530	-	AC / DC	2.83 x 1.57 x 1.42 (72 x 40 x 36)	●	●	●	●	●	170
FLZ 541	-	AC / DC	3.17 x 2.32 x 1.5 (80.5 x 59 x 38)	●	●	●		●	171
FLZ 542	-	AC / DC	3.17 x 2.32 x 1.5 (80.5 x 59 x 38)	●	●	●		●	171
FLZ 543	-	AC / DC	3.17 x 2.32 x 1.5 (80.5 x 59 x 38)	●	●	●		●	171
FLZ 600	-	AC / DC	2.52 x 1.46 x 1.81(64 x 37 x 46)	●	●	●		●	172
FLZ 610	-	AC / DC	3.17 x 2.32 x 1.5 (80.5 x 59 x 38)	●	●	●		●	172

● available
○ pending

FLH 010-M
FLH 020-M
FLH 030-M
Mini-Radiant Heaters

- The FLH Mini series of radiant heaters consists of three versions with heating performance ratings of 10, 20 and 30 Watts.
- The new mini-heaters by Pfannenberg are particularly suitable for use in small housings or for the heating of isolated spots in sensitive areas.

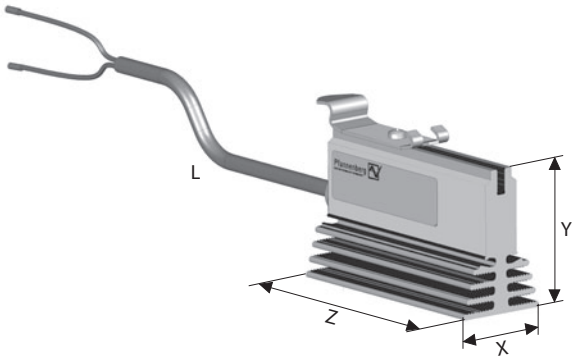
Data	FLH 010-M	FLH 020-M	FLH 030-M	Unit
Part number	17000105017	17000205017	17000305017	
Heating performance	10	20	30	W
Max. surface temperature	203 (95)	239 (115)	284 (140)	°F (°C)
Power consumption	10	20	30	W
Starting current	1.0	1.1	1.2	A
Sytem of protection for intended purpose of use	IP 54			
Weight	85	120	120	g
Rated voltage	230 V AC 50 / 60 Hz			
Functional range	110 - 250 V AC 50 / 60 Hz			
Duty cycle	100%			
Operating temperature range	-40 … +158 (-40 … +70)			°F (°C)
Storage temperature range	--40 … +158 (-40 … +70)			
Installation orientation	as desired, preferably vertical			
Device construction	aluminum profile, black anodised			
Type of mounting	snap fastening for 35mm profile bars according to EN 60715			
Protection class	II			
Connection	connecting cable 11.8" (300 mm)			
Approvals	UL, cUL, CE			

Accessories	Piece	Part number	Information on page
Thermostat	1	17111000010	
Hygrostat	1	17207000000	

Approvals see page 168

Dimensions

Dimension	FLH 010-M	FLH 020-M / 030-M
	inches (mm)	
X	1.16 (29.5)	1.16 (29.5)
Y	1.77 (45)	1.77 (45)
Z	1.97 (50)	2.95 (75)
L	11.81 (300)	11.81 (300)



FLH 045 – FLH 150
Radiant Heaters

- FLH radiant heaters are used in combination with a thermostat or hygrostat, predominantly for the avoidance of excessively low temperatures or excessively high humidity in the control cabinet.
- Different performance ratings from 45 to 150 Watts ensure that the correct heating power is always available. The total required heat can be distributed in a control cabinet according to needs.
- Available with either terminal or connecting cable.

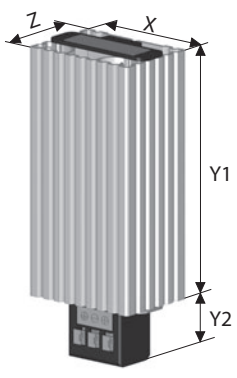
Data	FLH 045	FLH 060	FLH 075	FLH 100	FLH 150	Unit
Part number with terminal	17004505007	17006005007	17007505007	17010005007	17015005007	
Heating performance (Ta = +68 °F/+20 °C)	45	60	75	100	150	W
Max. surface temperature	221 (105)	221 (105)	248 (120)	266 (130)	302 (150)	°F (°C)
Power consumption	45	60	75	100	150	W
Starting current	1.8	2.5	4.5	5.0	7.5	A
Sytem of protection for intended purpose of use	IP20 (plug terminal connector)					
Weight		450	510	510	770	g
Rated voltage	230 V AC 50 / 60 Hz					
Functional range	110 - 250 V AC 50 / 60 Hz					
Duty cycle	100%					
Operating temperature range	--40 … +158 (-40 … +70)					°F (°C)
Storage temperature range	--40 … +158 (-40 … +70)					
Installation orientation	as desired, preferably vertical					
Device construction	aluminum profile, brightly anodised					
Type of mounting	snap fastening for 35mm profile bars according to EN 60715					
Protection class	I					
Connection	plug terminal connection					
Clamping range of connecting terminal	single wire: 2 x 0.5 - 2.5 mm^2, fine-stranded: (tinned, with ferrule, with pin cable lug) 2 x 0.5 - 1.5 mm^2					
Approval	UL, cUL, CE					

Accessories	Piece	Part number	Information on page
Thermostat	1	17111000010	
Hygrostat	1	17207000000	

Approvals see page 168

Dimensions

Dimension	FLH 045	FLH 060 - 100	FLH 150
	inches (mm)		
X	2.76 (70)	2.76 (70)	2.76 (70)
Y1	2.56 (65)	5.51 (140)	8.46 (215)
Y2	1.38 (35)	1.38 (35)	1.38 (35)
Z	1.97 (50)	1.97 (50)	1.97 (50)
L	19.68 (500)	19.68 (500)	19.68 (500)



FLH-LST 020
FLH-LST 030
FLH-LST 050

Surface temperature-limited Radiant Heaters

- The FLH series of radiant heaters with limitation of the radiator surface temperature consists of three versions with heating performance ratings of 20, 30 and 50 Watts.

- Typical applications can be found within building installations, where accidental contact with radiant heaters inside control cabinets is possible, where safety regulations prohibit open sources of heat, or where neighboring structural elements are negatively influenced by the increased development of heat.

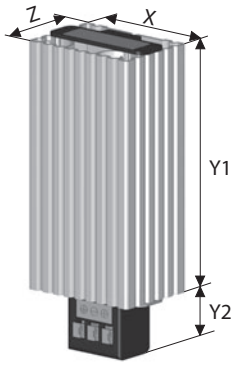
Data	FLH-LST 020	FLH-LST 030	FLH-LST 050	Unit
Part number	17002105017	17003105017	17005105017	
Heating performance (Ta = +68 °F/+20 °C)	68 (20)	102 (30)	171 (50)	Btu/h (W)
Max. surface temperature	131 (55)			°F (°C)
Power consumption	20	30	50	W
Starting current	1.1	1.2	2.3	A
Sytem of protection for intended purpose of use	IP20 (plug terminal connector)			
Weight	320	450	770	g
Rated voltage	230 V AC 50 / 60 Hz			
Functional range	110 - 250 V AC 50 / 60 Hz			
Duty cycle	100%			
Operating temperature range	-40 … +158 (-40 … +70)			°F (°C)
Storage temperature range	-40 … +158 (-40 … +70)			
Installation orientation	as desired, preferably vertical			
Device construction	aluminum profile, brightly anodised			
Type of mounting	snap fastening for 1.4" (35 mm) profile bars according to EN 60715			
Protection class	I			
Connection	plug terminal connection			
Clamping range of connecting terminal	single wire: 2 x 0.5 - 2.5 mm^2, fine-stranded: (tinned, with ferrule, with pin cable lug) 2 x 0.5 - 1.5 mm^2			
Approval	UL, cUL, CE			

Accessories	Piece	Part number	Information on page
Thermostat	1	17111000010	
Hygrostat	1	17207000000	

Approvals see page 168

Dimensions

Dimension	FLH-LST 020	FLH-LST 030	FLH-LST 050
	inches (mm)		
X	2.76 (70)	2.76 (70)	2.76 (70)
Y1	3.74 (95)	5.51 (140)	8.46 (215)
Y2	1.46 (37)	1.46 (37)	1.46 (37)
Z	1.97 (50)	1.97 (50)	1.97 (50)
L	19.68 (500)	19.68 (500)	19.68 (500)



FLH 250
FLH 400
FLH 250 SL
Fan Heaters

- The FLH series of fan heaters consists of two versions with heating performance ratings of 250 and 400 Watts. This type of heating is ideal for use in larger electrical enclosures.
- It has an integrated fan that assists the natural convection and thus provides for fast and even distribution of the heat in the control cabinet.

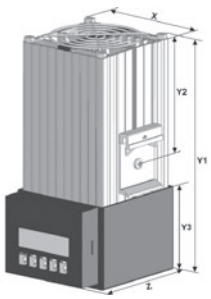
Data		FLH 250	FLH 400	FLH 250 SL	Unit
Part number	230 V	17025010007	17040010007	17025110007	
	115 V	17025015007	17040015007	N/A	
Heating performance (Ta = +20 °C)		250	400	250	W
Max. surface temperature		158 (70)	185 (85)	158 (70)	°F (°C)
Power consumption		260	410	261	W
Starting current		2.2 / 1.1	3.6 / 1.8	2.4 / 1.3	A
Sytem of protection for intended purpose of use		IP 20			
Weight		1035	1200	1500	g
Volumetric air flow		29 (50 Hz) / 36 (60 Hz) [50 (50 Hz) / 61 (60 Hz)]		94 (160)	CFM (m^3/h)
Rated voltage		115 V or 230 V AC 50 / 60 Hz			
Functional range		104 - 126 V or 110 - 250 V AC 50 / 60 Hz			
Duty cycle		100%			
Operating temperature range		-40 … +158 (-40 … +70)			°F (°C)
Storage temperature range		-40 … +158 (-40 … +70)			
Installation orientation		as desired, preferably vertical			
Device construction		aluminum profile, brightly anodised			
Type of mounting		snap fastening for 1.4" (35 mm) profile bars according to EN 60715[1]			
Protection class		I			
Connection		plug terminal connection			
Clamping range of connecting terminal		single wire: 2 x 0.5 - 2.5 mm^2, fine-stranded: (tinned, with ferrule, with pin cable lug) 2 x 0.5 - 1.5 mm^2 [2]			
Approvals		UL, cUL, CE			

[1] FLH 250 SL: M6 screw fastening
[2] FLH 250 SL: single wire: 0.08 - 4.0 mm^2 (AWG 28-12), fine-stranded: (tinned, with ferrule, with pin cable lug) 0.08 - 2.5 mm^2 (AWG 28-14)
Approvals see page 168

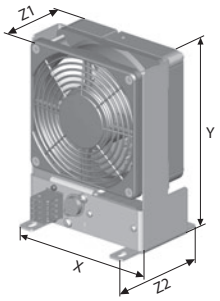
Accessories	Piece	Part number	Information on page
Thermostat	1	17111000010	
Hygrostat	1	17207000000	

Dimensions

Dimension	FLH 250	FLH 400
	inches (mm)	
X	3.35 (85)	3.35 (85)
Y1	7.34 (186.5)	8.92 (226.5)
Y2	3.54 (90)	3.54 (90)
Y3	2.56 (65)	2.56 (65)
Z	4.09 (104)	4.13 (105)



Dimension	FLH 250 SL
	inches (mm)
X	4.98 (126.5)
Y	6.71 (170.5)
Z1	2.95 (75)
Z2	4.06 (103)



FLH-TF 125 - 800

Fan Heaters with Thermostat

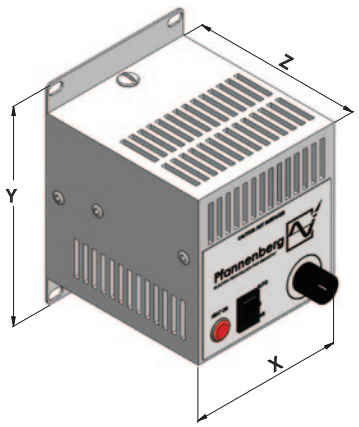
- The FLH-TF fan heater with thermostat is designed to protect electronics from the effects of low temperatures such as corrosion, freezing or condensation, which can damage critical components within a control enclosure.
- Includes auto fan control switch

Data		FLH-TF125	FLH-TF 200	FLH-TF 400	FLH-TF 800	Unit
Part number	115 V	17012515407	17020015407	17040015407	17080015407	
	230 V	17012510407	17020010407	17040010407	17080010407	
Heating performance (Ta = +68 °F/+20 °C)		125	200	400	800	W
Airflow Volume		16 (27)	16 (27)	26 (44)	26 (44)	CFM (m^3/h)
Heating Element		PTC- Semiconductor/Resistor				
Built-in Thermostat Range		0 - 100° (-18 - 38°)				°F (°C)
Max. surface temperature		Self Regulating +167° F (+75° C)				°F (°C)
Power consumption		140	230	440	860	W
Starting current		3	4.5	9	14	A
Sytem of protection for intended purpose of use		IP20 (plug terminal connector) temperature limitor in case of fan failure				
Weight		2.2 (1.0)	2.2 (1.0)	3.0 (1.4)	3.0 (1.4)	lb (kg)
Rated voltage		115 V or 230 V AC 50/ 60 Hz				
Functional range		103 - 127 V or 208 - 250 V AC 50/ 60 Hz				
Duty cycle		100%				
Operating temperature range		-20 … +158 (-20 … +70)				°C (°F)
Storage temperature range		-40 … +212 (-40 … +100)				
Installation orientation		vertical airflow expelled at top				
Device construction		aluminum metal housing				
Type of mounting		panel mount				
Protection class		1				
Connection		2-pole terminal block, 14 AWG max				
Clamping range of connecting terminal		single wire: 2 x 0.5 - 2.5 mm^2, fine-stranded: (tinned, with ferrule, with pin cable lug) 2 x 0.5 - 1.5 mm^2				

Approvals see page 168

Dimensions

Dimension	FLH-TF 125	FLH-TF 200	FLH-TF 400	FLH-TF 800
	inches (mm)			
X	4 (102)	4 (102)	4 (102)	4 (102)
Y	5.5 (140)	5.5 (140)	7.5 (191)	7.5 (191)
Z	4.5 (114)	4.5 (114)	4.5 (114)	4.5 (114)



FLZ 510 – FLZ 530

Thermostats

- The FLZ series are available with N.C. / N.O.[1] and changeover contacts. In combination with control cabinet heaters, they serve for temperature control inside the control cabinet.
- In combination with filterfans, they provide for additional savings on energy, materials and time. All in all, this results in greater reliability of the production process, reduced energy consumption due to need-based use and an improvement in the efficiency of the controlled heaters and filterfans.

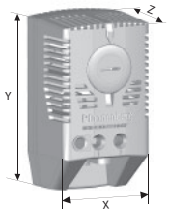
Data		FLZ 510	FLZ 520	FLZ 530	Unit
Part number	0 ° - 60 °C	17103000000	17111000000	17121000000	
	32 -140 °F	17103000010	17111000010	17121000010	
Type of contact		changeover with spring contact	N.C. with spring contact	N.O. with spring contact	
Switching temperature difference		1[2]/3	<7		K
Switching point tolerance		± 3	± 4		
Max. switching power - resistive value in brackets (): inductive load at cos φ = 0.6	N.C.	100 - 250 V AC / 10 (2)	240 V AC / 10 (2)		
	N.O.	100 - 250 V AC / 5 (2)	120 V AC / 15 (2)		
	DC	max. 30			W
Operating temperature range		-4 … +179 (-20 … +80)			°F (°C)
Storage temperature range		-4 … +179 (-20 … +80)			
Probe type		bimetal			
System of protection		IP 20			
Weight		75	50		g
Connection		screw terminal for cable cross-section 0.5 to 2.5 mm²			
Approvals		UL, cUL, CE	UL, cUL, CSA, CE		
Special feature		thermal return[2]	-		
Suitable for the operation of		fan and heater	heater	fan	
Type of mounting		snap fastening for 35mm profile bars according to EN 60715			
Color		RAL 7035			

Accessories	Piece	Part number	Info on page
Hygrostat	1	17207000000	170
Internal enclosure fan	1	18103000002	59

[1] N.C. = normally closed / N.O. = normally open
[2] for 230 V AC operation only
Approvals see page 168

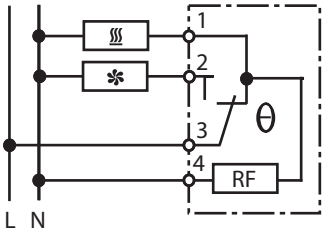
Dimensions

Dimension	FLZ 510	FLZ 520	FLZ 530
	inches (mm)		
X	1.46 (37)	1.57 (40)	1.57 (40)
Y	2.52 (64)	2.83 (72)	2.83 (72)
Z	1.81 (46)	1.42 (36)	1.42 (36)

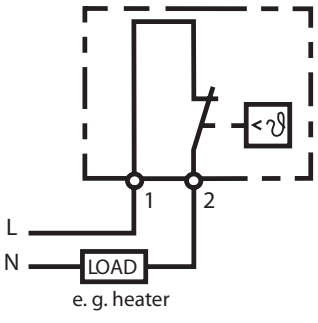


Schematics

FLZ 510 1K

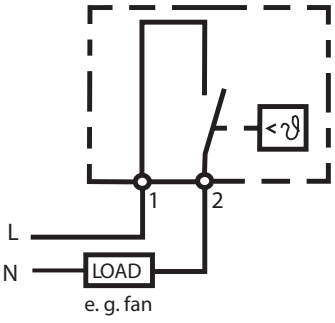


FLZ 520 N.C.



e. g. heater

FLZ 530 N.O.



e. g. fan

FLZ 541 – FLZ 543

Twin Thermostats

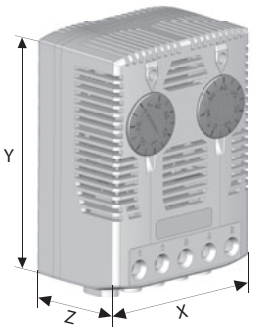
- The FLZ series of twin thermostats integrates two independently switchable thermostats. They are available with N.C./N.O.[1], N.C./N.C. and N.O./N.O. contacts.
- Unlike thermostats with changeover contacts, connected devices can be switched in different temperature ranges.

Data		FLZ 541	FLZ 542	FLZ 543	Unit
Part number	0 ° - 60 °C	17141000000	17142000000	17143000000	
	32 -140 °F	17141000010	17142000010	17143000010	
Type of contact		N.C. / N.O. with spring contact	N.C. / N.C. with spring contact	N.O. / N.O. with spring contact	
Switching temperature difference		< 7			K
Switching point tolerance		± 4			
Max. switching power value in brackets (): inductive load at cos φ = 0.6	N.C.	240 V AC / 10 (2)			
	N.O.	120 V AC / 15 (2)			
	DC	max. 30			W
Operating temperature range		-4 … +179 (-20 … +80)			°F (°C)
Storage temperature range		-4 … +179 (-20 … +80)			
Probe type		bimetal			
System of protection		IP 20			
Weight		95			g
Connection		screw terminal for cable cross-section 0.5 to 2.5 mm²			
Approvals		UL, cUL, CE			
Suitable for the operation of		fan and heater	heaters/alarm	fans/alarm	
Type of mounting		snap fastening for 35mm profile bars according to EN 60715			
Color		RAL 7035			

[1] N.C. = normally closed / N.O. = normally open
[2] for 230 V AC operation only
Approvals see page 168

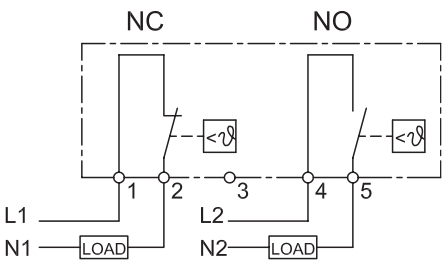
Dimensions

Dimension	FLZ 541	FLZ 542	FLZ 543
	inches (mm)	inches (mm)	inches (mm)
X	2.32 (59)		
Y	3.17 (80.5)		
Z	1.5 (38)		

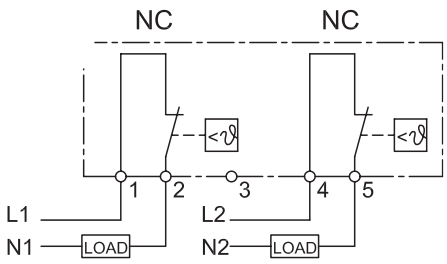


Schematics

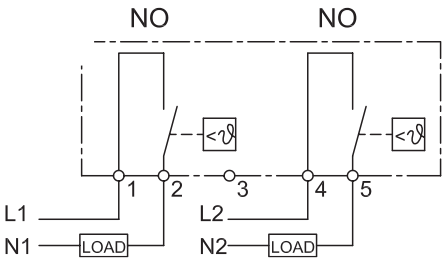
FLZ 541



FLZ 542



FLZ 543



FLZ 600 Hygrostat

FLZ 610 Hygrostat-thermostat

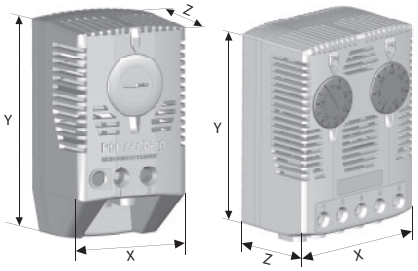
- Hygrostats switch on control cabinet heaters or filterfans when a preset relative humidity is exceeded. The relative humidity is kept above the dew point and the condensation of water on electrical components and the corrosion of unprotected sheet metal is prevented.

- The electronic combination device unites thermostat and hygrostat in one housing and monitors the relative humidity and the temperature independently of each other.

Data		FLZ 600	FLZ 610	Unit
Part number	0 °C (+32 °F) … +60 °C (+140 °F) 230 V	17207000000	17218100000	
	115 V	—	17218151000	
Device implementation		mechanical hygrostat	electronic hygrostat-thermostat combo device	
Type of contact		changeover with spring contact	changeover/relay	
Rated voltage		–	230 V AC 50 / 60 Hz[1]	
Setting range		40 - 90 % R.H.	40 - 90 % R.H. / 32° - 140° F (0 °C to +60 °C)	
Switching temperature difference		approx. 5 %	approx. 2 K ± 1 K / approx. 4 % R.H. ± 1 %	
Switching point tolerance		± 4[2]	± 4[2]	K
Contact resistance		–	< 10	mΩ
Max. switching power value in brackets: inductive load at cos φ = 0.6	N.C.	24-250 V AC / 2 (0.2)A – min. 100 mA	240 V AC, 8 (3) A or 120 V AC, 8 (3) A	
	N.O.	24-250 V AC / 5 (0.2)A – min. 100 mA	24 VDC, 4 A	
	DC	max. 30	–	W
Operating temperature range		+30 … +140 (0 … +60)	-4 … +140 (-20 … +60)	°F (°C)
Storage temperature range		-4 … +179 (-20 … +80)		
Probe type		polyamide belt	–	
System of protection		IP 20		
Weight		55	85	g
Connection		screw terminal for cable cross-section 0.5 to 2.5 mm²		
Approvals		UL, cUL		
Operating display		–	LED	
Suitable for the operation of		fan and heater		
Type of mounting		snap fastening for 35mm profile bars according to EN 60715		
Color		RAL 7035		

Dimensions

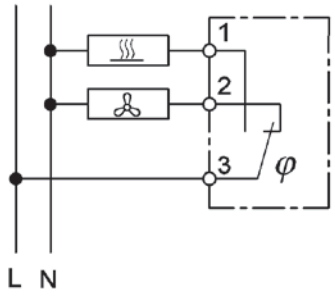
DIMS.	FLZ 600 inches (mm)	FLZ 610 inches (mm)
X	37	2.32 (59)
Y	64	3.17 (80.5)
Z	46	1.5 (38)



[1] N.C. = normally closed / N.O. = normally open
[2] for 230 V AC operation only
Approvals see page 168

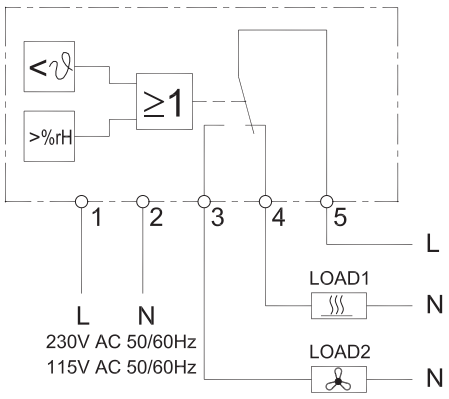
Schematics

FLZ 600

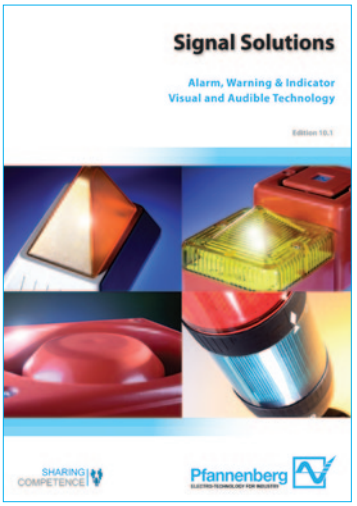


Schematics

FLZ 610

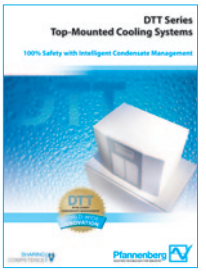


Other products and literature available from Pfannenberg...

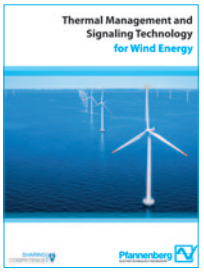


Signal Solutions Guide

Global Service Guide

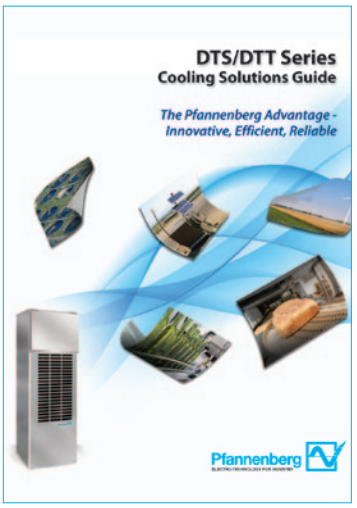


DTT Series Cooling Units



Wind Energy Solutions Guide

Food & Beverage Thermal Management Solutions



Cooling Solutions Guide

Pfannenberg
ELECTRO-TECHNOLOGY FOR INDUSTRY

Pfannenberg Incorporated
68 Ward Road
Lancaster, New York 14086 USA
Phone: 716-685-6866
Fax: 716-681-1521

info@pfannenbergusa.com
www.pfannenbergusa.com

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