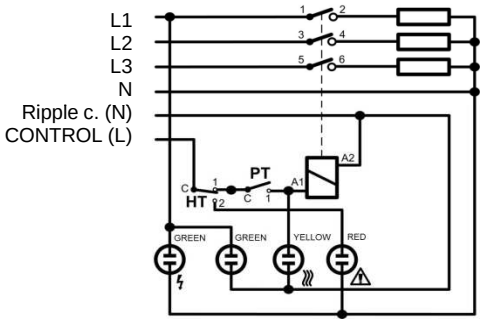
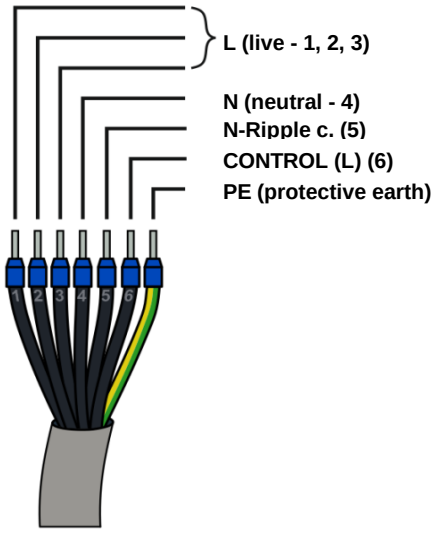
ETT-F Heating Element w. control and Ripple control, for PV

Recommended installation position

Wiring diagram



Marking of conductors



Main features	
Application	heating of static or flowing heating water or antifreeze fluid in Thermal Stores or drinking water
Purpose	heating of working fluid in hot water storage tanks and Thermal Stores, incl. DUO Thermal Stores, from single phase PV power plant using a wattrouter; **not designed to heat fluids in stainless steel tanks**
Working fluid*	drinking water, water, water/glycol mixture (max. 1:1) or water-glycerine mixture (max.
Installation position	horizontal, with cable gland downwards, element shall be completely immersed in working fluid (see photo)

Code	
ETT-F 3,0 kW	**16 250**
ETT-F 4,5 kW	**12 357**

Technical data	
Heating element type	electric, resistive, nickel-plated, thermostatic head with contactor
Connection thread	1 x G 6/4“ M
Connection to mains	cable for fixed wiring to a terminal box or fuse board

Electric data	
Power supply voltage	230 V 50 Hz
IP rating	IP 54 by EN 60529
Protection class	I by EN 61140 ed.2
Power supply cable	7 x 2,5 mm², l = 2 m, grey
Grommet	Pg 11

Adjustable termostat data	
Type	capillary type, adjustable
Switch-over contact	16 A
Temp. adjustment range	od 0 ± 5 ℃ do 90 ± 3 ℃
Switching difference	5 ± 1,5 ℃
Lower limit	cca 15 ℃ – frost protection
Upper limit	cca 60 ℃ – for hot water storage

** Both limits can be changed or eliminated completely by removing the knob.*

Safety thermostat data	
Type	capillary type, fixed setting
Switch-off temperature	99 +0/-6 ℃
Reset	manual, after temperature drops below 50 ℃

Contactor data	
Switching power	AC1: 20 A / 690 V, 1Z
Coil voltage	AC 220 – 240 V
Frequency	50 Hz

Materials	
Heating element	nickel-plated copper
Heat. element housing	aluminium alloy
Threaded hexagon	nickel-plated brass
Power supply cable	PVC

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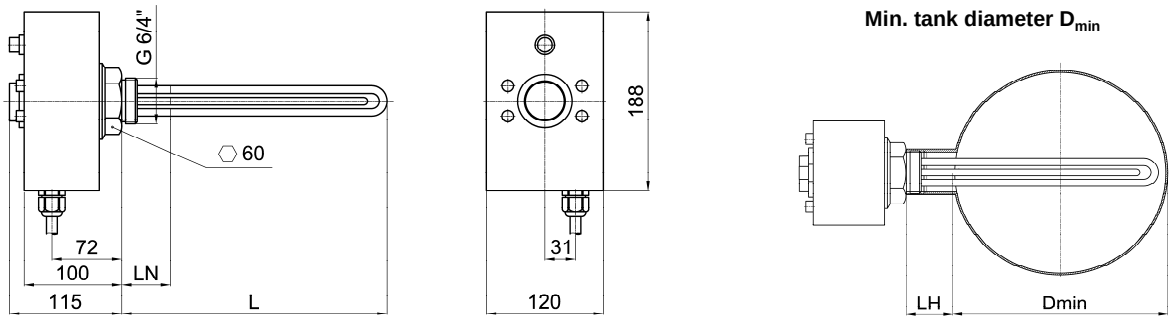
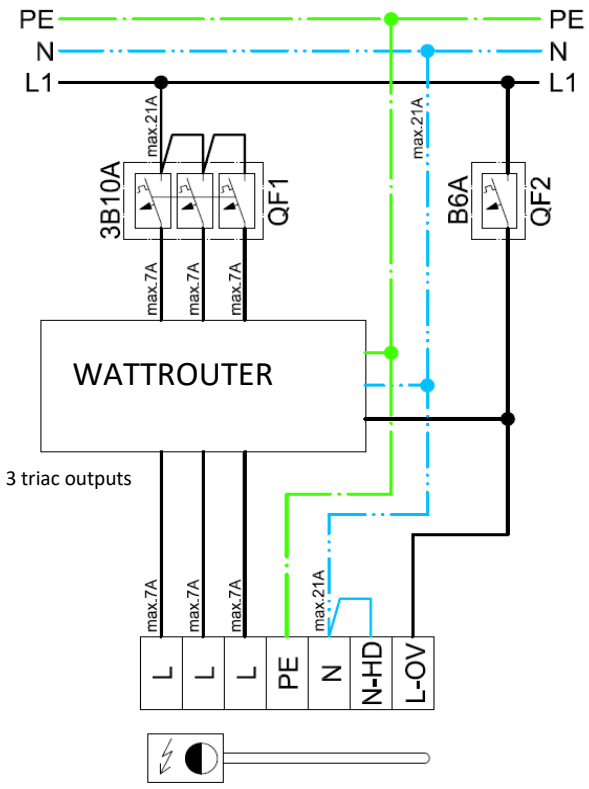
Dimensions



Element type	Nominal output	Nominal current	Element length L	Non-heating end length LN	Min. tank diameter without inner HE, Dmin	
					for LH = 50mm	for LH = 100mm
ETT-F - 3,0	3,0 kW	4,3 A	365 mm	180 mm	330 mm	290 mm
ETT-F - 4,5	4,5 kW	6,5 A	463 mm	180 mm	430 mm	390 mm

Wiring example



Poz.: *heating element is not designed to heat other fluids than listed, nor gases or vapours.*

Heating fluid in direct contact with the heating element shall meet the relevant standards.
Hot water values shall not exceed the following limits:

pH	Total Dissolved Solids (TDS)	Calcium	Chlorides	Sodium	Iron
6,5-9,5	**600 mg/litr**	**40 mg/litr**	**100 mg/litr**	**200 mg/litr**	**0,2 mg/litr**