

4.1.1 Tank heater

Model tank heater for EL heating oil, with display unit testing according to DIN EN 60335-1, DIN EN 60335-2-73



APPLICATION

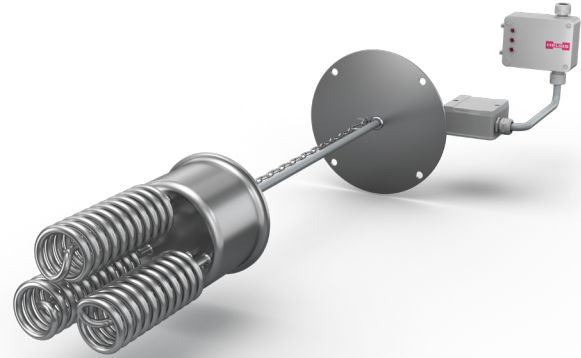
- exclusively tempering of EL heating oil with a flash point > 55 °C to prevent malfunctions, caused by paraffin excretion
- installation from a free space of 500 mm above the tank possible

DESIGN

- Design A - steel flange DN 150
- Design B - screw-in thread (nipple) G 1½
- oil-resistant, flexible cable, 3 steel jacket tubular heating elements
- temperature controller and limiter
- terminal box 98 x 98 x 59 mm high, protection type IP 65
- display unit 130 x 94 x 58 mm high, protection type IP 54

ELECTRICAL CONNECTION

- at 3 x 400 V three-phase-current. The electrical connection must be carried out according to the attached circuit diagram no. 28-5.4 A and must be done by a qualified electrician
- it is important to ensure that the cable cores are numbered correctly
- if the connection cable is damaged, the heater must not be used longer
- the cable cannot be replaced. The heater must be scrapped or sent to the manufacturer for repair



TECHNICAL DATA

ADJUSTABLE IMMERSION LENGTH (APPROX. MM)	MIN. IMMERSION LENGTH (APPROX. MM)	POWER (APPROX. WATT)	ARTICLE NO. DESIGN A (FLANGE)	ARTICLE NO. DESIGN B (NIPPLE)
550 - 2 950	210	3 000	04011011	04011111
550 - 2 950	230	4 500	04011021	04011121
550 - 2 950	250	6 000	04011031	04011131
550 - 2 950	275	7 500	04011061	04011161
550 - 2 950	300	9 000	04011041	04011141
550 - 2 950	400	10 000	04011051	04011151

tank heater hung horizontally

400 - 2 950	180	9 000	04011211	04011311
400 - 2 950	180	9 000	04011221	04011321

POWER DESIGN

non-binding calculation for a double-walled tank

POWER (APPROX. WATT)	TANK VOLUME (M³)
3 000	15
4 500	25
6 000	30
7 500	40
9 000	60
10 500	100

ALTERNATIVE DESIGN

- other immersion length over 2.95 m to 10 m

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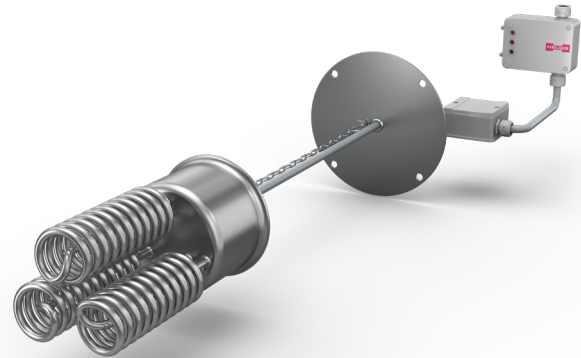
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ATTENTION! Safety Note

The guideline VdTÜV 967 tank systems must be observed. Flammable liquids of hazard class A1, A11, B and mixtures with A111, viscous oils such as hydraulic or lubricating oil are not allowed be heated. Flammable liquids are also not allowed to be heated if the flash point has been reduced to or below 55 °C by additives. (e.g. diesel fuel with gasoline admixture). The operation of the tank heater is only permitted as a **permanently immersed heating device**.

The covering of the oil above the heater must be at least 50 mm (**note the minimum immersion depth**). The suction pipe is to be shortened accordingly. The heater must be **switched off** before a complete emptying of the tank. **Before removing the heater let it cool down** for at least 15 minutes. If the **immersion depth changes**, the weight of the tank heater must be supported by the chain.



INSTALLATION - Design A with steel-flange DN 150

- Provide dome cover with hole diameter 150 mm and 4 stud bolts M 8, bolt circle diameter 200 mm
- The immersion depth of the heater must be set to a ground clearance of at least 50 mm, hang it in and screw the flange

INSTALLATION - Design B with nipple G 1½

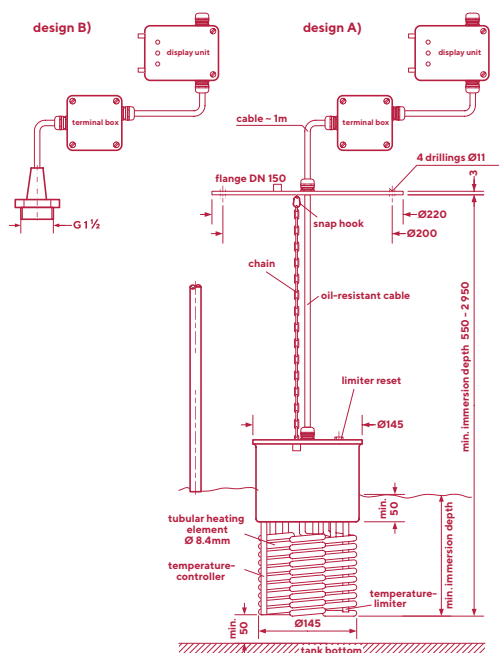
- Unscrew the dome cover, lift it and screw in the G 1½ nipple from above
- Pass the cable from below through the nipple and the clamping device
- Let the tank heater down to the tank, screw the dome cover. The immersion depth of the heater must be set to a ground clearance of at least 50 mm and fix the cable with the clamping device.
- It is important to ensure that the wires are numbered correctly

OPERATING

If the system is switched on and the oil temperature drops to approx. 2 °C, the temperature controller switches on the heater. If the oil temperature rises to about 7 degrees C, the heater switches off. Is the limit temperature at the heating pipes exceeded due to a malfunction, the safety temperature limiter switches off the heater. After eliminating the malfunction and pressing the reset button, the tank heater is activated again.

GENERAL INSTALLATION

- mount the display unit, control lights: red: malfunction /
- green: device ready for operation / yellow: device is heating
- lay the power cable and connection cable. A main switch must be installed



tank heater horizontal

