

## Oil preheater electronically controlled

**For oil burners with a throughput capacity up to 6 kg/h**  
**Precise control of the oil output temperature**  
**Electronic control intergrated in the preheater**

### INTRODUCTION

On the electronically controlled oil preheater type SOVE 930, the oil output temperature is maintained at a constant level, independant of the oil input temperature, viscosity and supply voltage variations.

The fuel oil is preheated immediately before it enters the burner nozzle. This achieves a virtually constant viscosity for atomisation and leads to reliable ignition and good combustion.

### CONSTRUCTIONAL FEATURES

The basic component is a tube containing a sintered body, which by its nature has a very large surface area for transmitting the temperature to the oil. The heating power, per unit of surface area is correspondingly low, which prevents coking.

A heating element of 120 watts is wound round the tube and is protected by a solid brass jacket, secured against rotation. The oil is supplied through a central connection. Apart from the release thermostat, the heating element and the temperature sensor, all electrical and electronic components for the temperature control are located on a printed circuit board. It is mounted in a plastic housing together with the release thermostat, which is thermally connected to the shaft, and is protected against shock damage and the ingress of dirt.

Supply cable and preheater can be seperated by a plug connector. This permits easy installation and removal.



### TECHNICAL DATA

Operating voltage	220 / 240 V (-15... +10%) 50 Hz (40 - 60 Hz)
Release contact switching current	4 A permanent current (cos φ 0.6)
Heating power	max. 120 W
Oil flow throughput	up to approx. 6 kg/h
Permissible pressure	max. 25 bar
Oil volume	2 cm <sup>3</sup>
Oil temperature in the nozzle when released	45° C
Control temperature	max. 65° C
Control amplitude	less than 0.5° C
Switch gap of the release thermostat	14° C
Preheat time at 15° C input temperature	approx. 20 sec
Weight	106 g
Wrench size	
- jacket	SW 16
- oil inlet part	SW 13

## APPLICATIONS ENGINEERING FEATURES

The preheater type SOVE 930 can be connected to any automatic oil burner safety control box.

**A unit with a thermostat loop and/or overriding contact (interceptor circuit) is not necessary.**

The controlled temperature is held constant, independent from oil inlet temperature, flow capacity and mains voltage. 120 watts heating power enables the SOVE 930 to be used universally with burners having an oil throughput of up to 6 kg/h. The heat exchanger, with its large surface area, and the electronic control circuit prevent the oil from coking at very small throughputs and under burner fault conditions. The thermostat contact releases the burner to start. This contact breaks if the temperature drops below 40° C.

In case of an interruption of the oil supply – a so called zero throughput – the temperature for the heating element is limited to 80° C.

The central oil connection, the simple cylindrical shape of the preheater and the plug connector enable this unit to be fitted to any burner assembly. The print-connector is compatible with all available preheater-plugs.

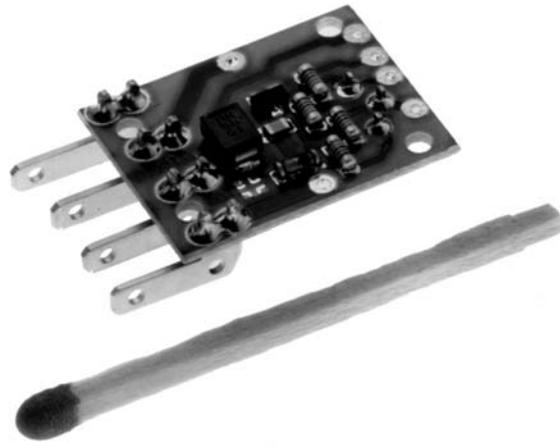
The preheater is also available in an uncontrolled version, called **SOVU 930**.

## DESCRIPTION OF OPERATION

A specially designed electronic circuit controls the temperature of the preheater type SOVE 930. A PTC-element acts as a sensor. The heating element is switched on and off by an electronic switch.

At the start, the oil is heated up to the release temperature with a heating power of 120 watts. The contact of the release thermostat is then closed and the burner is able to start. After this the oil output temperature is controlled at a constant level. The electronic circuit also makes sure that this operating temperature does not drop.

## CONTROL CIRCUIT OF THE SOVE 930



## COMMISSION AND MAINTENANCE

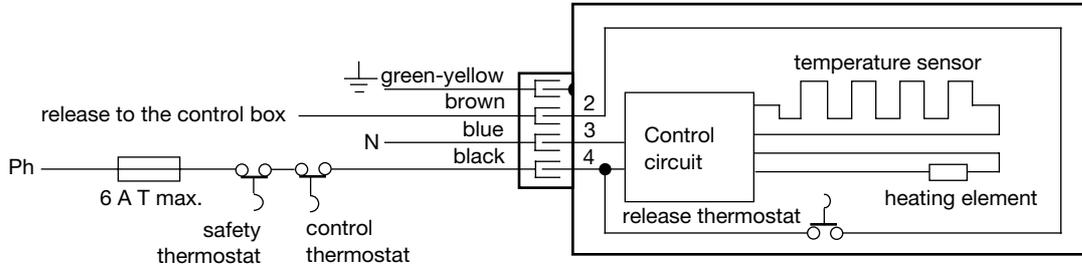
### Important notes

During assembly and wiring, the appropriate installation guidelines have to be fulfilled.

The chosen fuse rating must not, on any account, be higher than the value given in the technical data.

Failure to observe this instruction could, in the case of a short circuit, have serious consequences for the preheater or burner system.

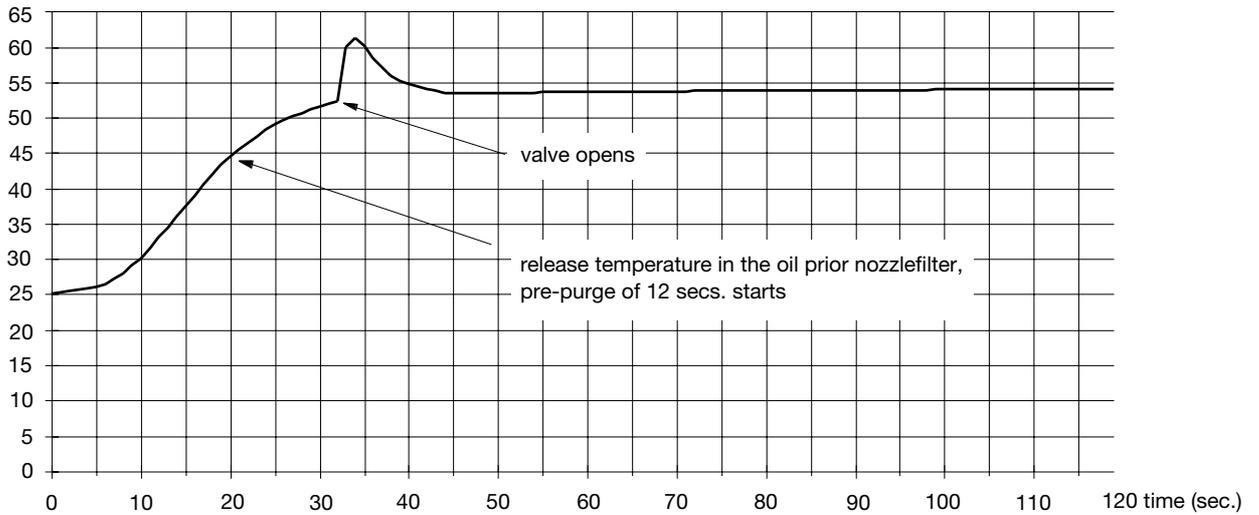
### WIRING DIAGRAM SOVE 930



### STARTPROCESS SOVE 930 AT A THROUGHPUT OF 2.5 KG/H

Place of measurement: in the oil between shaft and nozzle filter – Test fluid: Shell Calibration fluid – Voltage: 230 V

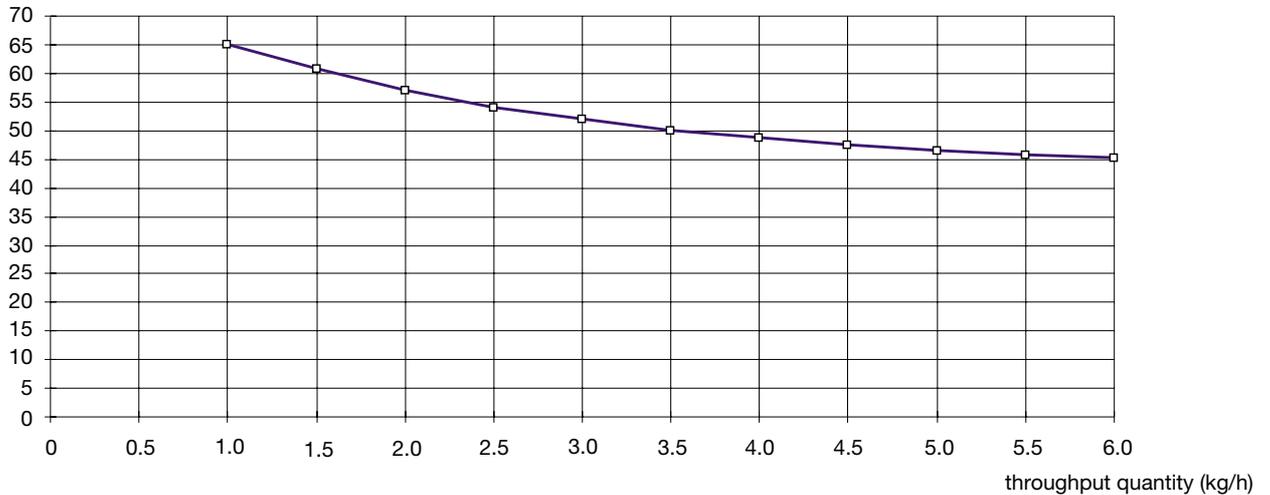
temperature (° C)



### SOVE 930, OIL OUTLET TEMPERATURE AS A FUNCTION OF THROUGHPUT AND POWER

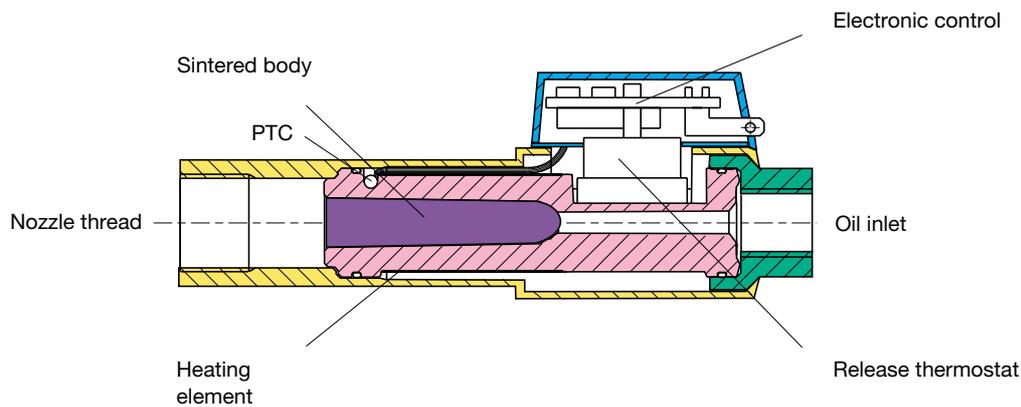
Place of measurement: in the oil between shaft and nozzle filter – Test fluid: Shell Calibration fluid – Voltage: 230 V

temperature (° C)

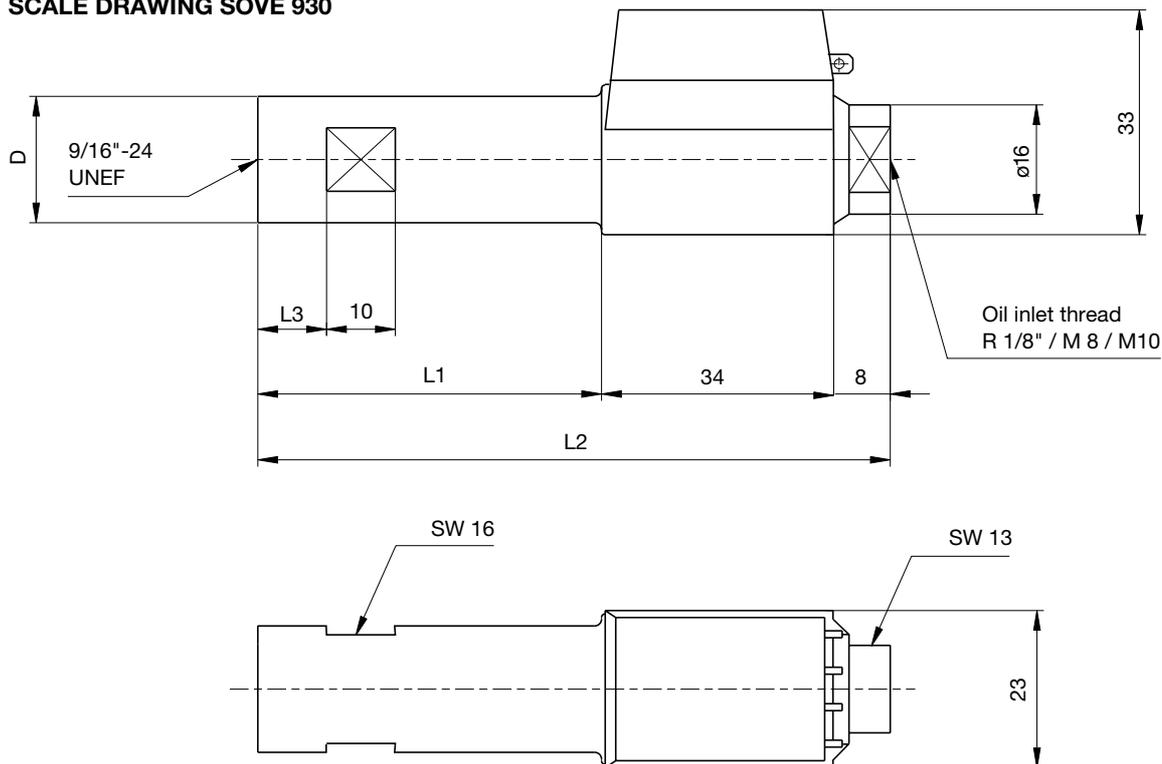


Variation of the voltage between 205 V and 255 V changes the temperature related to the throughput quantity only for max. ± 1° C.

## SECTIONAL DRAWING SOVE 930 (1:1)



## SCALE DRAWING SOVE 930



### Dimensions

L1	L2	L3	D	Versions
50	92	10	18.5	SOVE 930 standard
90	132	20	18.5	SOVE 930 L

The dimensions L1 and D can also be customized according to customers drawings.

## ORDERING INFORMATION

ITEM	DESIGNATION	ITEM NO.
oil preheater	preheater SOVE 930 standard	10100
Supply cable	preheater supply cable 4-wire, 400 mm	7244001

The above ordering information refers to the standard version.  
Special versions are also included in our product range.

Specifications subject to change without notice.

# SOVE 930

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