

## NESS Pump monitoring

Early detection of deviations and leakages

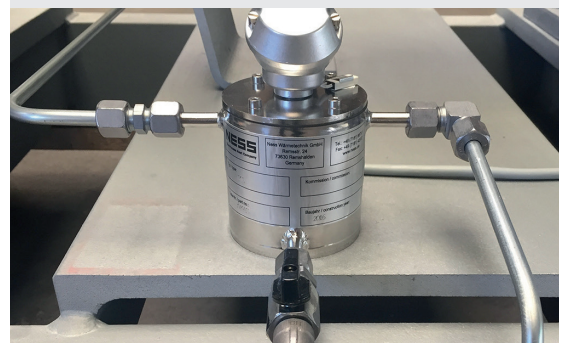
Pumps are the driving force in all thermal oil systems. In order to operate them, functioning pumps are a prerequisite.

When plant outages occur, the resulting costs can quickly exceed the total value of the pumps. In case of damage, there is a considerable risk of fire and pollution.

Therefore, it is important to act preventively and to react quickly to warning signs or damage events. Damage can be minimized or downtime avoided.

### Your advantages at a glance

- Increased safety
- Increased reliability of your pumps
- Higher predictability for your maintenance
- Quick amortization

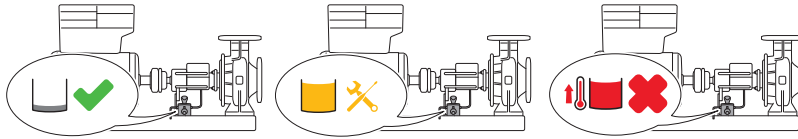


Connected Leakage monitoring (NPCL)

Functionality pump monitoring:

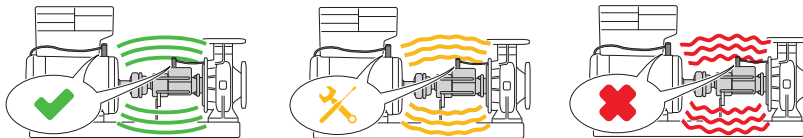
Increased safety in 2 phases

#### **NESS Leakage monitoring (NPCL)**



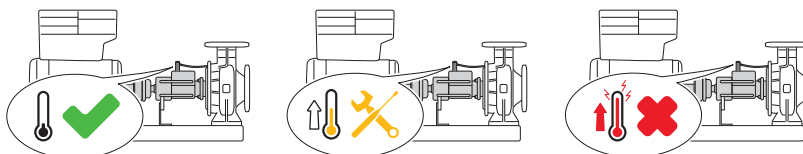
**#1** When a first limit is reached, an alarm is triggered

#### **NESS Vibration monitoring (NPCV)**



**#2** If the critical value is exceeded, the pump is switched off

#### **NESS Bearing temperature monitoring (NPCT)**



## 3 important monitoring systems are essential

#### **Decreased pump tightness due to wear**

The mechanical seals in pumps have a limited lifetime and can fail unexpectedly. If the plant operator discovers the failure of the seal too late or not at all, larger quantities of heat transfer fluid can leak. If thermal oil is used, this means not only a loss of the oil, but also pollution of the system and an increased risk of fire.

#### **Increased machinery vibrations indicate problems**

Many causes of damage to pumps lead to an increase in machine vibration. In some cases, they can be recognized by the human ear. However, the continuous measurement of the machine vibrations is considerably more reliable.

#### **Overload due to excessive bearing temperature**

During operation, the temperature of the pump bearings is in a normal range. In case of a defect, their temperature rises and the risk of overheating crops up. A loss of performance or failure of the pump is the result.

**The NESS pump monitoring systems detect warning signs and damage events on your pumps at an early stage. Damage can be minimized or downtime avoided.**