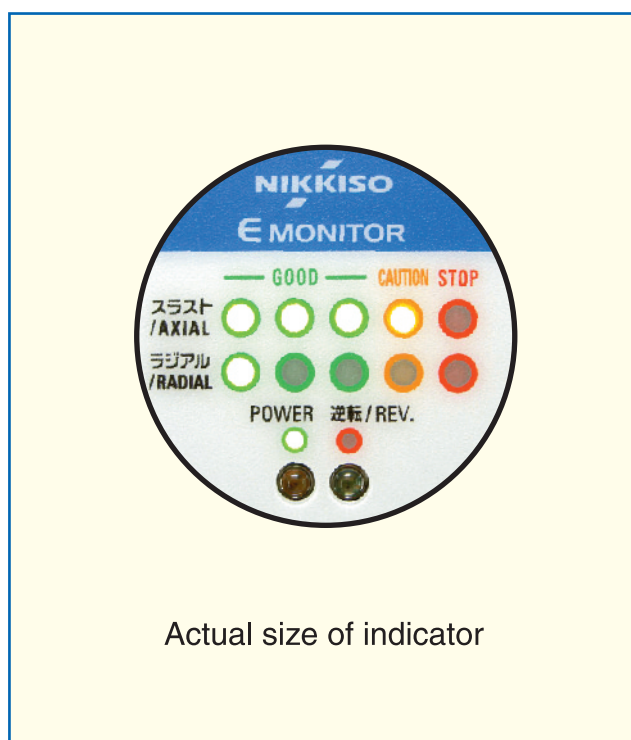


# NIKKISO $\epsilon$ MONITOR



**Monitoring of bearing condition**

## General

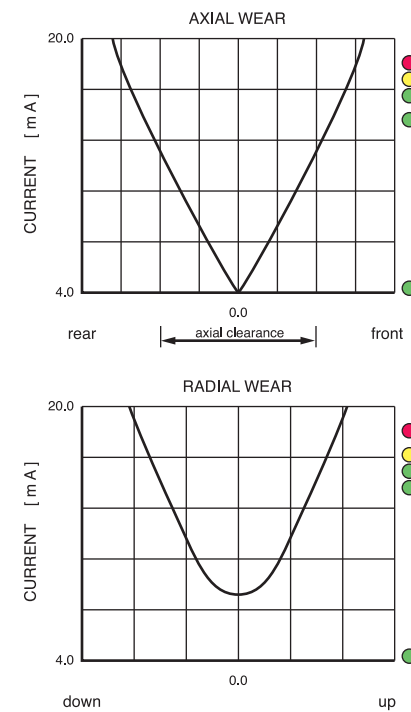
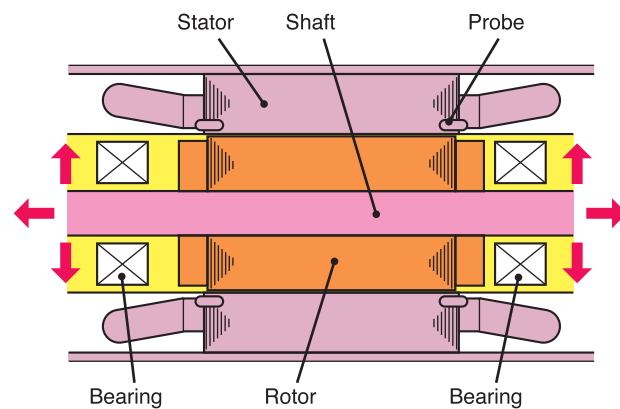
Nikkiso E Monitor was developed to detect the condition of bearings of hermetically sealed pumps during operation. In order to achieve this, the position of the rotor is monitored while the pump is operating. Bearing wear will be indicated. The technical excellence of the E monitor is useful in predictive maintenance necessitated by bearing wear. The E monitor is energized by power from the incoming motor leads and does not require additional wiring.

### Indication:

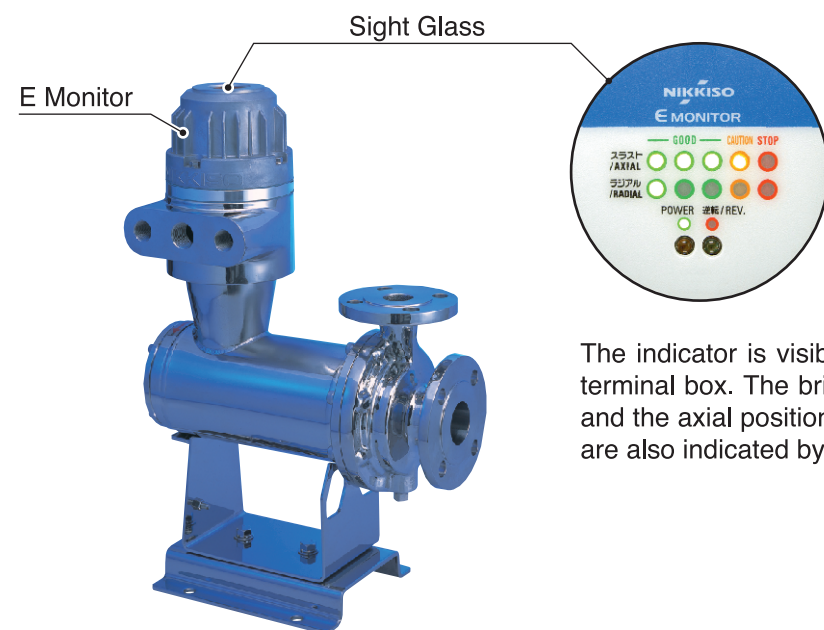
- Wear of front or rear radial bearing
- Uneven wear of front or rear bearing
- Wear of front or rear axial bearing
- Power on (pump is operating)
- Direction of rotation (correct or incorrect)

## Principle of operation

Wear of bearings can effect both, the rear and front bearing, evenly or unevenly. In case of bearing wear the rotor is displaced leaving its normal position. This variation is detected by 8 probes in the stator. The signal is processed and indicated on colored LED's: green (good) - yellow (caution) - red (stop).



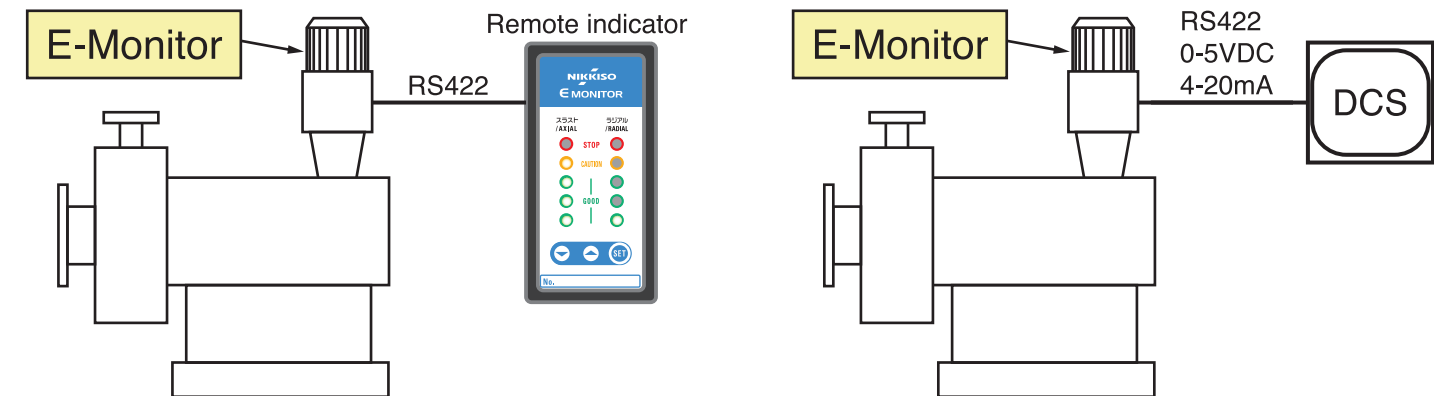
## Indication



The indicator is visible through a sight glass in the cover of the terminal box. The bright LED's indicate the state of the bearings and the axial position of the rotor. Power and direction of rotation are also indicated by LED's.

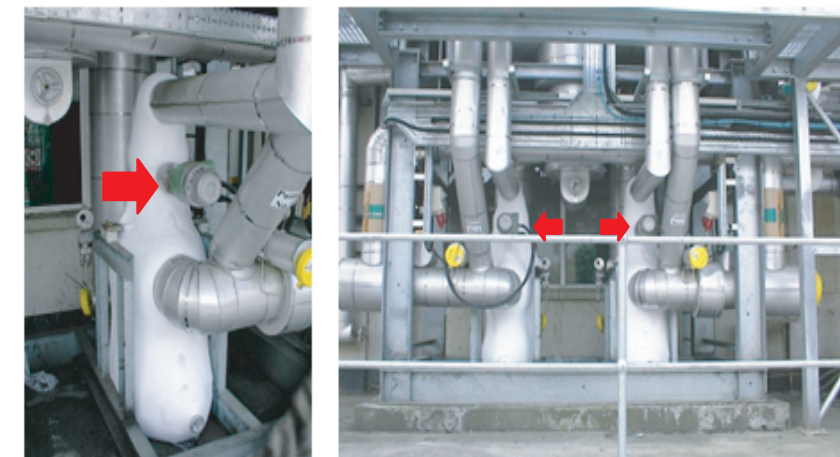
## Remote monitoring

In addition to the local indication a remote indicator including alarm and trip can be supplied. For this purpose a RS422, a 0 to 5 V, or a 4 to 20 mA signal is available.



## Example of using E Monitor

In liquid CO2 application, it is not easy to confirm the running condition from outside since the pump is iced up due to the low temperature. If there is an E Monitor, the bearing wear-out condition is known without touching the pump. A remote indicating E monitor can be used to send the information to a location away from the pump, such as a control room or motor control center.



## Technical Data

### E MONITOR

**Housing**  
Aluminum

**Location**  
On top of the terminal box

**Frequency range**  
50Hz, 60Hz

**Voltage range**  
200V to 690V

**Temperature range**  
-40 to 75°C (-40 to 167F)

**Protection class**  
IP65, Atex 100a, II2G EEx d II C T6

**Output**  
4 to 20mA (24V DC required)  
0 to 5V DC  
RS422

**Power supply**  
From pump, consumption negligible

### Remote indicator

**Input signal**  
Digital (RS422)

**Output signal**  
alarm contact (NO, NC)

**Transmission range**  
1 km ( 0.62 mile)

**Temperature range**  
0 to 75°C (32 to 167F)

**Power supply**  
85 to 132V AC



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