INFORMATION FLYER

ACHEMA 2009

MAP Monitor for Axial Position

ROM ROtation Monitor

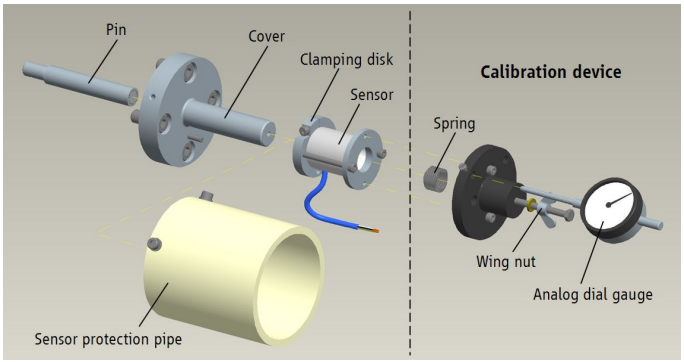
Monitoring systems for shaft position and sense of rotation

Axial thrust balance is basically influenced by the operation of the pump, by conditions in the plant and by different physical characteristics of the fluid. For an early detection of a pump failure the use of monitoring systems to observe rotor position and sense of rotation is recommended. While the pump is operating, these electronic protection devices are monitoring the shaft position and / or its sense of rotation in a hermetically sealed and contact free manner. In combination with fluid level and temperature control, an effective and automatic early failure detection is possible.

MAP – Monitor for Axial Position

The MAP is a contact free measuring device for monitoring the axial shaft position of a HERMETIC pump.
The system is characterized by following features:

- Based on the reliable LVDT principle (Linear Variable Differential Transformer)
- Independent of rotor speed, i.e. the device can be adjusted on a switched-off pump
- Suitable for frequency converter
- No permanent magnet, on which ferritic particles may attract
- The sensor is analyzed by a separate controller. Thereby an operation in a higher temperature range is possible
- Assembly parts, power supply, output signal and sensitivity is compatible to ARM 2000, and thereby easily exchangeable. Easy to install and to calibrate.
- Explosion proof
- Materials of wetted parts:
  Stainless steel 1.4571 or Hastelloy C-4 2.4610
- Operating range -40 °C to +130 °C



Technical data

- Measuring range +/- 3mm
- Supply voltage 24V (-30%…+20%) with inverse polarity protection
- Output signal 4…20mA, typical current consumption 80mA
- Output load max. 500 Ohm
- Signal without sensor < 3mA
- Temperature range for sensor: -40°C…+130°C
- Explosion protection marking of sensor:
  CE 0820 Ex II 2G Ex [ib] IIC T4/5/6
- Temperature range for controller unit: -30°C…+70°C
- Explosion protection marking of controller unit:
  CE 0820 Ex II 2G Ex emb [ib] IIC T4/5/6
- Protection type IP66

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MAP / ROM – Monitoring devices

ROM – ROtation Monitor

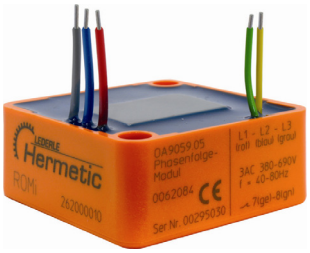
- Phase sequence module according DIN EN 60255
- Monitoring of sense of rotation, detection of incorrect phase sequence
- No separately auxiliary voltage necessary, power supply over pump
- device applicable at nominal voltage 3 AC 380 V to 690 V,
- Frequency range 40 to 80 Hz, suitable for frequency converters
- CE-marking
- Separate control circuit of device by means of two additional terminals (7-8)
- the device can be connected in series with PTC thermistor alternatively
- NC contact opens at wrong phase sequence and interrupts control circuit.
- NC contact reaction time approx. 100 ms, in practice the device reacts at 215 V / 27Hz
- Two versions of the device:
  - Chemical model ROMi (integrated)
  - Refrigeration model ROMe (external)

ROMi

- Fully integrated into flame proof enclosure of explosion protected motor containment.
- No possibility of wrong connecting.
- ROMi as standard with all orders for canned motor pumps in explosion-proof design starting from 2009/06/01, included in pump price.

ROMe

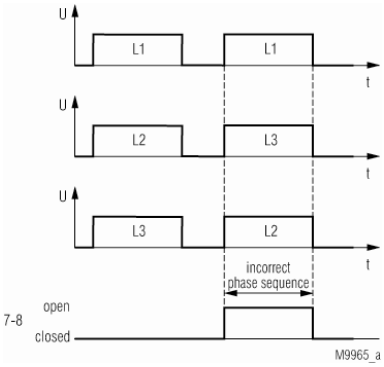
- Accessory part as DIN rail model
- Non explosion proof version
- Protection type: Enclosure IP 40, Terminals IP 20
- Also suitable for explosion proofed pumps by installation into control room or into a flame proofed enclosure.
- ROMe as standard with all orders for canned motor pumps in non-explosion-proof design starting from 2009/06/01, included in pump price.



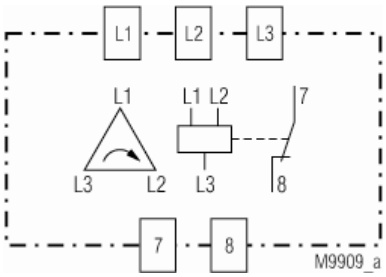
ROMi

ROMe

Function diagram



Circuit diagram



All data on this information flyer correspond to the technical conditions at the time of the expenditure. Technical improvements and changes we reserve ourselves at any time.

LEDERLE Hermetic

Stand 8.5.2009