

## Pneumatic Screw-in Temperature Controllers



**Operating Instruction**  
Edition October 2002

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## 1 Safety instructions.

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*PROFLEX products may only be mounted, started up or serviced by qualified and trained personnel, observing the accepted industry codes and practices.*

*PROFLEX products fulfil the European Pressure Equipment Directive 97/23/EC.*

*Take necessary precautions to eliminate risk from medium, pressure and moving parts. Make sure that operating pressure and temperatures do not exceed the design values of the valves.*

*Proper shipping and storage are assumed.*

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### **Pneumatic screw-in temperature controllers.**

The control air outlet 1/8" (connection there an arrow turning outwards) is connected to the pneumatic actuator of the control valve.

#### **5.1 Applications and principles. (enclosure 6)**

PROFLEX temperature controller is a screw-in temperature element with a pneumatic proportional controller.

PROFLEX temperature controller is used as temperature transmitter and pneumatic proportional controller in one simple unit. Together with PROFLEX control valves with pneumatic diaphragm actuators, type S or T, a complete temperature control loop can be made.

PROFLEX temperature controller is available as direct acting (T105) or reversed acting (T106). In this way, it is possible to make solutions with PROFLEX temperature controller in connection with heating as with cooling and for normally closed valves (NC) as for normally open valves (NO).

#### **5.2 Mounting and connections.**

The temperature controller is mounted in the pipe system where the temperature must be kept constant (for instance the hot water outlet from a heat exchanger).

The control valve is mounted in the pipe system where the control medium is present (for instance the steam inlet to a heat exchanger).

The air supply must be reduced to 1,5 barg in a filter-regulator before connection to the air supply inlet 1/8" (connection where an arrow turning inwards).

#### **5.3 Adjust control air pressure.**

The control air pressure of the temperature controller is pre-adjusted from factory, but can be adjusted to the specific control as follows :

(Example is for normally closed valve (NC)).

- The filter-regulator is adjusted to 1,5 barg in outlet pressure.
- Disassemble the ring cover of the controller head by the 2 side screws.
- Connect a manometer to the control air outlet (arrow turning outwards).
- Screw the set point of the temperature controller down to lowest temperature. Then the control air pressure will simulate closed valve.
- The inlet reduction screw (the brass screw which the arrow turns inwards against) is adjusted to the control pressure shows 0,1 bars on the manometer.
- The air outlet is connected to the air chamber of the pneumatic diaphragm actuator and the pre-loading of the springs is adjusted according to section 2.5.
- The air outlet is connected to the manometer again and the inlet reduction screw is adjusted to the control pressure shows 0,2 bars on the manometer and assemble the ring cover by the 2 side screws.
- The air outlet is connected to the air chamber of the pneumatic diaphragm actuator again and turn the temperature of the controller to the set point.

#### **5.4 Adjust temperature.**

It is recommended to adjust the temperature of the temperature controller by use of a thermometer as follows :

- Mount the thermometer as close as possible to the temperature controller in the pipe system.
- If the indication of the thermometer and the adjusted set point of the temperature controller are different from each other, assemble the plastic plug on the set screw in front of the controller head and loosen the screw behind.
- Turn the set screw to the temperature indication of the scale which correspond with the temperature indicated on the thermometer.
- Tighten the set screw and mount the plastic plug.

### **6 Service.**

#### **6.1 Service.**

The mentioned products in this operating instruction is produced in Denmark by KLINGER.DK. This causes a high flexibility and high service level.

#### **6.2 Calculation and quotation.**

Calculation of control valves, pneumatic actuators, temperature controllers, positioners and other control equipment can be made by technicians of KLINGER.DK.

Quotation for control valves and accessories in connection with changes, expansion or complete new plants, calculation and quotation is free service by:

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# ENCLOSURE 6

Pneumatic screw-in temperature controller  
(T105/106)

