

FLOW RATE COUNTING SYSTEM FOR THERMAL ENERGY

Type SCET - 02



PERFORMANCE SPECIFICATIONS

The system metering and display :
 thermal energy through the installation;
 quantity of water through installation ;
 system operating time;
 damage service time

Display:
 temperature on turn line;
 temperature on return line;
 throttle diaphragm pressure drop;
 instantaneous flow of hot water;
 hot water density ;
 hot water viscosity;
 hot water enthalpy on turn line;
 hot water enthalpy on return line ;
 thermal power;
 Reynolds number;

Protection of the configured and computed data when main supply breakdown ;
 Display information about system state;
 Storage time of configured and metering data
 without power supply (self-contained) : 8 years

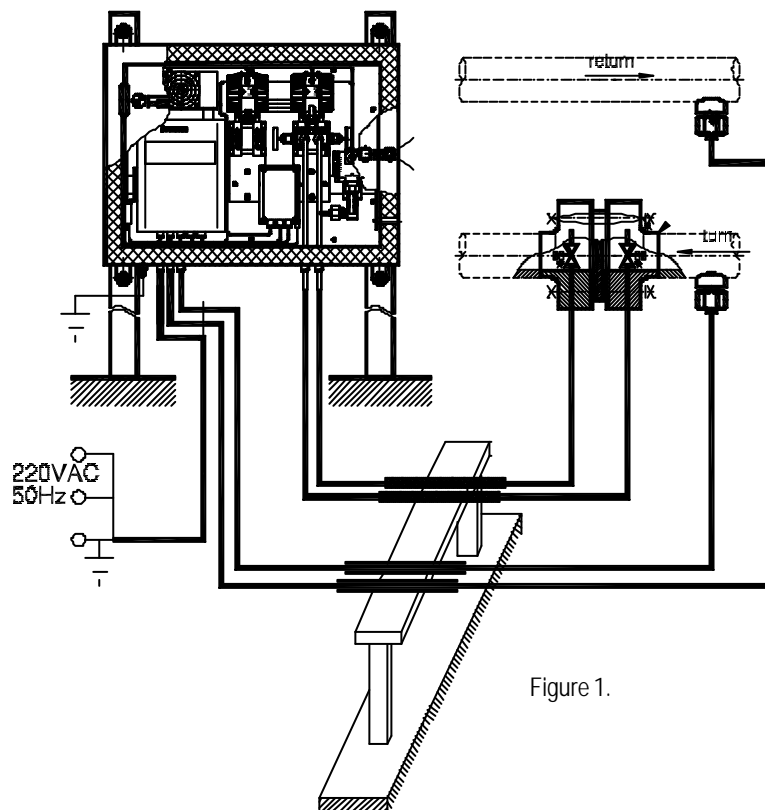
Metered quantities resolution:
 - thermal energy : 0,001 MWh
 - water quantity : 0,001 t
 - operating time : 1 s

Measured and computing quantities resolution :
 - temperature : 0,01°C
 - pressure : 0,01 kPa
 - flow : 0,001 kg/s
 - density: 0,001 kg/m³
 - viscosity: 0,01x10⁻⁶ Pa x s
 - enthalpy : 0,001 kJ/kg
 - thermal power : 0,001 kW
 - Reynolds no. : 1

Precision class (acc OIML R75) : 5
 Measured error of thermal energy (acc OIML R75
 - issued by Romanian Metrology):
 $\Delta T < 10^{\circ}\text{C} : \pm 8\%$
 $10^{\circ}\text{C} < \Delta T < 20^{\circ}\text{C} : \pm 7\%$
 $\Delta T > 20^{\circ}\text{C} : \pm 5\%$

TYPICAL VERSIONS

Depending on process pipes and system location a variety of configurations are available; only the casing is standard (except special working conditions) . Typical configuration see in fig. 1.



FUNCTIONAL SPECIFICATIONS

Ambient specifications:

- climatic area : N, acc EN 60721;
- working class : acc EN 60654-1, location class D1 or B3;
- temperature limits
 - for location class D1 : -33...+40°C;
 - for location class B3 : +5...+40°C;
- maintenance and storage conditions : acc EN 60654-1, location class C2;
- handling and transport conditions : acc EN 60654-1, location class D1;
- Average useful life : 8 years
- Throttle diaphragm type : corner pressure tapplings
flange straight tapplings
D and D/2 pressure tapplings

Water temperature range on turn line: 30 to 150 °C
 Water temperature range on return line : 25 to 145 °C
 Temperature difference between turn and return line : 5 to 125 °C

Throttle diaphragm specifications
 measuring span : $\Delta p_{\min} = 0,01 \times \Delta p_{\max}$
 $\Delta p_{\max} = 50\,000\text{ Pa}$
 max. 50 000 Pa
 pressure drop : 300 000 to 1 600 000Pa
 Nominal pressure of water : 0,07 to 4000 Kg/s
 Flow range:
 Max. metered values :
 - thermal energy : 9 999 999, 999 MWh
 - water quantity : 9 999 999, 999 t
 - operating time : 99 999h 59min 59s
 Power supply: 220V AC(-15...+10%)
 50Hz(-2...+2Hz)
 max 15VA

Power consumption:
 Protection grade , acc EN 60529:
 - casing: IP 54
 - thermocouples: IP 65
 - pressure transmitters : IP 65

The computing of flow rate is realized by the microprocesor based calculator taking into account the analog inputs from thermocouples, pressure transmitters and other data about system. The display of calculator is LCD type, 32 digits two rows disposed.

PHYSICAL CHARACTERISTICS

The shape and dimensions are delineated depending on the location conditions of the system. The dimensions also depend on the technical data of the process.

OVERALL AND MOUNTING DIMENSIONS

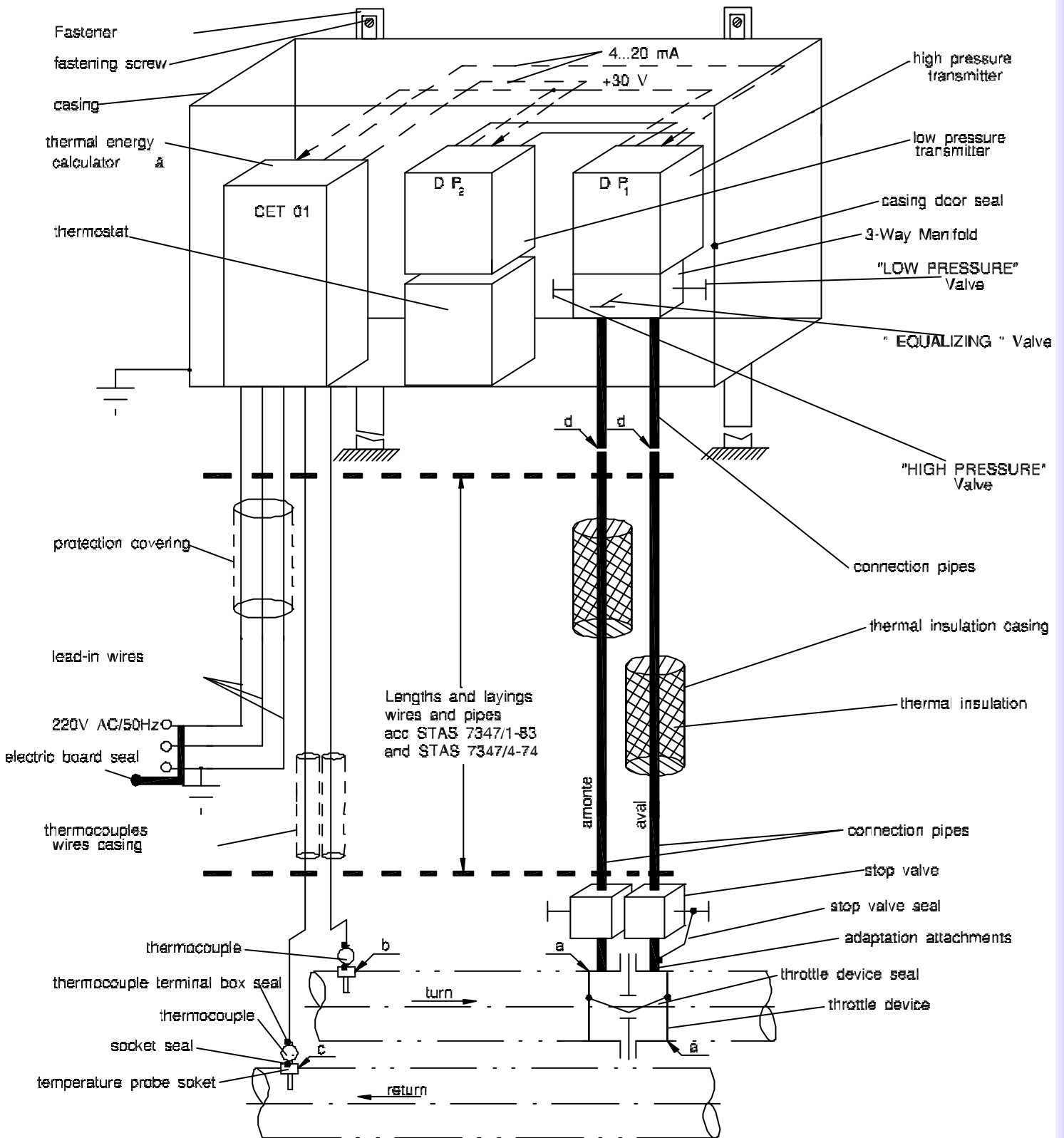


Fig. 2

CODING (HOW TO ORDER)

| Model SCET - 02 | X | XXXX | Coding level denomination |
|--------------------|---|-------------|---|
| Coding level | a | b | |
| | | | a) Working class |
| | 1 | | Acc EN 60654-1, class D1 |
| | 2 | | Acc EN 60654-1, class B3 |
| | | 0000...9999 | b) serial no. of technical data form which includes datas about process and system; these form is an enclosure of the order and is signed by client and the manufacturer. |

Example of ordering:

