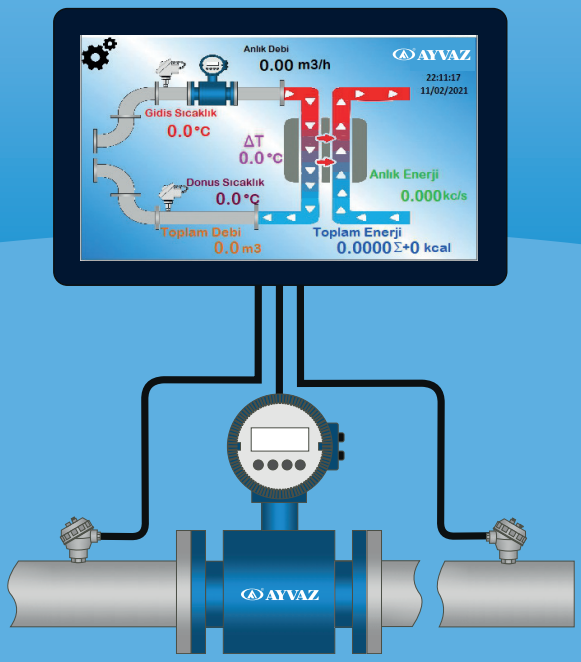


CALORIMETER

FLOWMETERS

GENERAL FEATURES

Calorimeters are devices used to measure the energy consumed in heating and cooling systems. It calculates the difference between two temperature measuring sensors by measuring the flow and return line temperatures.

At the same time, it measures the amount of water (m^3/h) passing through the installation with an electromagnetic flowmeter.

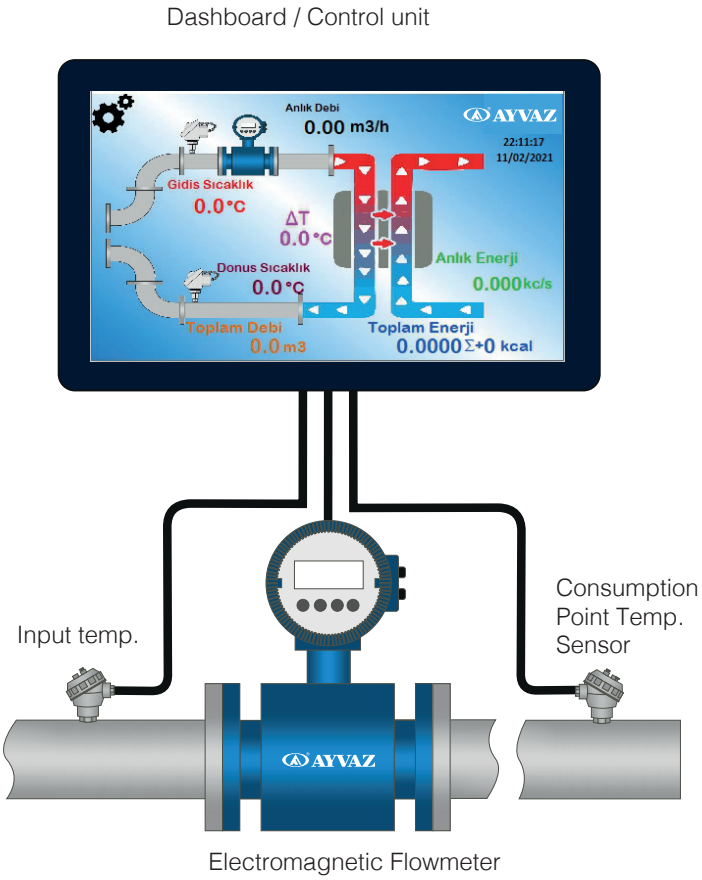
In order to provide high sensitivity and accuracy in calorie measurement, electromagnetic flowmeter and temperature measurement with PT100 temperature sensor are used.

The main unit calculates calories by calculating the energy difference between the temperature sensors according to the flow rate it receives and the temperature difference between the 2 temperature sensors. The system outputs this information in the desired communication protocol via Rs232, Rs485 and Ethernet outputs. Electromagnetic flowmeter calorimeter displays all measured values on the screen of flow temperature, return temperature and flow rate and sends it to the communication unit.

It allows retrospective reporting by storing these values in its memory.

CONTROL UNIT
IP67 Protection Class
Dimensions 200mm. X 309mm. X 167mm.
4.3" TFT LCD Touch Screen
Usb Connection
Ethernet Communication
1xRS232 Communication port / Optional: RS485
32Bit RISC Cortex-A8 600MHz Processor
2x Universal Output
2x Universal Input
Sampling frequency: 100 ms
Mathematical Calculation feature
Free Tuning Software
Input or Output Adjustable via Software

FLOWMETERS CALORIMETER



Calories can be calculated in the following units.

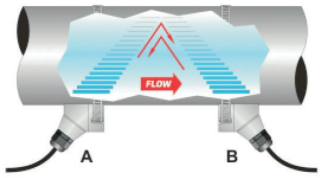
Giga Joule (GJ) Kwh Kilocalories (KC) BTU

FLOWMETER TECHNICAL SPECIFICATIONS	
Measuring Range	0.3 m/sn ... 15 mlsn
Measuring Range	Conductive Liquids
Fluids	ST37 Steel + Anti Corrosive Paint
Body Material	SS316l Opt: SS304, Hastelloy C, Hastelloy B, Titanium, Tantalium, Platin
Inner Covering	Teflon (PTFE) or Rubber
Precision	%0.5 or %0.25
Temperature	-10°C .... 60°C Rubber /-20°C ... + 150°C Teflon
Pressure	4MPa, 1.6MPa, 1.0 MPa
Power Supply	85 -265 VAC 50 Hz or 24VDC, (Opt. excluded battery)
Grounding	Included Grounding probe
Output	Pulse / Frequency / 4-20Ma / RS485 Modbus 12 X Transistor Alarm (Programmable)/ Opt. HART
Indicator	Instant or Total Flow Display 3xl6 Backlit LCD
Alarms	Empty Pipe, Sensor Error, Limit Exceeded, Cut Off
Raporting	Daily, Weekly, Monthly and Annual total flow (negative/positive/net)
Sampling Speed	0.2 sec - 100 sec
Protection Class	IP67/ opt. IP68

FLOWMETERS CALORIMETER

Flowmeter / Calorimeter works by transmitting the high frequency sound at a certain angle in the pipe and detecting the reflected signal with the receiver sensor. When there is no flow, there is a difference between the time it takes for this signal to be generated and returned, and the time spent with the translation of the signals depending on the flow rate in the pipe.

The system calculates the velocity of the fluid by calculating this difference. For this reason, this working principle is called transit time.



In this system, two signal generator sensors and two signal detecting sensors are connected to the main unit are available. According to the pipe information entered in the main unit, the installation distance is determined by the main unit and notified to the user, and the sensor is mounted according to this information.

The information entered in the main unit is pipe type, fluid type, pipe diameter and wall thickness. According to this information, the required distance between 2 sensors is calculated by the main unit. After installation, the correct signal strength can be monitored by the main unit, and the main unit helps to fine-tune the signal quality to be the most accurate.

The system calculates the flow rate with the help of these sensors and calculates the calories by using the temperature difference between the tempera-ture sensors. Temperature sensors are placed at 2 points where the energy difference is desired to be calculated.

In general, in cooling or heating systems, one of the temperature sensors is placed at the beginning of the input unit and the other sensor is placed at the end of the collection or output unit, and is used to calculate the entire energy consumed in the system.

Apart from this, the energy consumption of a single machine, the energy consumption of the heating system, etc. This system is also used for the purpo-se of calculating the calories of these regions only by placing temperature sensors at the entrance and exit of the points to be calculated within the applications.

In calorie measurement, the flow measurement method working on the ultrasonic principle and temperature measurement with the PT100 tempe-rature sensor are used. The flow rate of the main unit and

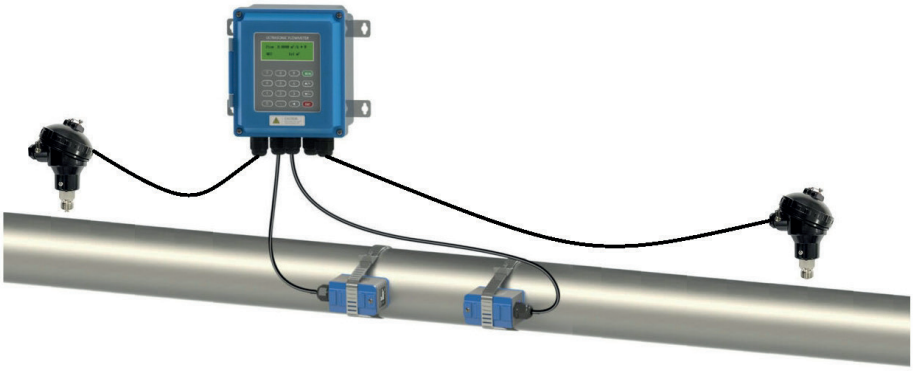
According to the temperature difference between the 2 temperature sensors, it calculates the energy difference between the temperature sensors and calculates calories. Ultrasonic calorie measurement system can calculate calories in the following units.

Giga Joule (GJ) Kwh Kilocalories (KC) BTU

The basic parts of the system consist of flow measurement sensors that allow measurement from outside the pipe, produce high-frequency sound and detect the return of this signal, tempe-rature sensors that detect the inlet and outlet temperatures with high sensitivity and transmit them to the main unit, and the main unit that performs all calculations and operations according to the information it receives.

The main unit measures the inlet and outlet tempe-rature. It calculates calories by calculating the energy difference between these 2 points with the flow measurement made using this temperature difference.

The system transfers this information to Mod-bus-Profibus converter via RS485Modbus output and calorie information is transferred as Profibus.



AYVAZ

HEAD OFFICE - MAIN FACTORY
Atatürk Sanayi Bölgesi Hadımköy Mahallesi
Mustafa İnan Caddesi No: 44 Arnavutköy - İstanbul
Tel: +90 212 771 01 45 (pbx) | Fax: +90 212 771 47 27
info@ayvaz.com | www.ayvaz.com

Cona
Caserta / Italy
Tel : +39 0823 187 3988
rmolaro@ayvaz.com

Ayvaz Ukraine
Kiev / Ukraine
Tel : +380 44 390 57 57
info@ayvaz.com.ua

Tricorr
Warsaw / Poland
Tel : +48 530 030 810
tricorr@tricorr.eu

Ayvaz Germany
Viernheim / Germany
Tel : +49 62046014399
germany@ayvaz.com

Ayvaz Serbia
Belgrade / Serbia
Tel : +381 61 658 70 52
yakbiyik@ayvaz.com

Ayvaz Azerbaijan
Baku / Azerbaijan
Tel : +99(455)579-84-32
ahayatov@ayvaz.com

Ayvaz Kazakhstan LLP
Almaty / Kazakhstan
Tel : +7 (727) 327 97 57
www.ayvaz.kz

Ayvaz N
Isperih / Bulgaria
Tel : +359 8431 27 32
office@ayvaz-n.eu

Ayvaz Vietnam
HCMC / Vietnam
Tel : +84 89 8508345
ggursoy@ayvaz.com

Ayvaz China
Ningbo / China
Tel : +86 152 5830 7361
msahin@ayvaz.com

Ayvaz Egypt
Cairo / Egypt
Tel : +20 122 819 78 29
andrew.eid@ayvaz.com

Ayvaz Gulf
Dubai / U.A.E.
Tel : +971 563550822
+971 501306871
mideast@ayvaz.com

Ayvaz Americas
Rhode Island
Tel : +1 401 737 8380
americas@ayvaz.com