Installation

PICOCAL - Heat Meter

English

Kamstrup

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Installation Manual for PICOCAL heat meter

Important!

Please read this manual before installing PICOCAL. Parts which have been damaged because of incorrect installation are not covered by Kamstrup's guarantee.

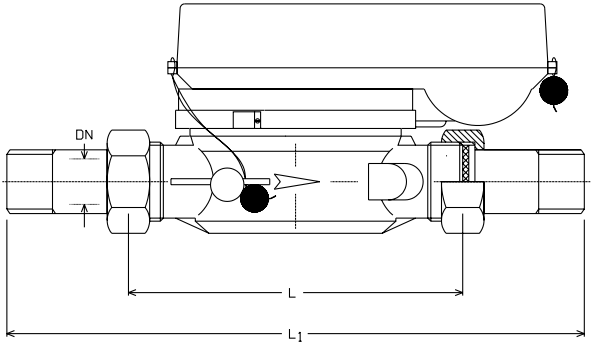
Usually, PICOCAL has been supplied with flow meter and temperature sensor prior to delivery. This facilitates the installation procedures.

The temperature sensor cables must not be shortened. If the sensors need to be changed or replaced a re-verification is necessary.

Installing PICOCAL with flow meter

In older heating installations, and other places where there may be impurities in the pipe system, a fitting tube should be installed were PICOCAL is to be fitted. Flush the system through thoroughly before fitting the heat meter.

Fit PICOCAL so that the arrow on the side of the meter corresponds to the direction of flow. Check to see whether the meter is designed for installation in the flow or return pipe. This information will be stated on the label on the side of the meter. Optimal accuracy, and the lowest starting flow, is attained by installing the meter horizontally. It is, possible to install the meter vertically - however, this reduces the meter's accuracy classification. Once the meter has been fitted, the water flow can start. The valve/tap on the meter's inlet side should be opened first.



Qs (Qn)	L (mm)	L1 (mm)
0.6 m^3/h	110	190
1.5 m^3/h	110	190
2.5 m^3/h	130	228

Fitting PICOCAL to the flow meter

PICOCAL can also be supplied independent of a flow meter. Using various adapter rings, it is possible to fit flow meters from Hydrometer (1), Metron (2), Wehrle (4) and Unico2 (5) to the heat meter.

Ensure that the correct adapter ring is fitted. If an Hydrometer flow meter is to be fitted, PICOCAL can be pressed into place. When using meters from other manufacturers, the locking ring must be used.

Note!

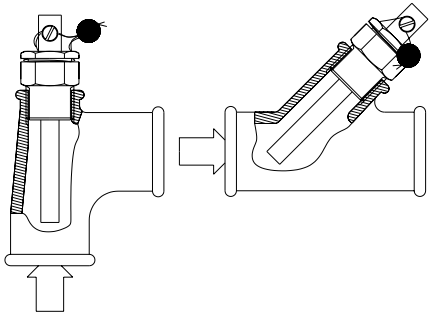
The top of the flow meter must be completely clean and free from any debris before fitting PICOCAL.

Fitting the sensors

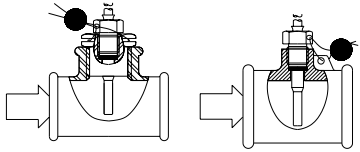
PICOCAL's high degree of accuracy can only be maintained if original Kamstrup Pt500 sensor pairs are used. The temperature sensors should be fitted in flow T's or in T's with branches set at 45°. The tip of the sensor must point against the direction of flow. Sensors marked with red plastic labels should be placed in the flow pipe and sensors with blue labels in the return pipe.

Pocket sensors must be pushed completely down into the pockets. The small plastic tube on the sensor cable should be facing the cut-out at the top of the pocket. Secure the cable, by using the screws (M4 brass) included in the delivery.

Only tighten the screw manually. The pockets can then be sealed using seal and sealing thread.



Direct sensors can be fitted in either ½" or ¾" brass glands, or in angle T's specially designed for this type of sensor. Due to the low density of the short direct sensors, angle fitting is acceptable. Check that the gasket on the sensor is in order, then tighten (6 Nm) the brass union by using a 12 or 13 mm spanner, depending on the sensor type. The sensors can then be sealed using seal and sealing thread.

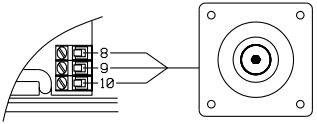


Connecting data or pulse output

Screw terminals 8 - 9 and 10 are used either for data communication or for pulse output, depending on the "W-program coding" of the actual PICOCAL.

W=0&2	gives a standard data output
W=1&3	gives an addressable data output
W=4&5	gives a pulse output for energy

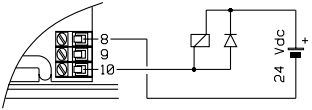
The data output is used for data acquisition, for example via Kamstrup's hand-held terminal MULTITERM and a data plug.



8	GND	Green
9	Request	White
10	Data	Brown

By means of an opto-coupler, the pulse output gives a pulse of 50 msec. per energy count (e.g. 1 kWh) in the display and is used amongst other things as an output signal for prepayment devices or remote displays for energy.

PICOCAL can also be delivered with a 100 msec. pulse.



8	GND
9	
10	PULSE OUT

Sealing

Once PICOCAL has been correctly installed, the meter should be sealed by the utility. Two seals, complete with sealing thread, must be used - as illustrated under *Installing PICOCAL with flow meter*.

Operational check

PICOCAL's operation should be checked after the meter has been installed. Activate the key on the front panel of the meter and hold it down. PICOCAL will then scan through the various displays at 1 second intervals. If possible, check that the heat meter counts energy in the display, or that the accummulation of water volume is registered. Furthermore, ensure that the temperature indications are correct.

Note that PICOCAL may be programmed to display only some of the parameters.

Maintenance

Battery lifetime

PICOCAL is supplied with a long-life lithium battery which, under normal operating conditions, can function perfectly for more than 15 years. It is not necessary to change the battery.

Filter change

The flow part of PICOCAL is normally equipped with a dirt collector (filter) which, depending on the quality of the water, must be changed periodically. If "E" is displayed, followed by information code 2 the filter should be checked or replaced if necessary. The filter should also be checked if consumers complain about insufficient heat supply.

Changing of the flow weter

The mechanical lifetime of the flow meter also depends on the water quality. Under normal water conditions, the flow meter will function satisfactorily within the accuracy range stipulated, for a period of not less than 5 years. The hour counter in PICOCAL is a good indication of how long the flow meter has been in operation.