Circulating pump with flowmeter

06754-01

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Fig. 1: Circulating pump with flowmeter 06754-01

Operating instructions

CE The unit complies with the applicable EC-Guidelines

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1 PURPOSE AND CHARACTERISTICS

The circulating pump wit flowmeter is used to generate a water flow with a measurable volumetric flow rate which varies within a range of 0…200 cm^3/min. Exact adjustment is carried out by means of a needle valve. The device is used e. g. for the measurement of the efficiency of the solar collector (order no. 06753-00).
The system, consisting of circulating pump followed by a flowmeter is mounted on a rack. The flowmeter is on the front, the pump and the water connection fitting are at the back. The lower connection fitting is the system input and upper fitting is the output. The pump presses water from below through the flowmeter. A floating sphere in the measurement pipe opposes the water flow and is thus lifted proportionally to the flow velocity. The measurement tube is fitted with a scale in order to allow reading the volumetric flow rate.

2 NOTES ON OPERATION

This high-quality instrument fulfils all of the technical requirements that are compiled in current EC guidelines. The characteristics of this product qualify it for the CE mark.
This instrument is only to be put into operation under specialist supervision in a controlled electromagnetic environment in research, educational and training facilities (schools, universities, institutes and laboratories).

3 HANDLING

The pump is of the cog wheel type, it can also pump water which contains air bubbles or small dirt particles. To fill the system with water, a flexible tube is fitted to both the in- and output, the pump either sucks water from a water tank, or the running pump is connected to a water tap and slowly rinsed through with water.

Adjusting the volumetric flow rate:

- Open the needle valve completely,
- connect a direct voltage of 2 V to 6 V− to the pump(connection cable length: max. 3 m),
- select voltage in such a way that the floating sphere in the measurement tube raises above the measuring range and is pressed against the upper spring,
- close the needle valve until the desired volumetric flow rate is indicated.

Note: The pump is operated with a direct voltage of 6 V at the utmost. If operating voltage is higher, the pumping efficiency is too large, so that the flexible tube feeding water to the flowmeter might jump off, especially if the needle valve is only opened a little.

Attention!

Please remove residual water from flowmeter and circulating pump after usage and unplug both rubber tubes from the inlet and outlet of the circulating pump to prevent calcification.

Cleaning in case of malfunction

If the pump should not work after a longer period of disuse, the cog wheels inside of the pump have to be cleaned.
Remove the pump from the rack by loosening of the two screws (Fig. 2).

Fig. 2: Mounting of the pump on the rack.

Remove the plate from the bottom side of the pump by loosening of the four screws (Fig. 3).

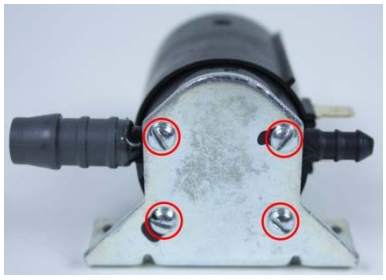

Fig. 3: Mounting of the ground plate on the pump.

Open the pump by taking of the seal and the cap to clean the cog wheels (Fig. 4).

Fig. 4: Cleaning of the cog wheels inside of the pump.

4 TECHNICAL DATA

Connecting voltage	2 V− to max. 6 V−
Required current	1.5 A
Flow rate	0…200 cm^3/min
Measuring substance	water
Connection fitting	for flexible tubes of d_i = 10 mm
Operating temperature	max. 90 °C
Operating pressure	max. 3.8 bar

5 RECOMMENDED ACCESSORIES

• Power supply, universal	13500-93
• Connecting cable, 100 cm, red	07363-01
• Connecting cable, 100 cm, blue	07363-04
• Flexible rubber tube, di =10 mm	39290-00

6 EXPERIMENTS

Solar ray collector	P2360100
Solar ray collector with measureLAB	P2360101

7 WARRANTY

We give a warranty of 24 months for units supplied by us inside the EU, and a warranty of 12 months outside the EU. The following is excluded from the warranty: Damage that is due to non-compliance with the operating instructions, improper use, or natural wear.

The manufacturer can only be held liable for the function and safety-relevant properties of the unit, if the maintenance, service, and modifications of the unit are performed by the manufacturer or by an institution that is expressly authorised by the manufacturer.

8 WASTE DISPOSAL

The packaging mainly consists of environmentally-friendly materials that should be returned to the local recycling stations.

Do not dispose of this product with normal household waste. If this unit needs to be disposed of, please return it to the address that is stated below for proper disposal.

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