

Flow control module and method for controlling the flow in a hydronic system

Abstract

The present disclosure is directed to a flow control module (39) for controlling one or more pumps in a hydronic system (1), wherein the hydronic system (1) comprises

- a primary side (3) with a first port (21) in fluid connection with an output (23) of at least one source element (7), a second port (27) in fluid connection with an input (29) of the at least one source element (7), and at least one controllable primary side flow actuator (9) for providing a primary side flow (q_1),
- a secondary side (5) with a third port (31) in fluid connection with an input (33) of at least one load element (11), a fourth port (35) in fluid connection with an output (37) of the at least one load element (11), and at least one controllable secondary side flow actuator (13) for providing a secondary side flow (q_2), and
- an intermediary transfer element (17) between the primary side (3) and the secondary side (5), wherein the intermediary transfer element (17) is in fluid connection with the first port (21), the second port (27), the third port (31) and the fourth port (35). The flow control module (39) is configured to adapt the thermal power transfer of the intermediary transfer element (17) by controlling the primary side flow (q_1) by means of the at least one controllable primary side flow actuator (9) and/or the secondary side flow (q_2) by means of the at least one controllable secondary side flow actuator (13) in a continuous or regularly closed-loop manner based on minimising a signed deviation value ($\Delta\Delta v$) being correlated with the thermal power transfer of the intermediary transfer element (17).

[Figure 1]