

CLAIMS

1. Water meter, configured to supply water at a customer site, including:

- a water flow regulating valve configured to assume at least three predetermined positions including a fully open position configured to let a maximum water flow to be supplied at said customer site, a closed position configured to prevent water flow to be supplied at said customer site, and at least one intermediate position configured to let at least one respective intermediate water flow, lower than the maximum water flow, to be supplied at said customer site;
 - an actuator operatively coupled to the water flow regulating valve and configured to automatically set a current position of the water flow regulating valve selected out of said at least three predetermined positions;
 - a pressure sensor configured to detect water pressure upstream of the water flow regulating valve;
 - a processing and communicating unit, operatively connected to the actuator, that is configured to communicate with a remote water provider centre to receive water flow regulating valve setting data, wherein said processing and communicating unit is further operatively connected to said pressure sensor to receive water pressure data sensed by said pressure sensor;
- wherein said processing and communicating unit is configured to control the actuator to cause the water flow regulating valve to assume said current position corresponding to valve position setting data that are correlated to said water flow regulating valve setting data and to said water pressure upstream of said water flow regulating valve detected by said pressure sensor, wherein said water flow regulating valve setting data are in turn correlated to a customer profile.

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2. Water meter according to claim 1, wherein said processing and communicating unit is configured to send said water pressure data sensed by said pressure sensor to the remote water provider centre, wherein said water flow regulating valve setting data are further correlated to said at least part of said water pressure data sensed by said pressure sensor, wherein said valve position setting data correspond to said water flow regulating valve setting data received from said remote water provider centre, thereby said valve position setting data are further correlated to at least part of said water pressure data sensed by said pressure sensor through

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correlation of said water flow regulating valve setting data to said at least part of said water pressure data.

3. Water meter according to claim 1, wherein said processing and communicating unit is
5 configured to determine said valve position setting data on the basis of both said water flow regulating valve setting data received from said remote water provider centre and at least part of said water pressure data sensed by said pressure sensor.

4. Water meter according to claim 3, wherein said water flow regulating valve setting data
10 include or consist of a target maximum water flow rate setpoint, thereby said valve position setting data are correlated to said target maximum water flow rate setpoint and said at least part of said water pressure data.

5. Water meter according to claim 4, wherein said water pressure data include or consist of a
15 current water pressure, and wherein said processing and communicating unit is configured to determine said current position of the water flow regulating valve by means of a look-up table stored in said processing and communicating unit, wherein said look-up table includes a set of positions of the water flow regulating valve each corresponding to a respective valve position setting data consisting of a pair of target maximum water flow rate setpoint and current water
20 pressure.

6. Water meter according to any one of claims 1 to 5, wherein said pressure sensor is configured to detect water pressure upstream of the water flow regulating valve periodically, wherein said processing and communicating unit is optionally configured to estimate a water static pressure
25 upstream of the water flow regulating valve.

7. Water meter according to any one of claims 1 to 6, wherein said processing and communicating unit is configured to issue an alert and to control the actuator to set said current position of the water flow regulating valve at the closed position when said water pressure data
30 correspond to a first alert condition, wherein the water meter optionally further includes a push button configured to acknowledge said alert and to cause said processing and communicating unit to control the actuator to change said current position of said water flow regulating valve

from said closed position.

8. Water meter according to any one of claims 1 to 7, wherein said processing and communicating unit is configured to issue an alert and to control the actuator to set said current position of the water flow regulating valve at the closed position when said water flow regulating valve setting data correspond to a second alert condition, wherein the water meter optionally further includes a push button configured to acknowledge said alert and to cause said processing and communicating unit to control the actuator to change said current position of said water flow regulating valve from said closed position.

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9. Water meter according to any one of claims 1 to 8, wherein said water flow regulating valve setting data include or consist of said current position of the water flow regulating valve.

10. Water meter according to any one of claims 1 to 9, wherein said processing and communicating unit is configured to bidirectionally communicate with the remote water provider centre through a Low-Power Wide-Area (LPWAN) bidirectional communication network, optionally through a Narrowband Internet of Things (NB-IoT) bidirectional communication network, more optionally according to an encrypted communication protocol.

11. System of monitoring water supply at a plurality of customer sites, including a remote water provider centre and a plurality of water meters each located at a respective customer site, wherein each water meter is the water meter according to any one of claims 1 to 10, thereby the processing and communicating unit of each water meter is configured to communicate with the remote water provider centre, wherein the remote water provider centre comprises a processing device configured to determine said water flow regulating valve setting data correlated to the customer profile.

12. Computer-implemented method of dynamically controlling a water supply at a customer site, including the following steps:

- A. having a customer profile;
- B. detecting water pressure upstream of a water flow regulating valve at said customer site to provide water pressure data;

- C. determining water flow regulating valve setting data correlated to a customer profile; and
- D. automatically setting a current position of said water flow regulating valve that correspond to valve position setting data that are correlated to said water flow regulating valve setting data and to said water pressure detected upstream of said water flow regulating valve,
- 5 wherein said current position is selected out of at least three predetermined positions that the water flow regulating valve is configured to assume and that include a fully open position configured to let a maximum water flow to be supplied at said customer site, a closed position configured to prevent water flow to be supplied at said customer site, and at least one intermediate position configured to let at least one respective intermediate
- 10 water flow, lower than the maximum water flow, to be supplied at said customer site.

13. Computer-implemented method according to claim 12, wherein said customer profile comprises one or more data selected from the group comprising billing data, a priority indicator, a location, consumption data, contractual data and plant data.

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14. Set of one or more computer programs comprising instructions which, when executed by a processing and communicating unit of a water meter and a processing device of a remote water provider centre, cause said processing and communicating unit and said processing device to carry out the computer-implemented method of dynamically controlling a water supply at a

20 customer site according to any one of claims 12 to 13.

15. Set of one or more computer-readable storage media having stored thereon the set of one or more computer programs according to claim 14.