CLAIMS

1. A monitoring system (100) comprising
a door closer (1) for closing a door (200),
- with a housing (2) and an output shaft (3) supported therein, designed for fastening a lever arrangement (103),
- with a mechanical energy storage device (4) in the housing (2), which drives the output shaft (3) to rotate in a closing direction of rotation (12), wherein the energy storage device (4) is preferably a spring, wherein the output shaft (3) can be rotated into a first angle range (8), which can be used to open and close the door (200), and into a second angle range (9), wherein the second angle range (9) is not occupied by the output shaft (3) if the door closer is properly installed on the door and in operation, and a limit between the first angle range (8) and the second angle range (9) represents a closed position of the output shaft (3),
- with a sensor unit (20) for detecting an actual angle of rotation (11) dependent on the angle of rotation of the output shaft (3),

and an evaluation unit (101),
- wherein the evaluation unit (101) is designed to generate a message when the actual angle of rotation (11) is in the second angle range (9),
- wherein the door closer (1) comprises a module (40) with at least one battery (42),
- wherein the module comprises a module circuit board (43) and the module (40) is fastened by means of the module circuit board (43).

2. The monitoring system according to claim 1, wherein a closing angle of rotation (10) is stored in the evaluation unit, which represents a closed position of the output shaft (3) and separates the first angle range (8) from the second angle range (9).

3. The monitoring system according to claim 1 or 2, wherein the door closer (1) is designed to rotate the output shaft (3) into the second angle range (9) as soon as a connection between the output shaft (3) and the door (200) or between the output shaft (3) and a wall (202) is detached.

4. The monitoring system according to one of the preceding claims, wherein the output shaft (3) in its closed position is driven by the energy storage device (4) to rotate in the closing direction of rotation (12).

5. The monitoring system according to one of the preceding claims, wherein the sensor unit (20) comprises a sensor (23) and an encoder (21), wherein the encoder (21) is arranged or designed on the output shaft (3), wherein the sensor (23) is designed and arranged to identify the encoder (21), in particular without contact, in particular a position and/or a rotation and/or an acceleration of the encoder (21), in order to detect the actual angle of rotation (11).

6. The monitoring system according to claim 5, wherein the encoder (21) comprises a permanent magnet and wherein the sensor (23) is a magnetic sensor, in particular a Hall sensor.

7. The monitoring system according to claim 5 or 6, wherein the encoder (21) is fastened, preferably screwed, to the end face of the output shaft (3).

8. The monitoring system according to one of claims 5 to 7, wherein the axis of rotation (3.3) of the output shaft (3) intersects the sensor (23) and/or the encoder (21); preferably wherein the sensor (23) is arranged symmetrically to the axis of rotation (3.3) and/or preferably wherein the encoder (21) is arranged symmetrically to the axis of rotation (3.3).

9. The monitoring system according to one of the preceding claims, wherein
- the output shaft (3) is exposed on two opposing sides of the housing (2) to optionally fasten the lever arrangement (103);
- preferably comprising the lever arrangement (103), wherein the lever arrangement (103) is fastened to the output shaft (3) on one side and the encoder (21) is fastened to the output shaft (3) on the other side.

10. The monitoring system according to one of claims 5 to 9, wherein the sensor (23) is arranged on a sensor receiving arrangement (24), in particular comprising a sensor circuit board (24.2), wherein preferably:

- the door closer (1) comprises a mounting plate (50) and the housing (2) of the door closer (1) and the sensor receiving arrangement (24) are fastened on the mounting plate (50),
- and/or the sensor receiving arrangement (24) is fastened to the housing (2) of the door closer (1),
- and/or the door closer (1) comprises a panel (30) which covers the housing (2) of the door closer (1) and the sensor receiving arrangement (24) rests against the inside of the panel (30).

11. The monitoring system according to one of the preceding claims, wherein the evaluation unit (101) is designed to relay the message to a unit (102), in particular building control unit and/or cloud and/or server and/or terminal and/or mobile terminal.

12. The monitoring system according to one of the preceding claims,

- wherein the evaluation unit (101) generating the message is arranged in the region of the door (200), in particular in the door closer (1), as an internal evaluation unit,
- or wherein the evaluation unit (101) generating the message is outsourced as an external evaluation unit, wherein the door closer (3) is designed to send the actual angle of rotation (11) or a value derived therefrom to the external evaluation unit.

13. The monitoring system according to one of the preceding claims, wherein the door closer (1) comprises a data transmission unit (44), in particular designed for wireless data transmission.

14. The monitoring system according to claim 13, wherein:

- the door closer (1) comprises a panel (30) which covers the housing (2) of the door closer (1) and the module (40) is fastened to the inside of the panel (30),
- and/or the door closer (1) comprises a mounting plate (50) and the housing (2) of the door closer (1) and the module (40) are fastened on the mounting plate (50).