Claims

CLAIMS

1. A system for detecting leaks of liquid, comprising a central management unit (8) and a plurality of linear sensors (500) each comprising a first end and a second end and which are connected to one another in series,

the plurality of linear sensors (5001 to 5006), connected together, form a linear query bus having a first and a second end,

the central management unit is designed to:

- send at least one query signal (E1, E2) and receive at least one response signal (R1, R2) from the plurality of linear sensors (5001 to 5006) via the first or the second end of the linear query bus, the at least one response signal comprises a first series of response signals and/or a second series of response signals;

communication between the linear query bus and the central management unit being two-way in such a case,

characterized in that the linear query bus is connected by the first and the second end of the linear query bus (51, 52) to the central management unit,

and in that the central management unit is also arranged to compare the first series of response signals obtained by the first end of the linear query bus with:

- the second series of response signals obtained by the second end of the linear query bus, and/or,
- a list of data characterizing the plurality of linear sensors, said list being stored by said central management unit,

the central management unit is configured to deduce a presence or an absence of a break in one of the linear sensors on the linear query bus from the comparison.

2. The system according to any of the preceding claims, characterized in that the system comprises at least one accessory corresponds to a branch and/or a terminator and/or a neutral cable.

3. The system according to claim 2, characterized in that the central management unit is arranged to compare the first series of response signals obtained comprising data from the first end of said linear query bus and/or accessories with:

- the list of data that characterize the plurality of linear sensors and/or accessories stored by said central management unit, and/or

- the second series of response signals obtained by the second end of the linear query bus, comprising data that characterize said linear sensors and/or accessories.

4. The system according to claim 1, characterized in that a position of said break of one of the linear sensors of the linear query bus is defined by the central management unit, if the central management unit deduces the presence of a break in one of the linear sensors of the linear query bus depending on the first and second series of response signals received.

5. The system according to any one of claims 2 to 4, characterized in that the system further comprises at least two branches (B1N2, B1N3, B1N6), the at least two branches (B1N2, B1N3, B1N6) being connected to the linear query bus, a second linear query bus (B2, B3) being formed by a second plurality of linear sensors connected in series with each other, said second linear query bus having a first and a second end and being connected to the at least two branches (B1N2, B1N3, B1N6) at both its ends,

for each end of the second linear query bus, each branch is arranged to:

- send at least one query signal (E1, E2) via the second linear query bus and receive at least one response signal (R1, R2) from the second plurality of linear sensors via said end,

each branch also being arranged to transmit the at least one response signal received from the second plurality of linear sensors to the central management unit (8) via the linear query bus (B1).

6. The system according to claim 2 and any one of claims 3 to 5, characterized in that the at least one accessory of the system is arranged to transmit at least one response signal further comprising an item of data specific to said accessory.

7. The system according to any of the preceding claims, characterized in that each linear sensor comprises a sensing member (208) sensitive to liquids, said sensing member having a change in resistivity when in contact with said liquid.

8. The system according to any of the preceding claims, characterized in that the plurality of linear sensors of the linear query bus corresponds to a plurality of linear sensors sensitive to conductive liquids and/or sensitive to non-conductive liquids and/or sensitive to hydrocarbons.

9. A method for detecting leaks of liquid in a system, the system comprising a central management unit (8) and a plurality of linear sensors (500) each comprising a first end and a second end and which are connected to one another in series,

the plurality of linear sensors (5001 to 5006), connected together, form a linear query bus having a first and a second end,

the method comprising the following steps:

- sending at least one query signal (E1, E2) and receiving at least one response signal (R1, R2) from the plurality of linear sensors via the first or the second end of the linear query bus, the at least one response signal comprises a first series of response signals and/or a second series of response signals;

the communication of the linear query bus through the plurality of linear sensors is two-way in such a case,

characterized in that the linear query bus is connected by the first and the second end of the linear query bus (51, 52) to the central management unit, and in that the method further comprises the following steps:

- comparison by the central management unit of the first series of response signals obtained by the first end of the linear query bus with:

• the second series of responses obtained from the plurality of linear sensors via the second end of the linear query bus, and/or,

• a list of data characterizing the plurality of linear sensors, said list being stored by said central management unit,

- deduction by the central management unit of a presence or an absence of a break in the linear query bus.

10. The method according to claim 9, characterized in that the system comprises at least one accessory corresponding to a branch and/or a terminator and/or a neutral cable, the method further comprising the following steps:

- comparison by the central management unit of the first series of response signals obtained comprising data from the first end of said linear query bus and/or accessories with:

• the list of data that characterize the plurality of linear sensors and/or accessories stored by said central management unit, and/or

• the second series of response signals obtained by the second end of the linear query bus, comprising data that characterize said linear sensors and/or accessories.

11. The method according to claim 9, characterized in that the method further comprises the following step:

- determination of a position of said break of one of the linear sensors of the linear query bus by the central management unit, if the central management unit deduces the presence of a break in one of the linear sensors of the linear query bus depending on the first and second series of response signals received.

12. The method according to any one of claims 10 to 11, characterized in that the system further comprises at least two branches (B1N2, B1N3, B1N6), the at least two branches (B1N2, B1N3, B1N6) being connected to the linear query bus, a second linear query bus (B2, B3) being formed by a second plurality of linear sensors connected in series with each other, said second linear query bus having a first and a second end and being connected to the at least two branches (B1N2, B1N3, B1N6) at both its ends,

for each end of the second linear query bus and for each branch, the method comprises the following steps:

- sending at least one query signal (E1, E2) via the second linear query bus and receiving at least one response signal (R1, R2) from the second plurality of linear sensors via said end,

- transmitting the at least one response signal received from the second plurality of linear sensors to the central management unit (8) via the linear query bus (B1).

13. A computer program product comprising instructions which, when the program is executed by a computer, cause the latter to implement the steps of the method according to any one of claims 9 to 12.