CLAIMS

1. Arrangement comprising a module (10) for providing an intrinsically safe electrical output power and an electrical load (20) to which the electrical output power is provided, the module (10) is provided with an inlet (11) having a first inlet connection (12) and a second inlet connection (13), to which inlet a current source (14) or a voltage source (15) can be connected, said source providing an intrinsically non-safe input power at the inlet (11), with a single outlet (17) that has one first outlet connection (18) and one second outlet connection (19), respectively, between which the electrical load (20) can be connected,

with the electrical load (20) comprising multiple branches (20a) connected in parallel, wherein each branch (20a) comprises a series connection of multiple components of the load 20, wherein no voltage monitoring arrangement is assigned to the outlet (17),

with an output voltage (UA) at the outlet (17) not monitored and the output voltage (UA) made intrinsically safe by the electric load (20) itself, with at least one current monitoring circuit (27) that detects an outlet current (IA) flowing through at least one of the loads (20) and compares it to a current limit value,

with at least one controllable safety switch (16) that is arranged either in an electrical connection between one of the two inlet connections (12, 13) and the outlet (17) or is arranged parallel to the outlet (17), and

with at least one control circuit (28) that is connected to the at least one current monitoring circuit (27) and is disposed to switch the controllable safety switch (16) into a safety state when the outlet current (IA) exceeds the current limit value, wherein the safety switch (16) in safety mode reduces the electrical output power on the outlet.

2. Arrangement according to claim 1, wherein two current paths, each of the current path having a safety switch (16) connected in series or in parallel to one another, wherein the safety switches (16) are controlled by a separate control circuit (28).

3. Arrangement according to claim 1, wherein each current monitoring circuit (27) is present in a redundant manner.

4. Arrangement according to claim 1, wherein each control circuit (28) is connected to one current monitoring circuit (27), respectively.

5. Arrangement according to any of the claims 2-4, wherein each current path containing one safety switch 16 is connected in parallel to the outlet (17).

6. Arrangement according to claim 5, wherein the safety switches (16) allow the current flow through the current path in a safety condition, such that the outlet connections (18, 19) are connected in a low ohmic manner.

7. Arrangement according to any of the claims 2-6, wherein each safety switch (16) is formed by a thyristor (61).

8. Arrangement according to any of the claims 2-7, wherein in each current path no further components are connected in series to the safety switch (16).

9. Arrangement according to any of the claims 2-8, wherein between the first inlet connection (12) and the first outlet connection (18) and between the first inlet connection (12) and the branching points of the current paths a fuse (52) is connected.

10. Explosion-proof luminaire (22) comprising an arrangement according to any of the preceding claims, wherein the components of the electric load (20) are formed by light-emitting diodes (21) and wherein a luminaire housing (23) and/or the arrangement of the light-emitting diodes (21) in the luminaire housing (23) is configured without additional mechanical explosion protection measures.