There is a need for improved protection against overload or short circuit conditions in subsea power distribution devices and systems. In particular, improved protection while maintaining the possibility of exchanging necessary elements at subsea conditions is desired.

SUMMARY

Disadvantages and/or shortcomings of background art have been overcome by a device and a system as have been set forth in the appended claims.

According to a first aspect, there is provided a subsea overcurrent breaking system, comprising a subsea overcurrent breaking device arranged to be connected to a subsea power consuming device and to an output terminal of a subsea power distribution device, and a watertight housing, the subsea overcurrent breaking device being arranged in an oil-filled environment in the watertight housing, wherein the watertight housing is separate from a first watertight housing which accommodates at least one transformer included in the subsea power distribution device.

According to a second aspect, there is provided a subsea power distribution device, comprising a first watertight housing accommodating at least one transformer, the transformer having a primary winding and at least one secondary winding; input terminals, electrically connected to a primary winding of the at least one transformer and arranged to be connected to a remote power supply; a plurality of output terminals, electrically connected to the at least one secondary winding; wherein switches are arranged to open and close the connections between each secondary winding and a corresponding output terminal , the switches being arranged within the first watertight housing, and wherein each output terminal is further connected to an overcurrent breaking device which is further arranged to be connected to a subsea power consuming device, the overcurrent breaking device being arranged in a second watertight housing separate from the first watertight housing.

According to a third aspect, there is provided a subsea power distribution system, comprising a remote power supply, a subsea power distribution device according to the second aspect, a plurality of subsea power consuming devices, and primary

electrical connections which interconnect the remote power supply and the input terminals of the subsea power distribution device, and secondary electrical connections which interconnect the output terminals of the subsea power distribution device and the subsea power consuming devices.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be discussed in closer detail in the following with reference to the drawings, wherein

Figure 1 is an electric single line diagram illustrating aspects of a subsea power distribution system.

Figure 2 is a simplified mechanical drawing illustrating further aspects of a subsea power distribution device.

Figure 3 is a schematic block diagram illustrating certain further aspects of a subsea power distribution device.

Figure 4 is a schematic block diagram illustrating certain further aspects of a subsea power distribution device.

DETAILED DESCRIPTION

Figure 1 is an electric single line diagram illustrating aspects of a subsea power distribution device.

The subsea power distribution device 100 comprises a first watertight housing 101 which accommodates a transformer 102. Further transformer (s) may also be provided in the first watertight housing 101.

The transformer 102 has a primary winding and at least one secondary winding. In the embodiment shown in figure 1 the transformer 102 has a plurality of secondary