

New DC-Breaker Switch (preliminary)

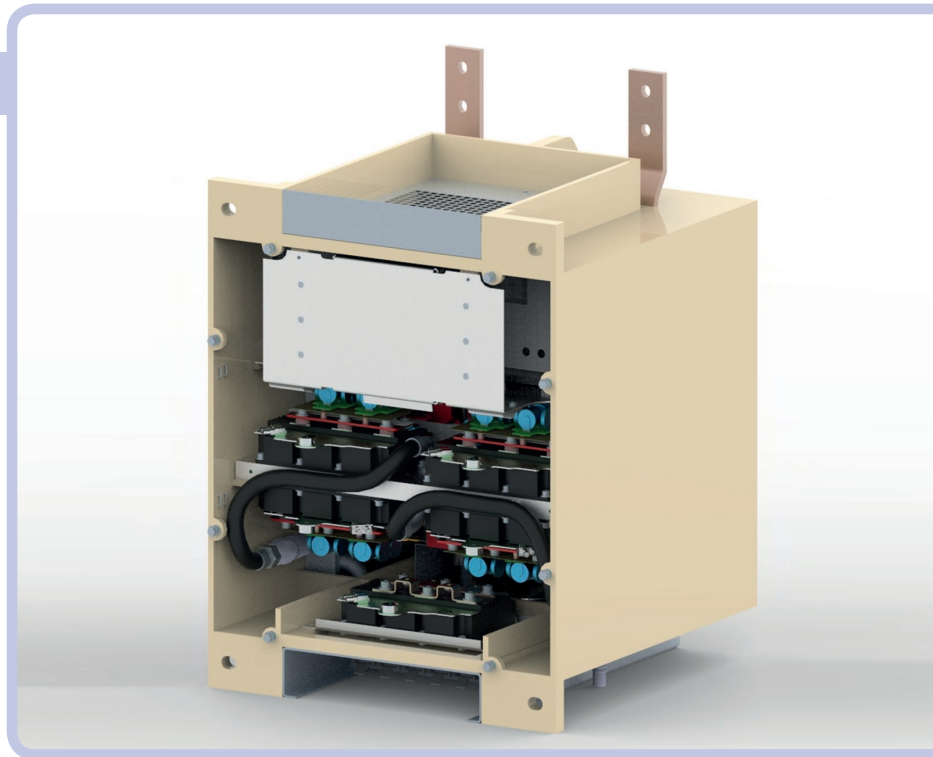
DC-Breaker

Based on many years of experience in manufacturing high-power switches for different applications, Astrol Electronic AG, together with KWx BV, has developed a series of DC breakers for the marine industry. The main goal is to allow maximum flexibility to system integrators of on-board DC-grids and to guarantee reliable protection against short-circuit currents in any part of the grid. Different voltage and current levels are realized by a modular structure and different configurations using 3.3kV, 4.5kV and 6.5kV Insulated Gate Bipolar Transistor (IGBT) and diode modules.

FAST FAULT INTERRUPTION

A solid-state breaker has to interrupt the full current in microseconds. With this ultra-fast response time requirement, local fault protection must be performed autonomously by the switch control system, without the need for external control or fault detection. In addition to the fast over-current protection, the breaker can be programmed to open according to a time-current profile. It allows the overall system to reconfigure the behavior of the DC-Breaker within certain boundaries which are pre-defined by the factory.

The fast opening time of solid-state breakers limits the fault current and reduces the negative impact on the load to a minimum. The current does not reach damaging energy levels and can be interrupted without forming an arc, therefore voltage reversal is not required.



FEATURES

- DC-Voltage Capability up to 1500V for 1kV Version
- Current rating 0 – 5kA (depending on model)
- Switch-off current up to 20kA (depending on model)
- Very short off time in μ s range
- Totally isolated to the main grid
- Can be used in high or low side power switching
- Bidirectional current flow
- Liquid cooling
- Internal self-diagnostic capability
 - Gate Drive Unit
 - Water In- and Outlet Temperature
 - Water In- and Outlet Pressure
- Interface to overall controller
 - Optical (Glass or Plastic)
 - Modbus-TCP
 - Other protocols on request
- DNV-GL type approval (pending)

MODEL

1kV Version with following current rating:

- 500A, 1000A, 2000A, 3000A, 4000A and 5000A

Subject to change in the case of technical modifications or misprints.

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Electronic Engineering • Technical Assemblies

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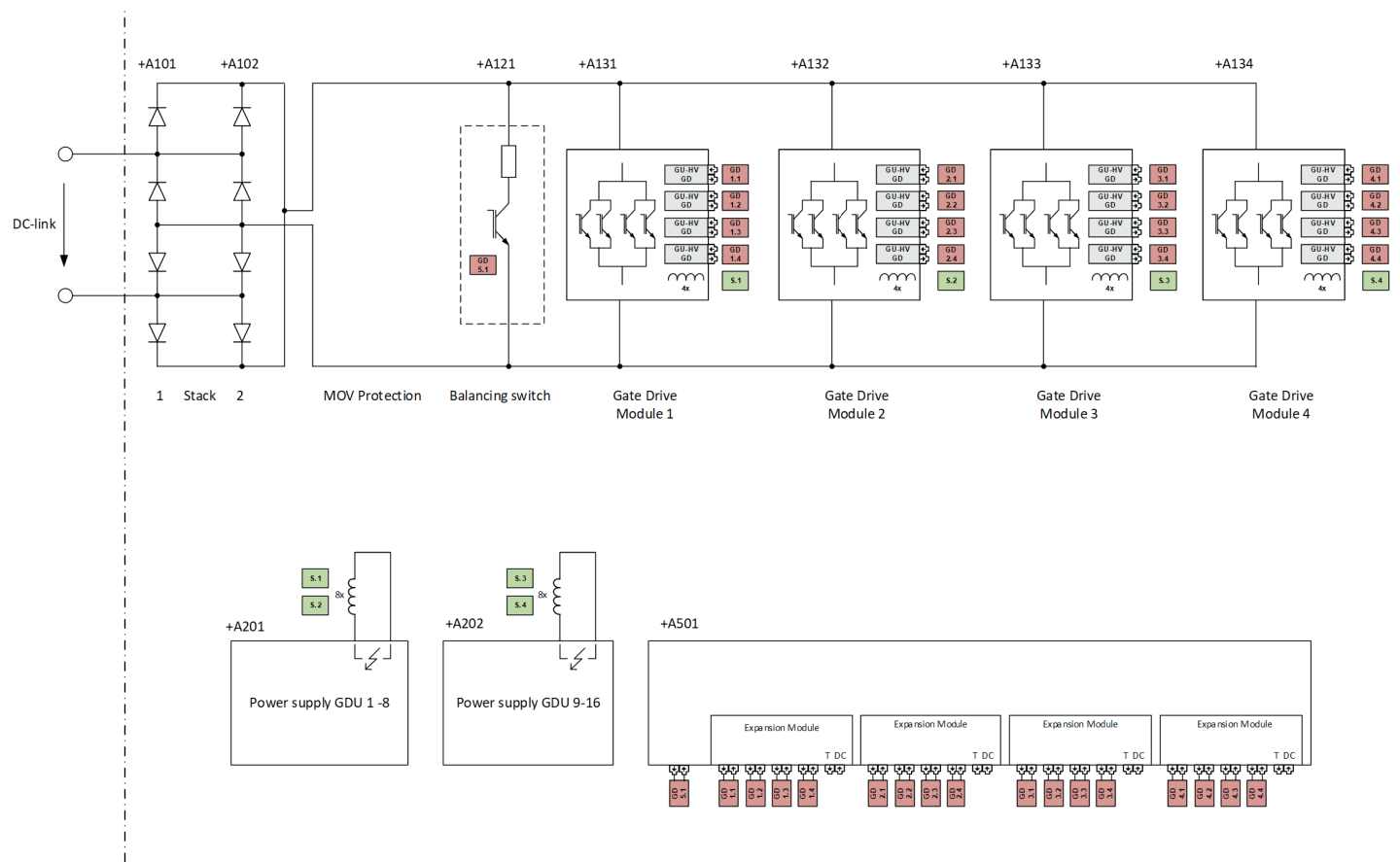
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ORDERING INFORMATION

IDENT NUMBER	DESCRIPTION		
AA-10411-101	DC-Breaker	0.5kA	1kV
AA-10411-102	DC-Breaker	1kA	1kV
AA-10411-103	DC-Breaker	2kA	1kV
AA-10411-104	DC-Breaker	3kA	1kV
AA-10411-105	DC-Breaker	3.5kA	1kV
AA-10411-106	DC-Breaker	4kA	1kV
AA-10411-107	DC-Breaker	4.5kA	1kV
AA-10411-108	DC-Breaker	5kA	1kV



BLOCK DIAGRAM



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