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DLC - Direct Liquid Cooling with non-conductive coolants

- Best cooling efficiency of all known cooling methods
- Allows an extremely compact high voltage switch design in connection with excellent Pd(max) specifications
- The absence of grounded heatsinks minimizes the stray capacitance with the result of faster electrical rise time and lower power losses at high operating frequencies
- The DLC principle allows a very homogenous cooling of the entire electronics of the switching module and reduces significantly the thermal stress at cyclic load change.

- Preferred stock type
- Stock may be limited

Pump Units

PU-1	<ul style="list-style-type: none"> ◦ Pump Unit complete with ESD protected reservoir, decoupled base plate and temperature sensor for speed control purposes, speed / power adjustable by voltage (7-12 V / 4-20 W), maximum flow rate 3l / min with Galden HT 135 @ 25°C, 120 x 88 x 94 mm³ <p>Available from January 2012:</p>
PU-2-A	Pump Unit complete with reservoir, temperature sensor and flow indicator. Professional and highly reliable design with milled metal housing and o-ring sealed windows. Non-blocking pump motor with coolant lubricated and self-adjusting ceramic bearing. The motor is electronically commutated and has a guaranteed life expectancy of >50,000 hours (typical 100,000 hours) at maximum temperature and maximum load. The motor speed is adjustable by voltage (7-12 V / 4-20 W). Maximum flow rate > 3l / min with Galden HT-135 @ 25°C. The pump unit with the control window can be attached behind front panels. Dimension 120 x 100 x 100 mm ³ (HxWxD)
PU-2-B	Dito, but with increased power (6-30 W). Maximum flow rate > 5l / min with Galden HT-135 @ 25°C. Dim. 120 x 100 x 100 mm ³ (HxWxD)
Option H-DIM	Housing Dimension adapted to customers requirements. Any housing shape and size is possible, but height must be > 60 mm.
Option I-FS	Integrated Flow Sensor. H-Signal if flow rate is > 0.5 l / min, otherwise pulses. The signal can be applied to the Inhibit input of HTS switches.
Option H-CF	Housing with Cooling Fins for secondary air cooling. Cooling fins can be attached on the rear side or right side of the housing.

Active Radiators

AR-500W	• Active Radiator, useable up to 500W, 155 x 120 x 60 mm ³
AR-800W	• Active Radiator, useable up to 800W, 155 x 120 x 87 mm ³
AR-2000W	• Active Radiator, useable up to 2000W, 275 x 120 x 87 mm ³
AR-3000W	• Active Radiator, useable up to 3000W, 395 x 120 x 87 mm ³
AR-4000W	◦ Active Radiator, useable up to 4000W, 515 x 120 x 87 mm ³
AR-9000W	◦ Active Radiator, useable up to 9000W, 411 x 370 x 80 mm ³

Liquid Coolers

LC-200W	• Liquid Cooler, useable up to 200W, for attachment on existing heat sinks or large metal housings, 90 x 60 x 42 mm ³
LC-1500W	• Liquid Cooler, useable up to 1500W, for attachment on existing heat sinks or large metal housings, 250 x 144 x 50 mm ³

Passive Radiators

PR1-1	• High efficiency cooling profile complete with two 90° fittings, 420 x 50 x 50 mm ³
PR1-4	• Set of four PR1-1 cooling profiles incl. connecting pieces, 420 x 200 x 50 mm ³

Heat Exchangers

HE-10	• Heat Exchanger complete with fittings for primary and secondary circuit, useable up to 10kW, 224 x 89 x 55 mm ³
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Control Units

CU-1	• Temperature depending speed control of pump and fans
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Thermometers and Sensors

TM-1	• Thermometer with LCD display and blue background illumination, snap-in assembly
TS-1	• In-Line Thermo-Sensor with ESD protection, both sides for tubing connection
TS-2	• In-Line Thermo-Sensor with ESD protection, 1x tubing connection, 1x thread G1/4"
TS-3	• Thermo-Sensor with ESD protection, for thread G1/4"

Flow Sensors and Indicators

FI-1	• Flow Indicator, for tubing connection
FI-2	• Flow Indicator with particle filter, 2x G1/4" fittings required
FS-1	• Flow turbine with digital tacho signal and background light, both sides for tubing connection
FS-2	• Flow turbine with diamond bearing and digital tacho signal, both sides for thread G1/4"

Fitting Kits

[FK-8x1.0](#)

- Metal fittings for tubing 8 x 1.00 mm, threads G1/4" with O-ring. Fitting caps inner diameter 10 mm.

[FK-8x1.5](#)

- Metal fittings for tubing 8 x 1.50 mm, threads G1/4" with O-ring. Fitting caps inner diameter 11 mm.

Tubing

[PVC 8 x 1.5](#)

- PVC tubing, ring of 5 m, highly flexible, ideal for laboratory use. Note: PVC plasticizers may migrate over the time. For d=11mm fitting caps.

[PUR 8 x 1.0](#)

- PUR tubing, ring of 5 m, recommended for professional purposes and higher temperature. For use with d=10mm fitting caps (8x1.0 fittings).

[PE 8 x 1.0](#)

- PE tubing, ring of 5 m, recommended for professional purposes and higher temperature. For use with d=10mm fitting caps (8x1.0 fittings).

[PTFE 8 x 1.0](#)

- PTFE tubing, ring of 5 m, recommended for professional purposes and higher temperature. For use with d=10mm fitting caps (8x1.0 fittings).

Coolant

[HT-135 5.0kg](#)

- Galden HT135 (PFPE), high performance dielectric coolant, non-flammable, non-toxic, residue-free evaporation. 5 kg can.

[HT-135 1.7kg](#)

- Galden HT135 (PFPE), high performance dielectric coolant, non-flammable, non-toxic, residue-free evaporation. 1.7 kg bottle

Further information, data sheets and drawings are available on request. All data and specifications subject to change without notice. BEHLKE POWER ELECTRONICS

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