



Hybrid 600 UW - Hyperbaric

600 A electronically regulated welding power source for welding and cutting in wet and dry hyperbaric environment.



The system concept consists of: power source, wire feeder, cooling unit, remote control, heating mats, welding torches and accessories.

The units are built to EN 60974-1 and meet the additional requirements of welding power sources for underwater wet welding. They may be used during intended use and in compliance with applicable regulations and rules for welding under water and under excess pressure !

System advantages

- ◆ emergency shutdown
- ◆ low open circuit voltage
- ◆ User friendly
- ◆ Multifunctional by GMA, MMA, Heating
- ◆ compact design
- ◆ high process stability
- ◆ adjustable Arc-Force
- ◆ adjustable Hot-Start
- ◆ 100% generator-compatible
- ◆ high efficiency
- ◆ high reliability

Technical Data

Type	Hybrid 600 UW - Hyperbaric
Mains voltage	3 x 400V, 50 Hz
Mains voltage fluctuation	max. +/- 10%
Power consumption	max. 27 KVA
Power factor cos. phi	ca. 0.98
Efficiency	> 85 %
Open circuit voltage	max. 60 V
Welding current range	20 A – 600 A
Welding voltage range	10 V - 50 V
Duty cycle (no filter mat)	60 % (25°C)
Dimensions Power source (h-w-d)	400 x 400 x 700 mm
Weight power source (no. periphery)	95 Kg

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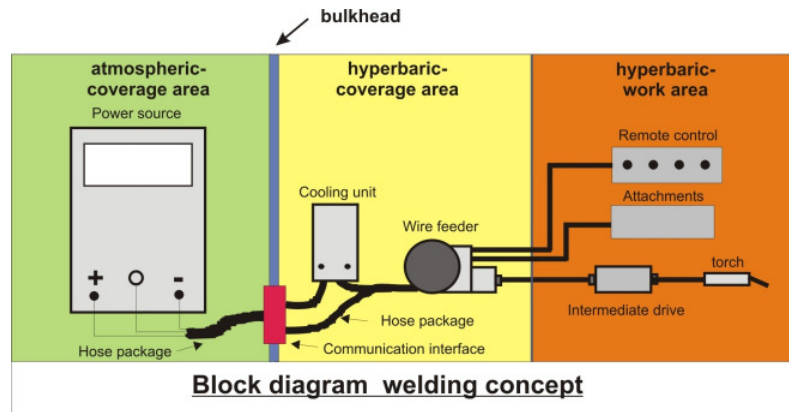
Elektronically regulated GMA / MMA welding power source for welding and cutting under excess pressure in dry and wet conditions.



Device concept

The **Hybrid 600 UW - Hyperbaric** was developed specifically for welding and repair work in hyperbaric and wet environment. (eg. tunnel boring machine). In developing the system, the valid rules and regulations and the AMT safety concept for under water welding machines have been applied.

In conjunction with the associated welding peripherals which was exactly matched to the increased requirements of the welding personnel to the hyperbaric welding and wet underwater welding, the **Hybrid 600 UW - Hyperbaric** represent with their newly developed control concept the optimal system technology for over pressure welders. That from AMT developed and since years approved AMT safety concept for UW devices provides a maximum protection for the welder (divers) against electrical hazards.



For safety, the power source must never be used in direct over pressure range. All for the process necessary interconnections are routed through a panel mounting in the hyperbaric workspace and distributed to the peripherals. In hyperbaric work area as the wire system are composed of wire drive and push-pull unit, cooling unit, remote control and auxiliary equipment.



By integrating the different methods (GMA welding, MMA welding, electrode cutting, gouging, and heating) in a facility, allows the user to perform all the work by preheating about cutting up to welding in a single dive (pressure) operation.

The operation of the control system is done by the welder or his assistant over a remote control locally in the hyperbaric range.

GMA welding sample, weld with the new AMT control concept under 5 bar pressure!

Fields of application

- **MIG/MAG:** New developed GMA control concept for short-, normal- and spray arc welding with low spattering under pressure with solid wires of 0.8 to 1.6 mm and flux cored wires from 1.0 to 2.4 mm diameter. Highest process stability by AMT - HYBRID technology.
- **MMA:** Optimal properties with high precision direct current for all types of electrodes from acid to basic. Integrated hot-start and arc-force function ensured best welding results in all welding positions. Large power reserves for special electrodes with more than 100 % deposition rate.
- **Gouging:** Due to the high energy levels and the associated high short-circuit currents of about 1000 A very good properties in arc cutting and gouging.
- **Heating:** Using the integrated heat program and associated heating mats, can be to prevent stress cracking of the weld area preheat partially.

AMT – Safety concept to protect the welder (diver) against electrical accidents

- fulfills the guidelines „BGV-D1“ and „Code of Practice for the Safe Use of Electricity under Water“
- enhanced protection due **maximum open circuit voltage of 60 V-dc** (permissible according to BGV: 65 V-dc)
- external **emergency stop** for fast network-based shutdown in case of danger
- **passive idle voltage limitation** due to secondary switched construction
- **Active idle voltage limitation** at power fluctuations through special electrical suppressor
- **Output voltage limit of 15 V-dc** at inactive welding process or break in the arc
- **external enable switch** for disconnection the power electronics
- **set point dependent enable power part** > 20 A
- **electronic mains over voltage protection**