

ORBIMAT 180 SW

Orbital welding power supply



More quality, safety and flexibility in orbital welding by Industry 4.0 technology:

This intelligent power supply is the first to allow digital networking of man and machine.

The orbital welding process thus connects with state-of-the-art information and communication technology, and makes for the best welding results, high efficiency and sustainable quality management.

The ORBIMAT 180 SW (shown here with the ORBIWELD 76S weld head) – an innovative welding power supply which sets new standards in welding results, operability and communication



Future-oriented connectivity
by IoT/Industry 4.0 technology



Sustainable quality management
through web-based productivity monitoring



100% data recording –
data available anywhere at anytime



Cost saving by precise and digital
"PERMANENT GAS" control



Short welding cycles through
unique gas "FLOW FORCE" function



Increased safety and extended
product lifetime through rotor torque control



Intuitive and simple operation
via 12.4" color touch display or rotary actuator



Automatic programming
by entering the tube diameter, wall thickness,
material and welding gas



Integrated liquid cooling system
for constant low weld head temperatures



This new generation of orbital welding power supplies combines the well-known and successful characteristics of the predecessors with the latest technical innovations:

Online access to projects and parameters

Thanks to the integrated LAN and WLAN interface, the ORBIMAT 180 SW can be integrated into the customer's network: Users, planning engineers and quality assurance employees with different user levels have access to projects and data at all times, making it possible to keep track of the entire welding process. All welding data and programs for each individual welding process can be called up and documented in full, analyzed, used and optimized for future welding processes. This way, production sequences can be planned better and are also safer and less time-consuming. The ORBIMAT 180 SW is therefore an important element for establishing more sustainable quality management. 4 USB ports open up forward-looking connectivity.

Intuitive operation and a multilingual menu interface

The ORBIMAT 180 SW is operated using the 12.4" color touch display screen, or alternatively with the multifunctional control dial, as is familiar from premium automobiles and the ORBIMAT CA series. The multilingual menu interface with graphic support makes operation and parametrization of the welding power supply simple and intuitive. Soft keys provide direct access to important commands. The new ORBIMAT runs with an operating system which reboots smoothly and without data loss, even after the types of abrupt system shut-downs and power failures which can occur on construction sites.

More quality and safety

The ORBIMAT 180 SW achieves more quality thanks to digital and precise welding gas control "PERMANENT GAS". It makes it possible to perform welding processes with the highest level of purity and a low gas requirement, reducing the costs for each welding process. The gas quantity values saved with the welding

program therefore make easily reproducible welding results.

The automatic rotor stop function provides improved safety. The ORBIMAT 180 SW also features motor torque control: If the welding head rotor is prevented from rotating by stiffness or an obstruction during automatic rotation, the power supply stops the rotor movement of the welding head immediately. Man and machine are provided with better protection, and costly production downtimes, caused by rejected goods and repairs, are prevented. At the same time, the service life of the welding head is extended.

Shorter welding cycles and more productivity

In order to minimize the gas pre-flow and post-flow times, ORBITALUM has incorporated the unique Flow-Force function. It shortens the welding process considerably when using closed welding heads: The digital gas control supplies safety gas at a very high volumetric flow rate directly from the pressure reducer to the welding head – the unwanted residual oxygen is



Elegant and practical housing (IP23) with carrier handles integrated at the side



The integrated liquid cooling system keeps connected welding tongs and heads constantly at the right temperature



The hinged lid with display screen, when closed, protects the operating controls, the system printer and the control dial

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FEATURES	ORBIMAT 180 SW
Simple and convenient operation thanks to multifunctional rotary actuator	●
Touchscreen operation	●
DC welding possible	●
WIDE RANGE input voltages for safe operation of power sets or voltage networks with extreme fluctuations in voltage	●
"Flow Force" function to reduce the gas pre-flow and post-flow time	●
"Permanent gas" function	●
Digital controlled welding gas	●
Coolant liquid and welding gas are monitored	●
Control option for cold wire feed	●
Possibility of connecting an external remote control	●
Constant or pulsed wire feed motion and rotation	●
Optimal visibility and operating conditions thanks to clearly laid-out 12.4" swivel monitor	●
Graphically-supported operating interface and multilingual menu navigation via color display	●
Metric and imperial units	●
Process-oriented, stable and real-time operating system without power-down sequence	●
Automatic weld head recognition and resulting parameter adaptation	●
Motor current monitoring	●
Capacity to store over 5.000 welding programs, providing systematic and clear program management thanks to the creation of folder structures	●
Welding data logging and printout of actual values	●
Integrated system printer	●
Possibility of connecting a monitor or printer (through HDMI/USB/LAN)	●
Optional PC software (OrbiProg CA) for welding program management and logging	●
Integrated, folding carrying grips	●
Option to program up to 99 sectors	●
Power and motor slope adjustment between the individual sectors	●
Integrated liquid cooling system for cooling the connected weld heads	●
Can only be used in combination with separately available liquid cooling system	ⓘ

● = feature included

ⓘ = feature limited included

TECHNICAL DATA	
Code	850 000 001
Connection voltage	110 - 230 V, 50/60 Hz, 1 phase
Control range (Connection voltage > 160 V)	5 - 180 A
Power-on time	60% at 180 A 100% at 160 A
Dimensions	600 x 400 x 310 mm 23.6" x 15.7" x 12.2"
SCOPE OF DELIVERY	
Orbital welding power supply ORBIMAT 180 SW	1 Pc.
Hose connection set ORBIMAT (Code 875 030 018)	1 Pc.
Dummy plug for remote control socket (Code 875 050 006)	1 Pc.
OCL-30 coolant, 2 liters (Code 875 030 015)	1 bottle
Operating instructions with calibration certificate	1 Set
QuickStart guide	1 Pc.
SUITABLE ACCESSORIES	
<ul style="list-style-type: none"> • ORBICAR W trolley with integrated liquid cooling • ORBICOOL Active compressor cooling device • ORBICAR S trolley • Durable storage and shipping case • ORBITWIN switching device • Remote control with cable • Soft-/Hardware package • BUP control box (purging gas pressure regulator) • ORBmax residual oxygen meter • Pressure regulator • TIG manual welding torch for ORBIMAT 	

Subject to change.

flushed out abruptly in the process. The resultant reduced pre-flow and post-flow times make for much shorter processing times and thus a higher level of productivity and an increased duty cycle. The high volumetric flow rate in the post-flow time and the optionally activatable cooling circuit delay reduce the temperature of the welding head - ideal for a high duty cycle. The benefits include a longer service life for the welding electrode. The optionally activatable permanent gas function prevents the penetration of oxygen in the welding head, even during secondary processing times. As a result, the ORBIMAT system achieves almost completely oxidation-free seams with simultaneously short processing times.

Elegant housing for good handling

The ORBIMAT 180 SW features an elegant and practical housing with carrier handles integrated at the side. The ports on the front of the device are set back for protection from mechanical damage. The hinged lid with display screen, when closed, protects the operating controls, the system printer and the control dial if the device is offline or is being transported.

The ORBIMAT 180 SW operates with a wide input voltage range of 110 V to 230 V AC 50/60 Hz, and offsets mains fluctuations of 90 V to 260 V AC. Voltage peaks of up to 500 V AC are offset. At 180 A, the output welding current is suitable for most applications. The ORBIMAT power supply automatically detects and includes the connected system components. The integrated liquid cooling system keeps connected welding tongs and heads constantly at the right temperature.

