

ORBIMAT 180 SW


World premiere:

Intelligent welding power supply

Orbital welding power supply

More quality, safety and flexibility in orbital welding by Industry 4.0 technology: This intelligent power supply connects the orbital welding process 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 (Connectivity IoT/4.0 Package 1 required)	✓
Longer-term welding data documentation thanks to centralized data storage	✓
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:

Centralized access to projects and parameters

Thanks to the integrated LAN interface, the ORBIMAT 180 SW can be integrated into the customer's network: 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.

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 parameterization of the welding power supply simple and intuitive. Soft keys provide direct access to important commands.

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 sluggishness 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 inert gas at a very high volumetric flow rate directly from the pressure regulator to the welding head – the unwanted residual oxygen is 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



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



The integrated liquid cooling system keeps connected welding 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

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 pulsend 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)	●
Integrated 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 be used in combination with separately available liquid cooling system	⦿

● = feature included ⦿ = feature limited included

TECHNICAL DATA	
ORBIMAT 180 SW	Code 850 000 001
Connectivity IOT/4.0 Package 1	Code 850 080 001
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 850 050 004)	1 Pc.
OC-30 coolant, 3.5 liters (Code 850 030 010)	1 can
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 • Storage and shipping case • ORBITWIN SW switching device • Remote control with cable • Bar code/QR code scanner SW • ORBmax residual oxygen meter • Pressure regulator • TIG manual welding torch for ORBIMAT 	

The technical data are not binding. They are not warranted characteristics and are subject to change.

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. 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 heads constantly at the right temperature.

Expandable with "Connectivity Package"

The optionally available "Connectivity Package 1" allows the saving and calling up of welding programs via a central network location. To increase the process control of the documentation all log files can be stored centrally. Detailed information on "Connectivity Package 1" starting on page 9.

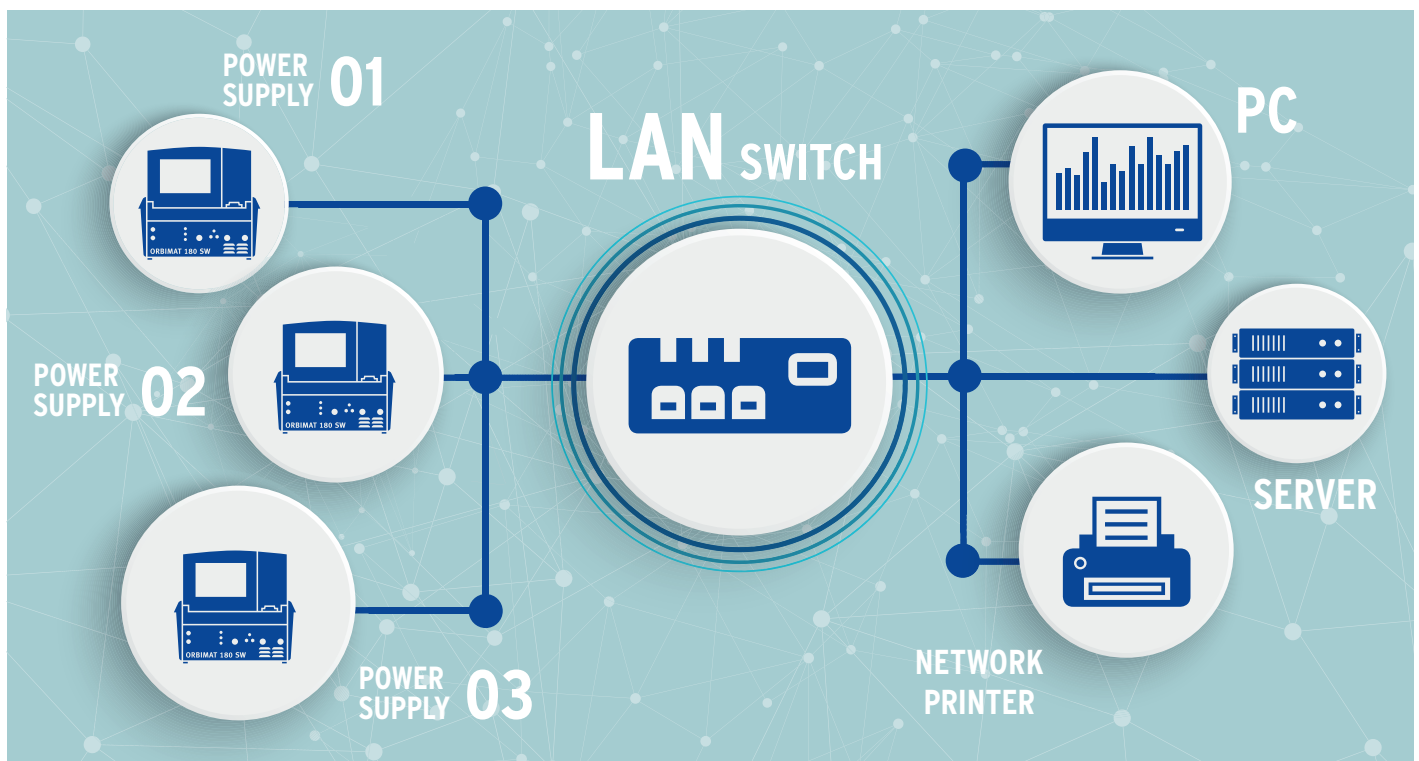
Connectivity package

for ORBIMAT 180 SW power supplies

Backing up and further processing

welding parameters
in local network environments

The optionally available "Connectivity Package 1" enables integration of the ORBIMAT 180 SW into a local network environment (LAN). Welding programs can thus be saved to centralized network storage locations and managed & backed up for the long term there. Power supplies integrated into the network can access the centrally saved programs and their folder structure at the same time. This ensures that all power supplies always have access to the latest version of the data, even if subsequent adjustments are made to programs.



The ORBIMAT 180 SW features an extensive, user-supporting documentation solution for digitally recording documentation parameters ahead of the welding process, e.g. the material and gas batch number, isometric number, weld seam position and the welder ID.

The documentation parameters to be entered are queried before the respective start of the welding process. Whether a parameter value can or must be entered once or for each weld can be individually defined.

This entry can be made either using the virtual keyboard, an external USB keyboard or efficiently using the separately available bar code/QR code scanner.

The option of documentation of the general conditions applicable for the welding programs, e.g. forming and welding gas types and volumes, electrode geometries, weld head alignment and operator comments round out the documentation process.

All recorded parameters can be recorded together with the generated welding data in a welding data log and saved digitally. These welding data logs can then be saved at the network storage location automatically, backed up for the long term and edited from there.

This makes it possible to considerably reduce and simplify the documentation effort for users.

In addition to network storage locations, other network resources like network printers can

also be accessed. In this way, welding logs and programs can be directly output locally via a printer over the network upon request.

Using the Industry 4.0/IoT data protocol "MQTT", the ORBIMAT 180 SW can be integrated into industrial environments 4.0 and "Machine-to-Machine" (M2M) communication can be established between devices and controllers. In this way, subscribers can exchange various different telemetry data, measurement values and parameters with one another and receive control commands for automation solutions.

The connectivity package is activated using a license key which can be entered directly into the power supply software. In this way, all relevant functions and interfaces can be immediately activated.