

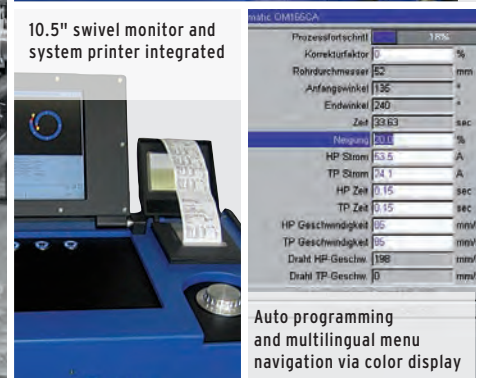
ORBIMAT CA AVC/OSC

Orbital welding power supply

Compact power source for mechanized TIG orbital welding with unique operating concept (human machine interface HMI) and a series of further technical features such as electronic arc gap control (AVC) and oscillation (OSC). In connection with an orbital weld head from ORBITALUM TOOLS the user receives an especially innovative as well economical welding system.



Simple and convenient operation by multifunctional rotary knob



10.5" swivel monitor and system printer integrated

HMI: ORBIMAT CA	
Prozessfortschritt	100%
Korrekturfaktor	0 %
Rohrdurchmesser	62 mm
Anfangswinkel	135 °
Endwinkel	240 °
Zeit	03:63 sec
Navigation	00:1 %
HP Strom	63.5 A
TP Strom	04.1 A
HP Zeit	0:15 sec
TP Zeit	0:15 sec
HP Geschwindigkeit	35 mm/min
TP Geschwindigkeit	35 mm/min
Draht HP Geschw.	198 mm/min
Draht TP Geschw.	0 mm/min

Auto programming and multilingual menu navigation via color display

In addition to tried-and-tested Orbitalum auto-programming via entry of the pipe diameter, wall thickness, material and welding gas using a programming aid, it disposes of a "Flow Force" function for reducing the gas pre-purge time with closed weld heads.

The operating concept of the power sources differs significantly from common operation variants: The operator guidance with display and single-knob operation (rotary knob) stems from car manufacturing and has proven itself worldwide in infotainment systems of modern luxury vehicles. The main advantage is that the operator's view remains focused on the screen.

Further technical refinements of the ORBIMAT CA AVC/OSC are soft keys for significant, quick-to-activate superordinate commands, for example "Start/Stop". The operating system RTOS (Real Time Operating System) used has the advantage in contrast to Windows-based

systems that a direct, abrupt switch-off of the systems does not lead to any problems. This is particularly important for the operation at vulnerable power supplies, such as on construction sites. In contrast to Windows, RTOS always focuses on the control and regulation of the welding process, which is ultimately decisive for the quality of the welding result.

Also unique on the market is the Flow Force function which significantly reduces the processing procedure when using closed weld heads. Through a second channel for protective gas, the protective gas flows directly from the pressure reducer to the chamber of the welding head before the start of the weld process - the unwanted residual oxygen is flushed out abruptly in the process. The ORBIMAT power source automatically detects and includes the system components connected for the course of the process, from closed or opened weld head with automatic control of the arc gap* (AVC = Arc

Voltage Control) and/or integrated oscillation of the torch* (OSC = Oscillation) up to the oxygen analysis device. In contrast to conventional orbital welding control systems the setting and controlling of the torch distances to the weld seam takes place directly via the arc gap.

* Only for ORBIMAT 300 AVC/OSC

PROPERTIES ORBIMAT ORBITAL WELDING POWER SUPPLIES		300 CA AVC/OSC
Easy and convenient operation using a multi-functional rotary knob		●
DC current welding source		●
AC power source for aluminum materials		○
"Flow Force" function to reduce the gas pre-flow and post-flow time		●
"Permanent gas" function		●
Monitoring of cooling water and weld gas		●
Control option for cold wire feed		●
Possibility of connecting an external remote control		●
Constant or pulsed wire feed motion and rotation		●
Optimal visual and operating conditions thanks to clearly laid-out 10.5" swivel monitor		●
Graphically-supported operating interface and multilingual menu navigation via color display		●
Metric and imperial measuring units		●
Process-oriented, stable and real-time operating system without power-down sequence		●
Automatic weld head recognition and resulting parameter modification		●
Capacity to store over 5,000 welding procedures, providing systematic and clear procedure 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 (via VGA/LPT)		●
Integrated multi card reader for transfer of log files and welding programs via CompactFlash Card (CF), SD, MMC, SM, Sony Memory Stick		●
Optional PC software (OrbiProg CA) for welding procedure management and logging		●
Integrated, folding carrying grips		●
PSS (Pro Service System) for external functional checking of the system as well as easy maintenance and fast replacement of parts thanks to system component design		●
Option to program up to 99 sectors		●
Power and motor slope adjustment between the individual sectors		●
Can only be used in combination with a separately available liquid cooling system		●
AC setting option of positive and negative half-cycle with a 20 - 80% ratio		○
AC frequency setting 50 - 200 Hz		○
AVC electronic arc gap control: Arc gap programmable in "mm" or via the arc voltage in "V", OSC oscillation with sampling function for automated determination of the tube joint between the sides of the pipe		●
SCOPE OF DELIVERY		300 CA AVC/OSC
Orbital welding power source of the ORBIMAT CA series	PCS.	1
Hose connection set ORBIMAT (Code 875 030 018)	PCS.	1
Dummy plug for remote control socket (Code 875 050 006)	PCS.	1
Welding current connection adapter	PCS.	1
External operating keyboard (Code 875 012 057)	PCS.	1
External remote control (Code 875 050 001)	PCS.	1
Key for key switch (for re-ordering of 1 key: Code 875 012 058)	PCS.	2
Operating instructions with calibration certificate	Set	1
QuickStart guide	PCS.	1


● = Function included

○ = Function not included

◐ = Function only conditionally included

* = Only DC welding

SUITABLE ACCESSORIES (optionally available):
<ul style="list-style-type: none"> • ORBICAR W trolley with integrated liquidcooling • ORBICOOL Active compressor cooling unit • ORBICAR S carriage • Rugged transport case • ORBITWIN SW Switching Unit • Remote control with cable • Software/Hardware Package "CA" • ORBmax residual oxygen meter • Double pressure reducer • TIG manual welding torch for ORBIMAT

TECHNICAL SPECIFICATIONS	300 CA AVC/OSC
Code	872 000 020
Supply voltage	400 - 480 V +/- 10%, 50/60 Hz, 3-phase
Control range (Supply voltage > 160 V)	5 - 300 A
Duty cycle	40% at 300 A 60% at 260 A 100% at 220 A
Dimensions (LxDxH)	540 x 420 x 440 mm 21.3" x 16.5" x 17.3"
	

Technical specifications are non-binding. They do not constitute any assurance of properties. We reserve the right to make changes.

Orbital welding power supplies

ORBIMAT CA AVC/OSC

Properties, application area, technical specifications and delivery scope, see from Page 11.

ITEM	VERSION	CODE	MACHINE WEIGHT KG	SHIPPING WEIGHT KG
ORBIMAT 300 CA AVC/OSC	400 - 480V +/- 10%, 50/60Hz, 3-phase	872 000 020	37.300	53.000



ORBIMAT 300 CA AVC/OSC

Suitable accessories (optionally available):

- ORBICAR W trolley with integrated liquidcooling, see Page 14
- ORBICOOL Active compressor cooling unit, see Page 14
- Rugged transport case, see Page 15
- Remote control with cable, see Page 16
- Software/Hardware Package "CA", see Page 16
- ORBmax residual oxygen meter, see Page 83
- TIG manual welding, see Page 88
- Double pressure reducer, see Page 87
- Welding current connection adapter set, see Page 87



ORBICAR W trolley with integrated liquidcooling

Cooling systems for ORBIMAT

ORBICAR W trolley with integrated liquidcooling

Thanks to its integrated liquid cooling function, the ORBICAR W trolley is the perfect complement to Orbitalum power sources*. Beside the liquid cooling, the trolley is equipped with a practical holder for gas bottles. On delivery the tank already includes 8 liters (2.11 gal) of the OCL 30 cooling liquid (see Page 17).

TECHNICAL SPECIFICATIONS	ORBICAR W TROLLEY
Input voltage	400 V, 50 Hz, 3-phase
Rated output	450 VA
Cooling type	Circulation cooling
Tank volume	8 l/2.11 gal
Water pressure max.	3.1 bar/45 PSI
Dimensions (LxDxH)	96 x 54 x 113 cm/37.8 x 21.3 x 44.5"
Dimensions storage area (LxDxH)	65 x 38 x 65 cm/26.6 x 15 x 26.6"

ITEM	SUITABLE FOR ORBIMAT	CODE	KG
ORBICAR W 300 trolley	300 SW, 300 CA	884 000 002	58.200
ORBICAR W 165 trolley	165 CA*	884 000 004	58.200
ORBICAR W 180 trolley	180 SW	884 000 005	58.200

* ORBIMAT 165 power source must be modified in the factory.



ORBICOOOL Active (front view)

ORBICOOOL Active

Very efficient compressor cooling device. Particularly suitable for welding units in series production.

Including:

- Stainless steel housing
- Adjustable digital thermostat with temperature hysteresis
- Low-noise
- Metal filter cell
- Water level indicator
- Pump protection
- Flow rate monitoring in combination with ORBIMAT current sources

2 canisters each 3.5 liters (0.92 gal) are included in the scope of delivery of the OCL-30 cooling liquid (see Page 17). Suitable for all* ORBIMAT orbital welding power supplies. Not usable in combination with the ORBICAR S trolley.



ORBICOOOL Active (rear view)

TECHNICAL SPECIFICATIONS	ORBICOOOL ACTIVE
Cooling (at ambient temp. +32°C/water +20°C)	1.025 kW/1.37 hp
Setting range inlet temperature	18 - 25°C
Input voltage	230 V, 50 Hz
Connected load (at ambient temp. +42°C/water +20°C)	900 W/1.21 hp
Maximum current consumption (depending on the design)	4.6 A
Tank volume	6 l/1.59 gal
Water pressure max.	2.2 bar
Pump output	2.3 l/min
Air output	800 m ³ /h
Sound pressure	65 dB(A)
Cooling type	Compressor cooling
Dimensions (LxDxH)	560 x 475 x 355 mm/22.0 x 18.7 x 14.0"

ITEM	VERSION	CODE	KG
ORBICOOOL Active for ORBIMAT 165 CA*	230 V, 50 Hz	889 000 011	42.000
ORBICOOOL Active for ORBIMAT 300 CA/SW	230 V, 50 Hz	889 000 012	42.000
ORBICOOOL Active for ORBIMAT 180 SW	230 V, 50 Hz	889 000 015	42.000

* ORBIMAT 165 power sources must be modified in the factory.

Other accessories for ORBIMAT

Weld current connection adapter set

See Page 87.



Weld current connection adapter set

ORBITWIN SW Switching Unit

To increase productivity, the ORBITWIN Switching Unit is available which allows the alternately operation with 2 weld heads on the ORBIMAT. By pressing the respective Start button of the used weld head the previously assigned program is called up from the memory. The respective weld head which is not being used is locked and can be prepared for the next welding task in advance.

Incl. all connecting lines and hoses.



ORBITWIN SW Switching Unit

ITEM	SUITABLE FOR ORBIMAT	CODE	KG
ORBITWIN SW Switching Unit	180 SW, 165 CA*, 300 CA*, 300 SW, 300 CA AC/DC*	853 000 001	15.00
Connection set ORBITWIN SW at ORBIMAT CA	165 CA, 300 CA, 300 CA AC/DC	853 050 010	0.100
Connection extension set 1.1m (3.6ft)	180 SW	853 050 011	2.585

* Usage of ORBITWIN SW with ORBIMAT 165 CA, 300 CA and 300 CA AC/DC only possible in combination with the "connection set ORBITWIN SW at ORBIMAT CA" (available separately, see table above).

ORBICAR S carriage

The ORBICAR S is a practical carriage with shelf and fastening possibility for a gas bottle and the ideal supplement for the Orbitalum 165 A and 180 SW orbital welding power supplies.

Not usable in combination with ORBICOOL Active compressor cooling unit.



ORBICAR S carriage

TECHNICAL SPECIFICATIONS	ORBICAR S CARRIAGE
Dimensions (LxDxH)	96 x 54 x 113 cm/37.8 x 21.3 x 44.5"
Dimensions storage area (LxDxH)	65 x 38 x 65 cm/26.6 x 15 x 26.6"

ITEM	CODE	KG
ORBICAR S carriage	884 000 001	19.100

Rugged transport case

With roles. Protects the power source during transport. Ideal for construction site usage.

ITEM	SUITABLE FOR ORBIMAT	CODE	KG
165 transport case	165 CA	875 050 002	17.500
300 transport case	300 CA, 300 CA AC/DC	874 050 001	20.800
180 SW transport case	180 SW	850 030 020	18.700

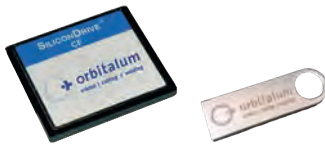


Transport case 165/300

180 SW transport case



Software/Hardware Package "CA"



CompactFlash Card ORBIMAT CA



Remote control with cable



Bar code/QR code scanner SW

Software/Hardware Package "CA"

Suitable for all ORBIMAT CA orbital welding power supplies.
For external programming and data documentation, consisting of:

- 1 CompactFlash card for data transfer between machine and PC.
For saving welding data logs or expanding the program memory. Storage capacity of up to 5,000 welding programs.
- 1 USB card reading device for reading out the CompactFlash Card at the PC.
- Software ORBIPROG CA. Allows saving and printing of programs and log files at the PC. Conversion of all data into PDF and Excel format Programs from the Orbitalum machine the C series (e.g. ORBIMAT 160 C) can also be converted into the CA format by means of the software. The parameters of the CA programs can be edited with the software and can be transferred to the machine again after editing and used there.

ITEM	CODE	KG
Software/Hardware Package "CA"	875 050 003	0.488

Storage media

For saving welding data logs or expanding the program memory. Storage capacity of up to 5,000 welding programs.

When the Software/Hardware Package "CA" is purchased, 1 **CompactFlash Card ORBIMAT CA** is already included in the scope of delivery.

ITEM	CODE	KG
CompactFlash Card ORBIMAT CA	875 012 056	0.010
ORBIMAT SW USB stick	850 030 001	0.002

Remote control with cable

Suitable for all ORBIMAT orbital welding power supplies (the remote control is already included in the scope of delivery with the ORBIMAT 300 CA AVC/OSC). It is not required when working with enclosed orbital weld heads.

Remote including "**Remote control adapter OM CA to ORBIMAT SW**" (Code 850 040 030). This adapter can be retrofitted at any time and allows the connection of older remote control units to the new SW generation.

ITEM	CABLE LENGTH [M]	CABLE LENGTH [INCH]	CODE	KG
Remote control with cable	7.5	24.6	875 050 001	1.350
OM CA remote control adapter for OM 180 SW (upgrade)	-	-	850 040 030	0.118

Bar code/QR code scanner SW

Compatible with the ORBIMAT SW power sources.
For welding data documentation or recording.
Rapid scanning in of the parameters stored in the bar code/QR code (e.g. weld seam number, isometry number, welder ID, etc.) into the power source.

ITEM	CODE	KG
Bar code/QR code scanner SW	850 030 005	0.250

Consumables for ORBIMAT

Replacement paper rolls and ribbon cartridges

For internal system printer.
 Suitable for all ORBIMAT orbital welding power supplies.

1 paper roll and 1 ribbon cartridge are already included in the scope of delivery of the ORBIMAT power sources.

ITEM	CODE	KG
Panel printer paper rolls, 3-pack	875 050 017	0.150
Panel printer ink ribbon cartridge CA/SW	875 030 004	0.010



Replacement paper rolls and ribbon cartridges

OCL-30 cooling liquid

Anti-freeze pre-mix for ORBIMAT power sources and cooling units to avoid freezing of the cooling water. Protects up to -30°C (-22°F) outside temperature. Increased service life of components of the cooling system through very high corrosion protection and high pH-value. Excellent ignition characteristics due to low conductivity. Clear cooling liquid.

Usable with ORBICAR W, ORBICOOL Active, 165 CA and 180 SW.

1 canister already included in the scope of delivery of the ORBIMAT 165 CA and 180 SW power sources.

ITEM	VERSION	CODE	KG
OCL-30 cooling liquid	Canister each 3.5l (0.92 gal)	850 030 010	3.715



OCL-30 cooling liquid

Hose connection set ORBIMAT

1 connection set is already included in the scope of delivery of the ORBIMAT power sources.

Consisting of:

- Teflon gas hose
- Ear clamps with insert ring
- Hose connectors 3/8"
- Water hose for tank deaeration
- Gas connector inlet
- Union nuts 3/8"
- Hose connectors 1/4"
- Union nuts 1/4"
- Funnel

ITEM	CODE	KG
Hose connection set ORBIMAT	875 030 018	0.445



Hose connection set ORBIMAT

Other accessories for orbital welding

- ESG electrode grinders, see Page 79
- ORBmax residual oxygen meter, see Page 83
- ORBIPURGE forming set, see Page 86
- Double pressure reducer, see Page 87
- WS2 tungsten electrodes, see Page 87
- TIG manual welding torch for ORBIMAT, see Page 88
- Welding current connection adapter set, see Page 87

ORBITAL WELDING POWER SUPPLIES & ACCESSORIES