

Sigma Weld - Pro AC/DC

Digital Welding Inverters



Sigma Weld Pro Series is State of the art digital welding technology operating at 150kHz. Ensures very quick response time and better welding performance each time. The modular technology helps increase duty cycle upto 100% and ensures maximum machine uptime.

Optional Industry 4.0 compliance can be inbuilt to give you a complete Log of programs used, welder details, Gas, Current, Voltage and other critical parameters against time stamp. This can be viewed over LAN on any computer.

150kHz
6,7 ums

Extremely fast switching, ensures quick response time & repeated quality



LCD Screen Display

Duty Cycle
100%

100% @ 40°C ensures non-stop welding



Modular Architecture
Max. Up time.

2000A

Option of increasing current by parallel connecting power modules upto 2000A

Digital

Full digital control of all welding parameters

Constant Current Output Provided

The output of sigmaweld welding inverters are constant even if there is a power fluctuation in the mains of upto $\pm 20\%$. The power source equally works well on generator sets with balanced load.

Robust and Versatile

Pro Series TIG welders can weld all kind of Arc welding electrodes, Basic Rutile, Alloys and Cellulosic with ease. Special Settings available starting current, Hot start, etc., Modes available for Carbon Arc Gouging as well. In GTAW one can weld with HF Initiation or weld in Lift Arc mode. Intensity of HF can be adjusted in case of longer torches to ensure smooth starting each time. Special modes for SPOT welding and Liner tacking.

Remote Control

Can be interfaced with multiple options, potential meter type remotes, Foot Control with current variations, Torches with One, Two, Three Switches, etc., The Pro Series adapts easily to every welders need.

Smart Interlocks

- The **Water Cooling Unit** has smart sensors to keep a check on *water flow, Pressure, Temperature, etc.*, The cooling unit can work in Auto mode for *ON DEMAND* work loads, or continuous ON/OFF options, Light Indicators for healthy, Idle or Error Modes.
- By choosing the **Tungsten Size**, current range is automatically limited to avoid melting of tungsten due incorrect current settings.
- The optional **WELD WEB** allows welding data to be collected wirelessly and can be accessed from any PC, Notebook or Tablet.
- Pulse on Demand**: Welder can swap between two current setting during welding as and when he wants. This is possible with the new 4T control mode.

**FUNCTIONAL DESCRIPTION
OF POWER SOURCES
OF TIG P AC/DC**

WELDING METHODS

- MMA
- TIG DC-
- TIG DC+
- TIG AC
- TIG AC+DC

- TIG SYN + DC
- TIG SYN +AC

MMA FUNCTIONS

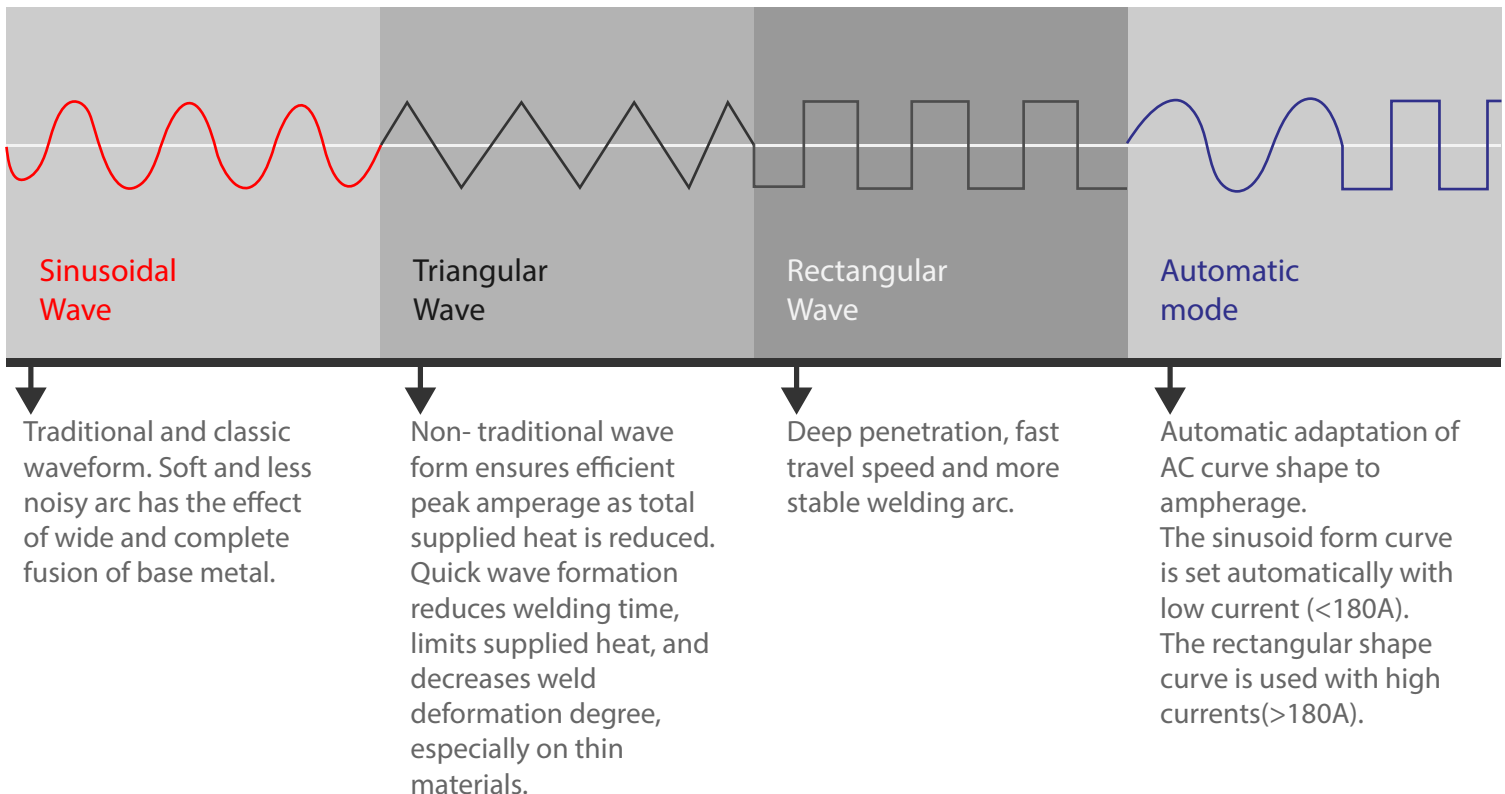
Hot Start

TIG FUNCTIONS

2T/4T \ HF (soft high frequency arc ignition) \ Lift (contact arc ignition)

WAVE FORM CONTROL IN AC and AC/DC MODES (MIX)

1 AC WAVEFORM (affects sound level and arc penetration depth)

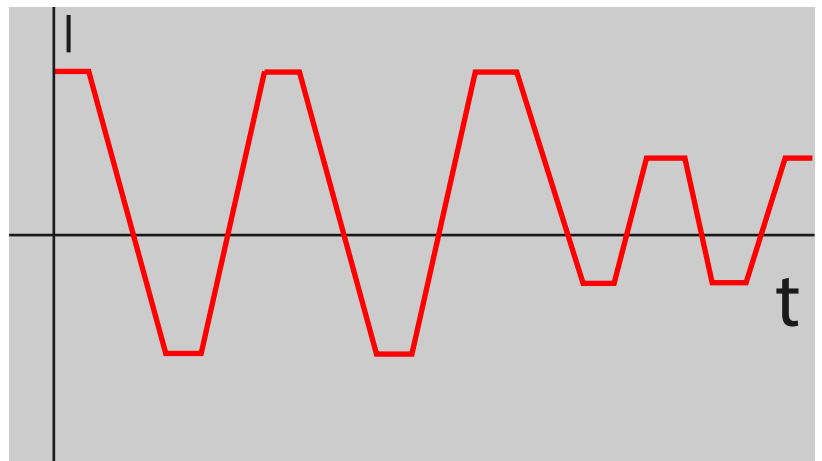


**2 ALTERNATING CURRENT FREQUENCY REGULATION 30 - 300
DC PULSE WELDING FREQUENCY REGULATION 40 - 15000Hz**

CONTROL IN AC and AC/DC MODES (MIX)

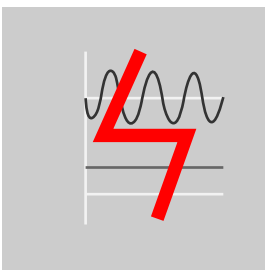
3 AUTOMATIC ALTERNATING CURRENT FREQUENCY REGULATION

The automatic alternating current frequency control for welding in AC mode. The high frequency of AC welding arc at low welding currents is applied to focus the welding arc, and reliably to capture the weld root e.g. when making fillet welds on thin sheet metal. Due to low AC frequency the amperage applied to electrodes reduces subject to high welding currents. It is achieved by the automatic synchronization of the pulsation frequency with the actual welding current value. The max. frequency is used to weld with low currents and the min. one with high currents.



Such function significantly simplifies welder operations as it does not have to set the pulsing frequency subject to the performed job.

4 TIG AC/DC (MIX) MODE



Simple welding of aluminium alloy even in complicated situation. The function is combination of alternating welding current (AC) and direct welding current (DC) which alternate successively. The double arc mode reduces the redundant component of the alternating current in the electric arc to the required minimum. The reduced heat input enables welder more fully to control the weld area. It is especially important to weld in hard to reach places, on edges of the bank or aluminium sheets or aluminium alloys which have different thickness and enables to achieve best quality welding. This mode also enables to reduce the load on the tungsten electrode.

- Higher stability stimulates the formation of pores because of high degassing of the weld area;
- It simplifies welding with forced formation;
- In DC phase the weld area cools down, and it is easier to control;
- The materials of different thickness may be welded;
- AC welding is much easier for inexperienced users.

Specifications

Current Source	TIG 350 P AC/DC	TIG 400 P AC/DC	TIG 500 P AC/DC
Welding current adjustment range:			
in TIG AC mode, A	5-350	5-400	5-500
in TIG DC mode, A	3-350	3-400	3-500
in MMA mode, A	20-300	20-300	20-300
Amperage at Duty cycle 100% (40°C),A	350	400	500
Duty cycle with max. current (40°C),%	100	100	100
Main voltage, V	400±25%	400±25%	400±25%
Main frequency, Hz	50/60	50/60	50/60
Automatic safety switch, A	3x40	3x40	3x60
Primary max. current, A	18	22	31
Primary max. power, kW	9.5	11.7	16.5
Performance Efficiency, %	96	96	96
Open circuit voltage, V	93	93	93
Dimension (DxWxH), mm	740x300x660	740x300x660	740x300x660
Weight of welding unit, kg	50	50	69
Protection class	IP 34	IP 34	IP 34
Insulation class	H	H	H

WATER COOLING UNIT

The Water Colling Unit is automatically activated with the curent above 150A.
The overheating protection is timely activated



Technical Specifications	
Voltage	400V± 25%
Frequency	50/60Hz
Input Power	0.3kW
Flow	10 L / min
Cooling Capacity	2kW
Pressure	3.2 Bar Max.
Tank Size	10L
Dimension	198 X 299 X 289 mm
Weight	21 Kg