



### Inverter

Maximum welding quality  
Maximum welding rates  
Minimum energy consumption  
Minimum weight  
Maximum efficiency

### IT 90

**Stud Welding Unit**  
for ARC stud welding  
according to current standards

#### Technical Data

Gas/Automation/Process control	Series/Series/Series
Welding range	Dia. 2 to 22 mm, M3 to M24
Welding material	Mild steel, stainless steel, aluminium
Welding rate	Dia. 22 = 6 studs/min
Welding current	2 000 A (max.)
Current adjustment range	300 to 2 000 A (stepless)
Welding time	5 to 1 500 ms (stepless)
Primary power	400 V, 3 phases, 50/60 Hz, 63 AT (alternative input voltages available)
Primary plug	63 A (400 V mains)
Connected load	100 kVA (400 V mains)
Cooling type	F (temperature controlled cooling fan)
IP Code	IP 21
Dimension L x W x H	650 x 560 x 1 290 mm (without handle)
Weight	93-60-12096: 145 kg 93-60-42096: 165 kg
<b>Order No.</b>	<b>93-60-12096 (Gas/Automation/Process control/1 Gun connection)</b> <b>93-60-42096 (Gas/Automation/Process control/4 Gun connections)</b>

#### General Information

##### Application

- Especially suitable for thicker sheets of about 2 mm or higher

##### Process variants

- **Short cycle drawn arc welding**
- **Drawn arc welding**

##### Equipment

- **Welding with ceramic ferrule** (series)
- **Welding with shielding gas** (series)
- **Automation** (series)
- **Process sequence control** (series)

## Advantages

### Features

- **Microcontroller** – for precise process times, optimal functional reliability and maximum operating convenience
- **Function monitoring** – automatic function test following power-up; monitoring of all internal system functions
- **Lift test** – for gap welding guns and stud welding heads
- **Library function** – automatic specification of welding current and welding time through selection of stud diameter according to welding range (with and without shielded gas); fine adjustment via arrow keys
- **Process monitoring** – recording and analysis of factors affecting the welding process; after each weld, the reference and actual values are compared; display of the welding energy input; switchable automatic welding stop if limits are exceeded
- **RS232 interface** – for data output; data and time of day are stored; welding parameters of each weld are logged)
- **4 gun connections** (optional)

### Structure

- **Extremely easy to operate**
- **Compact**
- **Mobile** – highly mobile thanks to compact dimensions and low weight (50 % weight savings vis-à-vis conventional stud welding units)
- **Robust** – metal housing withstands rough treatment in shop and on site

### Safety

- With integrated **mains filter** (protection against voltage peaks)
- **Optimal for construction sites with large mains voltage fluctuations** – use even with critical voltage supply (- 10 % + 10 %)
- **EMC test**
- **High-voltage test with log**
- **Retriggering lock-out** – prevents welding on a welding element that has already been set
- **Thermal monitoring of transformer** – automatic shutdown in case of overheating
- **Temperature-regulated ventilator** - reduces noise and dust in the stud welding unit (greater system reliability)
- **Control unit galvanically separated from welding lines** – high degree of functional safety
- **Optimal protection against external interferences**
- **IP Code: IP 21**

### Welding

- **Display** – infinitely adjustable power setting; easy monitoring of all functions via LED displays; easy operation via membrane keyboard and digital display; setting of welding parameters, programs, shielding gas, automation and process monitoring possible; digital display of current, welding and gas-preflow time (optional: pneumatic feed time for automation); separate settings for welding current and welding time
- **Powerful** – built-in power reserves
- **Trouble-free changing** of welding voltage polarity possible by reconnecting welding current and ground cables
- **Outstanding welding quality** – very high arc stability even at weak welding currents
- **High process flexibility** – high clock frequency (30 kHz) of stud welding unit allows highly dynamic regulation of welding process

### Suitable stud welding guns/ -heads

- **A 12, A 16, A 22, A 25, AI 06**
- **PAH-1**
- **KAH 412, KAH 412 LA**

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(Technical data may change)