



Inverter

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

IT 1002

Stud Welding Unit

– for ARC stud welding
– for MARC welding with magnetic rotating arc
according to current standards

Technical Data

Gas/Automation/Process control	Series/Option/Option
Welding range	Studs M3 to RD16, dia. 2 to 14 mm Sleeves and MARC welding nuts type Hex ^{Nut} M6 to M12
Welding material	Studs: Mild steel, stainless steel, aluminium Sleeves and MARC welding nuts type Hex ^{Nut} : Mild steel, stainless steel
Welding rate	Stud welding: M12 = 25 studs/min Nut welding ¹⁾ : Welding nuts type Hex ^{Nut} M12 = 10 sleeves/min (AM 12 W) ¹⁾ The maximum welding rate is limited by a variety of parameters.
Welding current	1 000 A (max.)
Current adjustment range	100 to 1 000 A Electrode: 50 to 400 A (stepless)
Welding time	5 to 1 000 ms (stepless)
Primary power	400 V, 3 phases, 50/60 Hz, 35 AT (alternative input voltages available)
Primary plug	32 A (with 400 V mains)
Connected load	50 kVA (with 400 V mains)
Cooling type	F (temperature controlled cooling fan)
IP Code	IP 23
Dimension L x W x H	660 x 280 x 340 mm (without handle)
Weight	31 kg
Order No.	93-60-1202 (Gas) 93-60-1204 (Gas/Automation) 93-60-1206 (Gas/Automation/Process control)

General Information

Application

- Especially suitable for thicker sheets of about 2 mm or higher
- Welding of welding nuts type Hex^{Nut} and MARC sleeves
- For welding on perforated and non-perforated sheets

Process variants

- Short cycle drawn arc welding
- Drawn arc welding
- MARC welding with magnetic rotating arc

Equipment

- Welding with ceramic ferrule (series)
- Welding with shielding gas (series)



- **Automation** (optional)
- **Process sequence control** (optional)

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
- **Display of error codes** – on digital display
- **Lift test** – for gap welding guns and 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 (only for version gas/automation/process control)

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 23**
- Also permits operation outdoors

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
- **2 in 1** – switchable from drawn-arc ignition to electrode welding

Suitable stud welding guns/ -heads

- **A 12, A 16, AI 06, CA 08**
- **PAH-1 (only suitable for automatic version)**
- **KAH 412, KAH 412 LA (only suitable for automatic version)**
- **AM 12 A, AM 12 W (only suitable for MARC welding process)**

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(Technical data may change)