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|  |  | | HBS efficient technology logo  **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. 14 ga to 7/8'', #4 to 1'' (dia. 2 to 22 mm, M3 to M24) | |
| **Welding material** | | Mild steel, stainless steel, aluminum | |
| **Welding rate** | | Dia. 7/8'' = 7 studs/min (dia. 22 mm = 7 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** | | 480/460 V, 3 phases, 50/60 Hz, 63 AT (alternative input voltages available) | |
| **Connected load** | | 100 kVA (400 V mains) 80 kW | |
| **Cooling type** | | F (temperature controlled cooling fan) | |
| **IP Code** | | IP 21 | |
| **Dimension L x W x H** | | 25.6'' x 22'' x 50.8'' (650 x 560 x 1 290 mm) without handle | |
| **Weight** | | 93-66-12096: 319.67 lbs (145 kg)  93-66-42096: 363.76 lbs (165 kg) | |
| **Order No.** | | **93-66-12096 (Gas/Automation/Process control/1 Gun connection) 93-66-42096 (Gas/Automatic/Process control/4 Gun connections)** | |
| **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) | | | |

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| **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** |
| Issue 11/15  (Technical data may change) |