CDMi 2402
Stud Welding Unit
for CD stud welding (capacitor discharge welding) according to current standards

## Technical Data

<table>
<thead>
<tr>
<th>Automation</th>
<th>Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welding range</td>
<td>#4 to 5/16&quot; (7/16&quot; limited), dia. 14 ga to 5/16&quot; (dia. 3/8&quot; limited) M3 to M8 (M10 limited), dia. 2 to 8 mm (dia. 10 mm limited)</td>
</tr>
<tr>
<td>Welding material</td>
<td>Mild steel, stainless steel, aluminum and brass</td>
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<tr>
<td>Welding rate</td>
<td>M3 = 40 studs/min. (Charging voltage 60 V) M8 = 21 studs/min. (Charging voltage 170 V) (M10 = 17 studs/min. (Charging voltage 210 V))</td>
</tr>
<tr>
<td>Capacitance</td>
<td>99 000 µF/33 000 µF*</td>
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<tr>
<td>Welding time</td>
<td>1 to 3 msec</td>
</tr>
<tr>
<td>Energy</td>
<td>2 400 Ws/800 Ws*</td>
</tr>
<tr>
<td>Charging voltage</td>
<td>50 to 220 V (stepless voltage regulation)</td>
</tr>
<tr>
<td>Primary power</td>
<td>115 V, 50/60 Hz, 10 AT</td>
</tr>
<tr>
<td>Power source</td>
<td>Capacitor</td>
</tr>
<tr>
<td>Cooling type</td>
<td>F (temperature controlled cooling fan)</td>
</tr>
<tr>
<td>IP-Code</td>
<td>IP 21</td>
</tr>
<tr>
<td>Dimension L x W x H</td>
<td>22.44&quot; x 11.22&quot; x 11.42&quot; (570 x 285 x 290 mm) without handle</td>
</tr>
<tr>
<td>Weight</td>
<td>57.32 lbs (26 kg)</td>
</tr>
<tr>
<td>* with change over of capacitors</td>
<td></td>
</tr>
</tbody>
</table>

### Order No.
92-12-22412 (Automation)

## General Information

### Application
- Especially suitable for thin sheets (at least 0.5 mm)

### Process variants
- Contact welding
- Gap welding

### Equipment
- Automation (series)
- Menu navigation in various languages: German, English, French, Italian, Russian, Portuguese, Spanish and Chinese
### 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 LCD display
- Function control – All functions are visible on the operator panel via LED or display

#### Structure
- Compact
- Robust – metal housing withstands rough treatment in shop and on site
- Industrial plugs – standardised and sturdy plugs
- Two ground connections – direct coupling of several stud welding machines possible when installed in complex welding systems

#### Safety
- With integrated mains filter (protection against voltage peaks)
- Optimal for construction sites with large mains voltage fluctuations – use even with critical voltage supply (-25% + 20%)
- Fulfils the requirements according to DIN EN 60974-10: 2008-09 - EMC test
- Fulfils the requirements according to DIN EN 60974-1: 2013-06 - Logged high voltage test
- Logged capacitor forming for quality control of the stud welding capacitors
- Controlled capacitor forming – step-by-step charging of capacitors after long standstill times for longer service life of capacitors
- Retriggering lock-out – prevents welding on a welding element that has already been welded
- Thermal control of inverter-capacitor charging unit and internal temperature of stud welding unit – automatic switch-off in the event of overheating
- Temperature controlled cooling fan – 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 cooling air stream – protection of the electronic components against contamination and ideal cooling of the inverter-capacitor charging circuit board for high cycle sequences
- Shock-resistant operation panel – operation panel protected by protruding casing
- Shock-resistant capacitors – capacitors protected by shock proofing elements
- Accessory: Control guard made of acrylic glass (lockable) – prevents damage and unauthorised access

#### Welding
- Graphic display – clear operator guidance via large LCD display
- Setting of charging voltage in V and charging energy inWs – when changing the charging voltage, the charging energy is automatically adjusted
- Process sequence control – detection and evaluation of influencing variables of the welding process via the process control (CP); after every welding, a comparison of the reference CP value and the actual values is performed; display of the actual and target value; welding stop when limit values are exceeded can be activated; limit values can be selected in steps; manual entry of CP value possible
- 15 programs can be stored – in every program, the parameters (charging voltage, capacity, CP settings and automatic settings) can be selected digitally via a superior control system and specific to the application
- Remote control of the stud welding machines via standardised RS232 interface possible – the stud welding machines can be controlled directly via the PC or CNC welding systems
- Library function – library with stored welding parameters for different diameter and material combinations for a quick start of the welding process
- User-specific settings – weld counter (display of previously executed welds); menu navigation in various languages; units (metric, imperial); date; time; setting of the transmission rate of the interfaces
- **Gun / welding head** test – functionality check of the welding guns or the welding heads with a lifting test (check of the lifting function of the gap welding guns and bolt welding heads without contact with the workpiece); functionality check of the welding guns or the welding heads by recording the movement time of the solenoid from triggering to the contact with the workpiece.
- **Reading out of CP values via standardised RS232 interface** – for the output of data such as the date, time and welding parameters of each weld with the superior control system; welding parameters of every weld are logged.
- **Powerful** – built-in power reserves
- **Inverter-capacitor charging technology** – makes high cycle rates possible
- **Trouble-free changing of welding voltage polarity** possible by reconnecting welding current and ground cables
- **Use of special capacitors** (developed for stud welding)
- **Capacitance switching** – 33,000 µF or 99,000 µF

### Suitable stud welding guns/ heads
- C 08
- CA 08
- PAH-1
- KAH 412
- KAH 412 LA

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(technical data may change)