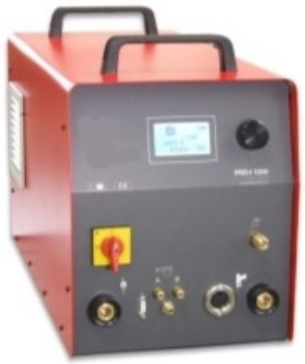
# Inverter stud welding units - drawn arc stud welding



**equipped as standard with**

**PowerPackage**

- excellent welding quality - modern inverter technology ensures a very precise control and a high reproducibility of the welding process
- very high arc stability - also in cases of short welding times and low welding currents
- powerful - high welding current for maximum welding diameters
- fast welding sequences through innovative cooling concept
- ideally suited for mobile use - considerably lower weight than conventional stud welding units
- easy operation also in cases of problematic power supply (e.g. with long extension cables or generators) through integrated electronic wide-range power supply unit (supply area: 320-495 V)
- robust construction for the use in harsh environments
- low power consumption because of the high efficiency
- welding current and time continuously adjustable
- constant current regulation
- standard welding programmes pre-installed (user-specific adaptable)
- 50 user-specific welding programmes can be stored
- integrated welding parameter monitoring (optional: welding parameter memory)
- all functions and parameters are controlled by a fast and high-performance microprocessor
- easy operation by a very robust rotary knob with a built-in push button, all functions and parameters are shown on a big display
- protection of the electronics through air filter

## PowerPackage

- active and intelligent system for the connection of two (optional: three) welding units PRO-I to a powerful unit
- integrated as standard in all series PRO-I units
- possible combinations:
  - PRO-I 1300 + PRO-I 1300: max. welding current/time: 2100 A/1500 mS ⇒ max. welding diameter **22** mm
  - PRO-I 1300 + PRO-I 1300 + PRO-I 1300: max. welding current/time: 3000 A/1500 mS ⇒ max. welding diameter **25** mm
  - PRO-I 1300 + PRO-I 2200: max. welding current/time: 3000 A/1500 mS ⇒ max. welding diameter **25** mm
  - PRO-I 2200 + PRO-I 1300: max. welding current/time: 3000 A/1500 mS ⇒ max. welding diameter **25** mm
- advantages:
  - weldings with high currents of up to 3000 A with only individually fused 32 A connections (PRO-I 1300)
  - easy transport and subsequent connection of the light PRO-I 1300 units in areas difficult to access
  - any job-related configuration at any time (also e.g. by use of rental units)

**Inverter stud welding units for drawn arc stud welding**
**- Technical data and characteristics -**

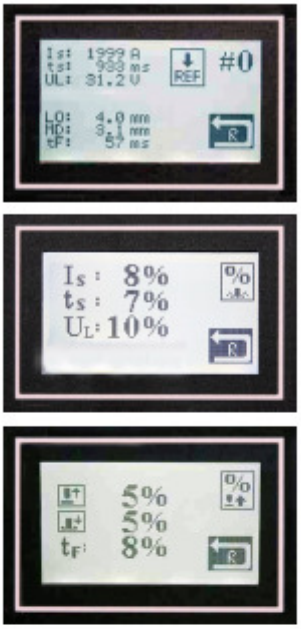
| | PRO-I 1300 | PRO-I 2200 | PRO-I 2800 |
|---|---|---|---|
| **Welding method** | | | |
| Drawn arc (ceramic ferrule)<br>[suitable for weld through deck] | x | x<br>[x] | x<br>[x] |
| Short cycle | x | x | x |
| Drawn arc (shielding gas) | o | o | o |
| **Max. welding diameter (mm)** | | | |
| Drawn arc (ceramic ferrule) | 13 | 22 | 25 |
| Short cycle | 10 | 10 | 10 |
| Drawn arc (shielding gas) | 12 | 12 | 12 |
| **Welding current (A)** | 100-1050 | 100-2100 | 100-2600 |
| **Welding time (mS)** | 5-1000 | 5-1500 | 5-1500 |
| **Constant current regulation** | x | x | x |
| **Welding parameter monitoring** | | | |
| Welding parameter monitoring | x | x | x |
| Welding parameter memory<br>with USB-interface for<br>data transmission to a PC | o | o | o |
| **Gun connections** | | | |
| 1 gun connection | x | x | x |
| 2 gun connections | | o | o |
| 4 gun connections | | o | o |
| **Utilisable with adapter box PRO-SPLIT** | x | x | x |
| **Operation** | | | |
| Microprocessor control | x | x | x |
| Welding programme storage | x | x | x |
| Device lock with PIN code | x | x | x |
| Weld counter (resettable) | x | x | x |
| Lift test | x | x | x |
| Repeat cycle lock | x | x | x |
| Electronic function control | x | x | x |
| Self diagnosis system | x | x | x |
| Automatic function test | x | x | x |
| **Shielding gas module** | o | o | o |
| **Automatic stud feeding** | o | o | o |

**Inverter stud welding units for drawn arc stud welding**
**- Technical data and characteristics -**

| | PRO-I 1300 | PRO-I 2200 | PRO-I 2800 |
|---|---|---|---|
| **Error diagnosis systems** | | | |
| Excess temperature | x | x | x |
| Phase failure | x | x | x |
| Damage on welding/control cable | x | x | x |
| Damage on solenoid | x | x | x |
| **Interfaces** | | | |
| CAN-BUS | o | o | o |
| Anybus | o | o | o |
| USB | o | o | o |
| **Thermic controlled ventilator** | x | x | x |
| **Trolley design** with two big, extremely robust castors and pull-out telescopic handle | | o | o |
| **Lifting eyes** | | x | x |
| **2 swivel castors, 2 fixed castors** | | x | x |
| **Robust, powder-coated metal housing** | x | x | x |
| **Dimensions** | | | |
| Width (mm) | 290 | 550 | 550 |
| Height (mm) | 360 | 850 | 850 |
| Length (mm) | 650 | 650 | 650 |
| Weight (kg) | 31 | 81 | 102 |
| **Electric connection** | | | |
| Mains supply (V) at 50/60 Hz | 320-495 | 320-495 | 320-495 |
| Mains fuse external | 35 AT | 63 AT | 125 AT |
| Mains plug CEE | 32 A | 63 A | 125 A |
| Protection | IP 23 | IP 23 | IP 23 |
| **Suitable welding guns** | | | |
| PHM-10 | x | o | o |
| PHM-12 | x | o | o |
| PHM-160 | o | o | o |
| PHM-161 | o | o | o |
| GD 16 | x | o | o |
| GD 19 | o | x | x |
| GD 22 | o | x | x |
| GD 25 | o | o | x |
| PHA-500 | o | o | o |
| PHA-500-6 | o | o | o |
| **Control cable socket for welding guns** | 12-pin | 12-pin | 12-pin |

x - Standard
o - Option

## Inverter stud welding units for drawn arc stud welding
### - Highlights -




**Welding parameter monitoring and documentation**
The welding parameter monitoring, integrated as standard in all series PRO-I stud welding units, enables a quality control of the finished welds. It offers the following features:

- recording of welding current, welding time and arc voltage for each weld
- recording of stud travel (lift, piston runtime and immersion depth) for each weld [only when a welding gun resp. an automatic welding head with travel measuring system is used]
- comparison of the recorded welding parameters (actual values) to the parameters of a reference weld (set values) (tolerances adjustable)
- in case of variances to the reference weld a warning is displayed or the unit is locked for further welds until the release by the operator (functionality can be switched off)
- storage of the last ten welding parameter sets
- optional (also retrofitable): welding parameter memory for the storage of 24500 welding parameter sets (storage with date and time) with USB-interface for data transmission (welding parameter sets) to a PC

**Multi gun units**

- optional for PRO-I 2200/2800 (also retrofitable): two or four gun connections
- different adjustment values for welding current and time for each gun connection
- automatic detection of used gun
- weld counter for each gun connection
- optional (also retrofitable): shielding gas module for each gun connection
- optional (also retrofitable): automatic module for each gun connection

**Adapter box PRO-SPLIT**

- available as accessory for all series PRO-I units
- enables the operation of up to four stud welding guns with different adjustment values for welding current and time on one unit
- automatic detection of used gun
- weld counter for each gun connection
- with up to four shielding gas modules

**Shielding gas module for welding with shielding gas**

- optionally available for all series PRO-I units
- enables welding with shielding gas for weld pool backing
- shielding gas pre- and post-flow time continuously adjustable
- For multi gun units each gun connection can be equipped with a shielding gas module.

**Automatic stud feeding**
An automatic module enables the connection of the automatic stud feeder VBZ and an automatic welding gun.
For multi gun units each gun connection can be equipped with an automatic module.

**Trolley design**

- optional for PRO-I 2200/2800 (also retrofitable): design as trolley for mobile use on construction sites
- two big, extremely robust castors
- pull-out telescopic handle