

## MasterTig MLS™ ACDC Technical data

| Single-phase model   | MLS™ 2300 ACDC                                      |   |
|----------------------|---|---|
| Connection voltage   | 1~230 V -15 %...+15 %, 50/60 Hz                     |   |
| Load capacity        | TIG 230 A 5.7 kVA (40% ED), 170 A 3.9 kVA (100% ED) |   |
|                      | MMA   | 180 A 6.0 kVA (40% ED), 120 A 3.7 kVA (100% ED) |
| Open circuit voltage | 58 V  |   |
| Welding range        | TIG   | 3 A / 10.0 V ... 230 A / 19.2 V                 |
|                      | MMA   | 10 A / 20.5 V ... 180 A / 27.2 V                |
| Dimensions           | L x W x H   | 430 x 180 x 390 mm                              |

| 3-phase models       | MLS™ 3000 ACDC  | MLS™ 3003 ACDC                                   |
|----------------------|---|--|
| Connection voltage   | 3~ 400 V -10% ... +10%, 50/60 Hz                      | 3~ 230 V -10% ... 460 V +10%, 50/60 Hz           |
| Load capacity        | TIG 300 A 13.3 kVA (40% ED), 190 A 7.9 kVA (100% ED)  | 300 A 9.2 kVA (40% ED) 190 A 4.8 kVA (100% ED)   |
|                      | MMA 250 A 14.4 kVA (40% ED), 190 A 11.0 kVA (100% ED) | 250 A 10.0 kVA (40% ED), 190 A 7.0 kVA (100% ED) |
| Open circuit voltage | 63 V  | 58 V (<35 V VRD)                                 |
| Welding range        | TIG 3 A / 10.0 V ... 300 A / 22 V                     | 3 A / 10.0 V ... 300 A / 22 V                    |
|                      | MMA 10 A / 20.5 V ... 250 A / 30 V                    | 10 A / 20.5 V ... 250 A / 30 V                   |
| Dimensions           | L x W x H   | 500 x 180 x 390 mm                               |
| Weight               | 23 kg   | 25 kg  |

| Cooling units      | Mastercool 20 (for single phase models) | Mastercool 30 (for 3-phase models) |
|--------------------|---|------------------------------------|
| Connection voltage | 230 V -15%...+15%                       | 24 VDC                             |
| Rated power        | 100% ED 50 W                            | 50 W                               |
| Cooling power      | 1.0 kW                                  | 1.0 kW                             |
| Maximum pressure   | 4.0 bar                                 | 4.0 bar                            |
| Cooling liquid     | 20%...40% glycol-water                  | 20%...40% glycol-water             |
| Dimensions         | L x W x H                               | 500 x 180 x 390 mm                 |
| Weight             | 8 kg                                    | 8 kg                               |

## MasterTig MLS™ ACDC Order information

| Power Sources            |         |
|--------------------------|---------|
| MasterTig MLS™ 2300 ACDC | 6162300 |
| MasterTig MLS™ 3000 ACDC | 6163000 |
| MasterTig MLS™ 3003 ACDC | 6163003 |

| Cooling units |         |
|---------------|---------|
| Mastercool 20 | 6162900 |
| Mastercool 30 | 6163900 |

| Control panels |         |
|----------------|---------|
| ACS            | 6162805 |
| ACX            | 6162804 |

| Torches       |           |
|---------------|-----------|
| TTC 160, 4 m  | 627016004 |
| TTC 160, 8 m  | 627016008 |
| TTC 160, 16 m | 627016016 |
| TTC 220, 4 m  | 627022004 |
| TTC 220, 8 m  | 627022008 |
| TTC 220, 16 m | 627022016 |

| Water-cooled torches |           |
|----------------------|-----------|
| TTC 200W, 4 m        | 627020504 |
| TTC 200W, 8 m        | 627020508 |
| TTC 200W, 16 m       | 627020516 |
| TTC 250W, 4 m        | 627025504 |
| TTC 250W, 8 m        | 627025508 |
| TTC 250W, 16 m       | 627025516 |

| TIG torch controls |         |
|--------------------|---------|
| RTC 10             | 6185477 |
| RTC 20             | 6185478 |

| Remote controls |         |
|-----------------|---------|
| R 10            | 6185409 |
| R11F            | 6185407 |

| Cables                      |         |
|-----------------------------|---------|
| Welding cable, 16 mm² 5 m   | 6184103 |
| Welding cable, 25 mm² 5 m   | 6184201 |
| Welding cable, 25 mm² 10 m  | 6184202 |
| Welding cable, 35 mm² 5 m   | 6184301 |
| Earthing cable, 16 mm² 5 m  | 6184113 |
| Earthing cable, 25 mm² 5 m  | 6184211 |
| Earthing cable, 25 mm² 10 m | 6184212 |
| Earthing cable, 35 mm² 5 m  | 6184311 |

| Transport unit |         |
|----------------|---------|
| T130           | 6185222 |
| T110           | 6185251 |
| T100           | 6185250 |
| T200           | 6185258 |



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## Master Tig MLS™ 2300, 3000, 3003 ACDC

Solutions for TIG welding applications

## MasterTig MLS™ ACDC

■ **MasterTig MLS ACDC** models are suitable for TIG welding of all metals, particularly aluminium and stainless steel, as well as for MMA welding. They can be used for manual welding as well as mechanised welding applications.

This product family offers the most versatile and advanced devices for TIG welding. Their characteristics were developed on the basis of the latest achievements in welding research.

### For single- or 3-phase network

The product family contains devices for two amperage classes: The MasterTig MLS 2300 ACDC, which is intended for use with single-phase power supply, and the MasterTig MLS 3000/3003 ACDC models, designed for 3-phase power supply networks. In a multi-voltage model (3003), the supply voltage can be 230–460V.

The maximum load of 3-phase devices in TIG welding is 300 amperes with a duty cycle of 40%. Even in continuous use, the load can be 190 amperes.

By applying a special PFC technology, the welding power has been increased to an unusually high level also in the single-phase machine. The peak current is 230 amperes, and even in continuous use the load can be up to 170 amperes.

### All the characteristics needed in TIG welding

The MasterTig MLS ACDC enables TIG welding with any type of current: AC, DC+, and DC-. In addition, it lets you use a combination of AC and DC, or the MIX TIG.

The digital control panels offer all the basic functions required in TIG welding, plus a great number of useful additional features that improve the quality and productivity of welding.

Setting the welding parameters is easy, and welder-specific, unique settings can be saved by using the memory channel function. There are also several remote control devices available.

### Efficient cooling units

Both of the MasterTig MLS ACDC amperage classes have specific cooling units for water-cooled torches. The MasterCool 30 is intended for 3-phase and MasterCool 20 for single-phase devices.

## Reliability based on welding research



### Basic welding research supports product development

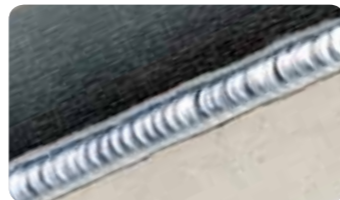
Kemppi's welding technology research unit conducts basic research in welding. The results have been utilised also in the development of the MasterTig MLS ACDC product family.

At the welding laboratory, the action of the welding arc can be slowed down using a high-speed camera, so that it is possible to analyse phenomena taking place in the arc in very great detail.

This is how basic research contributes to product development and helps to create new, increasingly efficient characteristics to Kemppi welding devices.

This type of research is behind the many innovations at Kemppi, which have promoted welding technology in the global market.

This is also how the stable arc and many useful additional features of the MasterTig MLS ACDC devices were born.



### New innovations are created in co-operation with our customers

Kemppi's customer service network is continually in touch with the users of Kemppi's products and services at the various levels throughout the welding industry.

User experiences and feedback derived from maintenance and customer services are collected and taken into consideration in the development of new models and services as much as possible. Customer feedback is refined into actual devices, new functions, customer-specific welding programmes, and service products at Kemppi's welding technology research unit.

Thus, Kemppi's product developers can offer tailored solutions for welding professionals at shipyards, metal workshops, construction sites and everywhere else where pieces of metals are joined either manually or by using a welding robot.

## Special features improve quality and productivity

### MicroTack™ Fast and high quality tacking ensures quality welds

Tack welding is an important phase before solid welding. If tack welds burn through or remain raised or bumpy, the quality of the final weld will inevitably be poor.

MasterTig MLS ACDC has a MicroTack function, which facilitates tack welding also in demanding cases where the sheets to be joined are thin or have different thicknesses. The heat input remains extremely low in MicroTack welding, which lets you create unnoticeable, neat tack welds without deformations. This makes final welding faster, and increases the productivity of welding work.



The difference in the tack welds is clearly visible. MicroTack was used to weld the piece on the right, and usual TIG was used on the piece on the left.

MicroTack welding is an easy and fast way of improving the quality and productivity of welding.



### MIX TIG™ The benefits of AC and DC in the same weld

The MIX TIG function, designed for welding aluminium materials, is a special method that lets you simultaneously utilise both direct and alternating current welding.

The MIX TIG function lets you efficiently utilise the versatile welding characteristics of the MasterTig MLS ACDC.

You can adjust the current components according to your own requirements and the materials to be welded.

By increasing the proportion of AC, you attain a better cleaning effect, while increasing DC provides better penetration.



A stable arc ensures a smooth weld and strong base material attachment, thus ensuring good mechanical properties for the joint.

The MIX TIG function combines the good qualities of direct and alternating current. It makes joining aluminium materials easy and decreases the number of deformations.



### Versatile features add smoothness and usefulness

MasterTig MLS ACDC represents the pinnacle of TIG welding for the versatility of its functions.

The ACX control panel offers many functions that facilitate and increase the speed of welding.

For instance, the Minilog function lets you increase or lower the power level during welding by simply pressing the torch switch.

The 4T LOG function makes it easy to start and stop welding.

The system also offers memory channels that make selecting settings easier, as well as pulse welding functions that increase productivity.

#### Control panel features:

ACS: Basic adjustments and MIX TIG  
ACX: Basic adjustments, MIX TIG and special features such as MicroTack, pulse welding, Minilog, 4T LOG and memory channels.

All MasterTig MLS ACDC welding devices can be equipped with an ACX or ACS control panel introducing numerous additional features that make welding easier and more efficient.

