

Fronius

ivwave

The intelligent
TIG welding machine



TIG system

190i / 230i / 300i /
400i / 500i



Multiprocess PRO system

300i / 400i / 500i



Full freedom

TIG welding quality without compromise

Maximum quality – on every weld, with every material. Thanks to targeted heat input and an improved ignition function, iWave offers you maximum control of your arc and significantly reduced ignition delays.

All the operating elements of the iWave series are designed for maximum control too. The result is intuitive handling, allowing you to fully focus on your welding challenge.

Need a system that can master a full spectrum of welding challenges? Then iWave Multiprocess PRO is the perfect choice: in addition to offering every imaginable TIG and plasma function, it also accommodates all MIG/MAG welding process variants.

iWave: Full freedom to unleash your welding potential.



iWave – your benefits



Targeted heat input

Maximum control of the weld pool

With CycleTIG, you control the arc and the heat input to the fullest extent. Short welding times let you reliably maintain control of the weld pool and weld even the thinnest material with ease.



Self-explanatory operation

Graphical, dynamic menu navigation – in over 30 languages

Straightforward and self-explanatory. With our intuitive menu structure you can easily change settings and get right back to welding.



Multiprocess PRO

One system for all processes (iWave 300i – 500i)

iWave and Multiprocess PRO—your key to unbridled welding freedom. Along with every possible TIG and plasma function, all MIG/MAG welding process variants are accommodated within a single system. Benefit from the modular concept that allows you to expand your high-tech welding system platform according to your exact needs. Simply choose from the following welding packages: Standard, Pulse, PMC, LSC, or CMT.



Reproducible ignition

Up to 71% less ignition delay

Fast and reproducible ignition, regardless of material condition and without any manual adjustment of the ignition parameters. All thanks to RPI auto – our intelligent ignition function.



Ready for Industry 4.0

Contactless data transfer and authentication

Ready for Industry 4.0 and all that lies ahead: iWave supports the key connection standards, from WLAN to Bluetooth and NFC, for optimum use.

For further information, visit:
www.fronius.com/iwave



Be co



Operation

iWave 190i–230i

Graphical, dynamic
operating concept

- Immediate graphical feedback when changing a range of welding parameters
- 4.3" color display with plain text display
- Over 30 languages available
- All work parameters in 1st menu level

Better Control

for better results

Inspired by welders, made for welders: all the operating elements of the iWave series are designed for your everyday work – from the robustness to the colors, legibility, and brightness.

This also applies to the settings:

all key welding parameters are located directly on the first menu level. With over 30 language choices available, the plain text display provides clarity. And operation with gloves has never been so easy.

- Can be used easily when wearing gloves
- Status bar: Additional functions that have been set and main settings at a glance
- 5 EasyJobs and 3 user-defined parameters in the 1st menu level
- Configurable favorites button



Easy, clear, structured



If necessary:
5 EasyJobs

USB interface
for software updates,
for example

Combined press-
and-turn button



iWave 300i–500i operation

Graphical, dynamic
operating concept

- Immediate graphical feedback when changing a range of welding parameters
- 7" color display with plain text display and touchscreen
- Over 30 languages can be selected
- All work parameters in 1st menu level



Status bar

Navigation bar

Touchscreen

Full screen mode

Wire threading

Gas test

NFC field, e.g., for user management and for locking/unlocking the power source with the NFC card or fob



Go straight to the desired setting with the plain text display in over 30 languages

Intuitive and reliable: the system is operated using the combined press-and-turn button or the touchscreen. Graphical instructions and dynamic visualizations when you are changing parameters provide direct assistance.

- Status bar: Additional functions that have been set and main settings at a glance
- 5 EasyJobs
- Touchscreen can also be used when wearing gloves
- Full screen mode: Display is around 40% bigger
- Configurable 1st menu level

Tota flex



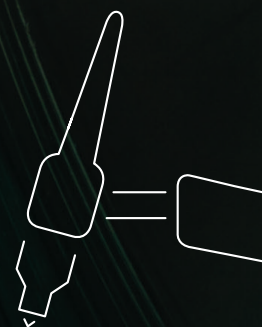
al ibility

Multiprocess PRO – One welding system
for all processes and process variants.
Equipped for the challenges of tomorrow.

From TIG and plasma to MIG/MAG or MMA, the iWave 300i, 400i, or 500i and the Multiprocess PRO option give you complete freedom so you can unleash your full welding potential.

The key difference between this system and conventional multiprocess devices is that in addition to all high-tech TIG and plasma functions, you also have access to every process variant from the field of MIG/MAG welding.

Choose exactly the functions you need from our modular Welding Packages: Standard, Pulse, PMC, LSC, and CMT. Even professional MMA welding is possible – with welding with Cel electrodes as a highlight.





Multi proces PRO

iWave 300i, 400i, 500i

Use MIG/MAG processes without limit:
ignite your welding potential in just three
steps with iWave:

STEP 1

Order and integrate the hardware
option OPT/i Multiprocess PRO.

STEP 2

Expand your modular welding system
with the required MIG/MAG hardware
components such as external
wirefeeder, welding torch, etc.

STEP 3

Select your required MIG/MAG
Welding Packages.

That's it!

Your power source is ready for all
welding processes.

ESS

Highlights

Little space
needed

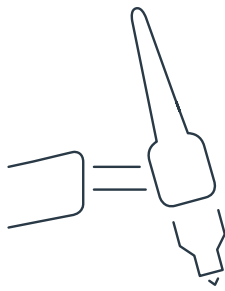
One power source for all
welding processes.

No
changeover

Change process at the touch of
a button.

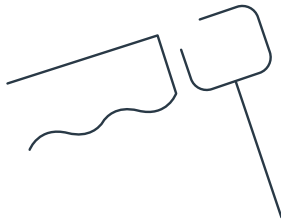
100%
compatibility

With all the welding process variants we offer in
the areas of TIG, plasma, MIG/MAG (Standard,
Pulse, PMC, LSC, and CMT), and MMA.

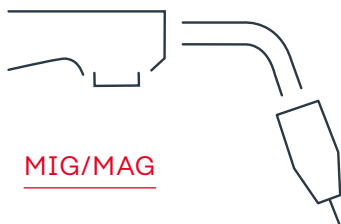


TIG (DC and AC/DC)

Plasma



MMA welding



MIG/MAG

- Top quality and appearance
- TIG DC or AC/DC from 3-500 A
- Optional: Plasma for increased efficiency and quality

- Independence
- MMA welding from 10 - 500A

- Cost effectiveness and productivity
- MIG/MAG from 3 - 500A
- Welding Packages: Standard, Pulse, PMC, LSC, CMT



Full Connectivity

Performance for Industry 4.0: iWave supports the key communication standards. You can quickly and wirelessly connect peripheral devices to the welding system via Bluetooth – from high-tech welding helmets such as the Vizor Connect to remote controls. You integrate the welding system directly into your network via WLAN so firmware updates can be carried out with ease.



Bluetooth

For connecting wireless remote controls and Bluetooth-compatible welding helmets.



NFC

For user management – and for easy locking and unlocking of the welding system.



WLAN

For complete network capability – for updates & use of the Smart Manager function without Ethernet (data documentation).

User management

Complete control: you can assign individual authorizations for each user via the integrated authorization system. The system immediately detects what the person may – and may not – do when they log in with a key card or key fob. If you want to assign and manage authorizations centrally for several welding systems, our Central User Management is the ideal solution.

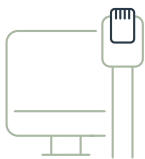
Data management



WeldCube Light

Minimal local documentation

You can record mean values for each weld directly in the welding system as standard and for no additional cost and export them as a PDF.



WeldCube Basic

Enhanced decentralized documentation with configurable range of functions

If you require actual values, limit monitoring, and editing functions for set values, as well as mean values, we present the WeldCube Basic. This version also records the data directly in the welding system.



WeldCube Premium

Central data documentation

Less administration, better overview: WeldCube Premium makes documentation significantly easier by storing your welding data centrally in a database. Intelligent management, statistics, and analysis functions with graphical visualization help you with the controlling requirements of welding production.

For further information, visit: www.fronius.com/weldcube

Cycle Tig

Outstanding weld appearance

Thanks to the Tacking function

Targeted heat input

Ideal for welding thin sheet metals and repair welding, such as edge applications

Simple weld pool control

No burn through – even on corner and butt welds

Fewer temper colors

For sensitive locations

Easier handling

Thanks to the precise setting options for current, time, and various parameter combinations.

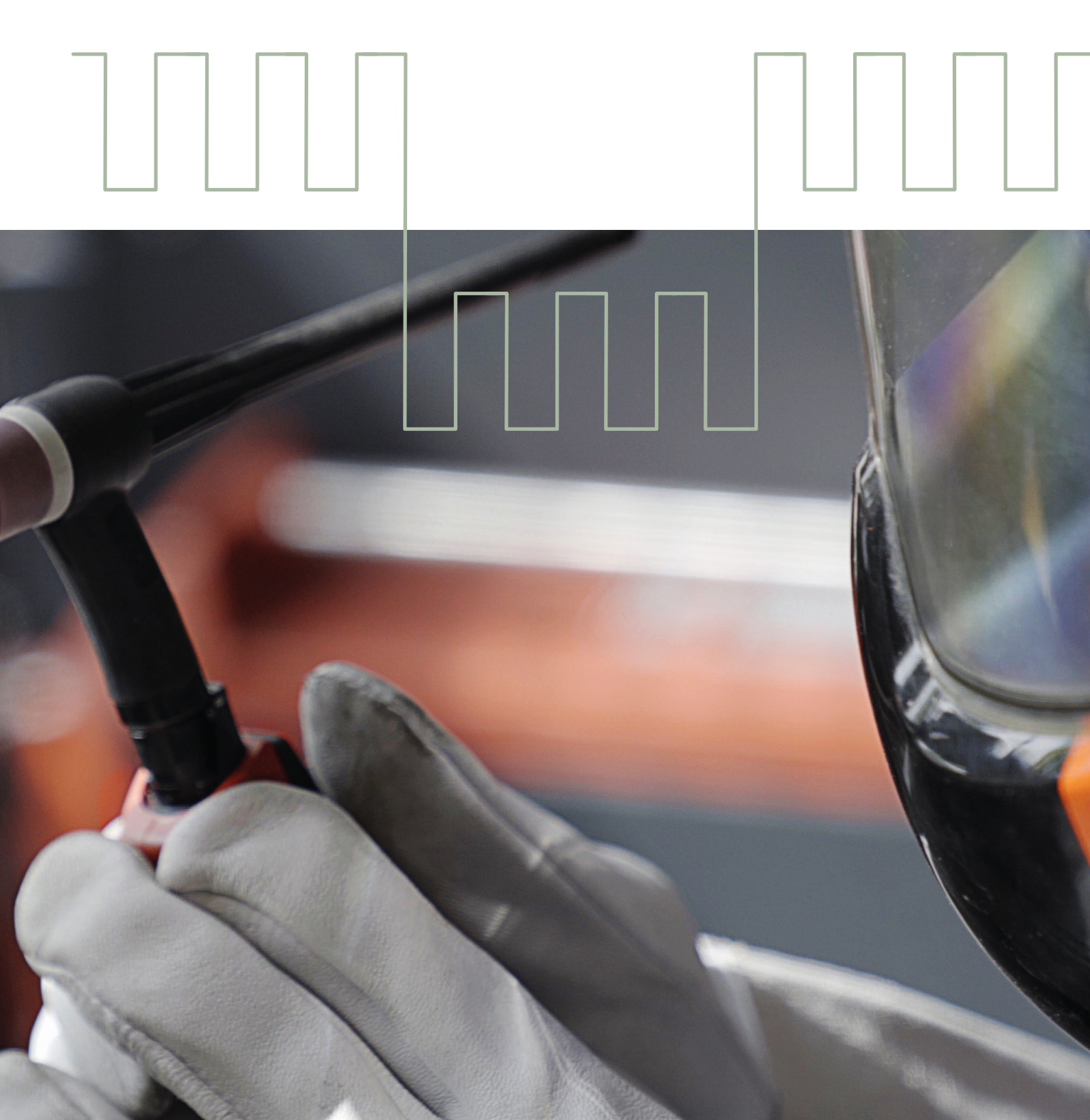
For targeted heat input

TIG welding made easier, thanks to the CycleTig function. This is based on the stitch welding principle and offers additional adjustment options and new parameter combinations for better welding results.

A direct comparison of the advantages

Targeted heat input





Seam optics



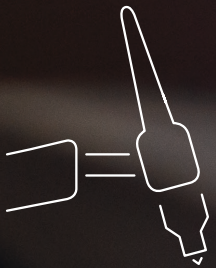
Skill level | Handling



Ignition

Stable and reproducible.

Noticeably better: iWave takes the ignition behavior of TIG welding to a new level. The HF ignition process has been optimized. And the ignition behavior has been adapted to the different electrode diameters.



RPI auto**

Up to 71%* less
ignition delay

Quicker, reproducible ignition – regardless of the condition of the material. With RPI auto, iWave has a solution that comes as standard. The new ignition mode is the intelligent evolution of the proven RPIon function. The welding system now automatically accepts the changes to the ignition settings – including when the ignition worsens and without the need for manual intervention.

Evaluation overview	RPI off	RPI on	RPI auto
Reproducible ignition
Lowest ignition delay
Lowest electrode load
Careful handling of the weld surface

* Compared to RPI off | Test series under laboratory conditions: 200 A welding current / 0.5s welding time/ 1000 ignitions!

** Only for iWave AC/DC

TIG functions



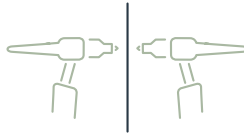
Automatic cap-shaping in just 2 seconds

Save time: use the function to quickly form a cap based on the set electrode diameter.



Tacking – time saving of up to 50% when tacking materials

The weld pool is made to oscillate by means of pulse currents. This makes it easier to tack components together and reduces tacking time, leaving hardly any or no temper colors on the tacking points.



Synchronous welding like never before

Challenge mastered: our “Sync Mode” makes synchronous, double-sided TIG welding with alternating current easier than ever before. Our solution for this ultimate welding challenge is automatic harmonization of both arcs, allowing two welders to work in perfect sync.



AC/DC waveforms – the right arc for every requirement

Weld your way: iWave offers you the option of selecting the wave shape during AC welding. These are typical of a range of weld properties that you prefer for the welding task in question. If required, you can also combine the waveforms.



Automatic gas post-flow – protecting the tungsten electrode

Welding without oxidation. The iWave ensures the gas shield for the tungsten electrode and weld. The gas post-flow is calculated automatically based on the set welding current and the electrode diameter.

We take responsibility

We believe in sustainability

Long service life, repairability, and recyclability: like all Fronius products, iWave is designed and produced with sustainability in mind. We use the latest technology to help protect people and the environment, and ensure a worthwhile future for coming generations.



iWave AC/DC – technical data

	iWave 190i AC/DC EF	iWave 190i AC/DC MV/B	iWave 230i DC EF	iWave 230i AC/DC MV/B	iWave 300i AC/DC	iWave 300i AC/DC /MV/nc	iWave 400i AC/DC	iWave 400i AC/DC /MV/nc	iWave 500i AC/DC	iWave 500i AC/DC /MV/nc
Weight	17,0 kg (37,4 lb.)	16,5 kg (36,3 lb.)	17,0 kg (37,4 lb.)	16,5 kg (36,3 lb.)	65,5 kg (144,4 lb.)	63,5 kg (139,9 lb.)	67,0 kg (147,7 lb.)	65,0 kg (143,3 lb.)	68,5 kg (151,0 lb.)	66,5 kg (146,6 lb.)
Dimensions / width	210 mm/8,26 in.				300 mm/11,8 in.					
Dimensions / height	369 mm/14,5 in.				740 mm/29,1 in.					
Dimensions / length	558 mm/21,9 in.				706 mm/27,8 in.					
Mains frequency	50–60 Hz	50–60 Hz	50–60 Hz	50–60 Hz	50–60 Hz	50–60 Hz	50–60 Hz	50–60 Hz	50–60 Hz	50–60 Hz
Mains voltage	230 V	120 V/230 V	230 V	120 V/230 V	3 x 400 V	3x 200–230 V/ 3x 380–575 V	3 x 400 V	3x 200–230 V/ 3x 380–575 V	3 x 400 V	3x 200–230 V/ 3x 380–575 V
Mains voltage tolerance	+/-15 %	+/-15 %	+/-15 %	+/-15 %	+/-15 %	+/-10 %	+/-15 %	+/-10 %	+/-15 %	+/-10 %
Welding current / duty cycle [10min/40°C]	190 A/35 %	190 A/35 % [230 V] 150 A/35 % [120 V]	230 A/35 %	230 A/35 % [230 V] 170 A/35 % [120 V]	300 A/40 %	300 A/40 %	400 A/40 %	400 A/40 %	500 A/40 %	500 A/40 %
Welding current / duty cycle [10min/40°C]	160 A/60 %	160 A/60 % [230 V] 120 A/60 % [120 V]	195 A/60 %	195 A/60 % [230 V] 140 A/60 % [120 V]	260 A/60 %	260 A/60 %	360 A/60 %	360 A/60 %	430 A/60 %	430 A/60 %
Welding current / duty cycle [10min/40°C]	140 A/100 %	140 A/100 % [230 V] 100 A/100 % [120 V]	165 A/100 %	165 A/100 % [230 V] 120 A/100 % [120 V]	240 A/100 %	240 A/100 %	320 A/100 %	320 A/100 %	360 A/100 %	360 A/100 %
Maximum welding current	190 A	190 A	230 A	230 A	300 A	300 A	400 A	400 A	500 A	500 A
Minimum welding current	3 A	3 A	3 A	3 A	3 A	3 A	3 A	3 A	3 A	3 A
Mark of conformity	CE, S,CCC	CE, CSA, S	CE, S,CCC	CE, CSA, S	CE, S	CE, CSA, S, CCC	CE, S	CE, CSA, S, CCC	CE, S	CE, CSA, S, CCC
Open circuit voltage	100 V	100 V	100 V	100 V	96 V	101 V	96 V	101 V	96 V	101 V
Working voltage range	10,1–17,6 V	10,1–17,6 V	10,1–19,2 V	10,1–19,2 V	10,1–22,0 V	10,1–22,0 V	10,1–26,0 V	10,1–26,0 V	10,1–30,0 V	10,1–30,0 V

Reducing the mental and physical load



For us, sustainability also means protecting people from physical and mental stress.

The new iWave operating concept, technologies for noise reduction during welding, or ergonomic aspects such as the working height of the systems or the design of the welding torch, all help to make the welder's life easier.



Environment and resources

During development of the new iWave series, we focused on bringing long-lasting and repairable systems into the market. A recyclable plastic housing and components that can be individually serviced and replaced help protect our environment. New technologies reduce power losses and gas consumption, thereby conserving resources.

iWave DC – technical data

	iWave 230i DC EF	iWave 230i DC MV/B	iWave 300i DC	iWave 300i DC /MV/nc	iWave 400i DC	iWave 400i DC /MV/nc	iWave 500i DC	iWave 500i DC /MV/nc
Weight	16,4 kg (36,1 lb.)	15,9 kg (35,0 lb.)	40,0 kg (88,2 lb.)	38,0 kg (83,7 lb.)	41,0 kg (90,4 lb.)	39,5 kg (87,1 lb.)	43,0 kg (94,8 lb.)	41,0 kg (90,4 lb.)
Dimensions / width	210 mm/8,26 in.		300 mm/11,8 in.					
Dimensions / height	369 mm/14,5 in.		510 mm/20,0 in.					
Dimensions / length	558 mm/21,9 in.		706 mm/27,8 in.					
Mains frequency	50–60 Hz	50–60 Hz	50–60 Hz	50–60 Hz	50–60 Hz	50–60 Hz	50–60 Hz	50–60 Hz
Mains voltage	230 V	120 V /230 V	3 x 400 V	3x 200–230 V/3x 380–575 V	3 x 400 V	3x 200–230 V/3x 380–575 V	3 x 400 V	3x 200–230 V/3x 380–575 V
Mains voltage tolerance	+/-15 %	+/-15 %	+/-15 %	+/-10 %	+/-15 %	+/-10 %	+/-15 %	+/-10 %
Welding current / duty cycle [10min/40°C]	230 A/45 %	230 A/45 % [230 V] 170 A/45 % [120 V]	300 A/40 %	300 A/40 %	400 A/40 %	400 A/40 %	500 A/40 %	500 A/40 %
Welding current / duty cycle [10min/40°C]	205 A/60 %	205 A/60 % [230 V] 155 A / 60 % [120 V]	260 A/60 %	260 A/60 %	360 A/60 %	360 A/60 %	430 A/60 %	430 A/60 %
Welding current / duty cycle [10min/40°C]	170 A/100 %	170 A/100 % [230 V] 130 A/100 % [120 V]	240 A/100 %	240 A/100 %	320 A/100 %	320 A/100 %	360 A/100 %	360 A/100 %
Maximum welding current	230 A	230 A	300 A	300 A	400 A	400 A	500 A	500 A
Minimum welding current	3 A	3 A	3 A	3 A	3 A	3 A	3 A	3 A
Mark of conformity	CE, S,CCC	CE, CSA, S	CE, S	CE, CSA, S,CCC	CE, S	CE, CSA, S,CCC	CE, S	CE, CSA, S,CCC
Open circuit voltage	97 V	97 V	96 V	99 V	96 V	99 V	96 V	99 V
Working voltage range	10,1–19,2 V	10,1–19,2 V	10,1–22,0 V	10,1–22,0 V	10,1–26,0 V	10,1–26,0 V	10,1–30,0 V	10,1–30,0 V

iWave – function overview

Functions	iWave 190i AC/DC	iWave 230i AC/DC	iWave 300i AC/DC	iWave 400i AC/DC	iWave 500i AC/DC	iWave 230i DC	iWave 300i DC	iWave 400i DC	iWave 500i DC
Pulse welding	✓	✓	✓	✓	✓	✓	✓	✓	✓
RPI on	✓	✓	✓	✓	✓				
RPI auto	✓	✓	✓	✓	✓				
SoftStart (touchdown ignition)	✓	✓	✓	✓	✓	✓	✓	✓	✓
HF ignition	✓	✓	✓	✓	✓	✓	✓	✓	✓
Touch HF ignition	✓	✓	✓	✓	✓	✓	✓	✓	✓
TIG Comfort Stop	✓	✓	✓	✓	✓	✓	✓	✓	✓
Arc break voltage	✓	✓	✓	✓	✓	✓	✓	✓	✓
Automatic cap-shaping	✓	✓	✓	✓	✓				
Waveform setting (AC/DC)	✓	✓	✓	✓	✓				
Tacking	✓	✓	✓	✓	✓	✓	✓	✓	✓
Synchronized welding	✓	✓	✓	✓	✓	✓	✓	✓	✓
Automatic gas post-flow	✓	✓	✓	✓	✓	✓	✓	✓	✓
CEL mode	✓	✓	✓	✓	✓	✓	✓	✓	✓
CycleTIG	✓	✓	✓	✓	✓	✓	✓	✓	✓
Multiprocess (TIG, MMA)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Multiprocess PRO			✓	✓	✓		✓	✓	✓
Plasma welding			✓	✓	✓		✓	✓	✓
Generator-compatible	✓	✓	✓	✓	✓	✓	✓	✓	✓
Multivoltage 120/230 V	✓	✓				✓			
Multivoltage 200-600 V			✓	✓	✓		✓	✓	✓
Cooling type	Gas-cooled	Gas or water-cooled	Gas or water-cooled	Gas or water-cooled	Gas or water-cooled	Gas or water-cooled	Gas or water-cooled	Gas or water-cooled	Gas or water-cooled
Connectivity (WLAN, NFC, Bluetooth)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ethernet and Speednet as standard	Ethernet optional	Ethernet optional	Ethernet and Speednet as standard	Ethernet and Speednet as standard	Ethernet and Speednet as standard	Ethernet and Speednet as standard	Ethernet and Speednet as standard	Ethernet and Speednet as standard	Ethernet and Speednet as standard

Text and illustrations were accurate at the time of printing. Fronius reserves the right to make changes. All information published in this document, despite exercising the greatest of care in its preparation, is subject to change. No legal liability is accepted. Copyright © 2021 Fronius™. All rights reserved.

Fronius Canada Ltd.
2875 Argenta Road, Units 3, 4, 5 & 6
Mississauga, ON L5N 8G6
Canada
T +1 905 288-21 00
F +1 905 288-21 01
sales.canada@fronius.com
www.fronius.ca

Fronius USA LLC
6797 Fronius Drive
Portage, IN 46368
USA
T +1 877 FRONIUS
sales.usa@fronius.com
www.fronius-usa.com

Fronius UK Limited
Maidstone Road, Kingston
Milton Keynes, MK10 0BD
United Kingdom
T +44 1908 512 300
F +44 1908 512 329
info-uk@fronius.com
www.fronius.co.uk

Fronius International GmbH
Froniusplatz 1
4600 Wels
Austria
T +43 7242 241-0
F +43 7242 241-95 39 40
sales@fronius.com
www.fronius.com