

/ Perfect Welding / Solar Energy / Perfect Charging



## **VERSION HISTORY**

### **FIRMWARE MWi/TTi**

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Version 0000 02/2021 0000

BU Perfect Welding

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Gender-specific wording refers equally to female and male form.

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# **1 CHANGES FROM V1.8.0 TO V1.8.2**

*Date: February 2021*

## **1.1 Language extension**

The Bulgarian language has been extended in the language settings.

## **1.2 Optimization Bluetooth settings**

Due to various interruptions in connection with Bluetooth, the Bluetooth settings have been optimized.

## 2 CHANGES FROM V1.7.1 TO V1.8.0

Date: February 2020

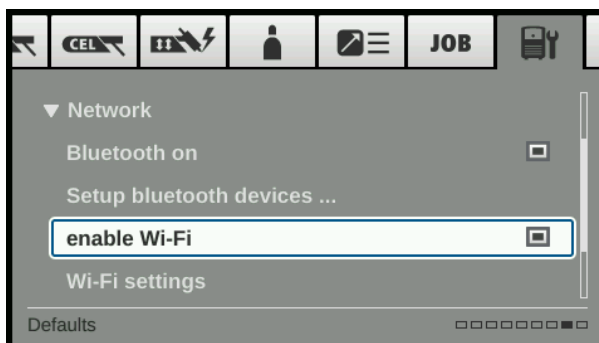
### 2.1 Wi-Fi Functionality

With the "Wi-Fi" functionality, all functions of the connection via Ethernet are now available via Wi-Fi. The Ethernet option is no longer necessary for using the network functionality.

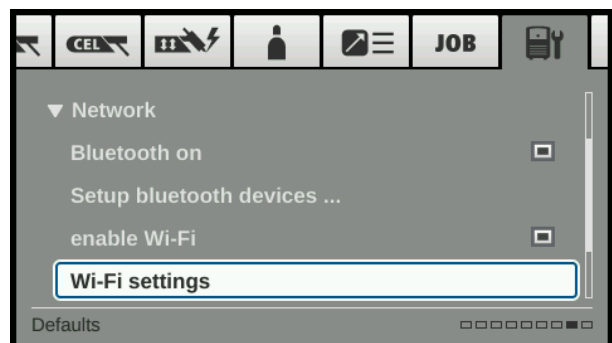
**Note:** Wi-Fi functionality is only available with the TransTig 230i / MagicWave 230i.

/ Connection setup

1. Enable Wi-Fi



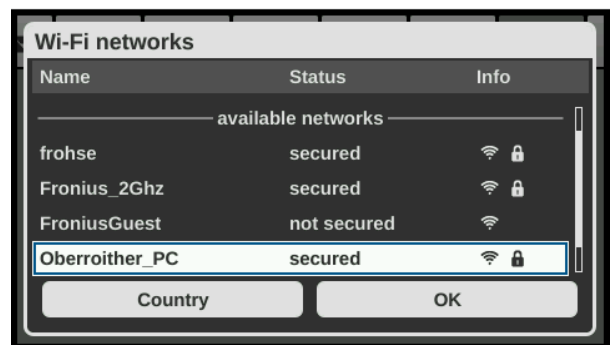
2. Select Wi-Fi settings



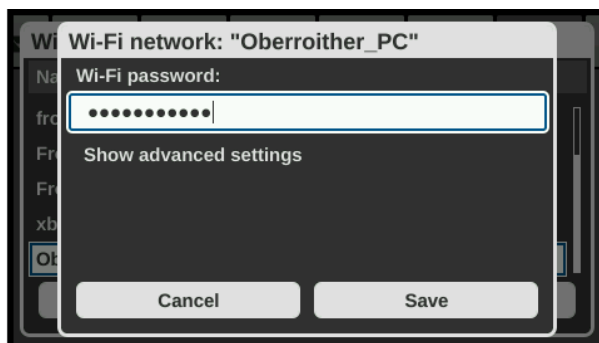
3. Define country settings



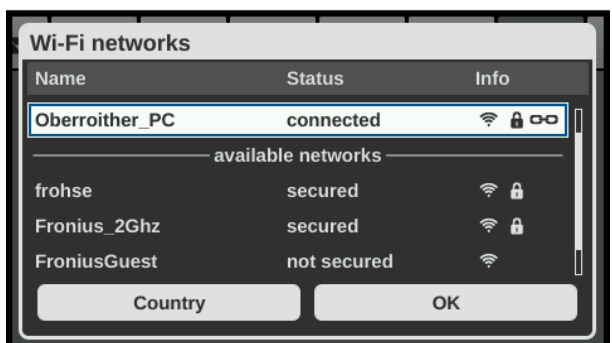
4. Select the preferred Wi-Fi network



5. Enter & save password



6. Connected - functionality available via Wi-Fi



## 3 CHANGES FROM V1.6.0 TO V1.7.1

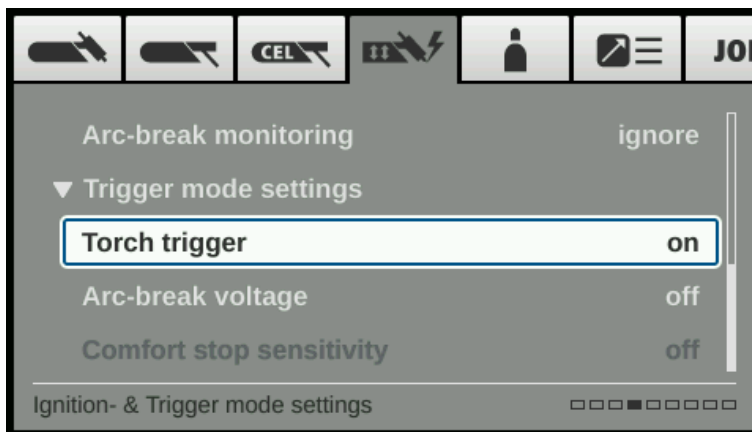
Date: October 2019

### 3.1 Process start and end without torch trigger

By using welding torches without a torch trigger, welding requirements that are difficult to access or other TIG welding applications, the welding process can be started or stopped without a torch trigger using this function.

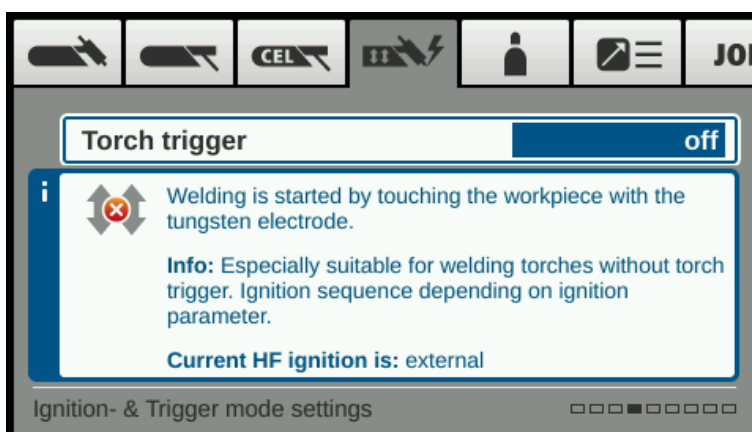
#### 1.1.1. Activation / deactivation of torch trigger

The function keys in the menu can be deactivated for special requirements or the use of welding torches without torch trigger



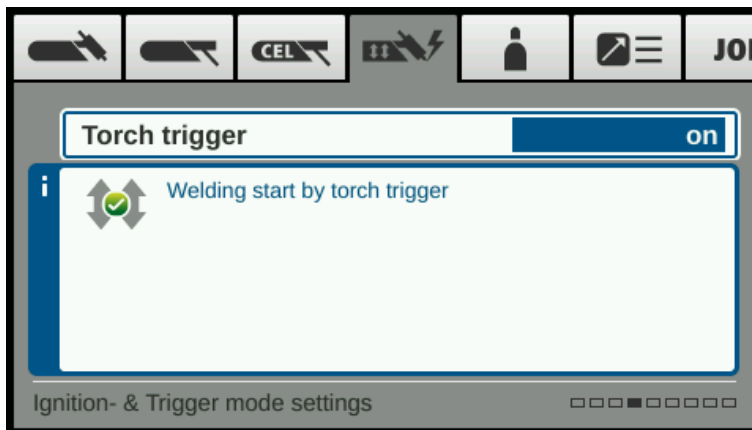
#### / Torch trigger OFF

When using the setting "Torch button - OFF", torches with function keys are deactivated and a welding start is only possible by means of the defined values for HF ignition (ON, OFF, external, Touch HF, contact ignition).



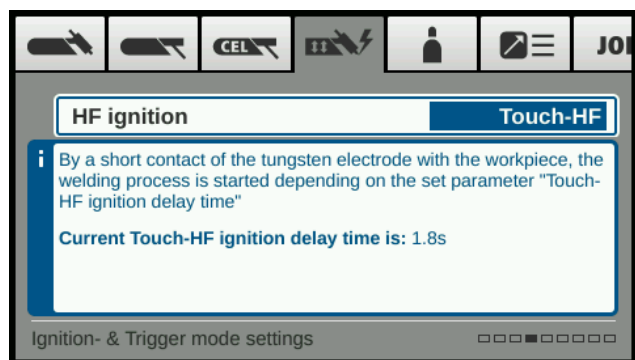
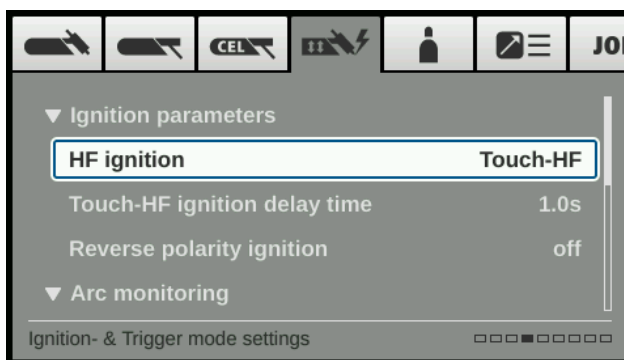
## / Torch trigger ON

Welding start and end by using the torch trigger.



### 1.1.2. Touch HF

For special ignition applications (difficult access, no burner button, exactly positioned ignition) the function "Touch HF" for exact ignition with HF ignition was implemented.



#### / Possible ignition settings

- / ON
- / OFF
- / TouchHF
- / Extern

#### / Functional sequence

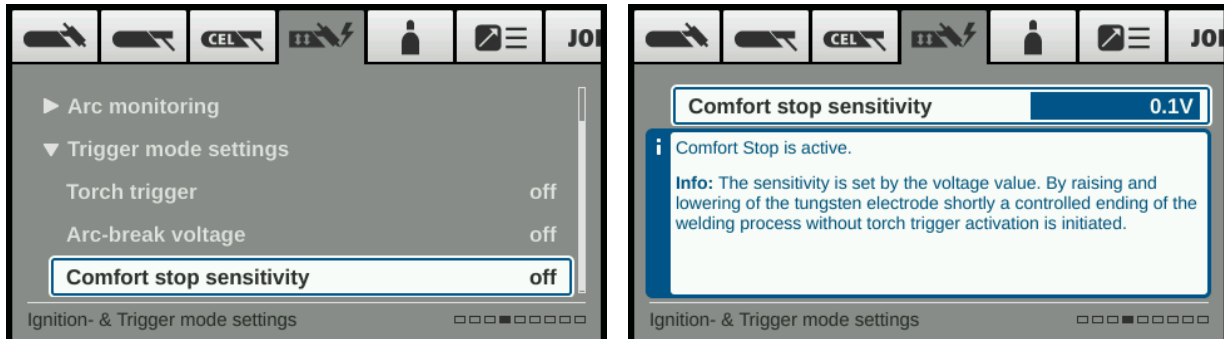
- / A short-circuit is generated by placing the electrode on the workpiece.
- / Set delay time after lifting the tungsten electrode is running
- / Exact ignition on the workpiece
- / Can be used in 2- and 4-step mode



### 1.1.3. TIG Comfort Stop / Arc-break voltage

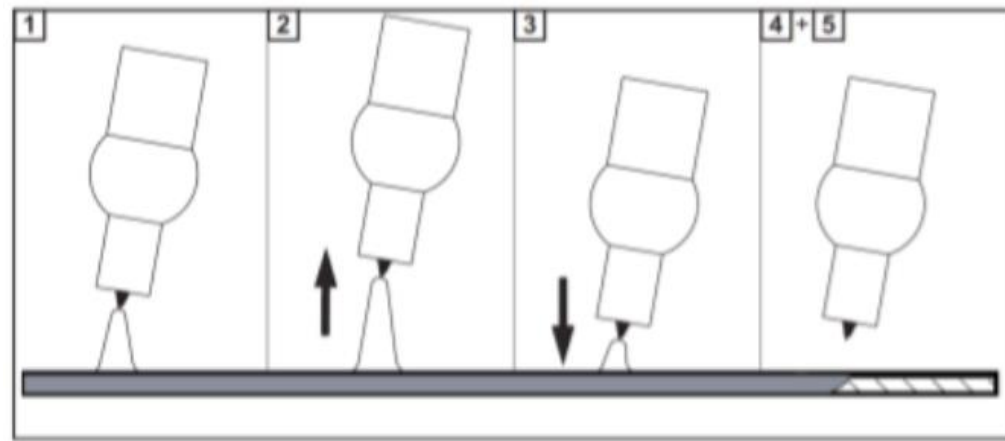
#### / TIG Comfort Stop

The "TIG Comfort Stop" function has been implemented to end the welding process without the torch trigger.



#### / Functional sequence

- / Short raising and lowering of the tungsten electrode in the welding process
- / Change in welding voltage is detected
- / Welding process is ended - DownSlope & and gas post-flow time as set
- / The sensitivity of the change of the welding voltage can be set in the menu.



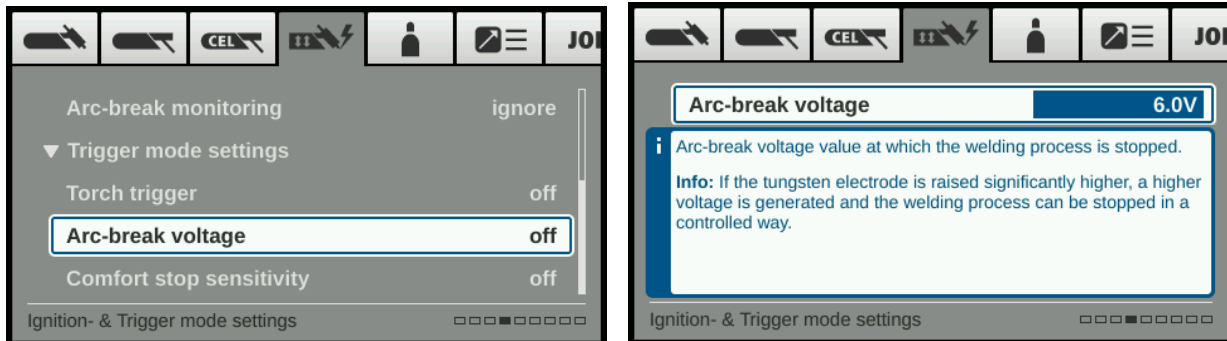
#### / Possible setting ranges

- / OFF (Default)
- / 0,1 – 10V

## / Arc-break voltage

In addition, the welding process can be ended by a preset arc break voltage.

A higher welding voltage is generated by raising the electrode, which allows the welding process to be stopped in a controlled way (process end according to set parameters).

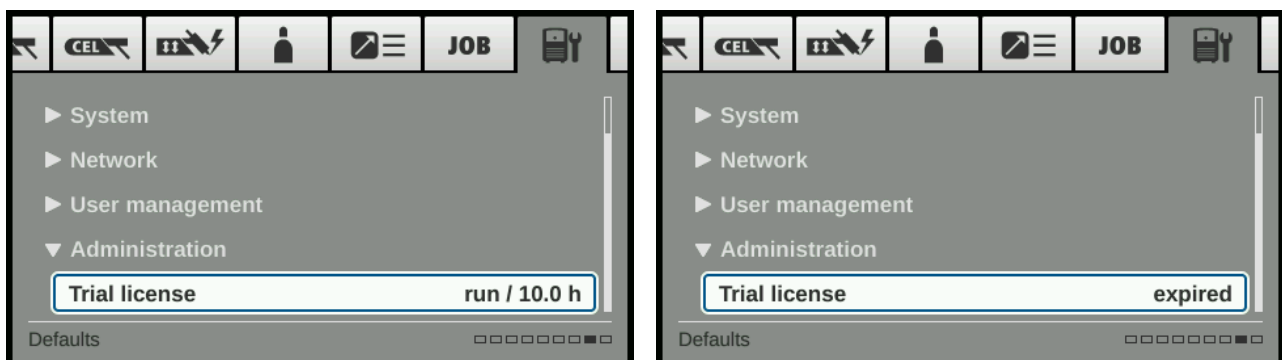


- / Possible setting ranges
- / OFF (Default)
- / Filter time
- / 6-90V

## 3.2 Trial - License

The currently available function packages can be used and tested on the power source free of charge for a certain period of time via a trial license.

- / Informatins
- / All function packages are unlocked and available after activation
- / Activation of the trial license in the menu
- / The trial license is available for 10 hours arc burning time.
- / Warning of expiration (remaining time: 2 hours) of license
- / After expiration, the function is stored as "expired" in the menu.
- / A new activation of the trial license is not possible.



## 4 CHANGES FROM V1.5.1 TO V1.6.0

Date: May 2019

### 4.1 User Management for TransTig 230i & MagicWave 230i

User Management is now available for the intelligent revolution of the TIG-Series at Fronius.

- / Manage individual permissions for every welding system
- / Simple management at the power source
- / Simple locking & unlocking of the welding system
- / User management also possible via PC



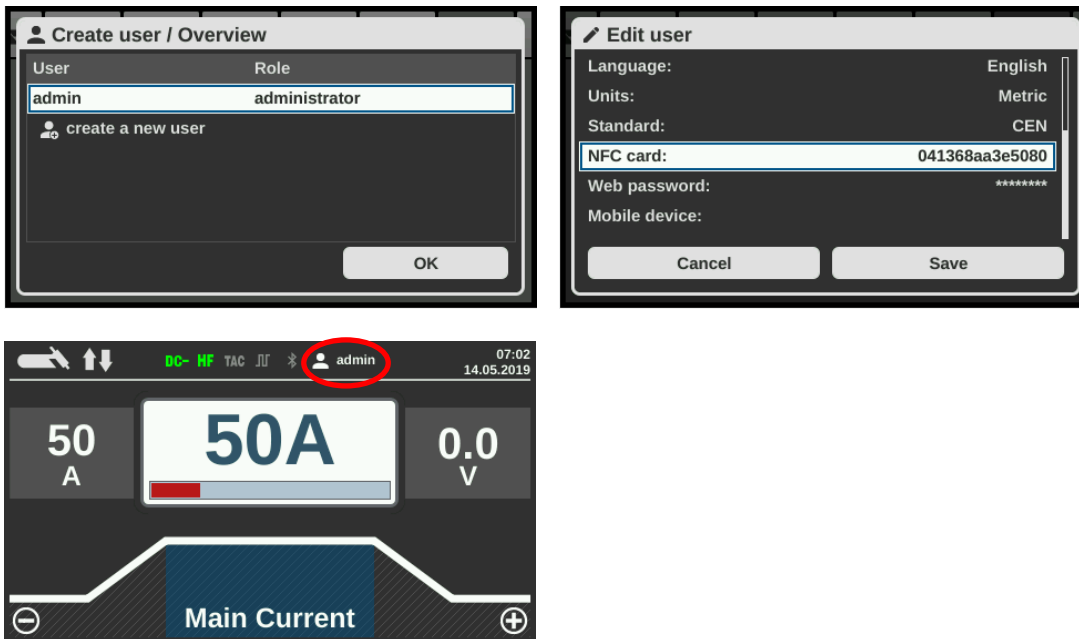
**There are three different ways to use the user management**

- / KeyCard – 4,044,032
- / KeyFob – 4,044,031
- / Individual customer card with the option Customer NFC – OPT/i Custom NFC (4,067,013)



## Important information for activating the user management

To activate user management, it is necessary to assign an administrator (key card, key fob, personal NFC card) to the power source. All users and roles can then be created and managed.



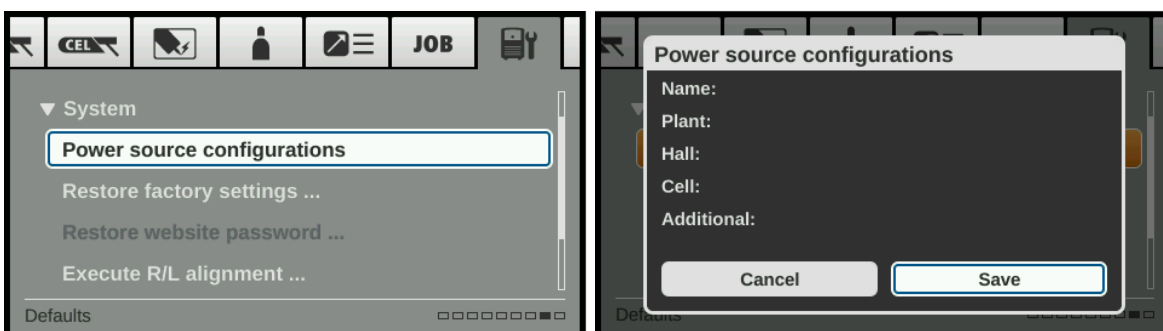
## 4.2 Power source configuration

From the software version V1.6.0 it is possible to configure any TIG power source and assign it to any plant, hall, welding cell and welder.

### Configurable parameters & informations:

- / Name
- / Plant
- / Hall
- / Cell
- / Additional

The functionality can be found in the menu under Defaults / System / Power source configuration



## 5 CHANGES FROM V1.5.0 TO V1.5.1

*Date: March 2019*

### 5.1 Adaption mains voltage tolerance for CU600t cooling unit

When operating with a water-cooled system in a lower mains voltage range, as well when using long extension cables, the error "Error 827 & 859 - mains under voltage" can occur.

Therefore adjustments on the cooling unit have been done. The main-voltage tolerance of the cooling unit and the power source have been reduced to the same level. This ensures that the system reacts uniformly to the applied mains voltage.

## 6 CHANGES FROM V1.4.0 TO V1.5.0

Date: December 2018

### 6.1 Bluetooth functionality\*

From now on, the Bluetooth functionality of the power source is activated which allows an additional extension of communication with other devices.

*\*only available in countries with valid certification.*

**Remote controls** – for adjusting welding parameters

/ 4,046,111 RC Panel TIG /Wireless

/ 4,046,112 RC Pedal TIG /Wireless



**Welding helmets** – premature darkening (PreTrigger)

/ 42,0510,0312 Vizor Connect

/ 42,0510,0313 Vizor Connect, fresh air system

/ 42,0510,0314 Vizor Connect, fresh air system, carrying strap

available 2019

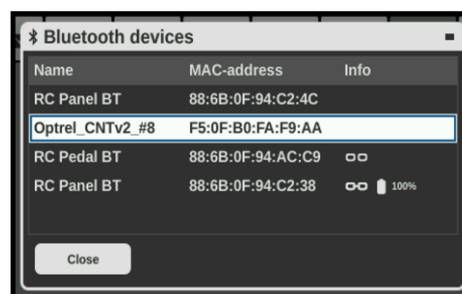
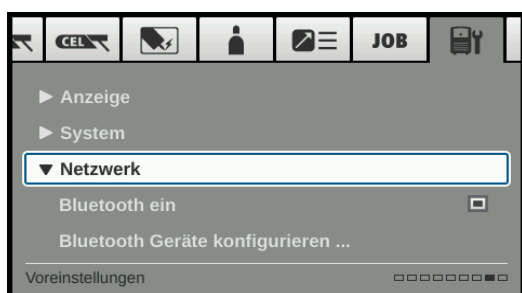
available 2019

available 2019



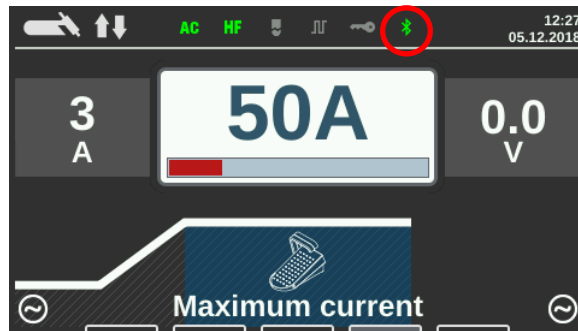
### 6.2 Bluetooth setup

- / In the menu "Preferences" and the new item "Network" now Bluetooth can be activated or a new Bluetooth device can be configured / "paired".
- / Each Bluetooth device has a unique **MAC address / tag** - this allows avoiding confusion and a specific assignment to the power source.
- / In addition, the charge state of the battery is displayed in the Info column of an actively connected device



### 6.3 Bluetooth remote control features

- / At the power source, the status bar indicates whether there is an active connection (green) - if this is not the case, the Bluetooth icon is greyed



- / There can only ever be one active connection of a component of the same type – e.g. for safety reasons, only one remote controller of one type (e.g. not two RC Pedal TIG / Wireless) can be actively connected to the machine at the same time



- / However, several active BT connections of different subscribers can be set up - for example: a remote control in combination with a Vizor Connect, an RC panel TIG with an RC pedal TIG, etc...



- / Each time a power source switches on; a new BT device is not automatically active, and needs a configuration at the power source
- / However, if a remote control / welding helmet was at least coupled to the power source prior to powering off, it will be reconnected automatically, provided it is in close proximity to the power source & self-powered, when the power source is turned on again
  - If several BT devices of the same type are switched on at the same time, the fastest device has priority for an active connection
- / It is not possible for another BT device to interrupt or influence an active / existing connection.

- / A Bluetooth device always takes precedence over a wired device.
- Between wired remote controllers or torches with control function (like Up/Down, JobMaster, potentiometer ...) and a Bluetooth remote control - the BT remote control has priority for a settable parameter on the BT remote control (with an active connection).



- / If the connection to the power source is interrupted during the welding process with a wired or BT remote control (with the function for starting the welding process, for example: RC Pedal TIG ...), then the welding process is terminated for safety reasons.



**Active connection** → Bluetooth device (remote controller, Vizor ...) can make an active change to the power source or accept



**Coupled** → a Bluetooth device was already actively connected to a power source and appears in the list of BT subscribers



**Inactive** → a new Bluetooth device was found or the user has removed an active BT device

## 6.4 Factory settings

Factory settings adjusted - this is due to feedback from customers who want to have the same factory settings of the older device generation in order to simplify the transition to the new device series.

This change affects the following AC parameter

- Positive wave → Sinus (before hard)
- Negative wave → rectangle soft (before hard)
- AC Balance → 35% (before 32%)

**PLEASE NOTE** - the above-mentioned parameters overwrite existing parameters in case of an update.



## 6.5 Drop current ( $I_2$ ) Up-/Down slope

From now on it is possible to set an up- or down-slope for the drop current  $I_2^*$  - in addition to this, the drop current in relation to the main current can be increased up to 200%.

*\* Prerequisite: 4-step operation when using a torch with trigger*

### When is it necessary?

#### **Down-Slope**

- If the welder wants to change the welding rod during the welding process, he must temporarily reduce the current or increase again after the change
- However, this should not be done abruptly but slowly & adapted to have no negative impact on the weld and the component - especially for aluminum applications

#### **Up-Slope**

- If the welding rod has changed, a ramp can be set via the up-slope so that the molten bath heats up slowly and not abruptly. This allows outgassing of the molten bath and reduces pores in aluminum welding.

#### **$I_2$ higher than 100%**

- if a component has been tacked before - this tacking point must be subsequently welded over - a higher welding current is often required here - therefore, from now on, the lowering current can also be set above the value of the main current

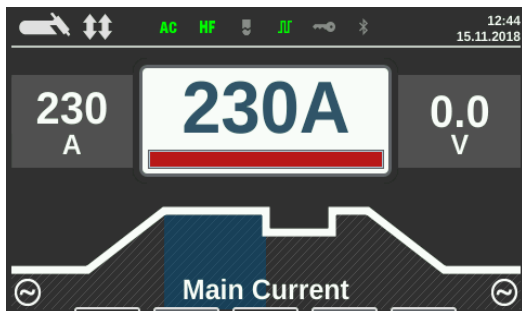


Fig.: 1

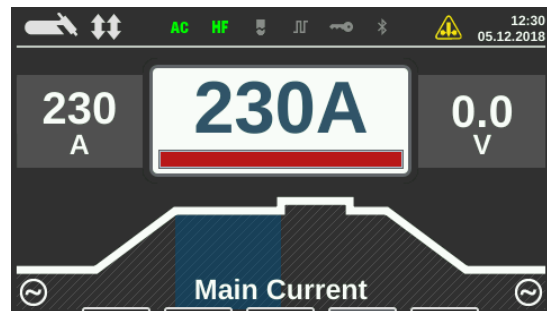
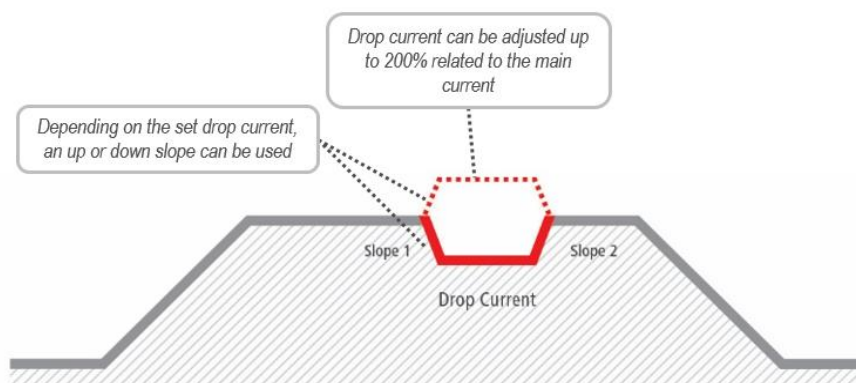


Fig.: 2

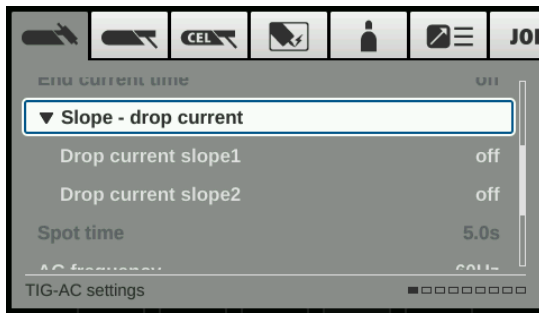
/ If the drop current is set to more than 100%, this is also shown graphically to the user in the function curve on the device display - see Fig. 2.

/ The two slope times are not graphically displayed for the sake of clarity.

### Further explanation



The two slope parameters can be set in the menu "TIG AC & DC settings" at "Slope - drop current".

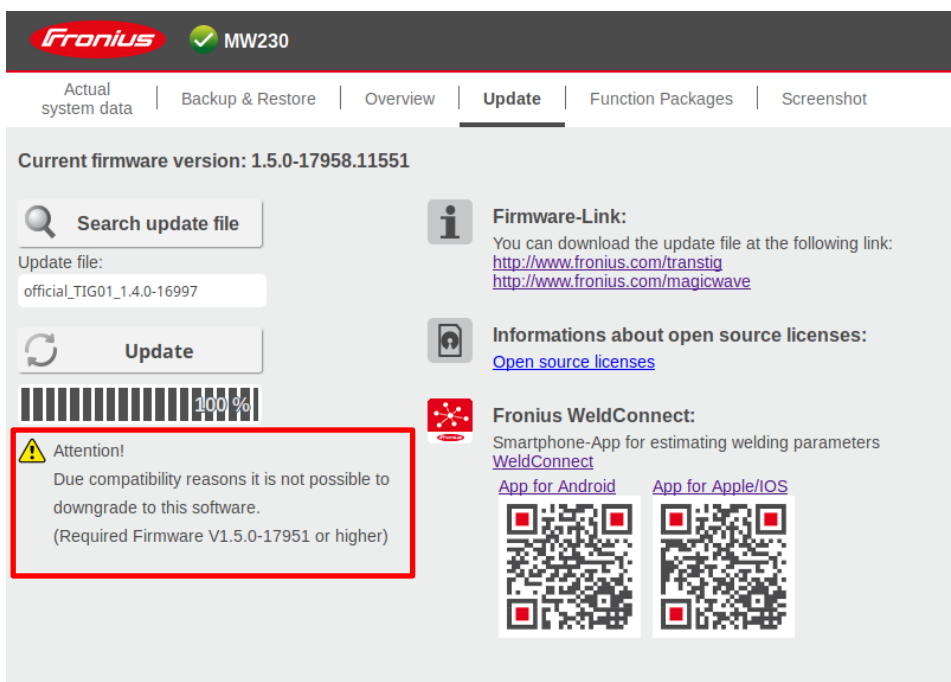


Factory setting for both Slope values → **off** → therefore there are no changes for the user after an update to the new software version.

**Parameter - Slope 1 & 2** → *off / 0,01 – 30sec*

## 6.6 Software Downgrade lock

Due to necessary hardware changes and internal software adjustments, it is not possible any more to downgrade from version v1.5.0 to previous software versions v1.4.0 / v1.3.1.



## 7 CHANGES FROM V1.3.1 TO V1.4.0

Date: September 2018

### 7.1 Drain / fill torch hose pack

In order to ensure a simple and "clean" change of the torch body in water-cooled systems, a new function has been implemented to empty the torch hose package or to refill after torch body replacement.

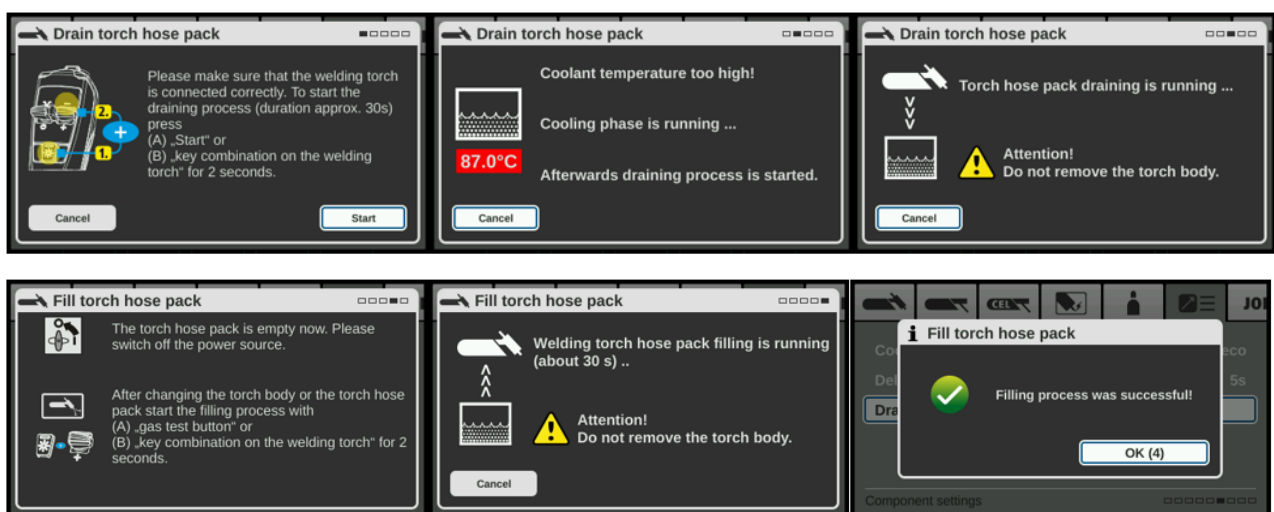
In addition, this function also offers the option of only draining the torch hose package to make a change of a complete hose package easier and without loss of coolant.

The function can be easily accessed via the menu "Component settings" and is carried out with a wizard in only 5 steps.

Function only in combination with a cooling circuit 4.048,011 CU600t **MC\*** / 4,048,011,630 CU600t MV **MC\***

\* MC = MultiControl

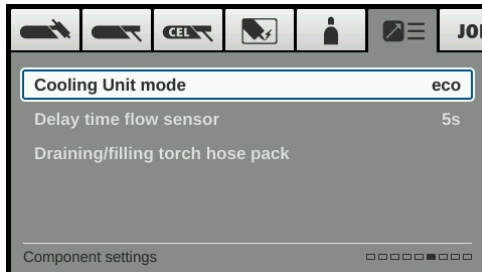
**Please note that in case of using a machine with an serial number before 29245644 you additionally need to change the TPC 220 pcb (4,071,570,Z).**



## 7.2 Flow sensor delay time adjustable

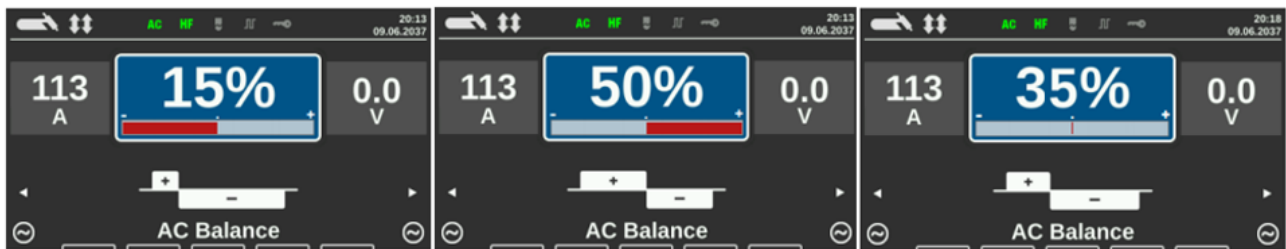
Needed to prevent the flow sensor from being triggered during longer hose packages during the filling phase.  
Grayed out when no flow sensor is installed.

*Adjustment range 5-25 sec*



## 7.3 Optimization AC Balance display

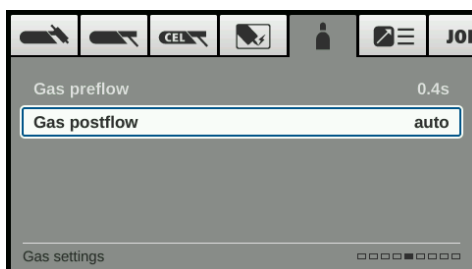
On existing TIG devices, the setting range has been -5 / 0 / +5 - since this was not a tangible value it was changed to percent "%" - so that the conversion is as easy as possible for users, the adjustment range was changed using the bar so that you can see immediately where the middle, minimum and maximum is located.



## 7.4 Gas post flow AUTO

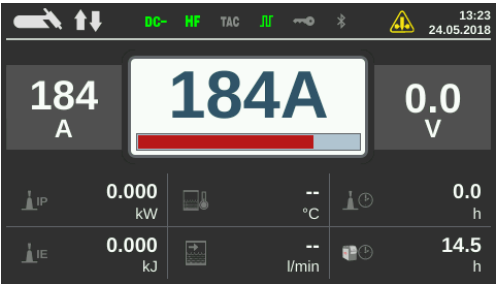
On predecessor machines it was possible to set the G-H parameter to an automatic gas post-flow time - this has now been changed. From now on the gas post-flow-time parameter has a setting range from *AUTO* to 60sec. This allows the customer to choose between a manual setup or the system automatically adjusts the post-flow-time based on the selected operating mode (AC /B DC) & the welding current.

**ATTENTION - in case of a firmware update for existing systems to V1.4.0, the parameter for the post-flow time is set to AUTO - thus the previously set value of the customer is overwritten!**



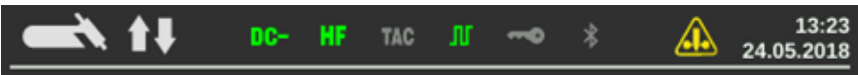
## 7.5 System data display

From now on it is possible to display the relevant system data on the main screen - the display can be activated in the background menu and remains until the system data is hidden again using the turn-push knob or a control knob on the power source display.



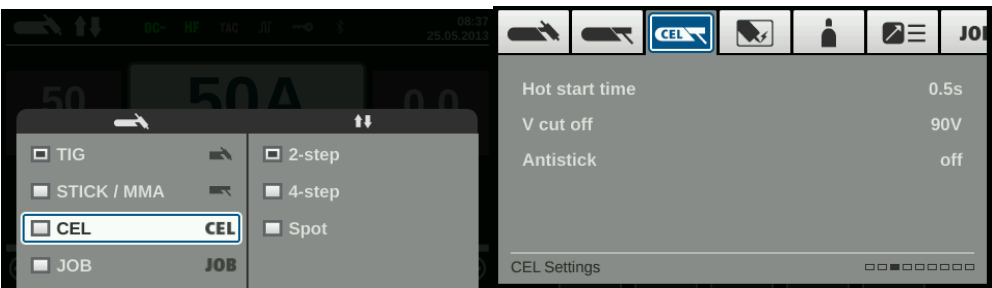
## 7.6 Overload of the electrode

The overload of the electrode is now displayed in AC and DC mode – it depends on the electrode diameter and the set welding current.



## 7.7 CEL Mode

The CEL mode is now available and can be used without restrictions.

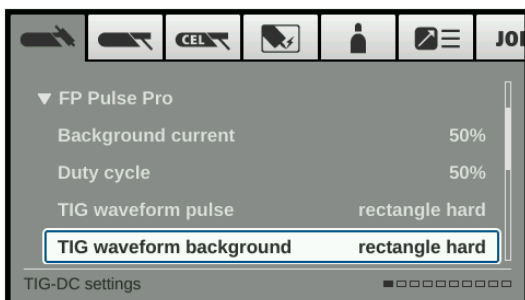


## 7.8 Extension of FP Puls Pro

The well-known function package "FP Puls Pro" will be extended with a new function. It is already known that the wave forms can be adjusted in AC mode - this is now also possible in DC mode with the new software release.

The following settings are available

- **Waveform basic current**
  - o Rectangle soft, Rectangle hard, sine
- **Waveform pulse current**
  - o Rectangle soft, Rectangle hard, sine



This results in the following advantages for the customer

- The advantage for the user is the possibility to adjust the arc pressure - resulting in improved welding of butt welds or corner seams or enables better outflow of the molten bath.
- Especially for fillet welds, high alloy steels and plating applications
  - o In any case, where by a slow increase or decrease of the welding current, the welding filler or the molten bath should not be pushed away
- Reduction of the noise level during welding due to rounded curve shapes.

Existing jobs are not changed by the two additional parameters – would a change to an existing job be desired, it must be loaded, modified and saved again.

**Factory setting -> "Rectangle hard" waveform -> corresponds to the previous standard value**

## 7.9 Synchronous TIG welding

To weld from both sides with two power sources, these must be synchronized.

This is now achieved with a parameter (AC Frequency → **SYN**), which makes it possible to synchronize the two current sources and thereby achieve a perfect welding result.

Synchronous welding is used at thicker material thicknesses to achieve high deposition rates and to minimize defects (inclusions) during welding.



On both power sources, the parameter "AC Frequency" must be set to SYN, so that the two current sources do not adversely affect - further it may be necessary - due to the phase position of the input voltage (1~ phase) - to turn the power plug of the power sources by 180deg connect the power cable again. (Switch off power source first!)

For the older TIG machine generation, it was also necessary to set the parameter PHA (0-5) - this is no longer necessary with the new TIG generation.

**Note: this function is not suitable for generator operation - Reason -> Grid frequency of the generator may fluctuate / deviate.**

---

## 7.10 Additional languages

In addition to German and English, the following languages have been implemented:

- |              |              |             |
|--------------|--------------|-------------|
| ✓ Czech      | ✓ Italian    | ✓ Slovak    |
| ✓ Spanish    | ✓ Japanese   | ✓ Slovenian |
| ✓ Estonian   | ✓ Latvian    | ✓ Serbian   |
| ✓ Finnish    | ✓ Dutch      | ✓ Swedish   |
| ✓ French     | ✓ Norwegian  | ✓ Thai      |
| ✓ Croatian   | ✓ Polish     | ✓ Turkish   |
| ✓ Hungarian  | ✓ Portuguese | ✓ Ukrainian |
| ✓ Indonesian | ✓ Romanian   |             |
| ✓ Icelandic  | ✓ Russian    |             |

## 7.11 Serial number display

The serial number of the power source is now displayed in the system information - however, the software version is no longer displayed - not relevant for the customer or support.

Serial number	2907xxxx
Image version	1.4.0
<del>Software version</del>	<del>1.3.48</del>

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## 7.12 Torch LED control



The LED can be operated with the LED button on the torch ON (one short press) and OFF (one short press).

If the LED button is pressed once only (ON) - the LED lights up for a maximum of 60 seconds and then switches off automatically.

- Customer Benefit - to view torch positioning or welding results in hard-to-reach, dark areas.

The runtime can be interrupted by two actions

1. Pressing on the torch for welding start → LED is only deactivated after the gas pre-flow time
2. Further operation of the LED button on the torch (OFF)

Torch LED flashes during the hose package emptying or filling phase.