



UNO-DM-TL-PLUS-US product family

Grid Support Function Rule 14H Settings Review Document for UNO- DM-TL-PLUS-US product family

General liability warnings concerning inverter use

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Please refer to the Product Manual for complete installation instructions and product use.

FIMER accepts no liability for failure to comply with the instructions for correct installation and will not be held responsible for systems upstream or downstream the equipment it has supplied. It is absolutely forbidden to modify the equipment. Any modification, manipulation, or alteration not expressly agreed with the manufacturer, concerning either hardware or software, shall result in the immediate cancellation of the warranty.

The Customer is fully liable for any modifications made to the system.

Given the countless array of system configurations and installation environments possible, it is essential to check the following: sufficient space suitable for housing the equipment; airborne noise produced depending on the environment; potential flammability hazards.

FIMER will NOT be held liable for defects or malfunctions arising from: improper use of the equipment; deterioration resulting from transportation or particular environmental conditions; performing maintenance incorrectly or not at all; tampering or unsafe repairs; use or installation by unqualified personnel.

FIMER will NOT be held responsible for the disposal of: displays, cables, batteries, accumulators etc. The Customer shall therefore arrange for the disposal of substances potentially harmful for the environment in accordance with the legislation in force within the country of installation.

Field of use, general conditions



FIMER shall not be liable for any damages whatsoever that may result from incorrect or careless operations.

You may not use the equipment for a use that does not conform to that provided for in the field of use. The equipment MUST NOT be used by inexperienced staff, or even experienced staff if carrying out operations on the equipment that fail to comply with the indications in this manual and enclosed documentation.

Intended or allowed use

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This equipment is a multi-string inverter designed for transforming a continuous electrical current (DC) supplied by a photovoltaic generator (PV) in an alternating electrical current (AC) suitable for feeding into the public distribution network.

Configuration through Web Server

REQUIRED TOOL:

Device capable to connect to internet for example laptop or smart phone, LAN/WiFi name and password, IP configuration of the inverter, admin account password and admin-plus token (service password).

Before to proceed with the Web Server configuration you need to receive the token to enable the admin-plus account, contact the FIMER service with the Serial Number and week/year of production of each inverter to be configured.

Serial Number and week/year of production can be retrieved from the inverter label or from web server.

PROCEDURE:

Connect the networking device to the same Wi-Fi or LAN of the Inverter then open a browser and insert the inverter IP address on the browser address bar then login to the inverter with the admin account. Use the token to login with admin-plus account.

Select Settings and then line Inverter Parameters, the available settings through web server are shown on figure 1.

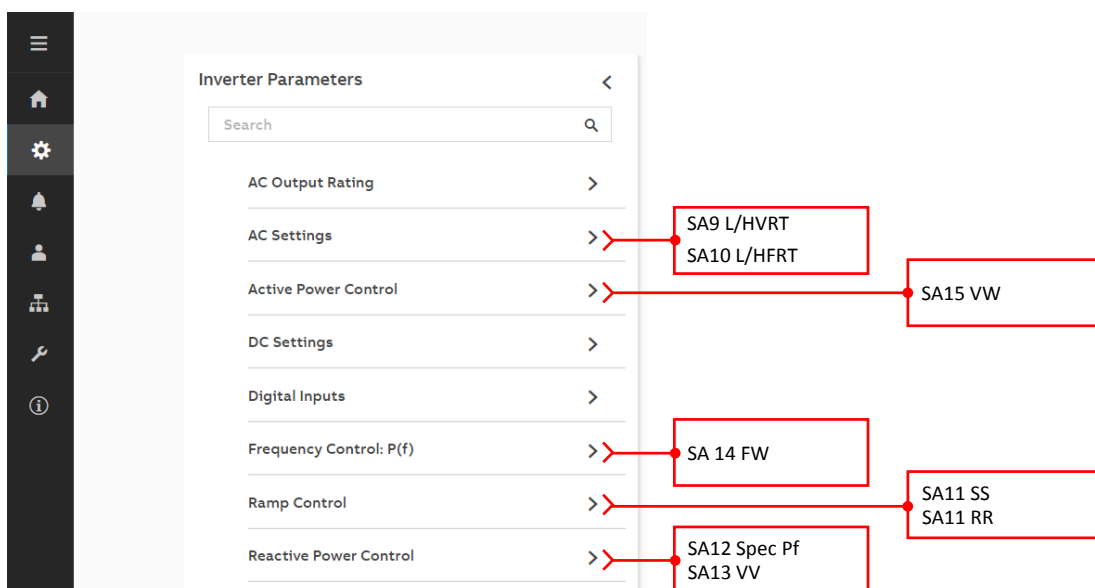


Figure 1: Web Server – Settings Menu

SA8 (Anti Islanding Protection)

No configuration possible.

SA9 (L/HVRT)

Enter on the sub menu *AC Settings* → *Grid Protections – VRT/FRT*

For each Variable **OV2, OV1, UV1, UV2, UV3**, the following applies:

- *Vgrid Voltage – En / Dis*: to disable and enable the specific protection
- *Vgrid Voltage - Value*: set the voltage threshold of the specific variable
- *Vgrid Trip Time*: set the trip time threshold of the specific variable

When the “**Momentary Cess. General En / Dis**” parameter is set to “*Enabled*”, the activation and trigger points of the Momentary Cessation function associated to voltage transients can be adjusted within this section as follows:

- *L/HVRT Momentary Cess. En / Dis*: to disable and enable the momentary cessation function associated to LVRT and HVRT transients.
- *HVRT Momentary Cess. Threshold*: set the voltage threshold that triggers the momentary cessation during grid overvoltage transients
- *LVRT Momentary Cess. Threshold*: set the voltage threshold that triggers the momentary cessation during grid undervoltage transients

**NOTE!**

In case voltage protection limits or trip times are modified, please follow the settings below:

$OV2 \geq OV1$; Trip time_OV1 \geq Trip time_OV2

$UV1 \geq UV2 \geq UV3$; Trip time_UV1 \geq Trip time_UV2 \geq Trip time_UV3

SA10 (L/HFRT)

Enter on the sub menu *AC Settings* → *Grid Protections – VRT/FRT*

For each Variable **OF2, OF1, UF1, UF2** the following applies:

- *Grid Frequency – En / Dis*: to disable and enable the specific protection
- *Grid Frequency*: set the frequency threshold of the specific protection
- *Grid Frequency Trip Time*: set the trip time threshold of the specific protection

When the “**Momentary Cess. General En / Dis**” parameter is set to “*Enabled*”, the activation and trigger points of the Momentary Cessation function associated to frequency transients can be adjusted within this section as follows:

- *L/HFRT Momentary Cess. En / Dis*: to disable and enable the momentary cessation function associated to LFRT and HFRT transients.

- *HFRT Momentary Cessation*: set the frequency threshold that triggers the momentary cessation during grid overfrequency transients
- *LFRT Momentary Cessation*: set the frequency threshold that triggers the momentary cessation during grid underfrequency transients

**NOTE!**

In case frequency protection limits or trip times are modified, please obey the following rules:

$OF2 \geq OF1$; Trip time_OF1 \geq Trip time_OF2

$UF1 \geq UF2$; Trip time_UF1 \geq Trip time_UF2

Please refer to the **SA9 Low and High Voltage Ride Through** and **SA10 Low and High Frequency Ride Through** chapters for details about the description of the parameters.

Inverter Parameters <

Search

- AC Output Rating >
- AC Settings >**
- Active Power Control >
- DC Settings >
- Digital Input >
- Frequency Control: P(f) >
- Ramp Control >
- Reactive Power Control >

Grid Protections - VRT/FF <

HFRT Momentary Cessation
67 Hz

HVRT Momentary Cess. Threshold
288 V

LFRT Momentary Cessation
50 Hz

L/HFRT Momentary Cess. En / Dis
DISABLED

L/HVRT Momentary Cess. En / Dis
ENABLED

LVRT Momentary Cess. Threshold
115.2 V

Momentary Cess. General En / Dis
ENABLED

Momentary Cessation Voltage & Frequency

OF1 Grid Frequency
63 Hz

OF2 Grid Frequency
64 Hz

OF1 Grid Frequency - En / Dis
ENABLED

OF2 Grid Frequency - En / Dis
ENABLED

OF1 Grid Frequency Trip Time
21 s

OF2 Grid Frequency Trip Time
0.16 s

Over Frequency (OF) protections

OV1 Time Variance - En / Dis
DISABLED

OV2 Time Variance - En / Dis
DISABLED

OV3 Time Variance - En / Dis
DISABLED

OV4 Time Variance - En / Dis
DISABLED

OV5 Time Variance - En / Dis
DISABLED

Over Voltage (OV) protections Time Variance

OV1 Vgrid Trip Time
1 s

OV2 Vgrid Trip Time
0.16 s

OV3 Vgrid Trip Time
0.001 s

OV4 Vgrid Trip Time
0.001 s

OV5 Vgrid Trip Time
0.001 s

Over Voltage (OV) Protections Trip Time (OV3-OV5, reserved to other standards)

OV1 Vgrid Voltage - En / Dis
ENABLED

OV2 Vgrid Voltage - En / Dis
ENABLED

OV3 Vgrid Voltage - En / Dis
DISABLED

OV4 Vgrid Voltage - En / Dis
DISABLED

OV5 Vgrid Voltage - En / Dis
DISABLED

Over Voltage (OV) Protections Enable/Disable (OV3-OV5, reserved to other standards)

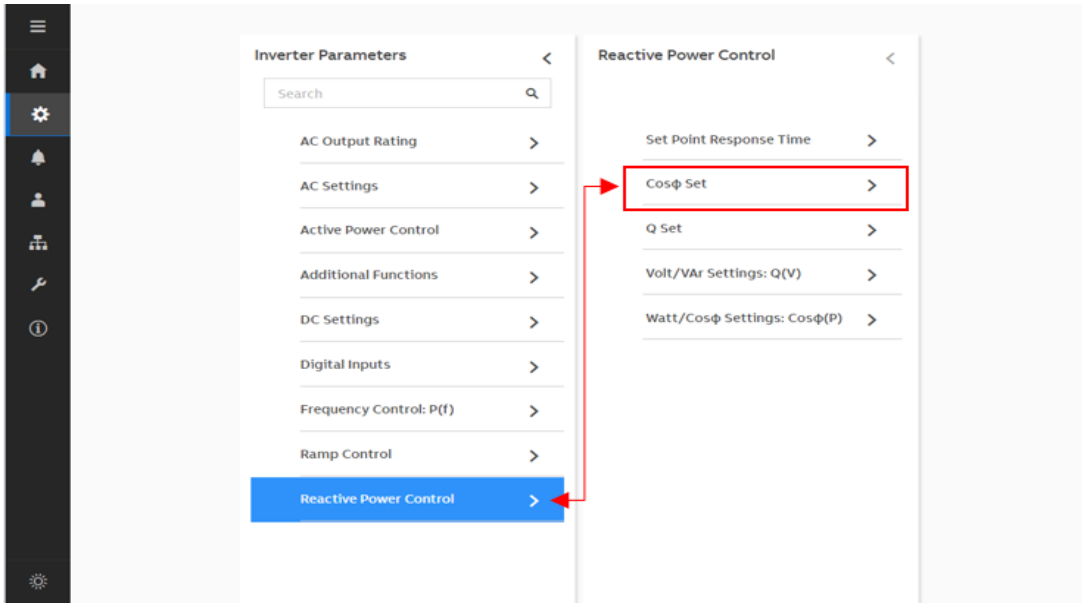
Figure 2: L/HVRT Configuration through Web Server

| | | | | | | | | | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------------------------------------------|------------------------------|---------------------------------------------|-------------------------------|---------------------------------------------|-------------------------------|---------------------------------------------|------------------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------|
| <table border="1"> <tr><td>OV1 Vgrid Voltage - Value</td><td>264 V</td></tr> <tr><td>OV2 Vgrid Voltage - Value</td><td>288 V</td></tr> <tr><td>OV3 Vgrid Voltage - Value</td><td>330 V</td></tr> <tr><td>OV4 Vgrid Voltage - Value</td><td>330 V</td></tr> <tr><td>OV5 Vgrid Voltage - Value</td><td>330 V</td></tr> </table> | OV1 Vgrid Voltage - Value | 264 V | OV2 Vgrid Voltage - Value | 288 V | OV3 Vgrid Voltage - Value | 330 V | OV4 Vgrid Voltage - Value | 330 V | OV5 Vgrid Voltage - Value | 330 V | <p>Over Voltage (OV) Protections values (OV3-OV5, reserved to other standards) Notes: -) OV1 264 V = Vn (240) x 110% -) OV2 288 V = Vn (240) x 120%</p> | | |
| OV1 Vgrid Voltage - Value | 264 V | | | | | | | | | | | | |
| OV2 Vgrid Voltage - Value | 288 V | | | | | | | | | | | | |
| OV3 Vgrid Voltage - Value | 330 V | | | | | | | | | | | | |
| OV4 Vgrid Voltage - Value | 330 V | | | | | | | | | | | | |
| OV5 Vgrid Voltage - Value | 330 V | | | | | | | | | | | | |
| <table border="1"> <tr><td>UF1 Grid Frequency</td><td>57 Hz</td></tr> <tr><td>UF2 Grid Frequency</td><td>56 Hz</td></tr> <tr><td>UF1 Grid Frequency - En / Dis</td><td>ENABLED <input checked="" type="checkbox"/></td></tr> <tr><td>UF2 Grid Frequency - En / Dis</td><td>ENABLED <input checked="" type="checkbox"/></td></tr> <tr><td>UF1 Grid Frequency Trip Time</td><td>21 s</td></tr> <tr><td>UF2 Grid Frequency Trip Time</td><td>0.16 s</td></tr> </table> | UF1 Grid Frequency | 57 Hz | UF2 Grid Frequency | 56 Hz | UF1 Grid Frequency - En / Dis | ENABLED <input checked="" type="checkbox"/> | UF2 Grid Frequency - En / Dis | ENABLED <input checked="" type="checkbox"/> | UF1 Grid Frequency Trip Time | 21 s | UF2 Grid Frequency Trip Time | 0.16 s | <p>Under Frequency (UF) protections</p> |
| UF1 Grid Frequency | 57 Hz | | | | | | | | | | | | |
| UF2 Grid Frequency | 56 Hz | | | | | | | | | | | | |
| UF1 Grid Frequency - En / Dis | ENABLED <input checked="" type="checkbox"/> | | | | | | | | | | | | |
| UF2 Grid Frequency - En / Dis | ENABLED <input checked="" type="checkbox"/> | | | | | | | | | | | | |
| UF1 Grid Frequency Trip Time | 21 s | | | | | | | | | | | | |
| UF2 Grid Frequency Trip Time | 0.16 s | | | | | | | | | | | | |
| <table border="1"> <tr><td>UV1 Time Variance - En / Dis</td><td>DISABLED <input type="checkbox"/></td></tr> <tr><td>UV2 Time Variance - En / Dis</td><td>DISABLED <input type="checkbox"/></td></tr> <tr><td>UV3 Time Variance - En / Dis</td><td>DISABLED <input type="checkbox"/></td></tr> <tr><td>UV4 Time Variance - En / Dis</td><td>DISABLED <input type="checkbox"/></td></tr> <tr><td>UV5 Time Variance - En / Dis</td><td>DISABLED <input type="checkbox"/></td></tr> </table> | UV1 Time Variance - En / Dis | DISABLED <input type="checkbox"/> | UV2 Time Variance - En / Dis | DISABLED <input type="checkbox"/> | UV3 Time Variance - En / Dis | DISABLED <input type="checkbox"/> | UV4 Time Variance - En / Dis | DISABLED <input type="checkbox"/> | UV5 Time Variance - En / Dis | DISABLED <input type="checkbox"/> | <p>Under Voltage (UV) protections Time Variance (reserved to other standards)</p> | | |
| UV1 Time Variance - En / Dis | DISABLED <input type="checkbox"/> | | | | | | | | | | | | |
| UV2 Time Variance - En / Dis | DISABLED <input type="checkbox"/> | | | | | | | | | | | | |
| UV3 Time Variance - En / Dis | DISABLED <input type="checkbox"/> | | | | | | | | | | | | |
| UV4 Time Variance - En / Dis | DISABLED <input type="checkbox"/> | | | | | | | | | | | | |
| UV5 Time Variance - En / Dis | DISABLED <input type="checkbox"/> | | | | | | | | | | | | |
| <table border="1"> <tr><td>UV1 Vgrid Trip Time</td><td>21 s</td></tr> <tr><td>UV2 Vgrid Trip Time</td><td>21 s</td></tr> <tr><td>UV3 Vgrid Trip Time</td><td>2 s</td></tr> <tr><td>UV4 Vgrid Trip Time</td><td>0.001 s</td></tr> <tr><td>UV5 Vgrid Trip Time</td><td>0.001 s</td></tr> </table> | UV1 Vgrid Trip Time | 21 s | UV2 Vgrid Trip Time | 21 s | UV3 Vgrid Trip Time | 2 s | UV4 Vgrid Trip Time | 0.001 s | UV5 Vgrid Trip Time | 0.001 s | <p>Under Voltage (UV) protections Time Trip (UV4-UV5, reserved to other standards)</p> | | |
| UV1 Vgrid Trip Time | 21 s | | | | | | | | | | | | |
| UV2 Vgrid Trip Time | 21 s | | | | | | | | | | | | |
| UV3 Vgrid Trip Time | 2 s | | | | | | | | | | | | |
| UV4 Vgrid Trip Time | 0.001 s | | | | | | | | | | | | |
| UV5 Vgrid Trip Time | 0.001 s | | | | | | | | | | | | |
| <table border="1"> <tr><td>UV1 Vgrid Voltage - En / Dis</td><td>ENABLED <input checked="" type="checkbox"/></td></tr> <tr><td>UV2 Vgrid Voltage - En / Dis</td><td>ENABLED <input checked="" type="checkbox"/></td></tr> <tr><td>UV3 Vgrid Voltage - En / Dis</td><td>ENABLED <input checked="" type="checkbox"/></td></tr> <tr><td>UV4 Vgrid Voltage - En / Dis</td><td>DISABLED <input type="checkbox"/></td></tr> <tr><td>UV5 Vgrid Voltage - En / Dis</td><td>DISABLED <input type="checkbox"/></td></tr> </table> | UV1 Vgrid Voltage - En / Dis | ENABLED <input checked="" type="checkbox"/> | UV2 Vgrid Voltage - En / Dis | ENABLED <input checked="" type="checkbox"/> | UV3 Vgrid Voltage - En / Dis | ENABLED <input checked="" type="checkbox"/> | UV4 Vgrid Voltage - En / Dis | DISABLED <input type="checkbox"/> | UV5 Vgrid Voltage - En / Dis | DISABLED <input type="checkbox"/> | <p>Under Voltage (UV) protections Enable/Disable (UV4-UV5, reserved to other standards)</p> | | |
| UV1 Vgrid Voltage - En / Dis | ENABLED <input checked="" type="checkbox"/> | | | | | | | | | | | | |
| UV2 Vgrid Voltage - En / Dis | ENABLED <input checked="" type="checkbox"/> | | | | | | | | | | | | |
| UV3 Vgrid Voltage - En / Dis | ENABLED <input checked="" type="checkbox"/> | | | | | | | | | | | | |
| UV4 Vgrid Voltage - En / Dis | DISABLED <input type="checkbox"/> | | | | | | | | | | | | |
| UV5 Vgrid Voltage - En / Dis | DISABLED <input type="checkbox"/> | | | | | | | | | | | | |
| <table border="1"> <tr><td>UV1 Vgrid Voltage - Value</td><td>211.2 V</td></tr> <tr><td>UV2 Vgrid Voltage - Value</td><td>168 V</td></tr> <tr><td>UV3 Vgrid Voltage - Value</td><td>120 V</td></tr> <tr><td>UV4 Vgrid Voltage - Value</td><td>10 V</td></tr> <tr><td>UV5 Vgrid Voltage - Value</td><td>10 V</td></tr> </table> | UV1 Vgrid Voltage - Value | 211.2 V | UV2 Vgrid Voltage - Value | 168 V | UV3 Vgrid Voltage - Value | 120 V | UV4 Vgrid Voltage - Value | 10 V | UV5 Vgrid Voltage - Value | 10 V | <p>Under Voltage (UV) protection values (UV4-UV5, reserved to other standards) Note: -) UV1 211,2 V = Vn (240) x 88% -) UV2 168 V = Vn (240) x 70% -) UV3 120 V = Vn (240) x 50%</p> | | |
| UV1 Vgrid Voltage - Value | 211.2 V | | | | | | | | | | | | |
| UV2 Vgrid Voltage - Value | 168 V | | | | | | | | | | | | |
| UV3 Vgrid Voltage - Value | 120 V | | | | | | | | | | | | |
| UV4 Vgrid Voltage - Value | 10 V | | | | | | | | | | | | |
| UV5 Vgrid Voltage - Value | 10 V | | | | | | | | | | | | |

Figure 2.1: L/HVRT Configuration through Web Server

SA12 (Specified Power Factor)

1. Select the **Reactive Power Control** → **CosΦ Set** menu from the Inverter Parameters section of the Settings Menu to configure the power factor (PF) according to Utility request.



2. **CosΦ Set** sub-menu will allow you to Enable/Disable the control of the reactive power output of the unit based on a fixed cosΦ and define the value of the cosΦ within the capability limits of the inverter [+ 0.8 to - 0.8] for UNO-DM-TL-PLUS-US product family



Figure 3: SA12 Specified Power Factor Configuration through Web Server

For details about the above parameters or inverter capability, refer to the description on chapter **SA12 Specified Power Factor Mode**



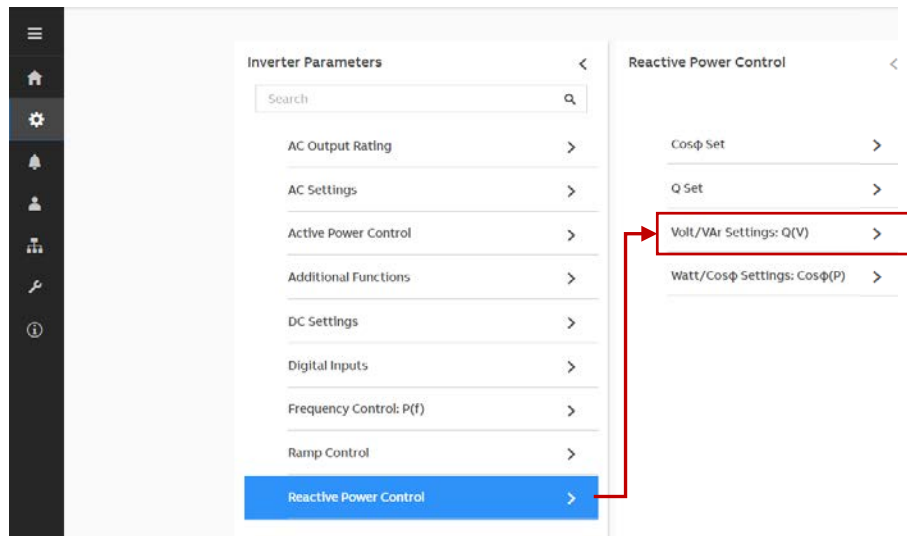
NOTE:
Enabling the Power Factor control mode it will automatically disable any other reactive power mode.

**NOTE:**

The sign of the power factor is assigned according to the reactive power sign and NOT according to EEI, as described on Annex 1.

SA13 VV

1. Select the **Reactive Power Control** → **Volt/Var Settings: Q(V)** menu from the Inverter Parameters section of the Settings Menu to configure the Volt-Var mode according to Utility request.



2. **Volt/Var Settings: Q(V)** sub-menu will allow you to Enable/Disable the control of reactive power based on the AC terminal voltage by a user(utility)-defined piecewise linear control curve.

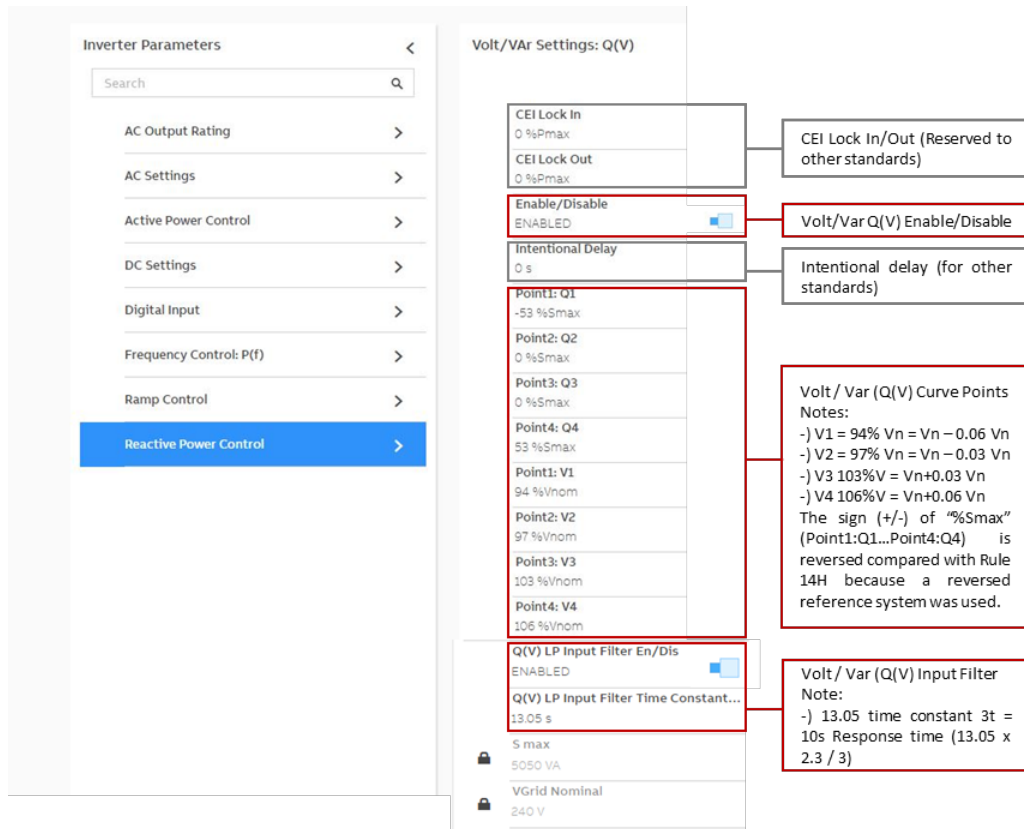


Figure 4: SA13 VV Configuration through Web Server

For details about the above parameters or inverter capability, refer to the description on chapter **SA13 VV Volt VAr Mode**



NOTE:

The sign of the reactive power is assigned with REVERSE values with respect to the EEI reference system specified in Annex 1.

SA11 SS and SA11 RR

Select the Ramp Control menu to configure the soft start and normal ramp up according to Utility request.

Inverter Parameters

- AC Output Rating
- AC Settings
- Active Power Control
- DC Settings
- Digital Input
- Frequency Control: P(f)
- Ramp Control**
- Reactive Power Control

Ramp Control

- Normal Ramp-up En / Dis: ENABLED
- Normal Ramp-up Rate: 6000 %Pmax/min
- P max: 3330 W
- SoftStart General En / Dis: ENABLED
- SoftStart Ramp-up Rate: 19.8 %Pmax/min
- SoftStart after AnyFault En/Dis: ENABLED
- SoftStart after GridFault En/Dis: DISABLED

SA 11 RR (Normal Ramp-up Rate) Enable/Disable.
Set the Normal Ramp-up Rate
Note:
6000%Pmax/min = 100%Pmax/sec

SA 11 SS (Normal Ramp-up Rate) Enable/Disable.
Set the Normal Ramp-up Rate
Note:
19.8%Pmax/min = 33%Pmax/sec
(19.8/60 = 33)

Soft start after Grid Fault
(Reserved to other Standards)

Figure 5: SA11 Normal Ramp Rate and Soft-Start Configuration through Web Server



NOTE:

Rule 14H requires setting the values as %Pn/s. To set properly the value it is necessary to request of 50%Pmax/s should be set on inverter as 3000%Pmax/min.

SA14 FW

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Select the Frequency Control: P(f) menu to configure the Frequency - Watt according to Utility request.

Inverter Parameters

- Search
- AC Output Rating
- AC Settings
- Active Power Control
- DC Settings
- Digital Input
- Frequency Control: P(f)**
- Ramp Control
- Reactive Power Control

Frequency Control: P(f)

- Freq. Derating General En / Dis: ENABLED
- High Freq. Derating En / Dis: ENABLED
- High Freq. Droop Reference Power: Pref_OF = Pmax
- Hysteresis Enable/Disable: DISABLED
- Intentional Delay (O.F.): 0 s
- Intentional Delay (U.F.): 0 s
- Low Freq. Derating En / Dis: DISABLED
- Low Freq. Droop Reference Power: Pref_UF = Pmom (Snapshot Mode)
- P(f) LP Input Filter En/Dis: ENABLED
- P(f) LP Input Filter Time Constant 3τ: 0.65 s
- P max: 5050 W
- Restore Frequency Check Time (O.F.): 1 s
- Restore Frequency Check Time (U.F.): 1 s
- Restore Frequency Lower Limit: 59.964 Hz
- Restore Frequency Upper Limit: 60.036 Hz
- Restore Ramp Enable/Disable: DISABLED
- Restore Ramp Mode: ARN 4105
- Restore Ramp Slope: 19.8 %Pmax/min
- Restore Ramp Slope (Minimum): 5 %Pmax/min
- Start Frequency Derating (O.F.): 60.036 Hz
- Start Frequency Derating (U.F.): 59.964 Hz
- Stop Frequency Derating (O.F.): 62.436 Hz
- Stop Frequency Derating (U.F.): 56.964 Hz

Annotations:

- General and Over-frequency Derating Enable/Disable
- Reference power for over-frequency droop
- Reserved for other standards
- P(f) Input filter
Notes:
0.65 time constant 3τ = 0.5s
Response time (0.65 x 2.3 / 3)
- Hysteresis settings
- Start and Stop Frequency for droop setting (U.F. reserved to other standards)

Figure 6: SA14 FW Configuration through Web Server



Start and Stop frequency defines also the slope of the Frequency – Watt curve. The slope is defined as:

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$$\text{Slope} = P_{max} / (f_{start} - f_{stop}) = \left[\frac{P_{max}}{\text{Hz}} \right] 41.67\%$$

To deactivate the Frequency - Watt, it is sufficient to disable one between the frequency and the high frequency control flag.

To enable the Frequency - Watt, both general and high frequency control flags must be enabled.

SA15 VW

Select the **Active Power Control** → **Volt/Watt Settings: P(V)** menu to configure the Volt-Watt function according to Utility request.

The screenshot shows the 'Inverter Parameters' menu on the left, with 'Active Power Control' selected. The 'Volt/Watt settings: P(V)' configuration page is displayed on the right. Red boxes highlight specific settings with corresponding callouts:

- High Voltage Droop Reference Power** (Pref_OV = Pmax): Reference Power for Over-voltage droop
- P(V) LP Input Filter En/Dis** (ENABLED): Volt / Watt P(V) Input Filter
- P(V) LP Input Filter Time Constant 3t** (13.05 s): Notes: 13.05 time constant 3t = 10s Response time (13.05 x 2.3 / 3). This function has effect only with Regulation Curve = ENABLED
- Regulation Curve Enable/Disable** (DISABLED): Volt / Watt P(V) Enable / Disable (Unless Enabled required by HECCO)
- Curve Points** (Point1: V1, Point2: V2, Point3: V3, Point4: V4, Point1: W1, Point2: W2, Point3: W3, Point4: W4): Volt / Watt P(V) Curve Points. Notes: Point 1:W1...Point 4: W4 = Output power (Watts) of the Point 1...Point 4

Figure 7: SA15 VW Configuration through Web Server

The screenshot shows the 'Service Tools' menu on the left. The 'Current Firmware Release' page is displayed on the right. A red box highlights the 'INVERTER' section, which shows the firmware level '19138 - 1.8.15'. A callout points to this section with the text 'Firmware level identification'.

Figure 8: Firmware identification

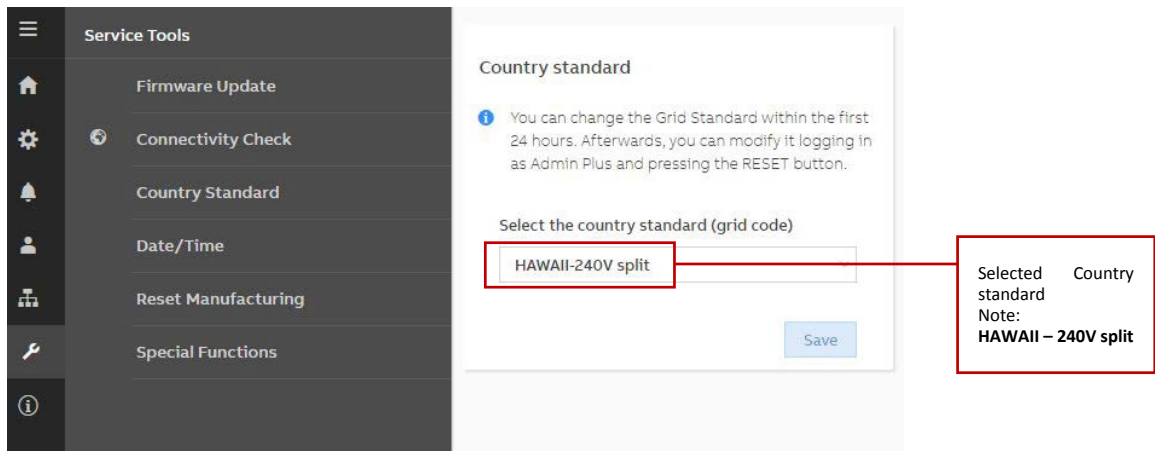


Figure 9: Selected Country standard identification through Web Server

Annex 1: Firmware Compatibility Matrix to Rule 14H

This Annex correlates the inverter firmware with the default settings included on this guideline.

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Affected products within the UNO-DM-TL-PLUS-US product family:

Model designation = UNO-DM-WW-TL-PLUS-US-XYZ-ABC-DE

where WW = 3.3, 3.8, 4.6, 5.0, 6.0;

X = S, blank;

Y = B, C, E, Z, blank;

Z = M, blank;

A = X, blank;

B = R, blank;

C = A, blank;

D = Q, blank;

E = U, blank.

| Inverter model | SA8 | SA9 L/HVRT | SA10 L/HFRT | SA11 SS | SA11 RR | SA12 Spec P f | SA 13 VV | SA 14 FW | SA15 VW |
|----------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| UNO-DM-3.3-TL-PLUS-US UNO-DM-3.8-TL-PLUS-US UNO-DM-4.6-TL-PLUS-US UNO-DM-5.0-TL-PLUS-US product families | 1913B 1.8.15 | 1913B 1.8.15 | 1913B 1.8.15 | 1913B 1.8.15 | 1913B 1.8.15 | 1913B 1.8.15 | 1913B 1.8.15 | 1913B 1.8.15 | 1913B 1.8.15 |
| UNO-DM-6.0-TL-PLUS-US product family | 1913D 1.8.15 | 1913D 1.8.15 | 1913D 1.8.15 | 1913D 1.8.15 | 1913D 1.8.15 | 1913D 1.8.15 | 1913D 1.8.15 | 1913D 1.8.15 | 1913D 1.8.15 |

Table A1: Rule 14H Firmware Compatibility Matrix (minimum firmware level)

Tables A1 defines, for each grid support function, the minimum FW release that satisfy the Rule 14H default settings described on this application guideline.



Firmware **XXYYK** is encoded as follows:

XX: represents the latest two digits for year of release, for example 18 means 2018

YY: represents the week of release within the year, for example 1803 means 3rd week of 2018

K: represents the day of release within the week, for example 1803G means 7th day (Sunday) of the 3rd week of 2018 and corresponds to 21 January 2018. A firmware is greater than another one if it is released on a later date.

Document revisions

| Revision | Date | Change Log |
|----------|---------------|---------------------------------------------------------------|
| Rev 0.0 | July 16, 2020 | Specific revision for HECO (UNO-DM-TL-PLUS-US product family) |

Contact us

fimer.com