

# Ramp-up/down and active power control

## Version History

Version 1.0 (Dec. 2018) – Initial release

## Content

The document describes how to control Active Power Ramp-up Rate, Active Power Ramp-down Rate and Active Power Limit in SolarEdge inverters using the appropriate Modbus registers.

## Modbus Registers

The following describes the registers that control Active Power Ramp-up Rate, Active Power Ramp-down Rate and Active Power Limit.

- **Active Power Ramp-up Rate** controls the ramp-up rate of the dynamic active power change.
- **Active Power Ramp-down Rate** controls the ramp-down rate of the dynamic active power change.
- **Command Timeout:** this register set the timeout timer for dynamic commands. If the inverter doesn't get one of the dynamic commands within this period it will revert to fallback settings. The controller command rate should be at least  $Command\ Timeout / 2$ .
- **Fallback Active Power Limit** sets the fallback limit for the dynamic active power control.
- **Dynamic Active Power Limit:** This register controls the active power limit of the inverter dynamically. The register must be refreshed at least at  $Command\ Timeout / 2\ rate$ .
- **Enable Dynamic Power Control** on address 0xF300 is disabled (=0) by default and should be enabled (1) for dynamic power control functionality. The register must be set first.

Address	Size	R/W	Name	Type	Value Range	Units
F300	1	R/W	Enable Dynamic Power Control	Uint16	0-1	N/A
F310	2	R/W	Command Timeout	Uint32	0-MAX_UINT32	Sec
F312	2	R/W	Fallback Active Power Limit	Float32	0-100	%
F318	2	R/W	Active Power Ramp-up Rate	Float32	0-100	%/min
F31A	2	R/W	Active Power Ramp-down Rate	Float32	0-100	%/min
F322	2	R/W	Dynamic Active Power Limit	Float32	0-100	%

### Note:

- All registers except dynamic active power limit (F322) should be set only when required.
- All inverters must have identical configuration.
- The dynamic active power limit can be sent in Modbus broadcast.
  - The MODBUS addressing space comprises of 256 different addresses:

0	From 1 to 247	From 248 to 255
Broadcast address	Slave individual addresses	Reserved

- In broadcast mode, the master send a request to all slaves. No response is returned.

Prior to controlling Ramp-up, Ramp-down and Active Power Limit Modbus must be configured either by using SetApp or via LCD.

## Configure Modbus Access

The Modbus configuration menu is accessible from the inverter LCD main menu and from SetApp. Please refer to the *"SunSpec Implementation Technical Note"* for navigation instructions, Modbus configuration options, and response time information. Additional information can be found also in the *Installation Guide*.