

# SolarEdge residential Power Optimizer inter-compatibility - Technical note

## Revision history

- Version 1.9, November 2024 – Added R-Series Power Optimizers
- Version 1.8, September 2024 – Updated general compatibility guidelines
- Version 1.7, August 2024 – Updated general compatibility guidelines

This technical note specifies the inter-compatibility between:

S-Series Power Optimizers and P-Series SolarEdge Residential Power Optimizers.

P-Series Power Optimizers with previous PBxxx and OPxxx series of Power Optimizers.

For inter-compatibility of Commercial Power Optimizers refer to <https://knowledge-center.solaredge.com/sites/kc/files/se-power-optimizer-commercial-inter-compatibility-technical-note.pdf>



### NOTES

- A single PV string refers to Power Optimizers that are connected using their output cables to form a string.
- In new installations, do NOT mix S-series and P-series Power Optimizers in the same string.
- When adding a new Power Optimizer use SolarEdge Designer to verify that the specifications of the PV module such as the power,  $I_{sc}$  and  $V_{oc}$  (at minimum ambient temperature) are compatible with the replacement Power Optimizer. Refer to the Power Optimizer datasheet for details.

## Guidelines for retrofitting

### Adding a new parallel string

When retrofitting additional strings, it is not necessary to comply with the inter-compatibility rules. You may include different series and models of Power Optimizers in the same installation if you install them in separate PV strings.

### String expansion

When expanding a string, Power Optimizers can be installed in the same PV string, if it complies with the inter-compatibility rules.



### NOTE

In systems where both P-series and S-series Power Optimizers are connected to the same inverter unit, the Sense Connect feature is enabled only in the S-series connectors. For Sense Connect inverter compatibility table please refer to <https://knowledge-center.solaredge.com/sites/kc/files/se-sense-connect-application-note.pdf>

## Guidelines for Power Optimizer RMA

When connecting different Power Optimizer models in the same PV string for RMA or retrofit purposes, they must be inter-compatible with each other as specified in Tables 1, 2 and 3.

## Smart PV module compatibility

### SolarEdge Smart Modules RMA

SolarEdge Smart PV Modules all have compatible, built-in Power Optimizers (P370 or S440). These Power Optimizers are compatible and thus ensure that all SolarEdge Smart Modules are inter-compatible.

## P-Series, R-Series and S-Series compatibility

In existing installations, installing P-Series, R-Series and S-Series Power Optimizers in the same PV string is only possible based on their inter-compatibility as specified in Table 1. When replacing P-Series Power Optimizers with S-Series or R-Series Power Optimizers, verify that the inverter firmware version is updated as follows:

- For inverters with LCDs (2.x CPU) the minimum required CPU firmware version is 2.11xx.
- For inverters with LCDs (3.x CPU) with Tesla battery, the minimum required CPU firmware version is 3.2193
- For SetApp enabled inverters the minimum required CPU firmware version is 4.16.xx.

The following tables summarize Power Optimizer series and models that may be installed in the same PV string when a Power Optimizer is being replaced. Where a cell contains a check mark, the relevant Power Optimizers may be installed in the same string.

## S-Series Power Optimizer inter-compatibility table for RMA

	Existing Power Optimizer to be replaced	Replacement/Additional Power Optimizer				
		S440	S500	S500B	S650B	S650C/U650
S-Series	S440	✓	✓			✓
	S650C/U650 <sup>3</sup>	✓	✓			✓
	S500 <sup>3</sup>	✓	✓			✓
	S500B			✓	✓	
	S650B <sup>3</sup>			✓	✓	

**Table 1**

## R-Series Power Optimizer inter-compatibility table for P-Series RMA

SolarEdge support centers will continue to support all phased-out P-Series Power Optimizers with compatible R-Series Power Optimizers. In case of stock shortages, replacement will be supported with S-Series Power Optimizers.

	Existing Power Optimizer to be replaced	Replacement/Additional Power Optimizer					
		R500	R600	S440	S500	S500B	S650B
P-Series	P3xx/P401	✓		✓	✓		
	P350I/P370I/P401I <sup>1</sup>	✓		✓	✓		
	P400 <sup>2</sup>		✓	✓	✓		
	P500 <sup>2</sup>		✓	✓	✓		
	P404/P405/P485/P505		✓			✓	✓
	P601		✓			✓ <sup>3</sup>	✓

**Table 2**

<sup>1</sup> Compatible only when connected to a SolarEdge inverter. Otherwise, must be replaced with one of P350I or P370I or P401I.

<sup>2</sup> Important: Verify the modules  $V_{oc}$ . If  $V_{oc}$  is less than 60V, use S440 or S500 according to Table 2. If  $V_{oc}$  is greater than 60V, use R600.

<sup>3</sup> Make sure that you choose an equivalent or higher power rating Power Optimizer for RMA according to the PV module's power rating.


**IMPORTANT NOTES**

- R-Series Power Optimizers cannot be used for new installations or to replace S-Series Power Optimizers for retrofit or RMA purposes.
- The R600 Power Optimizer is compatible with P400 and P500 Power Optimizers, but not with other 60V output P-Series Power Optimizers. If you have a full string of P400/P500 Power Optimizers, use R600 for RMA. If you have a P400/P500 Power Optimizer in a string of P3xx/P401 Power Optimizers, use R500 for RMA.

## P-Series Power Optimizer inter-compatibility table for P-Series RMA

Support for all phased-out P-Series Power Optimizer models by SolarEdge support centers will continue with a compatible replacement while stocks last, followed by replacement with compatible part numbers from the R-Series.

Series	Existing Power Optimizer	Replacement Power Optimizer											
		M2640	P300/P320/P340/P350/ P370/P375/P395 <sup>4</sup>	P370T	P400	P401	P404	P405	P485	P500	P505	P601	P350I/P370I/P401I <sup>4</sup>
P-Series	P300		✓		✓	✓				✓			✓
	P320		✓		✓	✓				✓			✓
	P340		✓		✓	✓				✓			✓
	P350		✓		✓	✓				✓			✓
	P370		✓		✓	✓				✓			✓
	P370T			✓									
	P375		✓		✓	✓				✓			✓
	P395		✓		✓	✓				✓			✓
	P400 <sup>5</sup>		✓		✓	✓				✓			
	P401				✓	✓				✓			✓
	P350I/P370I/P401I		✓ <sup>6</sup>		✓ <sup>6</sup>	✓ <sup>6</sup>				✓ <sup>6</sup>			✓
	P404						✓	✓	✓		✓	✓	
	P405 <sup>7</sup>						✓	✓	✓		✓	✓	
	P485 <sup>7</sup>						✓	✓	✓		✓	✓	

<sup>4</sup> Make sure to choose an equivalent or higher power rating Power Optimizer for RMA

<sup>5</sup> Important: Verify the modules  $V_{oc}$ . If  $V_{oc}$  is less than 60V, use S440 or S500 according to Table 2. If  $V_{oc}$  is greater than 60V, use R600.

<sup>6</sup> Compatible only when connected to a SolarEdge inverter. Otherwise, must be replaced with one of P350I or P370I or P401I.

<sup>7</sup> For P405 and P485 the same replacement options apply for both single and dual input versions.

Series	Existing Power Optimizer	Replacement Power Optimizer											
		M2640	P300/P320/P340/P350/ P370/P375/P395 <sup>4</sup>	P370T	P400	P401	P404	P405	P485	P500	P505	P601	P350I/P370 I/P401I <sup>4</sup>
	P500		✓		✓	✓				✓			
	P505						✓	✓	✓		✓	✓	
	P601						✓	✓	✓		✓	✓	
OP-Series	OP250-LV		✓		✓	✓				✓			✓
	OP300-LV		✓		✓	✓				✓			✓
	OP300-MV		✓		✓					✓			
	OP350-LV		✓		✓	✓				✓			✓
	OP350-MV		✓		✓					✓			
	OP400-MV		✓		✓					✓			
	OP400-EV		✓		✓					✓			
	OP480		✓		✓	✓				✓			
	OP500-IV									✓			
PB-Series	PB250-AOB		✓		✓	✓				✓			✓
	PB350-AOB		✓		✓	✓				✓			✓
	PB350-TFI		✓		✓	✓				✓			✓
	PB250-CSI		✓		✓								
	OPJ300-LV		✓		✓	✓				✓			✓
M series	M2640	✓											

Table 3

**IMPORTANT NOTE!**

- Using a configuration in contradiction to the compatibility table(s) above may revoke the warranty.