

Contents

Solar Photovoltaic (PV) Products

Siemens Microinverter Features and Technical Data	19-2
Catalog Logic	19-4
Siemens Microinverter System	19-5
Microinverter Trunk and Drop Cabling	19-6
Microinverter System Components	19-7
Microinverter Accessories	19-8

Electric Vehicle Supply Equipment (EVSE)

VersiCharge Features	19-9
VersiCharge EVSE and Accessories	19-10

Renewable Energy Products

Siemens Microinverter Features and Technical Data

Productive

- Maximize energy production
- Resilient to dust, debris, and shading
- Performance monitoring per module

Safe

- Low voltage DC
- Reduced Fire Risk

Smart

- Quick & simple design, installation, and management
- 24/7 monitoring and analysis

Reliable

- System availability greater than 99.8%
- No single point of system failure



Input Data (DC)	SMIINV215R60XX	
Recommended maximum input power (STC)	190 – 260 W	
Maximum input DC voltage	45 V	
Operating range	16 - 36 V	
Maximum DC short circuit current	15 A	
Maximum input current	10.5 A	
Compatibility	Pairs with most 60-cell PV modules	
Output Data (AC)	@ 208 VAC	@ 240 VAC
Rated (continuous) output power	215 W	215 W
Nominal output current	1.0 A _{RMS} (@ V _{nominal})	0.9 A _{RMS} (@ V _{nominal})
Nominal voltage / range	208 / 183 – 229 V	240 / 211 – 264 V
Nominal frequency / range	60.0 / 59.4 – 60.5 Hz	60.0 / 59.3 – 60.5 Hz
Power factor	> 0.95	
Maximum units per 20 A branch circuit	25 (three phase)	17 (single phase)
Maximum output fault current	1.05 A _{RMS} over 3 cycles; 2.52 A _{peak} 1.74 ms duration	
Efficiency		
CEC weighted efficiency	96.00%	
Peak inverter efficiency	96.30%	
Night time power consumption	46 mW	
Mechanical Data		
Operating temperature range (internal)	-40° C to +85° C	
Dimensions (W x H X D)	17.3 cm x 16.4 cm x 2.5 cm (6.8" x 6.5" x 1.0")	
Weight	1.6 kg (3.5 lbs)	
Enclosure environmental rating	Outdoor – NEMA 6	
Features		
Communication	Power line carrier	
Warranty	25 years	
Compliance	UL1741/IEEE1547, FCC Part 15 Class B, CAN/CSA-C22.2 NO. 0-M91, 0.4-04, and 107.1-01	
Integrated Ground	The DC circuit meets the requirements for ungrounded PV arrays in NEC 690.35. Equipment ground is provided in the Trunk and Drop Cable. No additional GEC or ground is required. Ground fault protection (GFP) is integrated into the microinverter.	

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Siemens Microinverter Features and Technical Data

NEW Microinverters with integrated ground

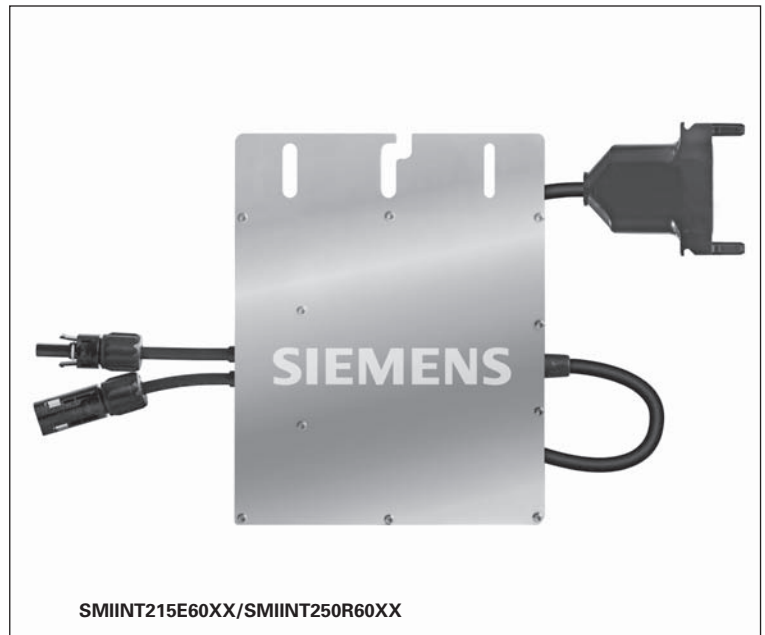
The newly introduced Microinverters with integrated ground delivers increased energy harvest and reduces design and installation complexity with its all-AC approach. With the advanced SMIINT215R60XX or SMIINT250R60XX, the DC circuit is isolated and insulated from ground, so no Ground Electrode Conductor (GEC) is required for the microinverter. This further simplifies installation, enhances safety, and saves on labor and materials costs.

Productive

- Maximize energy production
- Resilient to dust, debris, and shading
- No single point of system failure

Simple

- No GEC needed for microinverter
- No DC design or string calculation required
- Easy installation with Engage Cable

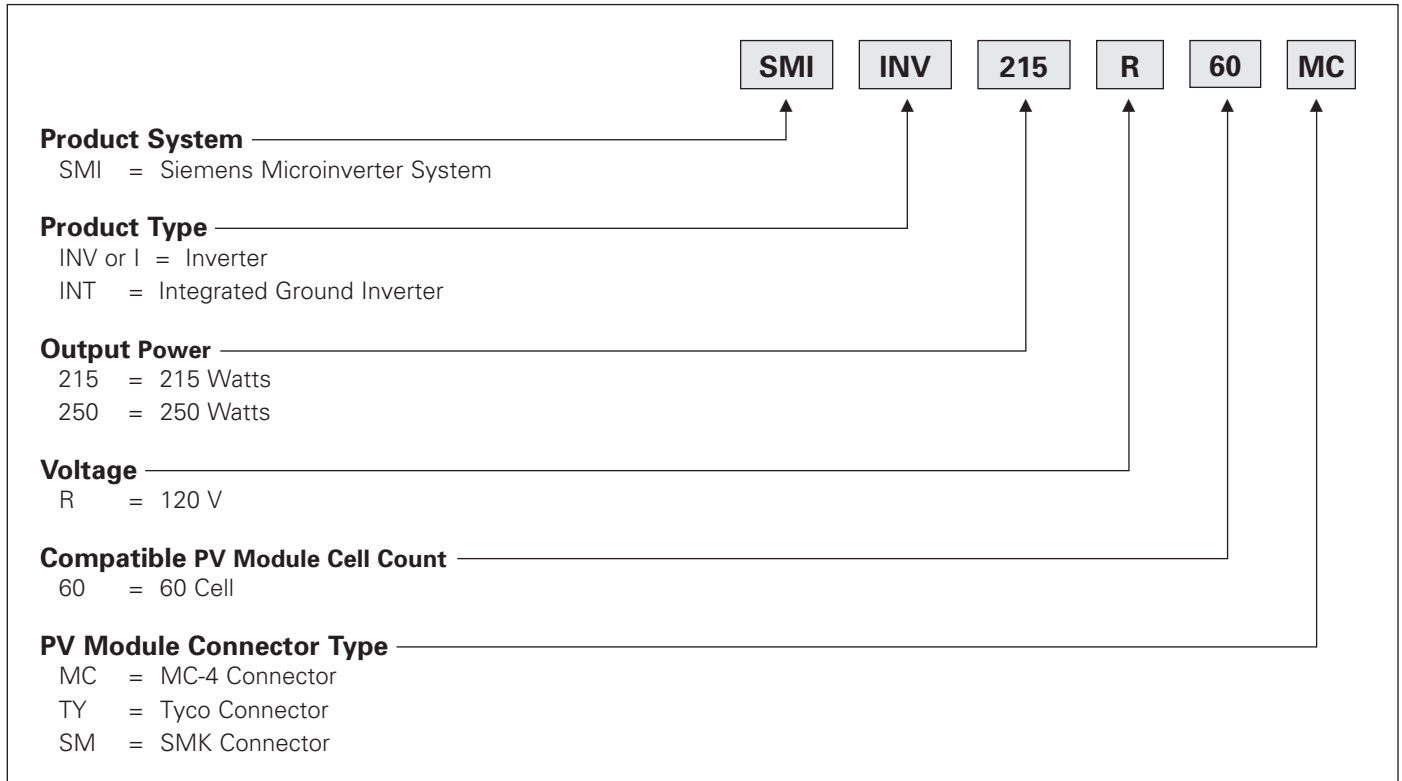


Input Data (DC)	SMIINT215R60XX		SMIINT250R60XX	
Recommended max. input power (STC)	190 – 270 W		210 – 300 W	
Maximum input DC voltage	48 V		48 V	
Operating range	27 – 39 V		27 – 39 V	
Maximum DC short circuit current	16 – 48 V		16 – 48 V	
Maximum input current	10 A		9.8 A	
Compatibility	Compatible with 60-cell PV modules.		Compatible with 60-cell PV modules.	
Output Data (AC)	@ 208 VAC	@ 240 VAC	@ 208 VAC	@ 240 VAC
Peak output power	225 W	225 W	250 W	250 W
Rated (continuous) output power	215 W	215 W	240 W	240 W
Nominal output current	1.1 A _{RMS} (@ V _{nominal})	0.9 A _{RMS} (@ V _{nominal})	1.5 A _{RMS} (@ V _{nominal})	1.0 A _{RMS} (@ V _{nominal})
Nominal voltage / range	208 / 183 – 229 V	240 / 211 – 264 V	208 / 183 – 229 V	240 / 211 – 264 V
Nominal frequency / range	60.0 / 57 – 61 Hz		60.0 / 57 – 61 Hz	
Power factor	> 0.95		> 0.95	
Maximum units per 20 A branch circuit	25 (three phase)	17 (single phase)	24 (single phase)	16 (single phase)
Maximum output fault current	850 mA _{RMS} for 6 cycles		850 mA _{RMS} for 6 cycles	
Efficiency	@ 208 VAC	@ 240 VAC	@ 208 VAC	@ 240 VAC
CEC weighted efficiency	96.50%		96.50%	
Peak inverter efficiency	96.50%		96.50%	
Night time power consumption	65 mW max.		65 mW max.	
Mechanical Data				
Operating temperature range (internal)	-40° C to +85° C		-40° C to +85° C	
Dimensions (W x H X D)	16.3 cm x 17.3 cm x 2.5 cm (6.4" x 6.8" x 1.0")*		17.1 cm x 17.3 cm x 3.0 cm (6.7" x 6.8" x 1.2")*	
Weight	1.6 kg (3.4 lbs)		2.0 kg (4.4 lbs)	
Enclosure environmental rating	Outdoor – NEMA 6		Outdoor – NEMA 6	
Features				
Communication	Power line		Power line	
Warranty	25 years		25 years	
Compliance	UL1741/IEEE1547, FCC Part 15 Class B, CAN/CSA-C22.2 NO. 0-M91, 0.4-04, and 107.1-01		UL1741/IEEE1547, FCC Part 15 Class B, CAN/CSA-C22.2 NO. 0-M91, 0.4-04, and 107.1-01	
Integrated Ground	The DC circuit meets the requirements for ungrounded PV arrays in NEC 690.35. Equipment ground is provided in the Trunk and Drop Cable. No additional GEC or ground is required. Ground fault protection (GFP) is integrated into the microinverter.			

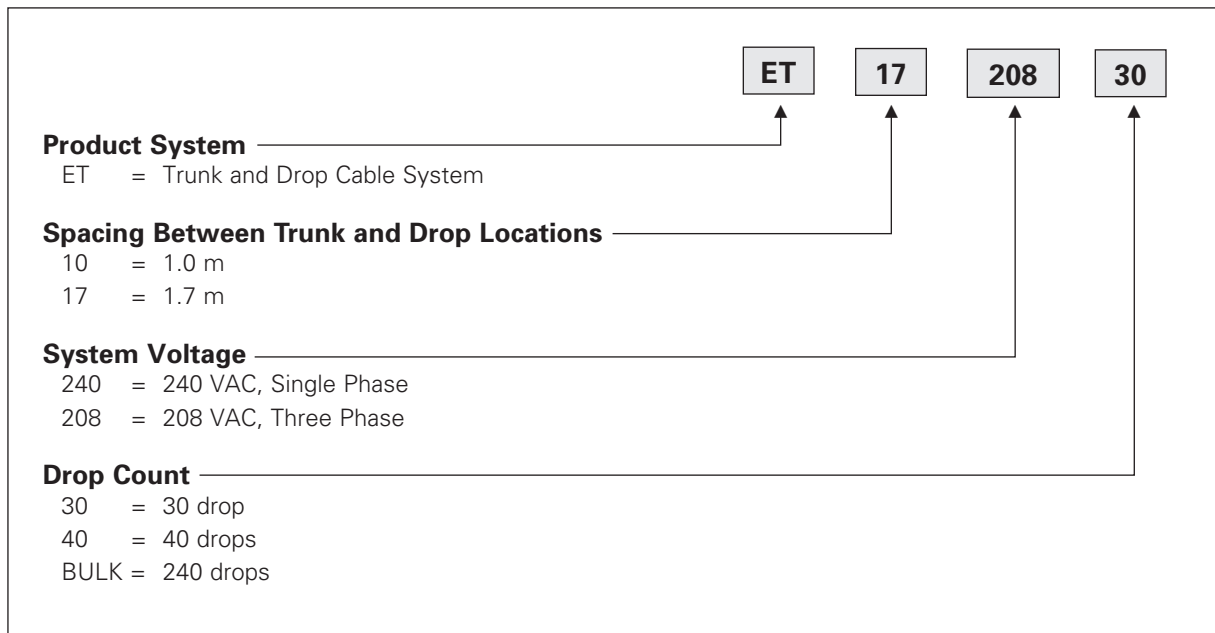
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Catalog Logic

Siemens Microinverter System




Trunk and Drop Cabling



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Siemens Microinverter System



Microinverter Overview

- One Inverter per PV Module
- Mounts to Racking ①
- MC or Tyco Connector ②
- AC out to Trunk-and Drop Cabling ③

Catalog #	Output (Watts)	Phase Voltage (V)	Connector Type
SMIINV215R60MC	215	120	MC-4
SMIINV215R60TY	215	120	TYCO
SMIINT215R60MC	215	120	MC-4
SMIINT215R60TY	215	120	TYCO
SMIINT215R60SM	215	120	SMK
SMIINT250R60MC	250	120	MC-4
SMIINT250R60TY	250	120	TYCO
SMIINT250R60SM	250	120	SMK



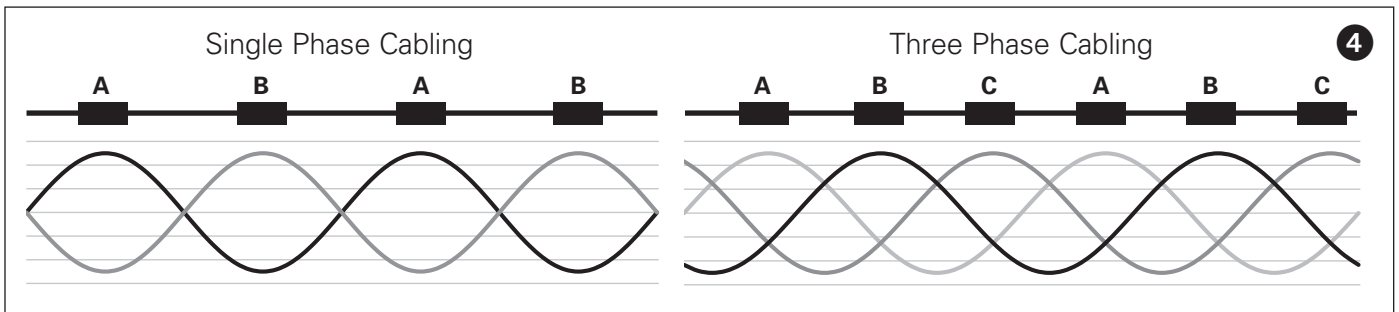
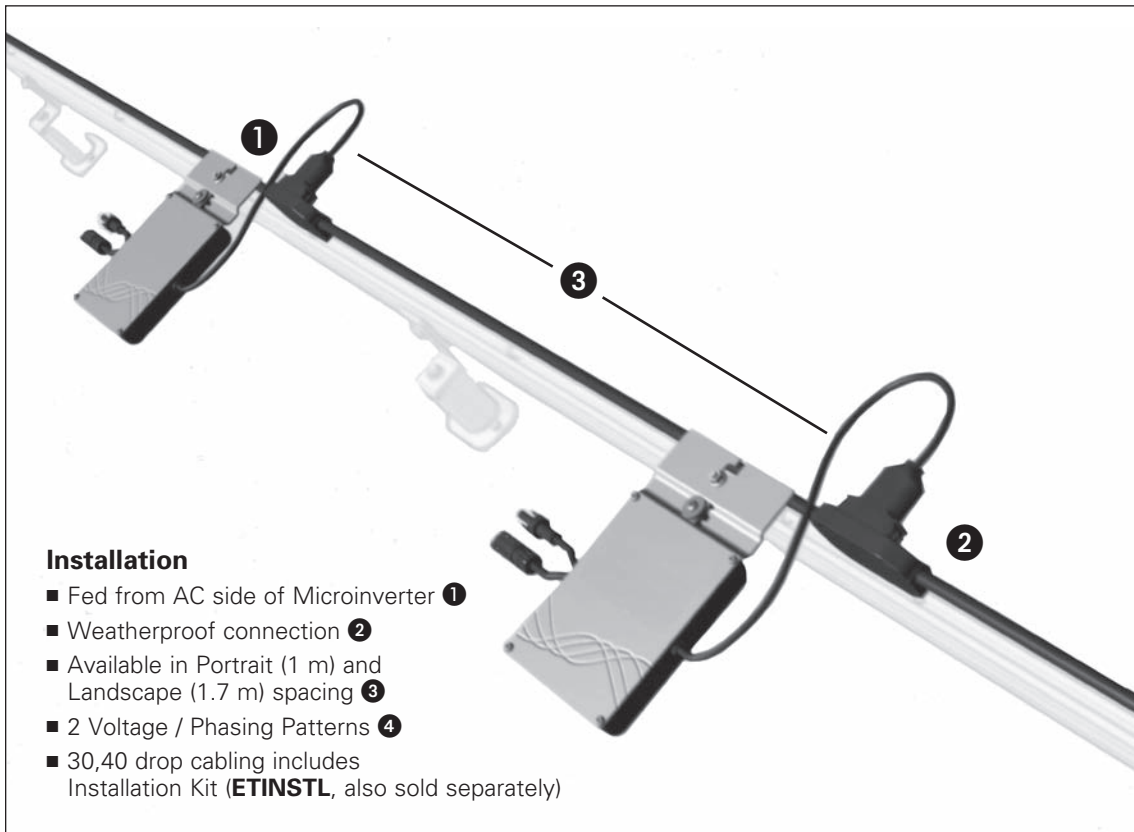
MC-4
Connector



Tyco
Connector

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Microinverter Trunk and Drop Cabling



Catalog #	Cable Type	Length (m)	Voltage Rating (V)	Phase	Number of Drops
ET1024040	Trunk & Drop	1	240	Single	40
ET10240BULK	Trunk & Drop	1	240	Single	240
ET1724040	Trunk & Drop	1.7	240	Single	40
ET17240BULK	Trunk & Drop	1.7	240	Single	240
ET1020830	Trunk & Drop	1	208	Three	30
ET10208BULK	Trunk & Drop	1	208	Three	240
ET1720830	Trunk & Drop	1.7	208	Three	30
ET17208BULK	Trunk & Drop	1.7	208	Three	240

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Microinverter System Components

Envoy

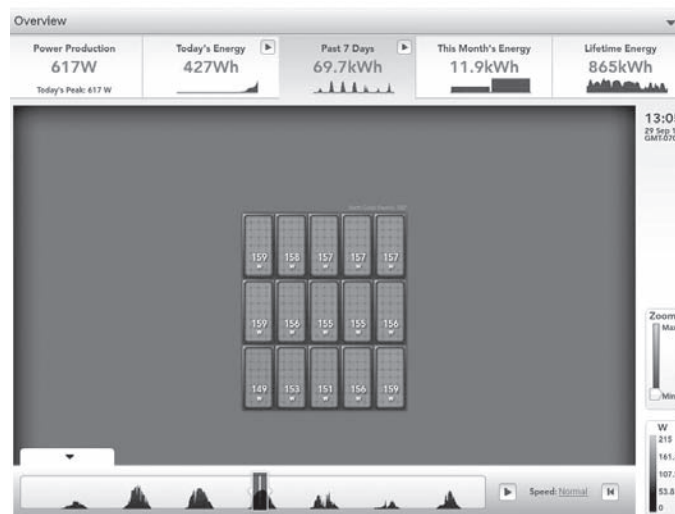
- Plugs into standard 120 V wall outlet and Ethernet cable
- Reads Power Line Carrier (PLC) Signal from each inverter
- Communicates via PLC or Wi-Fi to display monitoring data on Enlighten.
- Transmits software / firmware updates from Enphase servers to each inverter
- UL 60950 Listed
- Dim: 8.8" x 4.4" x 1.7"



Catalog #	Description
IEMU03	Envoy Communications Gateway, indoor, PLC Bridge, Monitoring Included
IEMU03WIFI	Envoy Communications Gateway, indoor, Wi-Fi enabled, Monitoring Included
EPLC01	Power Line Carrier Ethernet Bridge
ELCF120001	Line Communication Filter, Envoy Included

Enlighten

- Online monitoring service
- Allows for 24/7 monitoring of individual PV modules
- Web and smart phone accessible
- Can mimic roof layout for easy understanding
- Can aggregate over several installs
- Easily troubleshoot faulty modules



Lifetime subscription included with each Envoy