Solar inverters

ABB micro inverter system
MICRO-0.25/0.3/0.3HV-I-OUTD
0.25kW to 0.3kW

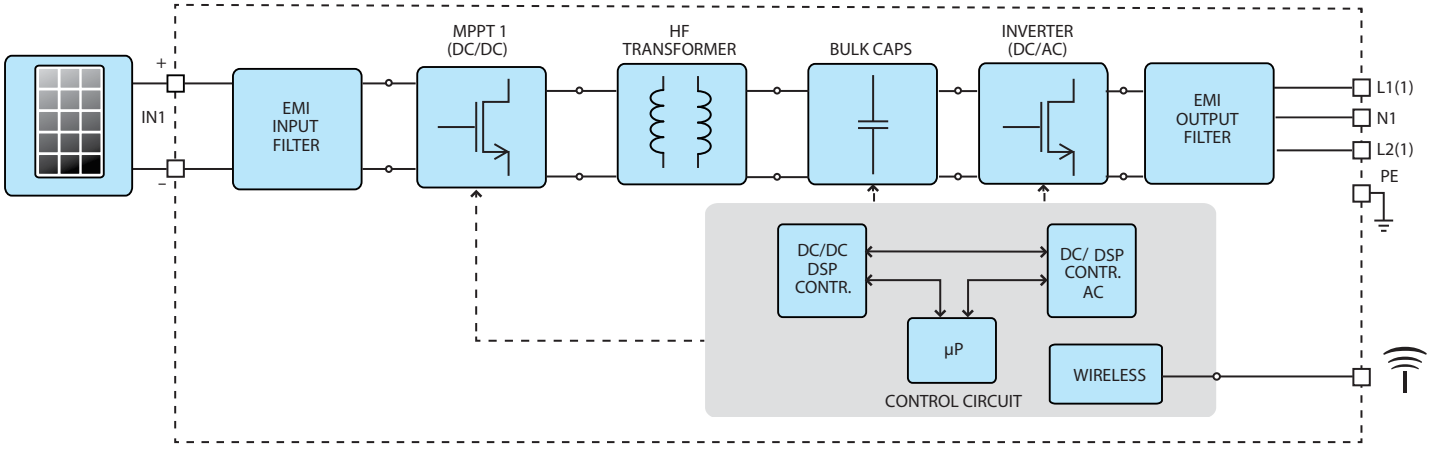
ABB's MICRO inverter enables individual panel output control when flexibility and modularity are required.

This ABB MICRO inverter enables individual panel output control.
Individual panel output control can reduce shading and mismatching effect. ABB's MICRO is the best alternative to the traditional string inverters that ABB is famous for.
The individual panels can be installed in different orientations which reduce the efficiency losses in a variety of challenging conditions.

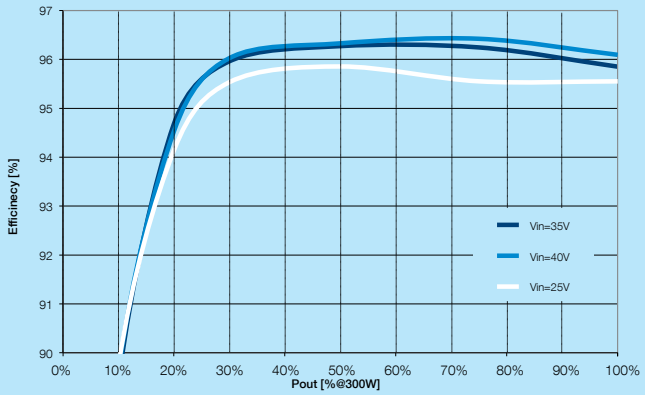
The Maximum Power Point Tracking (MPPT) algorithm maximizes energy and flexibility.
The proprietary MPPT algorithm works at the level of each solar panel in any light condition offering more energy output. This inverter has a maximum efficiency of 96.5%.
The electrolyte-free power converter further increases the life expectancy.
The compatible and proprietary wireless communication hub, Concentrator Data Device (CDD), simplifies installation.

Highlights:
- The high speed and precise MPPT algorithm offers real time power tracking and improved energy harvesting.
- HF isolation to fit any application that requires the positive grounding of DC input terminals
- Reduced susceptibility to fault. In case of a component failure only the energy produced from one PV module will be lost.
- Outdoor enclosure for unrestricted use under any environmental conditions.

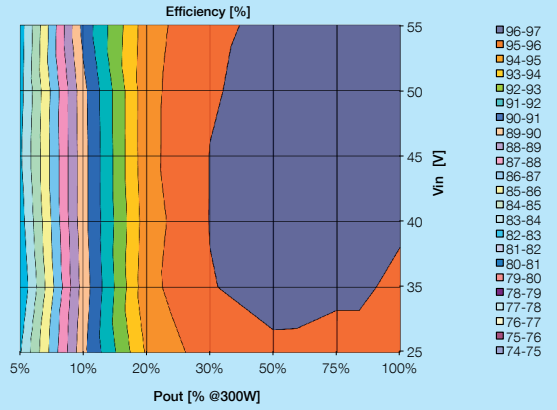
Block diagram of MICRO-0.25/0.3/0.3HV-I-OUTD



MICRO-0.3-I



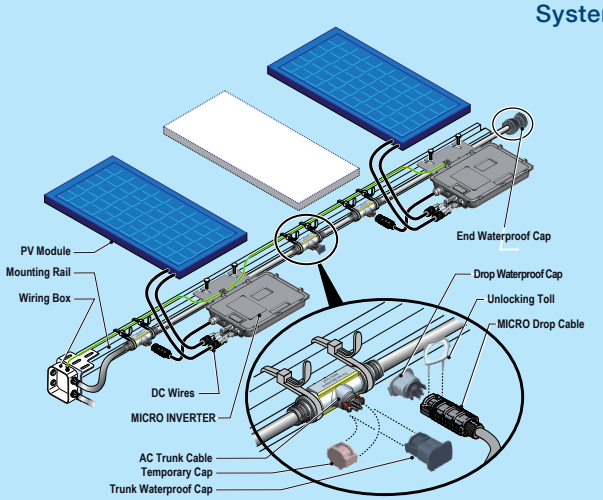
MICRO-0.3-I

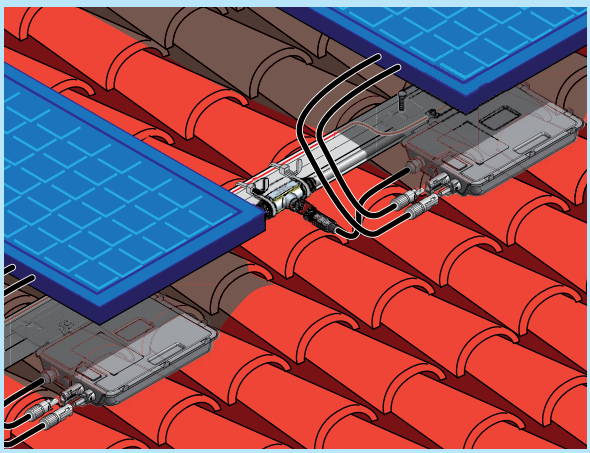


MICRO inverter system installation:

- The ABB MICRO inverter offers ease of installation with AC trunk and drop cable configuration.
- The mounting bracket on the MICRO inverter ensures simple and durable mounting on commercially available racking solutions.
- AC cabling compatible with 60, 72 and 96 cell modules in both portrait and landscape orientation.
- Locking connectors and weatherproof accessories ensure long term reliable operation of the plant.

System installation





Additional highlights:

- Used with the ABB Concentrator Data Device (CDD), ABB's MICRO inverter offers proprietary wireless monitoring of real-time system monitoring, troubleshooting and plant feedback.
- Only product in the market compatible with majority of PV modules.
- Comes with a 10-year system warranty covering the entire system, including MICRO, CDD and cabling.

Available models:

- 250W: MICRO-0.25-I
- 300W: MICRO-0.3-I
- 300W: MICRO-0.3HV-I

Technical data and types

Type code	MICRO-0.25-I-OUTD		MICRO-0.3-I-OUTD		MICRO-0.3HV-I-OUTD	
Nominal output power	250W		300W[1]		300W[1]	
Rated grid AC voltage	208V	240V	208V	240V	208V	240V
Maximum output power	260W		310W		310W	
Input side (DC)						
Maximum usable DC input power	265[2]Wp		320[2]Wp		320[2]Wp	
Maximum PV panel rating (STC)	300W		360W		360W	
Absolute maximum voltage (Vmax)	65V		65V		79V	
Start-Up voltage (Vstart)	25V		25V		25V	
Full power MPPT voltage range	25-60V		30-60V		30-75V	
Operating voltage range	12-60V[3]		12-60V[3]		19-75V[3]	
Maximum usable current (Idcmax)	10.5A		10.5A		10.5A	
Maximum short circuit current limit	12.5A[3]		12.5A[3]		12.5A[3]	
DC connection type	Amphenol H4 PV connector		Amphenol H4 PV connector		Amphenol H4 PV connector	
Output side (AC)						
Grid connection type	1Ø/2W	Split-Ø/3W	1Ø/2W	Split-Ø/3W	1Ø/2W	Split-Ø/3W
Adjustable voltage range	183V-228V	211V-264V	183V-228V	211V-264V	183V-228V	211V-264V
Nominal grid frequency	60Hz		60Hz		60Hz	
Adjustable grid frequency range	57-60.5 Hz		57-60.5 Hz		57-60.5 Hz	
Maximum output current	1.20A	1.04A	1.44A	1.25A	1.44A	1.25A
Power factor	>0.95					
Maximum number of inverters per string	13	15	11	12	11	12
Grid wiring termination type	18AWG drop cable from inverter to 10AWG AC trunk cable					
Input protection devices						
Reverse polarity protection	Yes; polarized PV connectors (Amphenol H4)					
Output protection devices						
Anti-islanding protection	Meets UL 1741/IEEE1547 requirements					
Over-voltage protection type	Varistor		Varistor		Varistor	
Maximum AC OCPD rating	20A		20A		20A	
Efficiency						
Maximum efficiency	96.5%		96.5%		96.5%	
CEC efficiency	96%		96%		96%	
Operating performance						
Stand-by consumption	<50mW		<50mW		<50mW	
Communication						
Monitoring system	Wireless and web-based monitoring through AURORA CDD (CDD required for compppliance to UL1741)					
Environmental						
Ambient air operating temperature range	-40°F to +167°F (-40°C to +75°C) Derating above +149°F (+65°C)					
Ambient air storage temperature range	-40°F to +167°F (-40°C to +80°C)					
Relative humidity	0-100% RH condensing					
Acoustic noise emission level	< 30 db (A) @1m					
Maximum operating altitutde without derating	6560 ft (2000 m)					
Mechanical specifications						
Enclosure rating	NEMA 4X					
Cooling	Natural convection					
Dimensions (H x W x D)	10.5 x 9.7 x 1.37in (266 x 246 x 35mm)					
Weight	<3.5lbs (1.65kg)					
Mounting system	Rack mounting with M8, 1/4" or 5/16" bolt					
Safety						
Isolation level	HF transformer					
Safety and EMC standard	UL1741, CSA C22.2 N. 107.1-01, EN61000-6-2, EN61000-6-3, FCC Part 15					
Safety approval	$_{C}CSA_{US}$					
Warranty						
Standard warranty	10 years					
Available models						
Standard	MICRO-0.25-I-OUTD -US-208/240		MICRO-0.3-I-OUTD-US-208/240		MICRO-0.HV-I-OUTD-US-208/240	

1. With derating below 200V for 208Vac operation
2. This is the maximum input power that the inverter will utilize
3. Only use PV modules that satisfy these parameters under all operating conditions.

Additional highlights:

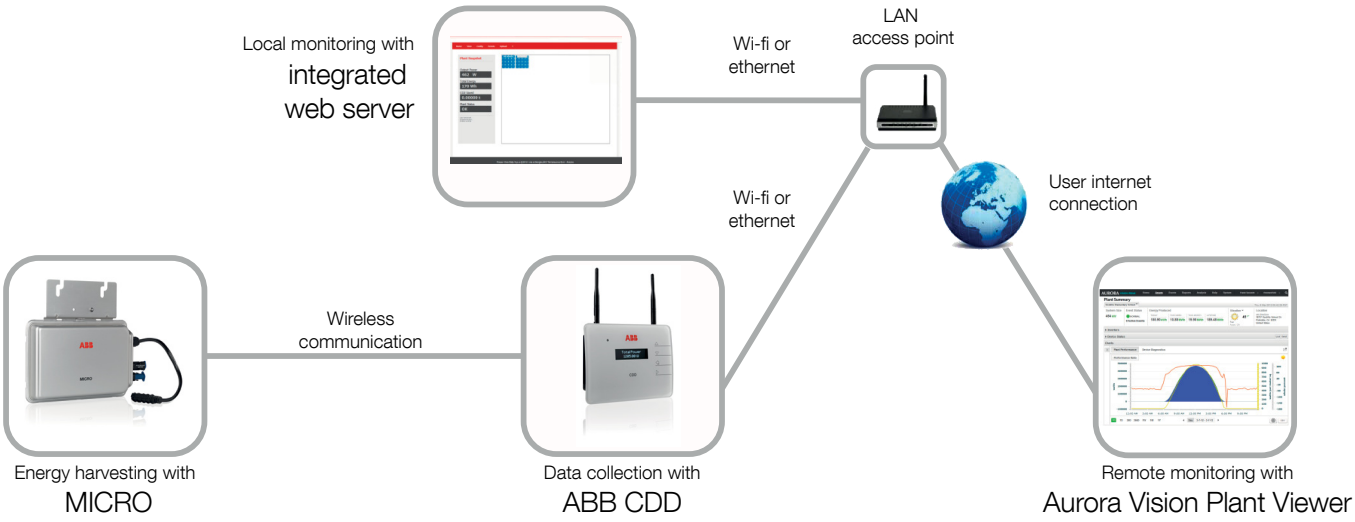
- Wireless data monitoring.
- Remote monitoring through Aurora Vision.
- Easy configuration.
- Up to 30 MICRO Inverters directly monitored by a single CDD.
- 24-hours 7-days web-based monitoring on web or mobile devices.
- Mesh network topology ensures redundancy in communications and the highest design flexibility.
- Homeowners can create thier own private monitoring portal or share their data with their installer.
- Free panel level monitoring standard on every system.

Technical data and types

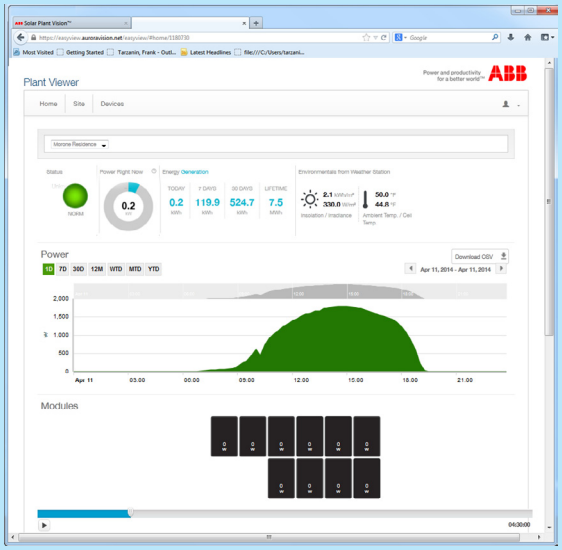
Type code	CDD
Communication to inverter	
Type	Radio IEEE 802.15.4
Sample rate	1 min.
Max. distance (free space)	164ft (50m[1)])
Max. number of devices	30
Communication to modem/PC	
Wireless communication	Radio IEEE 802.11/b - 2.4GHz/10Mbps
Wired communication	Ethernet RJ45 10/100Mbps
Connectivity	
Wired ports	1x RJ45 Ethernet
Features	
Operation	Integrated web server
Power supply	
Type	External plug-in adapter
Adaptor input	100 to 240Vac : 50/60Hz
Adaptor output	5Vdc -1A
Power consumption	typ. 2.5W/max. 5W
Environmental	
IP degree	IP20/NEMA 1
Ambient temperature	-4°F to 131°F (-20°C to +55°C)
Relative humidity	< 90% non condensing
Physical	
Dimensions (H x W x D)	5.9 x 7 x 1in (150 x 180 x 25mm)
Weight	1.32lbs (0.6kg)
Mounting	Wall mounting (screws provided)
Interface	
Display	16 characters x 2 lines OLED
Display language	EN-ES-IT-DE-FR
LED	Bicolor (red and green)
Safety	
Marking	CE, $_{C}$CSA$_{US}$, FCC
Safety and EMC standard	EN 62311, EN60950-1, EN 301489-1 V1.8 1, EN 301489-17 V2.1.1, EN 55022, EN 55024, FCC part 15 Class B/ Class C, RTTE 1999/5/EC
Accessories	
Antenna extension cable	Optional
Plug-in power adaptor	Included

1. Actual distance is function of environmental condition. Please refer to dedicated technical note for further information
Remark: features not speciically listed in the present datasheet are not included in the product.

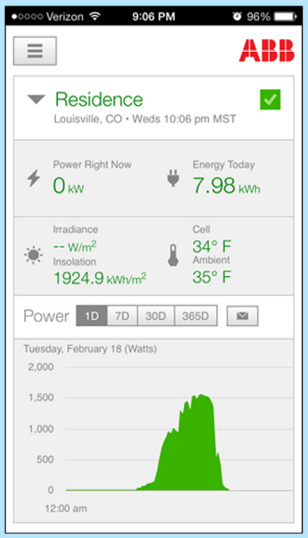
Monitoring solutions



Aurora Vision Plant Viewer



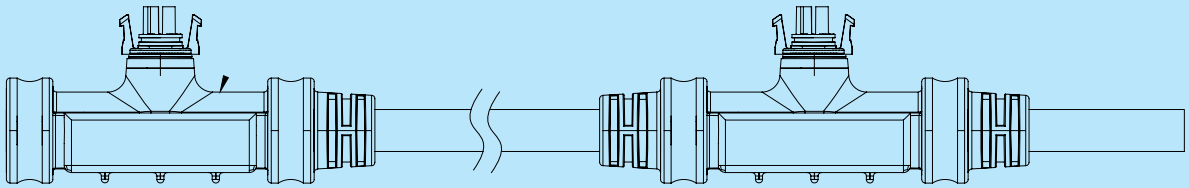
Plant Viewer for mobile



Aurora Vision Plant Viewer:

- Easy monitoring solution for homeowners on web or mobile devices.
- Complete reporting, analytics and diagnostic view for installers with complete control of installation process and acccess security.
- Tightly integrated micro-inverter and monitoring solution.

System components for MICRO 0.25/0.3/0.3HV-I-OUTD



Cabling and accessories:

- Portrait orientation (60, 72, 96 cell modules): AC-Trunk Spool-41inches-50plugs (41“ connector pitch, spool of 50 plugs)
- Landscape orientation (60, 96 cell modules): AC-Trunk Spool-67inches-32plugs (67“ connector pitch, spool of 32 plugs)
- Landscape Orientation (72 cell modules): AC Trunk Spool-81inches - 27plugs (81“ connector pitch, spool of 27 plugs)

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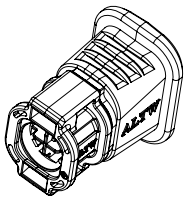
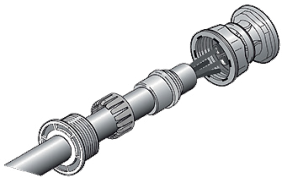


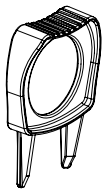
AC trunk cable plug cap:

- Plug cap to cover and seal unused plugs on AC trunk cable: AC-TRUNK PLUG CAP



AC trunk cable end cap:

- End cap to cover and seal ends of AC trunk cable: AC-TRUNK END CAP



AC trunk cable unlock tool:

- To disconnect MICRO inverter or Junction cap from trunk cable. AC-TRUNK UNLOCK TOOL

AC trunk cable joiner:

- To connect two trunk cables together: AC-TRUNK CABLE JOINER

CDD antenna extension cable 50ft (optional):

- To extend the wireless communication range of the CDD and MICRO inverters: MOBILE MARK CABLE-ASSY-C25-26-15L

Support and service

ABB supports its customers with a dedicated, global service organization in more than 60 countries, with strong regional and national technical partner networks providing a complete range of life cycle services.

For more information please contact your local ABB representative or visit:

www.abb.com/solarinverters

www.abb.com

Power and productivity for a better world™