Solar inverters

ABB micro inverters
MICRO-0.25/0.3-I-OUTD, CDD and accessories
250 to 300 W

MICRO

The ABB MICRO inverter system is the perfect solution suitable for photovoltaic applications when flexibility and modularity are required.

The ABB MICRO inverter enables individual panel output control reducing shading and mismatching effect.

It offers increased flexibility and maximizing energy harvesting thanks to ABB's proprietary MPPT algorithm, which works at the level of each solar panel.

This system offers the best alternative to the traditional string inverters.

ABB MICRO inverter plants enable a simple installation thanks to a proprietary wireless communication protocol between the ABB MICRO and the ABB CDD.

CDD

The ABB Concentrator Data Device (CDD) is the communication hub between the MICRO inverter system and plant owner.

The ABB CDD is able to provide immediate and complete feedback of the plant status in the front LED display panel, which helps with more concise monitoring and troubleshooting; thereby, reducing service calls.

For a complete and detailed status report, the integrated web server provides a local view of plant status.

Finally for remote and complete historical data presentation ABB offers the Aurora Vision® Plant Management Platform.

Highlights

- Available in 250W and 300W versions that can be used with most common PV modules
- Enhanced MPPT control with reduced DC input current ripple
- Easy to set up
- Individual panel level control
- Single PV module energy harvesting and monitoring
- Secure wireless interface for system monitoring and configuration means no wiring needed
- 10-year system warranty for all parts (MICRO, CDD and cabling)

Accessories

ABB MICRO inverters are connected to the AC using an AC–TRUNK BUS or with single cable drop extender.

The AC-TRUNK BUS is a 4 mm² cross section cable homologated for outdoor applications with preinstalled connectors for ABB MICRO inverters.

Once connected to the ABB MICRO inverters or terminated using the specific water-tight caps, the AC-TRUNK cable connectors guarantee IP67 environmental protection grade.

The AC accessories complete the range, making it possible to create extension cables, terminations and connections to other cables. This simplifies the installation of small and large systems alike.

Thanks to the broad temperature range and the high mechanical strength, there are no particular restrictions on the type of installation, thus increasing the design flexibility.

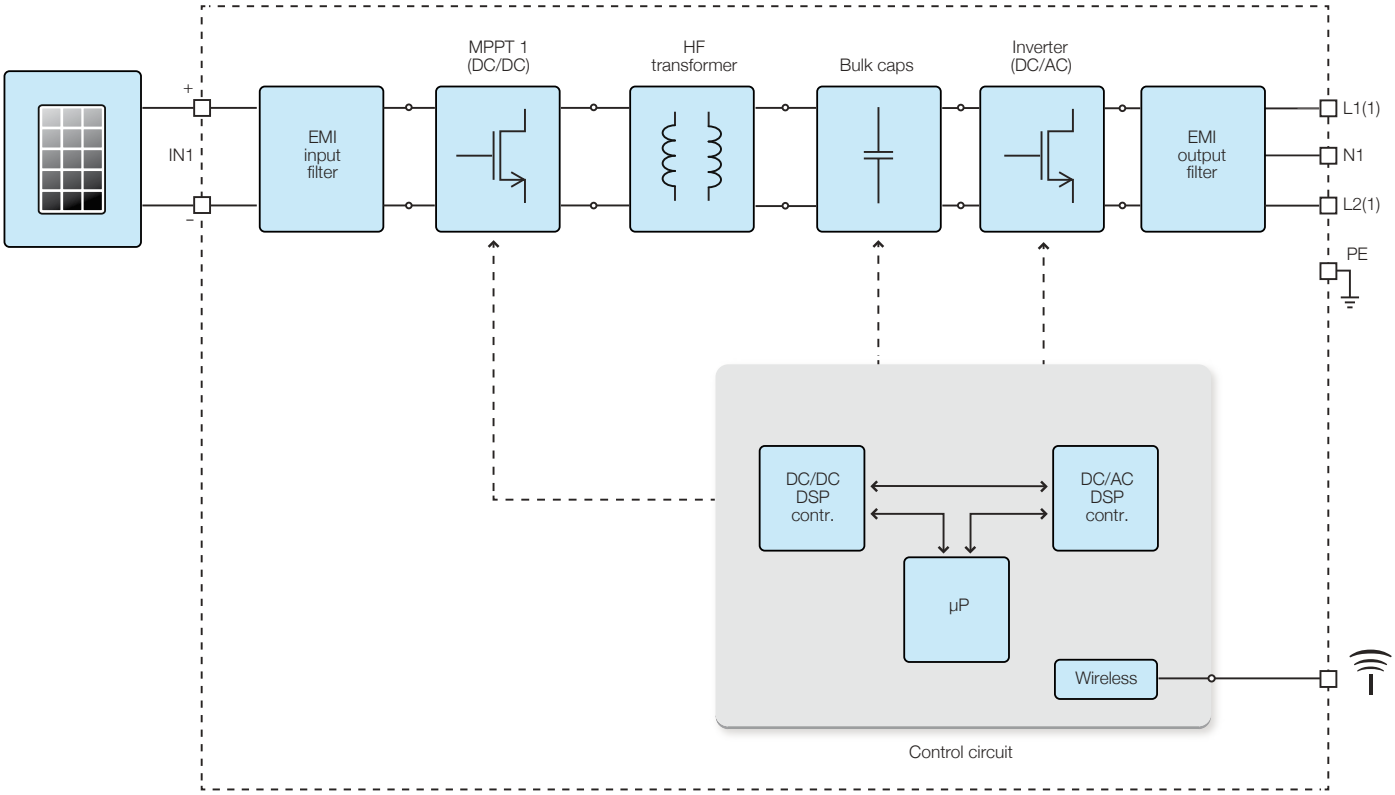
In addition to single accessories, ABB has created two kits to simplify the order procedure and reduce the excess number of components: a mounting accessories kit and an extension accessories kit.

The mounting accessories kit includes all the necessary accessories (except the AC-TRUNK BUS that has to be ordered separately) to easily proceed with the installation.

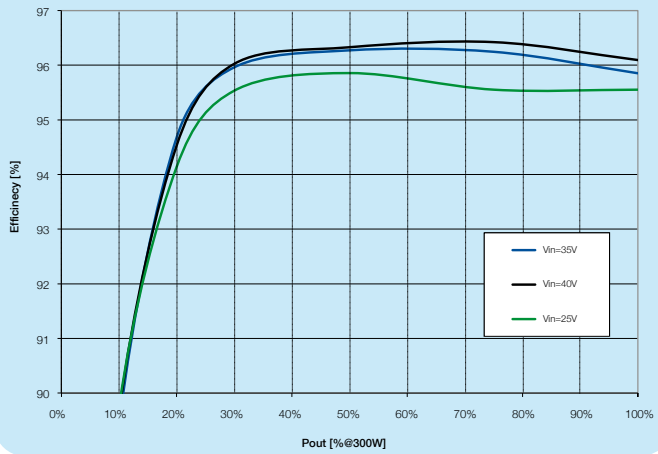
The extension accessories kit includes all the necessary accessories to extend the AC-TRUNK BUS cable with an installer's cable.

The single drop extender cable is a 0.75 mm² cross section cable, homologated for all ABB MICRO inverter products. The single drop extension cable offers maximum flexibility to the installer with 5m length and terminating with loose end.

Block diagram of MICRO



Efficiency curves of MICRO-0.25/0.3-I



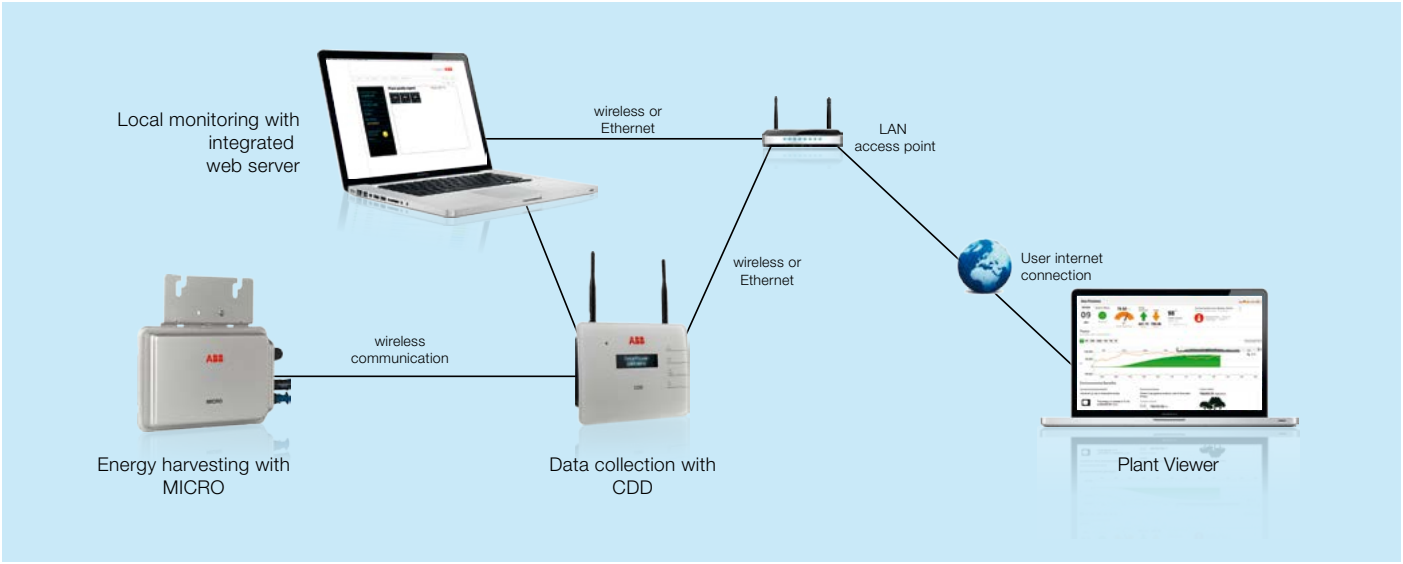
Technical data and types

Type code	MICRO-0.25-I-OUTD	MICRO-0.3-I-OUTD
Input side		
Maximum DC input power (P_{dcmax})	265 Wp	320 Wp
Operating DC input voltage range (V_{dcmin}...V_{dcmax})	12...60 V	
MPPT input DC voltage range ($V_{MPPTmin}$... $V_{MPPTmax}$)	25...50 V	30...50 V
Absolute maximum DC input voltage ($V_{max,abs}$)	65 V	
Maximum DC input current (I_{dcmax})	10.5 A	
Number of DC inputs pairs for each MPPT	1	
DC connection type	PV connector MC4	
Start-up DC input voltage (V_{start})	25V	
Output side		
AC grid connection type	Single phase	
Rated AC power ($P_{ac,r}$)	250 W	300 W
Maximum apparent power (S_{max})	250 VA(3)	300 VA(3)
Rated AC grid voltage ($V_{ac,r}$)	230 V	
AC voltage range (V_{acmin}...V_{acmax})	180...264 V (1)	
Maximum AC output current ($I_{ac,max}$)	1.3 A	1.5 A
Contributory fault current	3 A	
Rated output frequency (f_r)	50 Hz / 60 Hz	
Output frequency range (f_{min}...f_{max})	47...53 Hz / 57...63 Hz (2)	
Nominal power factor ($Cosphi_{ac,r}$) and adjustable range	> 0.995(3)	
Maximum number of units per phase	17	
Output protection		
Anti-islanding protection	According to local standard	
Output overvoltage protection - varistor	Yes	
Operating performance		
Maximum efficiency (η_{max})	96.5%	
Weighted efficiency (η_{EURO}/η_{CEC})	95.4% / -	95.5% / -
Stand-by consumption	< 50mW	
Communication		
Monitoring system (PC/Data logger)	Wireless	
Remote monitoring	Wireless	
Environmental		
Ambient temperature range	-40...+75°C / -40...167°F with derating above 65°C (149°F)	
Relative humidity	0...100 % condensing	
Noise emission	< 30 db(A) @ 1 m	
Maximum operating altitude without derating	2000 m / 6560 ft	
Physical		
Environmental protection rating	IP 65	
Cooling	Natural	
Dimension (H x W x D)	266mm x 246mm x 35mm / 10.5" x 9.7" x 1.37"	
Weight	< 1.65 kg / 3.5 lb	
Safety		
Isolation level	HF transformer	
Marking	CE (5)	
Safety and EMC standard	EN61000-6-2, EN61000-6-3, EN61000-3-2, EN61000-3-3, EN 50178, EN62109-1, EN62109-2	
Grid standard (4)	CEI 0-21, VDE 0126-1-1, VDE-AR-N 4105, G83/2, RD1699, AS 4777	
Available products variants		
Standard	MICRO-0.25-I-OUTD-230	MICRO-0.3-I-OUTD-230

1. The AC voltage range may vary depending on specific country grid standard
2. The frequency range may vary depending on specific country grid standard
3. The unit has not reactive power capability
4. The unit has not an internal disconnection device
5. Take care that an external device (i.e. CDD) shall be used in the end system installation to indicate faults.

Remark. Features not specifically listed in the present data sheet are not included in the product

ABB MICRO inverters system communications



Technical data and types

Type code	CDD
Communication to inverter	
Type	Radio IEEE 802.15.4
Sample rate	1 min.
Max distance (free space)	50 m(1)
Max number of devices	30
Communication to modem/pc	
Wireless communication	Radio IEEE 802.11 / b - 2.4GHz / 10 Mbps
Wired communication	Ethernet RJ45 10/100 Mbps
Connectivity	
Wired ports	1x RJ45 Ethernet, (1x RS485, 1x Go-Go Relè)
Features	
Operation	Integrated web server
Power supply	
Type	External plug-in adapter
Adapter input	100...240 Vac ; 50/60 Hz
Adapter output	5 Vdc - 1 A
Power consumption	typ. 2.5W/ max. 5W
Battery	coin battery, 3Vdc, replaceable
Environmental	
Ip degree	IP20 / NEMA 1
Ambient temperature	-20...+55 °C / -4...131°F
Relative humidity	< 90% non condensing
Physical	
Dimensions (h/w/d)	150x180x25 mm / 5.9x7x1"
Weight	0.6 kg / 1.32lbs
Mounting	Wall mounting (screws provided)
Interface	
Display	16 Characters x 2 lines OLED
Display language	IT-EN-ES-DE-FR
Led	Bicolor (red and green)
Safety	
Marking	CE, cCSAus, FCC
Safety and EMC standard	EN 62311; EN 60950-1; 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 adapter	Included

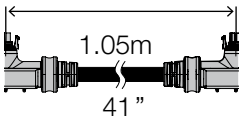
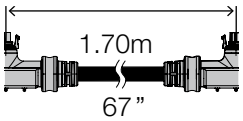
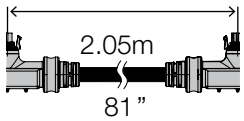
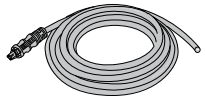
1. Actual distance is function of enviromental condition. Please refer to dedicated technial note for further information
2. Cabling and plug available but not used

Remark. Features not specifically listed in the present data sheet are not included in the product

Cable system list and details

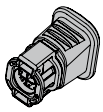
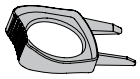
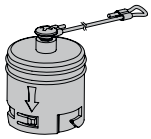
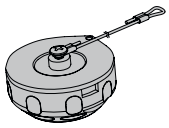
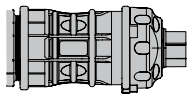
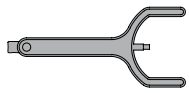
The AC-TRUNK BUS is available in three different lengths, with different pitch as shown in table below. In addition to the standard AC-TRUNK BUS, ABB provides the cable drop extender*; this cable gives the possibility to connect a single MICRO inverter to a junction box (not provided).

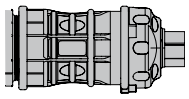
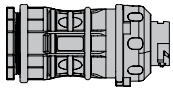
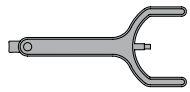
AC-TRUNK-BUS
4 junctions

AC-TRUNK-BUS-1.05m	AC-TRUNK-BUS-1.70m	AC-TRUNK-BUS-2.05m	CABLE DROP EXTENDER
 1.05m 41”	 1.70m 67”	 2.05m 81”	 5m

Accessories list and details

ABB accessories are available as discrete component for installers and now in two aggregated kits*: a mounting accessories kit and an extension accessories kit. The mounting accessories kit is used to complete the installation for a block of 4 MICRO and one AC-TRUNK BUS. The extension accessories kit is used to connect two not adiacent AC-TRUNK BUS.

MOUNTING ACCESSORIES KIT					
PLUG CAP	UNLOCK TOOL	FEMALE EXTENSION CAP	MALE EXTENSION CAP	FEMALE EXTENSION	EXTENSION UNLOCK TOOL
 4x	 1x	 1x	 1x	 1x	 1x

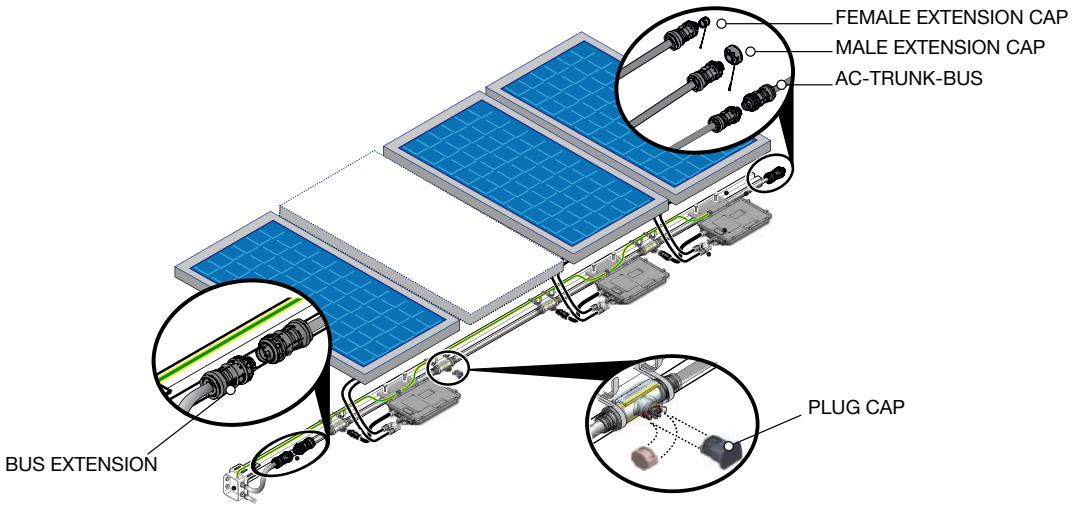
EXTENSION ACCESSORIES KIT		
FEMALE EXTENSION	MALE EXTENSION	EXTENSION UNLOCK TOOL
 1x	 1x	 1x

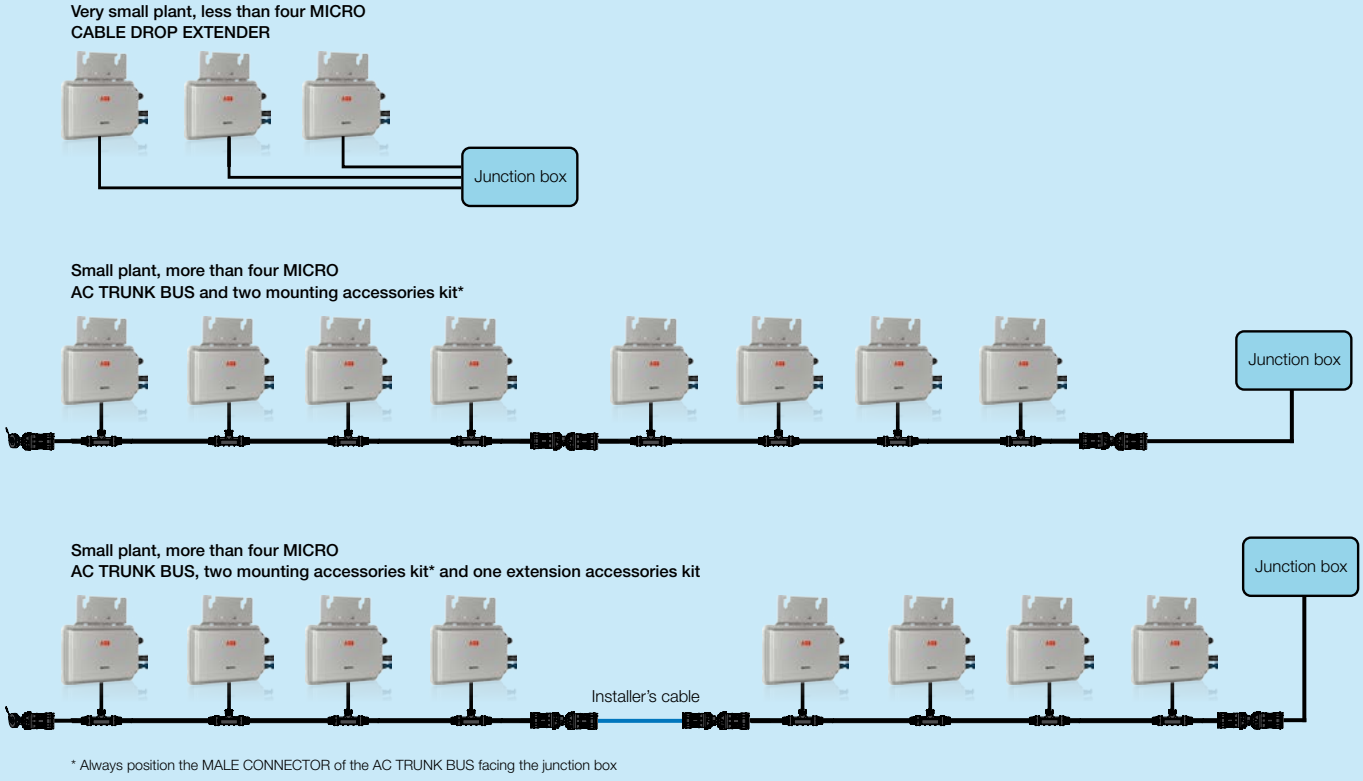
*Product availability may vary in different countries.

Technical data and types

Technical specifications of the cable	AC TRUNK BUS	CABLE DROP EXTENDER
Number of conductors and cross section	3G4 mm²	3G0.75mm²
Minimum radius of curvature for fixed installation	48 mm	40 mm
Operating temperature (mobile installation)	-40 to +90°C	-40 to +90°C
Rated voltage u0/u	450 / 750 V	450 / 750 V
Specific resistance of the insulation	>10 GΩ·cm	> 100 GΩ·cm
Test voltage	3 kV	6.5 kV
External sheathing	Black PUR Black	XLPO Jacket
Cable type	H07BQ-F	2pfg 1940
Specifications of the connectors		
Operating temperature	-40°C to +90°C	-40 to + 105°C
Protection class	IP67	IP67
Connector rated current	5 A	5 A
Connector rated voltage	300 V	300 V
Extension connector rated current	25 A	-
Extension connector rated voltage	660 V	-

Installation examples





Support and service

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

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

www.abb.com/solarinverters

www.abb.com

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