

SOLAR INVERTERS

# ABB string inverters

## UNO-DM-6.0-TL-PLUS

### 6 kW



The new UNO-DM-6.0-PLUS single-phase inverter is an upgrade of the proven UNO family and is an optimal solution for residential installations.

—  
01  
UNO-DM-6.0-TL-PLUS  
outdoor string inverter

#### High power density

The new design wraps ABB's quality and engineering into a lightweight and compact package thanks to technological choices optimized for installations with different orientation.

The inverter allows high performance in a minimum space and has a dual Maximum Power Point Tracker (2 MPPT).

#### Easy to install, fast to commission

The featured easy commissioning routine removes the need for a long configuration process, resulting in lower installation time and costs.

Improved user experience thanks to a built-in User Interface (UI), which enables access to features such as advanced inverter configuration settings, dynamic feed-in control and load manager, from any WLAN enabled devices (smartphone, tablet or PC).

#### Smart capabilities

The embedded logging capabilities and direct transferring of the data to Internet (via Ethernet or WLAN) allow customers to enjoy the whole Aurora Vision® remote monitoring experience. The advanced communication interfaces (WLAN, Ethernet, RS485) combined with an efficient Modbus

(RTU/TCP) communication protocol, Sunspec compliant, allow the inverter to be easily integrated within any smart environment and with third party monitoring and control systems.

A complete set of control functions with the embedded efficient algorithm, enabling dynamic control of the feed-in (i.e. zero injection), make the inverter suitable for worldwide applications in compliance with regulatory norms and needs of the utilities.

The future-proof and flexible design enables integration with current and future devices for smart building automation.

#### Highlights

- Wireless access to the embedded Web User Interface
- Easy commissioning capability
- Future-proof with embedded connectivity for smart building and smart grid integration
- Dynamic feed-in control (for instance "zero injection")
- Remote Over The Air (OTA) firmware upgrade for inverter and components
- Modbus TCP/RTU Sunspec compliant
- Remote monitoring via Aurora Vision® cloud
- Dual input section with independent MPPT

# ABB string inverters

## UNO-DM-6.0-TL-PLUS

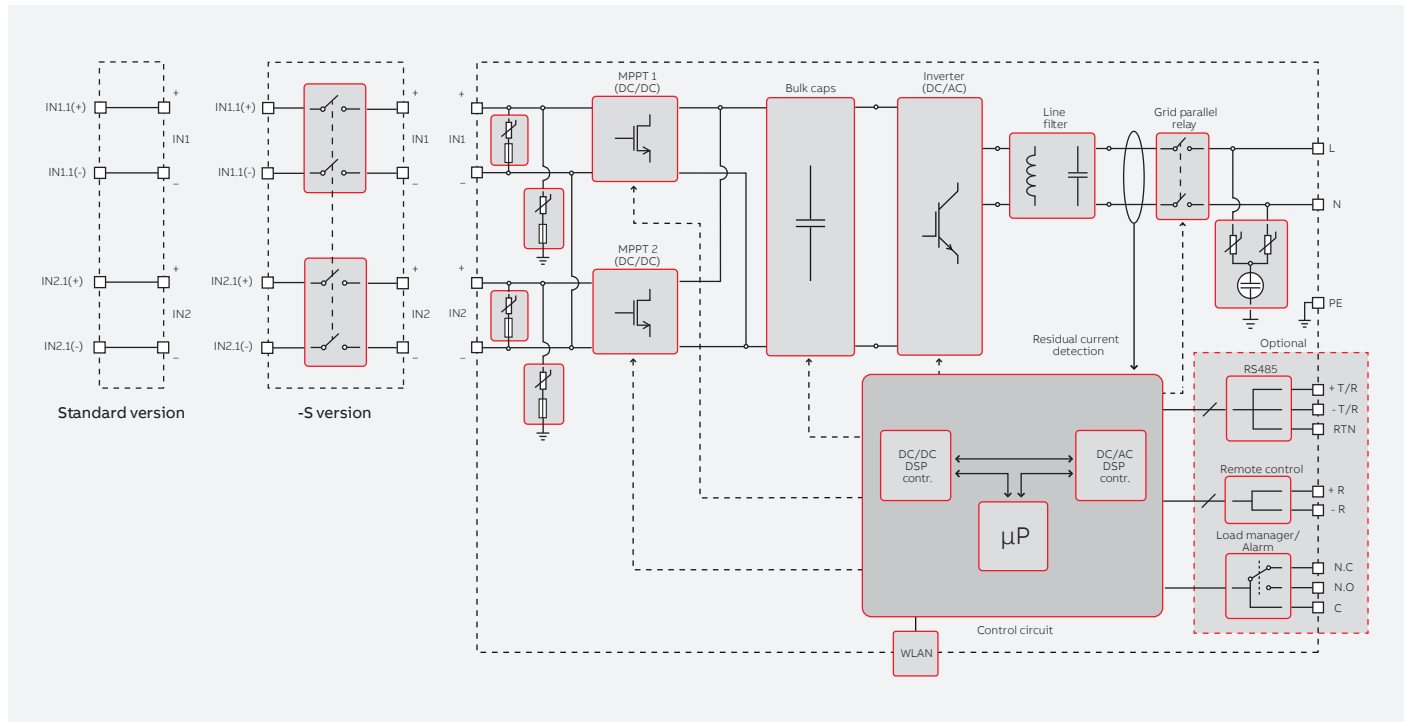
### 6 kW



#### Technical data and types

Type code	UNO-DM-6.0-TL-PLUS
<b>Input side</b>	
Absolute maximum DC input voltage ( $V_{max,abs}$ )	600 V
Start-up DC input voltage ( $V_{start}$ )	200 V (adj. 120...350 V)
Operating DC input voltage range ( $V_{dcmin}...V_{dcmax}$ )	$0.7 \times V_{start}...580$ V (min 90 V)
Rated DC input voltage ( $V_{dcr}$ )	360 V
Rated DC input power ( $P_{dcr}$ )	6200
Number of independent MPPT	2
Maximum DC input power for each MPPT ( $P_{MPPTmax}$ )	4000W
DC input voltage range with parallel configuration of MPPT at $P_{acr}$	160...480V
DC power limitation with parallel configuration of MPPT	Linear derating from Max to 500W [ $480V \leq V_{MPPT} \leq 580V$ ]
DC power limitation for each MPPT with independent configuration of MPPT at $P_{acr}$ , max unbalance example	4000 W [ $220V \leq V_{MPPT} \leq 480V$ ] the other channel: $P_{dcr} - 4000W$ [ $120V \leq V_{MPPT} \leq 480V$ ]
Maximum DC input current ( $I_{dcmax}$ ) / for each MPPT ( $I_{MPPTmax}$ )	40 A / 20.0 A
Maximum input short circuit current for each MPPT	25.0 A
Number of DC inputs pairs for each MPPT	2
DC connection type	Quick Fit PV Connector <sup>(1)</sup>
<b>Input protection</b>	
Reverse polarity protection	Yes, from limited current source
Input over voltage protection for each MPPT - varistor	Yes
Photovoltaic array isolation control	According to local standard
DC switch rating for each MPPT (version with DC switch)	32A / 600 V
<b>Output side</b>	
AC Grid connection type	Single phase
Rated AC power ( $P_{acr} @ \cos\phi=1$ )	6000 W
Maximum AC output power ( $P_{acmax} @ \cos\phi=1$ )	6000 W
Maximum apparent power ( $S_{max}$ )	6650 VA
Rated AC grid voltage ( $V_{ac,r}$ )	230 V
AC voltage range	180...264 V <sup>(2)</sup>
Maximum AC output current ( $I_{ac,max}$ )	30.0 A
Contributory fault current	40.0 A
Rated output frequency ( $f_r$ )	50 Hz / 60 Hz
Output frequency range ( $f_{min}...f_{max}$ )	47...53 Hz / 57...63 Hz <sup>(3)</sup>
Nominal power factor and adjustable range	> 0.995, adj. $\pm 0.8$
Total current harmonic distortion	< 3%
AC connection type	Termilan Block
<b>Output protection</b>	
Anti-islanding protection	According to local standard
Maximum external AC overcurrent protection	40.0 A
Output overvoltage protection - varistor	2 (L - N / L - PE)
<b>Operating performance</b>	
Maximum efficiency ( $\eta_{max}$ )	97,40%
Weighted efficiency (EURO/CEC)	97.0% / -
Feed in power threshold	8 W
Night consumption	< 0.4 W

ABB UNO-DM-6.0-TL-PLUS string inverter block diagram



Technical data and types

<b>Type code</b>	<b>UNO-DM-6.0-TL-PLUS</b>
<b>Embedded Communication</b>	
Embedded Communication Interface	Wireless <sup>(4)</sup>
Embedded Communication Protocol	ModBus TCP (SunSpec)
Commissioning Tool	Web User Interface, Display, Aurora Manger Lite
Monitoring	Plant Portfolio Manager, Plant Viewer, Plant Viewer for Mobile
<b>Optional board UNO-DM-COM kit</b>	
Optional Communication Interface	RS485 (use with meter for dynamic feed-in control), Alarm/Load manager relay, Remote ON/OFF
Optional Communication Protocol	ModBus RTU (SunSpec), Aurora Protocol
<b>Optional board UNO-DM-PLUS Ethernet COM kit</b>	
Optional Communication Interface	Ethernet, RS485 (use with meter for dynamic feed-in control), Alarm/Load manager relay, Remote ON/OFF
Optional Communication Protocol	ModBus TCP (SunSpec), ModBus RTU (SunSpec), Aurora Protocol
<b>Environmental</b>	
Ambient temperature range	-25...+60°C (-13...+ 140°F) with derating above 45°C/113°F
Relative humidity	0...100% condensing
Maximum operating altitude without derating	2000 m / 6560 ft
<b>Physical</b>	
Environmental protection rating	IP 65
Cooling	Natural
Dimension (H x W x D)	418 mm x 553 mm x 180 mm
Weight	20,5 kg
Mounting system	Wall bracket
<b>Safety</b>	
Isolation level	Transformerless
Marking	CE (50 Hz only), RCM
Safety and EMC standard	EN 50178, IEC/EN 62109-1, IEC/EN 62109-2, AS/NZS 3100, EN 61000-6-1, EN 61000-6-3, EN 61000-3-11, EN 61000-3-12
Grid standard (check your sales channel for availability)	CEI 0-21, DIN V VDE V 0126-1-1, ITC-BT-40, AS 4777, INMETRO Ordinances 357-2014
<b>Available products variants</b>	
Standard	UNO-DM-6.0-TL-PLUS-B
With DC switch	UNO-DM-6.0-TL-PLUS-SB

<sup>1)</sup> Refer to the document "String inverter – Product Manual appendix" available at [www.abb.com/solarinverters](http://www.abb.com/solarinverters) to know the brand and the model of the quick fit connector

<sup>2)</sup> The AC voltage range may vary depending on specific country grid standard

<sup>3)</sup> The Frequency range may vary depending on specific country grid standard

<sup>4)</sup> As per IEEE 802.11 b/g/n standard

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

---

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

**[www.abb.com/solarinverters](http://www.abb.com/solarinverters)**  
**[www.abb.com](http://www.abb.com)**

---

We reserve the right to make technical  
changes or modify the contents of this  
document without prior notice. With  
regard to purchase orders, the agreed  
particulars shall prevail. ABB AG does not  
accept any responsibility whatsoever for  
potential errors or possible lack of  
information in this document.

We reserve all rights in this document and  
in the subject matter and illustrations  
contained therein. Any reproduction,  
disclosure to third parties or utilization of  
its contents – in whole or in parts – is  
forbidden without prior written consent of  
ABB AG. Copyright© 2020 ABB  
All rights reserved

