

SOLAR INVERTERS

# ABB string inverters

## UNO-DM-6.0-TL-PLUS

### 6 kW



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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

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.

(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

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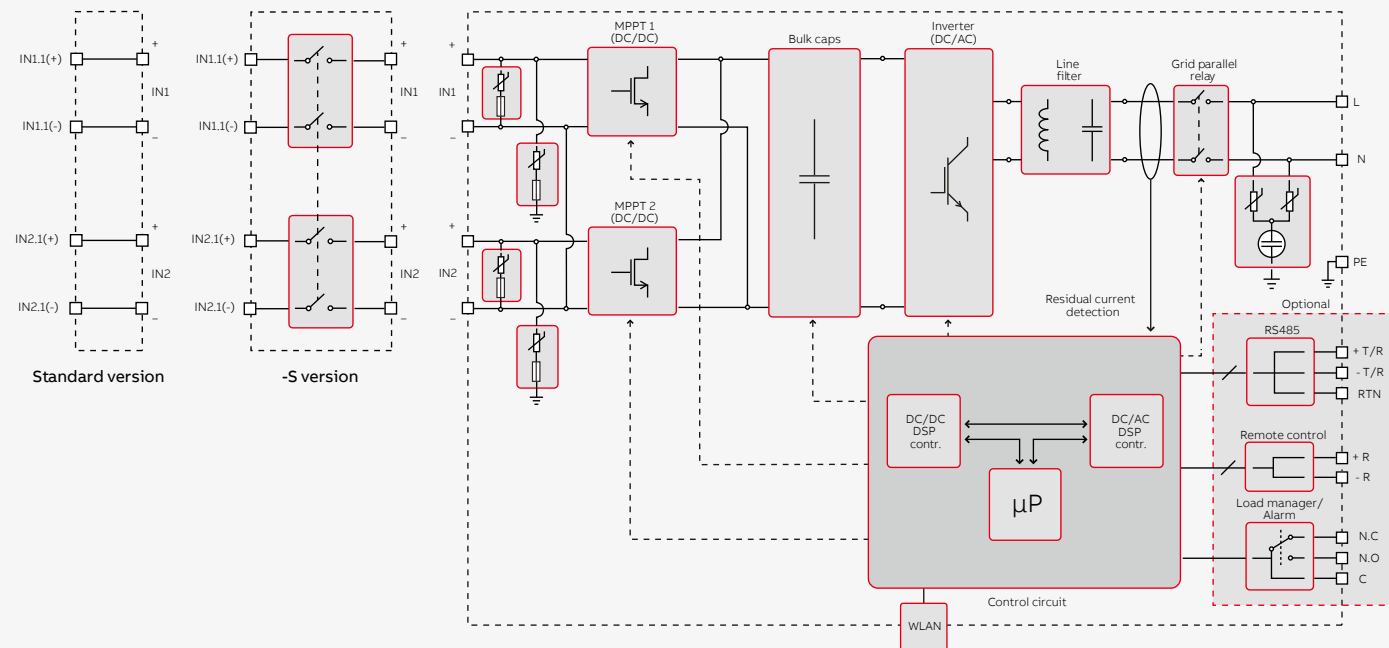
### 6 kW



#### 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 ( $V_{acr,r}$ )	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	< 3.5
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

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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)**

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