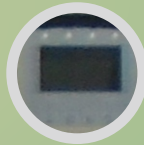


# Medha Solar Inverter

## MCI-0760-10-1000 kW/1250 kW



- DC insulation monitoring and protection
- Low harmonic current output
- Input and output isolation through automatic control of contactor and ACB through control computer respectively
- Automatic wake-up and sleep mode operation



### Smart User Interface

- 128 x 64 dot matrix user Interactive Display
- User data configuration, and faults, data download through USB/ Ethernet using PC based application software
- Ethernet / SCADA system for interfacing the web-based monitoring system
- 30 days of Internal memory data and fault information with associated data packs for any triggered event



### Advanced Technology

- Highest efficiency over wide operation range using three level technology
- Configurable reactive and power factor adjustment
- Grid side fault monitoring and support (LVRT, HVRT, anti-islanding, reactive power control, power factor regulation)
- Integrated grid side lower harmonic control algorithm



### High Yield

- Highest efficiency of 98.9% with Euro/CEC efficiency of 98.71% / 98.76%
- Wide operating Temperature range
- 110% higher operating power at lower working ambient temperature
- Optimized cooling fan control for energy savings as well as longer fan life



## Protections

Input side Disconnection device	DC contactor
Output side Disconnection device	AC Circuit Breaker
Anti islanding-loss of mains	✔ Yes
DC reverse polarity protection	✔ Yes
AC and DC short circuit and over load protection	✔ Yes
AC and DC Surge Protection	✔ Yes (DC-Side Type-I, AC-Side- Type-II )
AC over and under voltage protection	✔ Yes
DC over voltage protection	✔ Yes
Earth fault protection	✔ Yes
Insulation monitoring and protection	✔ Yes
Ground Fault monitoring and protection	✔ Yes
Monitoring of dc current injection into grid	✔ Yes
AC Over/ Under frequency protection	✔ Yes
Current Imbalance protection	✔ Yes
Loss of synchronisation	✔ Yes
Over Temperature	✔ Yes
Cooling Failure	✔ Yes



## Compliance

Efficiency Measurements	IEC 61683:First Edition,1999-11
Environmental Testing *	IEC 60068-2-1 Cold test, -2-2 Dry Heat Test, -2-30 Damp Heat Cycle Test
Electromagnetic Compatibility (EMC)	IEC 61000-6-2, -6-4
Electrical Safety	IEC 62109-1:Edition 1.0,2010-04 and IEC 62109-2 :Edition-1,2011-06
Protection against Islanding of grid	IEC 62116 and IEC 61727:Edition2,2004-12
Photovoltaic (PV) systems characteristics of the utility interface	IEC61727:Edition2,2004-12

\* Testing in progress



## Operating Performances

Maximum Efficiency (excluding auxiliary supply), %	98.9
Weighted Efficiency EURO/CEC(excluding auxiliary consumption for both parameters), %	98.71 / 98.76
MPPT Efficiency , %	99.99
Auxiliary supply consumption, W	< 2900
Night mode power consumption, W	< 100
No load losses, W	<1650

## DC Data

	1000 kW	1250 kW
Maximum DC voltage, V	1000	1000
Voltage operating range, V	550-950	640-950
MPPT voltage range, V	550-850	640-850
DC start voltage, V	575	640
Maximum input Power, kWp	1250	1562
No. of MPPT trackers	1	1
Maximum MPPT power, kWp	1000	1250
MPPT Efficiency, %	>99.9	>99.9
Max Operating DC current, A	2050	2050
Max Short Circuit DC current, A	2600	2600
Maximum Inverter backfeed current to the array, A	< 3200	< 3200
DC connection type	Through cables with Lug fixing, Bolt & nut type	

## AC Data

	1000 kW	1250 kW
Rated AC power (Cos $\Phi$ =0.95, Ambient = 50°C)	1000	1316
Rated AC power (Cos $\Phi$ =0.95, Ambient = 40°C)	1197	1387
Rated power factor at rated power / Displacement factor adjustable range	>0.99/ Adjustable from 0.8 Lead to 0.8 Lagg	
Rated AC Voltage, V	380	440
AC Voltage range, V	380 (+10% , -15%)	440 (+10% , -15%)
Rated frequency / frequency range, Hz	50 $\pm$ 5%	
Rated AC current @ Ambient = 50°C, A	1520	1726
Rated AC current @ Ambient = 40°C, A	1820	1820
AC Current (In rush), A	< 400A, 100msec	< 600A, 100msec
Maximum output fault current, A	3200 A, 250uSec	
Maximum output over current protection, A	2850 A, <250uSec	
Max. distortion factor THD at rated power conditions, %	< 3	
DC current Injection, %	<0.5	
Grid Feeding off at [Standby mode power], kW	5	
AC connection type	3-phase, 3 wire Through cables with Lug fixing, Bolt & nut type	
Distribution Network type	TN (Source side) - IT/Grounded (Inverter side) (Inverter can be floating or Grounded system)	

## Mechanical Data

### Main Unit

### Accessory Unit

Dimensions H x W x D, mm	2000 x 2500 x 657	2000 x 700 x 657
Protective class	Class I	
Degree of protection	IP54 for DC, Inverter section IP50 AC cabinet IP20 for Magnetics & Blower cabinet	
Cooling	Forced Air, based on Temperature	
Fresh air consumption	2880 m <sup>3</sup> /h	
Weight, kg	< 1500	< 210
Mounting method	On concrete base	On concrete base
DC side termination	Al. Busbar with Ø17 hole, Gland plate 5mm	Al. Busbar with Ø17 hole, Gland plate 5mm
AC side termination	Al. Busbar with Ø17 hole, 7 per phase, Gland plate 5mm	

## Environmental Data

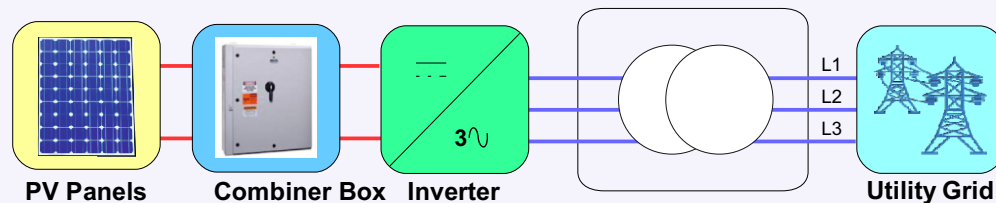
Installation	Indoor, unconditioned
Ambient temperature range	-5°C to 60°C
Relative humidity, %	0- 95% non-condensing
Maximum noise emission, dBA	<75 dB(A) 1m away from unit
Maximum altitude	2000m (above mean sea level) >2000m(with power deration)

## Communication

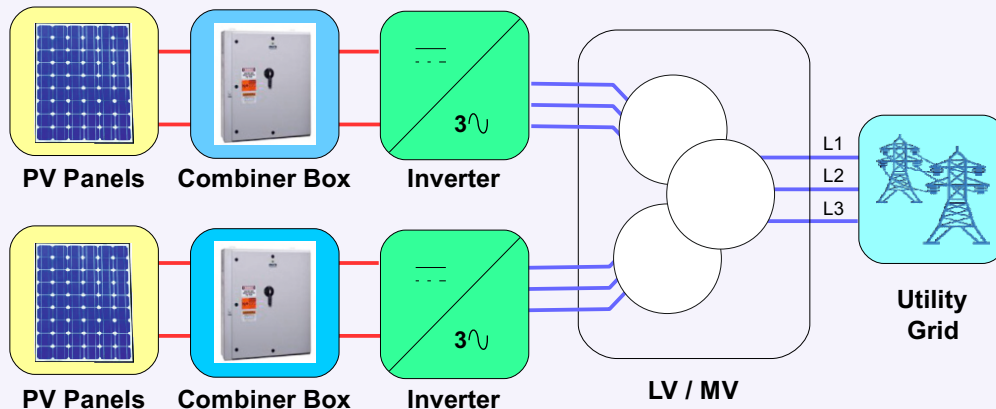
Local User interface	128 x 64 dot matrix User Interactive LCD Display and keypad
Field bus connectivity	Ethernet

## Proposed Configuration of Inverters and Transformer connections

### Single Inverter Connecting to Grid with two Winding Transformer



### Two Inverters Connecting to Grid with three Winding Transformer



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