

Solar inverters

# ABB turnkey stations ULTRA-MVC 770 to 3110 kW



## Turnkey solutions comprising an ULTRA series inverter and a Medium Voltage Compartment (MVC) transformer cabin.

Thanks to the liquid cooling of the inverter, this solution can be used in installations with the toughest climatic conditions.

Furthermore, these compact and reliable solutions have a high power density, thanks to the series of central inverters from the ULTRA series, and the use of MVC specifically designed to be directly connected to both the inverters and the medium tension grid.

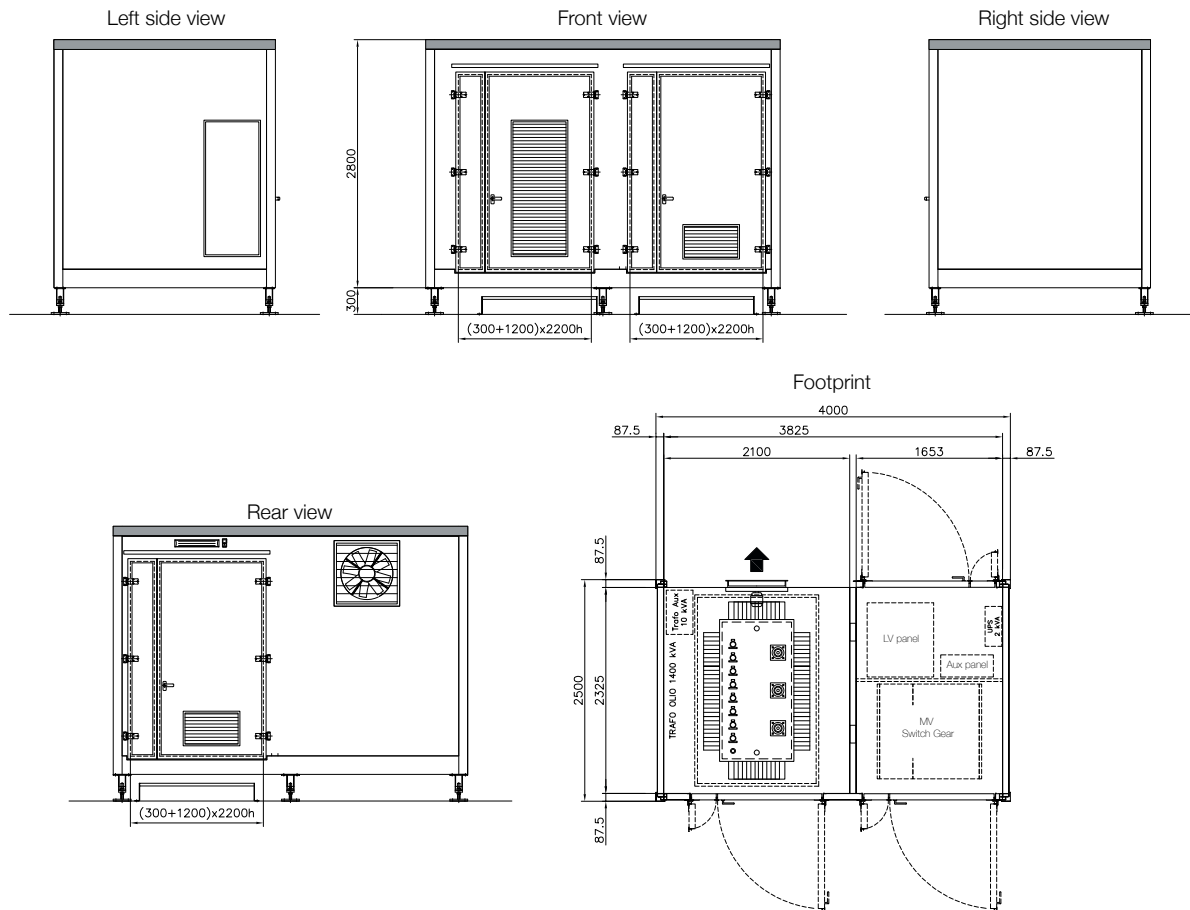
The performance of these solutions and the use of LV/MV low-loss transformers

ensure maximum levels of efficiency and return on investment. Furthermore, the ease of maintenance of the complete solution is ensured by the simplicity of access to all the components of the inverter and the MVC.

### Highlights

- Body constructed for outdoor use in all environmental conditions, and for ease of transport and installation
- Inverter with passive liquid cooling, featuring complete separation of the internal compartments to ensure longer maintenance cycles
- Modular structure with multiple MPPTs and reduced sensitivity to individual failures
- Maximum input voltage 1000 Vdc (1100Vdc opt), with max. 690V between the inverter and the Medium Voltage Compartment
- LT/MT transformer sub-station (Medium Voltage Compartment) designed for exclusive use with the ULTRA family of inverters
- Reduced weight and dimensions to ensure ease of transport and installation
- All components directly accessible and simple to remove, ensuring rapid and effective maintenance
- Maximum efficiency guaranteed by the use of reduced-loss LT/MT oil-cooled or resin transformers
- Wide power range for all types of applications

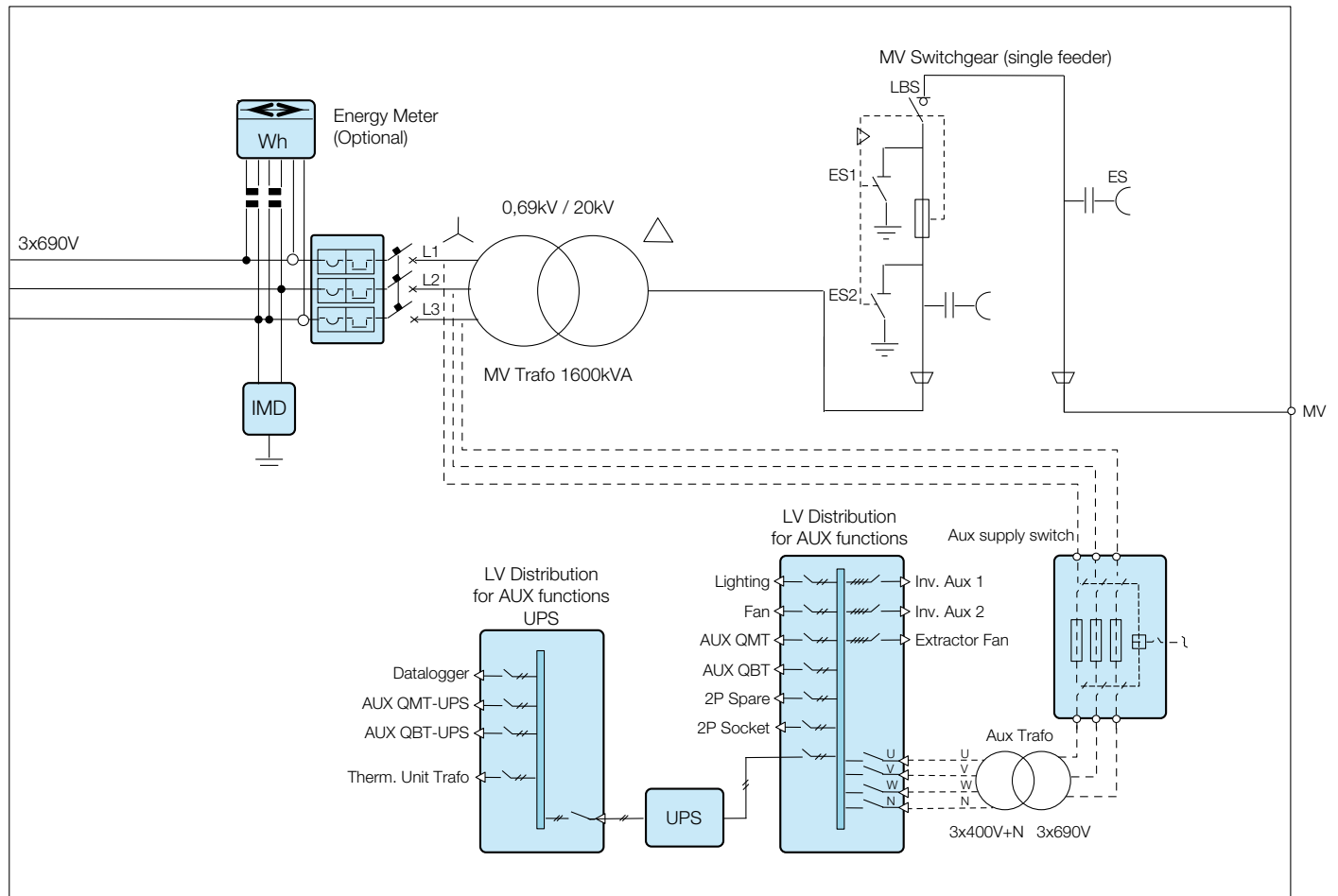
## Footprint ULTRA-MVC-1550.0



## Technical data and types

Type code	ULTRA-MVC-770.0	ULTRA-MVC-1160.0	ULTRA-MVC-1550.0
Inverter <sup>(1)</sup>	ULTRA-700.0-TL	ULTRA-1050.0-TL	ULTRA-1400.0-TL
<b>LV distribution panel</b>			
LV connections from the inverter <sup>(1)</sup>	6 x 3 cables max diameter 32,5mm		
Low voltage AC power distribution from inverters to trafo (magnetohermic switch)	3P 800A	3P 1250A	3P 1600A
Device for insulation permanent control <sup>(2)</sup>	Yes, with alarm (available for floating version only)		
Energy meters <sup>(3)</sup>	Four quadrant, MID certified with MODBUS/RS485 communication port		
<b>Medium-voltage transformer</b>			
Construction	Oil-sealed / dry		
Rated power (voltage)	800kVA	1250 kVA	1600kVA
Tap changer <sup>(4)</sup>	± 2 x 2,5% / 690V		
Number of secondary windings	1		
Cooling	ONAN (Oil type) / Air (dry type)		
Charging	Mineral oil (Class A) / Air		
Vector group	Dyn11		
Short circuit voltage	6%		
Losses class (according EN 50541-1)	BoBk with no positive tolerance		
<b>MV switchgear</b>			
Configuration	Single/double feeder (optional)		
Trafo protection	Fuses and disconnector 24kV, 16kA (1s) / 630A		
<b>Auxiliary supply</b>			
Auxiliary supply voltage	3x400Vac + N, 50Hz		
Low voltage distribution for auxiliary functions	Yes (includes dedicated and protected supply lines for: inverter, datalogger, lighting, AC socket, spare).		
Supply for customer devices	Single phase socket with RCD protection, 16A/230V/50Hz (I <sub>d</sub> = 0,03A)		
<b>Auxiliary supply transformer</b>			
Construction	Dry		
Rated power (voltage)	15kVA (690/400V)		
Cooling	Air		
Vector group	Dyn11		
On load losses	600W		
Disconnect switch for AUX transformer	Yes		
<b>Cooling</b>			
Cooling type (medium voltage compartment)	Forced air by extractor fan		

## Electrical diagram of ULTRA-MVC-1550.0



### Technical data and types

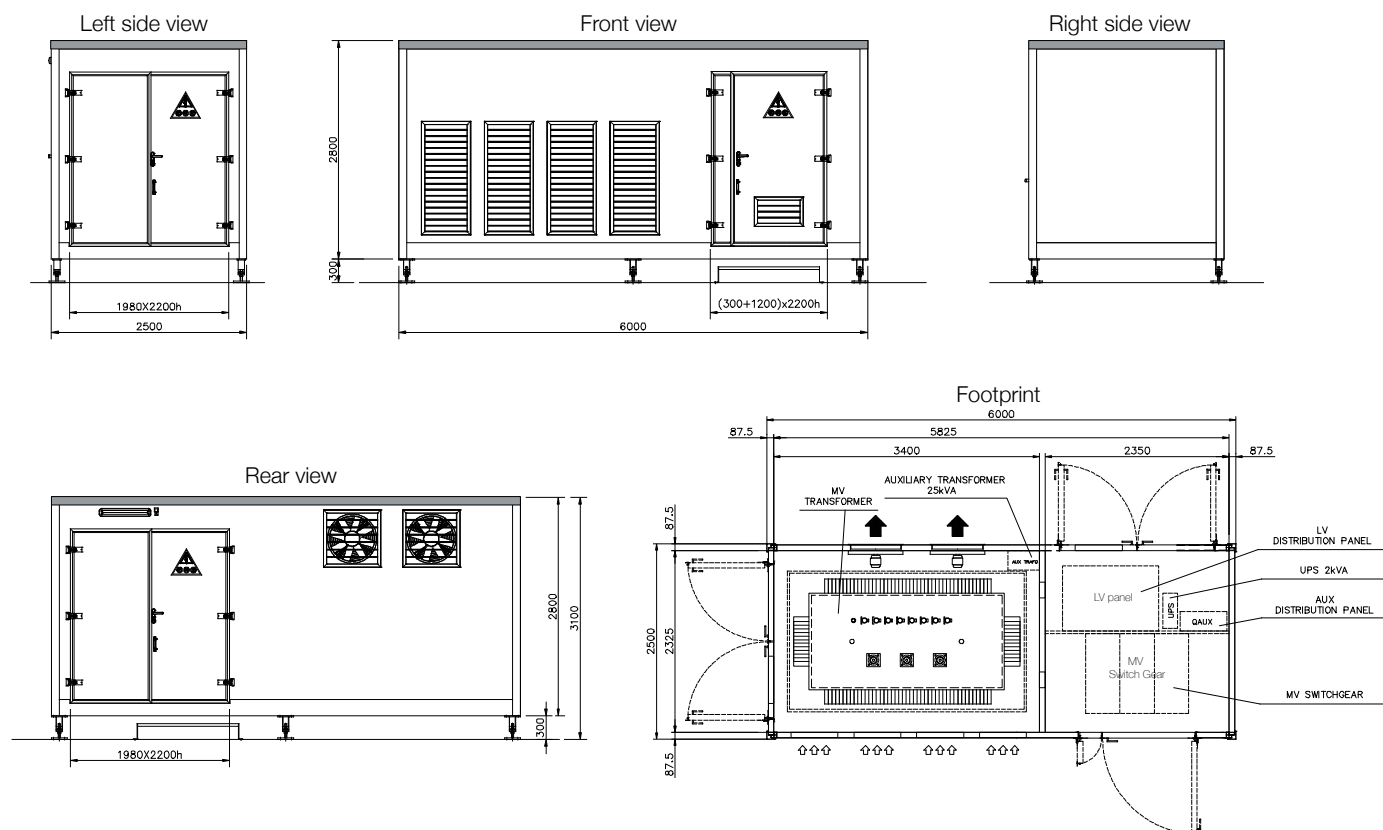
Type code	ULTRA-MVC-770.0	ULTRA-MVC-1160.0	ULTRA-MVC-1550.0
Inverter <sup>(1)</sup>	ULTRA-700.0-TL	ULTRA-1050.0-TL	ULTRA-1400.0-TL
<b>Environmental parameters</b>			
Full power operating temperature range		-20°C...+45°C	
Relative humidity (non-condensing)		≤ 95%	
Maximum operating altitude without derating <sup>(5)</sup>		1000	
<b>Communication/user interface and system monitoring</b>			
Communication port (PC / Datalogger)		1 x RS485	
Communication to inverter		1 x RS485	
Remote communication		PVI-AEC-EVO (optional)	
<b>UPS</b>			
Integrated AUX supply UPS for protection and monitoring system		2kVA	
<b>Mechanical characteristics - sandwich solution</b>			
Dimensions (WxHxD)		4000 x 2800(*) x 2500 mm	
(*) Overall height pier mounted		3100 mm	
Body material	Metal housing with double panel (aluminium alloy and galvanized iron) insulated by polyurethane foam		
Oil collecting tank	Yes (for oil trafo)		
Environmental protection rate	IP43 (IP54 optional)		
Lighting	Fluorescent lamps T8 2x18W, protection degree IP 65, G13 connection, class I, electronic supplier for emergency lighting with Ni-Cd hermetic battery (1h autonomy)		
<b>Approvals</b>			
Certifications	CE		
EMC end safety	EN50178, EN62109-1, EN61000-6-2, EN61000-6-4		

1. For further details please refer to the specific inverter data-sheet
2. Not available in grounded configuration
3. Energy meters are included in the LV compartment

4. Other medium voltage levels available on request
5. Contact ABB for application at higher altitudes

Optional	ULTRA-MVC
LV electrical panel with automatic circuit breaker	•
Energy meters (one for each inverter)	○
LV distribution panels for auxiliary functions	•
Auxiliary transformer	•
Single/double feeder switchgear	○
Monitoring system PVI-AEC-EVO	○
UPS 2kVA for monitoring and protection system	•
IP54 ambiantal protection degree	○

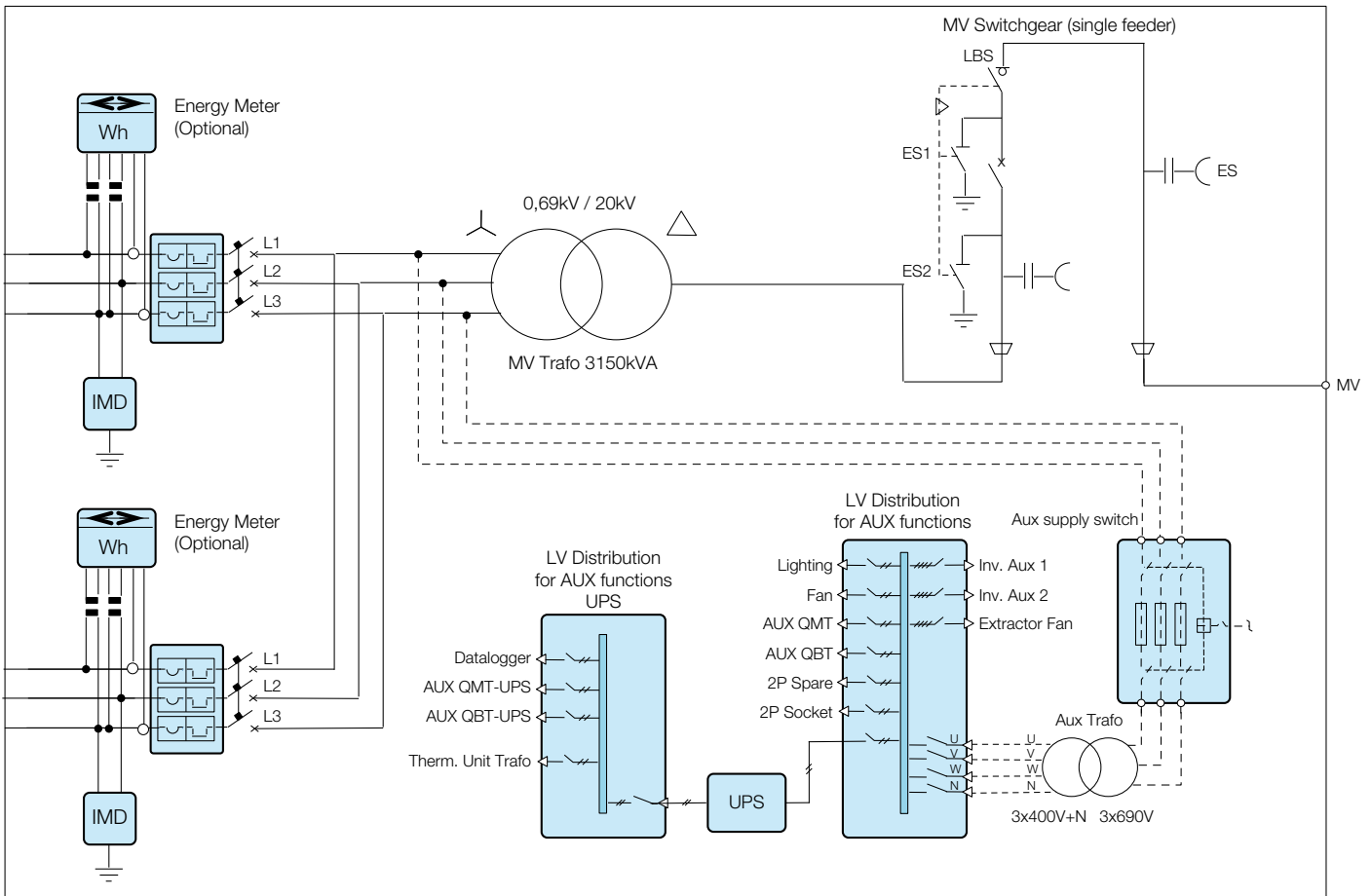
## Footprint ULTRA-MVC-3110.0



## Technical data and types

Type code	ULTRA-MVC-1940.0	ULTRA-MVC-2330.0	ULTRA-MVC-2720.0	ULTRA-MVC-3110.0
Inverter <sup>(1)</sup>	ULTRA-700.0-TL ULTRA-1050.0-TL	2x ULTRA-1050.0-TL	ULTRA-1050.0-TL ULTRA-1400.0-TL	2x ULTRA-1400.0-TL
<b>LV distribution panel</b>				
LV connections from the inverter <sup>(1)</sup>		6 x 3 cables max diameter 32,5mm		
Low voltage AC power distribution from inverters to trafo (magnetothermic switch)	3P 800A 3P 1250A	3P 1250A 3P 1250A	3P 1600A 3P 1250A	3P 1600A 3P 1600A
Device for insulation permanent control <sup>(2)</sup>		Yes, with alarm (available for floating version only)		
Energy meters <sup>(3)</sup>		Four quadrant, MID certified with MODBUS/RS485 communication port		
<b>Medium-voltage transformer</b>				
Construction		Oil-sealed (only)		
Rated power (voltage)	2000kVA	2500kVA	3150kVA	3150kVA
Tap changer <sup>(4)</sup>		20kV ± 2 x 2,5% / 0,690kV		
Number of secondary windings		1 (2 optional)		
Cooling		ONAN (Oil type only)		
Charging		Mineral oil (Class A)		
Vector group		Dyn11		
Short circuit voltage		6%		
Losses class (according EN 50541-1)		BoBk with no positive tolerance		
<b>MV switchgear</b>				
Configuration		Single/double feeder (optional)		
Trafo protection		Fuses and disconnecter 24kV, 16kA (1s) / 630A		
<b>Auxiliary supply</b>				
Auxiliary supply voltage		3x400Vac + N, 50Hz		
Low voltage distribution for auxiliary functions		Yes (includes dedicated and protected supply lines for: inverter, datalogger, lighting, AC socket, spare).		
Supply for customer devices		Single phase socket with RCD protection, 16A/230V/50Hz (I <sub>d</sub> = 0,03A)		
<b>Auxiliary supply transformer</b>				
Construction		Dry		
Rated power (voltage)		25kVA (690/400V)		
Cooling		Air		
Vector group		Dyn11		
On load losses		1000W		
Disconnect switch for AUX transformer		Yes		
<b>Cooling</b>				
Cooling type (medium voltage compartment)		Forced air by extractor fan		

## Electrical diagram of ULTRA-MVC-3110.0



## Technical data and types

Type code	ULTRA-MVC-1940.0	ULTRA-MVC-2330.0	ULTRA-MVC-2720.0	ULTRA-MVC-3110.0
Inverter <sup>(1)</sup>	ULTRA-700.0-TL ULTRA-1050.0-TL	2x ULTRA-1050.0-TL	ULTRA-1050.0-TL ULTRA-1400.0-TL	2x ULTRA-1400.0-TL
<b>Environmental parameters</b>				
Full power operating temperature range	-20°C...+45°C			
Relative humidity (non-condensing)	≤ 95%			
Maximum operating altitude without derating <sup>(5)</sup>	1000			
<b>Communication/user interface and system monitoring</b>				
Communication Port (PC / Datalogger)	1 x RS485			
Communication to inverter	1 x RS485			
Remote communication	PVI-AEC-EVO (optional)			
<b>UPS</b>				
Integrated AUX supply UPS for protection and monitoring system	2kVA			
<b>Mechanical characteristics - sandwich solution</b>				
Dimensions (WxHxD)	6000 x 2800(*) x 2500 mm			
(*) Overall height pier mounted	3100 mm			
Body material	Metal housing with double panel (aluminium alloy and galvanized iron) insulated by polyurethanic foam			
Oil collecting tank	Yes			
Environmental protection rate	IP43 (IP54 optional)			
Lighting	Fluorescent lamps T8 2x18W, protection degree IP 65, G13 connection, class I, electronic supplier for emergency lighting with Ni-Cd hermetic battery (1h autonomy)			
<b>Approvals</b>				
Certifications	CE			
EMC end safety	EN50178, EN62109-1, EN61000-6-2, EN61000-6-4			

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Energy meters (one for each inverter)	○
LV distribution panels for auxiliary functions	•
Auxiliary transformer	•
Single/double feeder switchgear	○
Monitoring system PVI-AEC-EVO	○
UPS 2kVA for monitoring and protection system	•
IP54 ambiantal protection degree	○

## 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](http://www.abb.com/solarinverters)

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