04 Sirio Central Station

How to increase the overall efficiency of a conversion system and cut installation costs. This objective can be achieved by using a Sirio Central Station (SCS) system with Sirio HV-MT Central inverters connected to a common medium voltage transformer. The devices are installed in concrete stations to prolong their useful life, improve thermal insulation and to provide resistance to atmospheric agents and the most unfavourable environmental conditions.

An integral system for large plants

Sirio Central Station solutions are available in versions ranging from 200kW to 1MW offering a complete, safe and highperforming "Plug&Play" solution. The modular system, which uses inverters housed in separate stations, each with it own MV/LV transformer, enables the inverters to have a barycentric position within the photovoltaic field to optimize installation.

The logic of having separate stations cuts production losses caused by failures and during ordinary and extraordinary maintenance operations. The stations are built in vibrated reinforced concrete, in accordance with the CEI 0-16 standards currently in force, with the Guide for Connections to the Enel Distribuzione Power Grid Ed. 1 December 2008 and with the Enel DG 2092 Construction Specifications Ed. 1 December 2008. The structures are particularly resistant to atmospheric agents since they are treated with special plastic and waterproofing coatings which protect against the formation of cracks and seepages.

The external walls are coated with a quartz/rubber paint with a textured finish to provide optimal resistance to atmospheric agents, even in marine, mountain, industrial or very polluted environments. The normal operating conditions of the installed equipment are guaranteed by a natural ventilation system using air vents thus avoiding recourse to air conditioning systems. The whole structure is assembled entirely with electromechanical equipment in the factory in accordance with the CEI EN 62271-202 standard, and electrical equipment where applicable, ready to be placed on site for subsequent start-up.

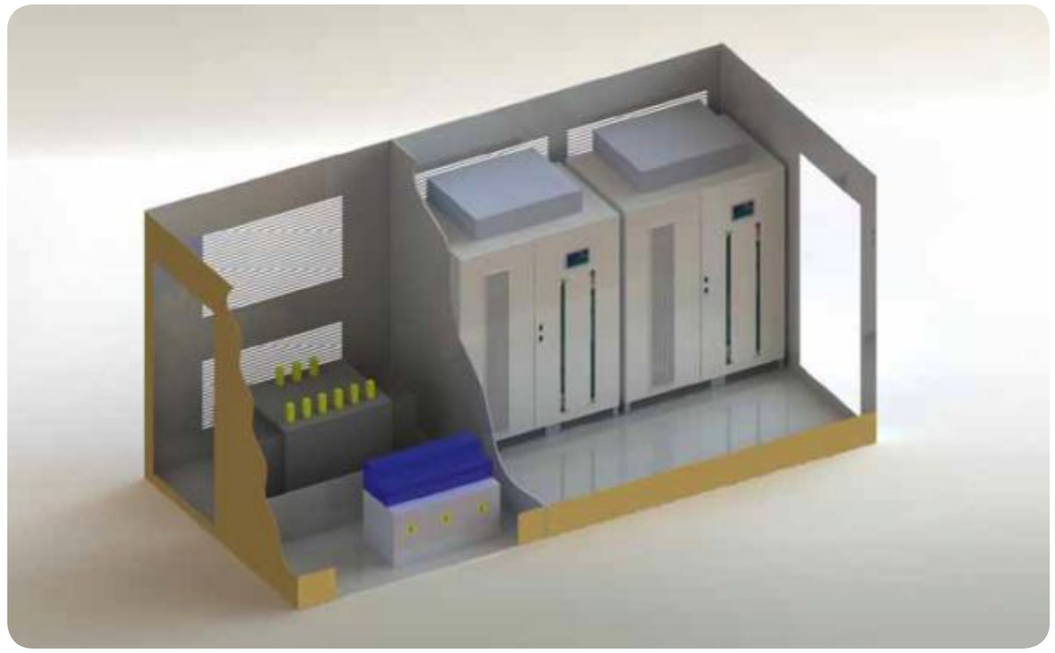
Optional solutions

Aros can also offer pre-assembled solutions for:

- user stations with interface and general device protection in compliance with CEI 0-16 requirements;
- Public Utility cabins implemented in compliance with ENEL unification standards DG 2092 Rev.2 with the measurement unit where the electricity distribution utility takes its readings;
- intermediate configurations from 200kW are available in addition to versions present in the catalogue;
- in-shelter execution.

Practical and complete

The SCS provides solutions that can be defined as "All in One" since they reduce the normal design phases, cut transport and installation times and come already equipped with all that is needed for system start-up. The significantly lower costs, the excellent efficiency of the whole system (due to the inverters and transformers used) and the time saving in the startup phases make the Sirio Central Station an attractive choice for optimizing return on investment.



04 SCS

SIRIO CENTRAL STATION - SCS

MODELS	SCS 500	SCS 660	SCS 1000
Rated AC power	500 kW	660 kW	1000 kW
INPUT			
Maximum DC voltage in an open circuit		880 Vdc	
MPPT operating range		450÷760 Vdc	
Maximum input current	2x590 Adc	2x780 Adc	2x1180 Adc
Number of inputs	2	2	4
MPPT number	2	2	2
D.C. connectors		Bar	
OUTPUT			
Operating voltage		20kV (1)	
Frequency range		47,5÷51,5 Hz (2)	
Settable frequency range		47÷53 Hz	
Nominal current (at 20KV)	14,45 Aac	19 Aac	28,90 Aac
Current Harmonic Distorsion (THDi)		<3%	
Power factor		from 0,9 ind. to 0,9 cap. (2)	
SYSTEM			
Maximum efficiency	97,3% (data include the auxiliary inverters and LT/MT transformer)		
European efficiency	96,7% (data include the auxiliary inverters and LT/MT transformer)		
Operating temperature	-20°C÷45°C (without derating)		
Humidity	0÷95% non-condensing		
STATION FEATURES			
Materials	Block construction with reinforced concrete, class Rck 250 Kg/sq. cm with superfluidifying and waterproofing additives		
Structure	Comprising electro-soldered metal mesh reinforcement and corrugated iron, with improved adherence, both in Feb44k		
Walls	Waterproof plastic coating painted with quartz/rubber paint with a textured finish		
Cooling	Natural ventilation through metal ducting		
Dimensions (WxDxH)	5440x2500x2550 mm		
Weight	22000 Kg		
Lighting	2x18W fluorescent lamps, of which 1x18W is for emergency lightingfor each prefabricated structure		
Standard features	2 ENEL-approved meters, GSM remote reading system, extinguisher		
Conformance to specifications	CEI 0-16 ed. 2 July 2008; ENEL Guide for grid connections ed. 1 December 2008		
TRANSFORMER FEATURES			
Construction		resin or oil bath seal	
Primary nominal power	500 kVA	1 MVA	1 MVA
Secondary nominal power	2x250 kVA	2x500 kVA	2x500 kVA
In/Out voltage		2x(270V)/20000 V (1)	

(1) The MT voltage can vary according to the Grid Authority request.

(2) These values can vary according to the local regulations.