Tescom® Solar

HV-MT Central Inverter / K100 HV-MT - K500HV-MT

SIRIO K100 HVMT - K500 HVMT

HV-MT Central Inverter

- Suitable for use in medium-high power plants connected to a medium voltage distribution network
- High conversion efficiency
- Full nominal power up to 45 °C
- 10% overload for 1 h
- Speed-controlled fans to optimize the efficiency
- Colour LCD touch display with datalogger function
- Fully accessible from the front
- 2 expansion slots to connect communication boards
- MCCB AC side and switch DC side
- Suitable for operation with modules that require the grounding of a pole

In order to increase overall plant efficiency, the Sirio HV-MT Central inverters do not have an integrated transformer. This feature and the meticulous design make them ideal for use in medium- high power plants connected to a medium voltage grid.

General Specifications

Maximum energy and safety
The Maximum Power Point Tracking (MPPT) research algorithm implemented in the control system of Sirio Central inverters allows full use of the photovoltaic generator in any radiation and temperature conditions, making the plant work constantly at maximum efficiency. In the absence of solar radiation the converter goes on standby and resumes normal operation when there is radiation again. This feature reduces self-consumption to a minimum and maximizes energy efficiency. The use of speed-controlled fans helps to optimize the overall efficiency of the inverter. Fan operation that is linked to the temperature also increases the expected lifespan and reduces costs incurred for extraordinary maintenance. All these design features, the careful choice of components and guaranteed quality of production according to ISO9001 standards make the three-phase inverters Sirio extremely efficient and reliable and guarantee maximum energy production.

Thermal derating
Derating as a function of temperature aimed to safeguard against overheating inverter semiconductors in the case of environments with temperatures exceeding installation specifications or for forced ventilation faults, without causing a complete block of the inverter itself. Sirio Central models ensure rated power output up to 45°C environment. If this threshold is exceeded, the inverter gradually decreases the power fed into the network in such a way as to maintain heat sink temperature within the maximum limit. Once back in the range of thermal normal operation, the inverter restores the optimal working point, again ensuring maximum power transfer.

User Interface
Sirio Central inverters provide a series of new user interfaces composed of an LCD colour touch screen in a convenient 4.3' format. This is an evolution that allows to control the main parameters of the PV system and interact with it monitoring the operation through the interactive experience of touch functions. The device is able to perform the functions of data logger, allowing the storage of all parameters with a historical database of more than 5 years and view graphically all the variables (power, energy, AC / DC, AC / DC voltage, frequency , temperature and reactive power inverter). The new display has a USB port for data backup and the software upgrade; furthermore is compatible both with PVSER proprietary protocol on the network and with ModBUS/TCP, thus offering easy insertion in any management BMS or data analysis using an Ethernet network.

Easy installation and maintenance
The footprint of these devices has been considerably reduced and there is no need to leave space at the side or back of the equipment since the electronics and power components are fully accessible from the front. Fully automatic operation ensures ease of use and facilitates installation and startup, thus avoiding installation and configuration errors which could lead to failures or reduced plant productivity.

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Technical Specifications

MODELS	SIRIO K100 HV-MT	SIRIO K200 HV-MT	SIRIO K250 HV-MT	SIRIO K330 HV-MT	SIRIO K500 HV-MT
Rated power alternating current	100kW	200KVA	250KVA	330KVA	500kVA
Maximum power alternating current	110kW	200KW	250KW	330KW	500KW
INPUT					
Maximum direct voltage in an open circuit	880Vcc				
MPPT Full Rating Range	450÷760Vcc				
Working range	450÷760Vcc				
Maximum imput current	245Acc				
Initial feeding voltage	540Vcc				
Ripple voltage	<1%				
Input number	1				
MPPT number	1				
D.C. connectors	Bus bar				
OUTPUT					
Operating voltage	270Vca				
Operating interval	245÷300Vca				
Maximum power interval	245÷300Vca				
Frequency interval	47,5÷51,5Hz				
Settable frequency interval	47÷53Hz				
Nominal current	214Aca				
Maximum current	277Aca				
Current Harmonic Distorsion (THDi)	<3%				
Power factor	from 0,9 ind. to 0,9 cap.				
Galvanic separation	No				
A.C. connectors	Bus bar				
SYSTEM					
Maximum efficiency	98,10%				
European efficiency	97,50%				
Stand-by consumption	<32W				
Night consumption	<32W				
Internal protection	MCCB AC side and Switch DC side				
Insulation operating protection	Yes				
Detecting earth leakage	Yes				
Heat dissipation	Controlled fans				
Operating temperature	0°C÷45°C (without derating)				
Storage temperature	-20°C÷70°C				
Humidity	0÷95% non-condensing				
CHARACTERISTICS					
Acoustic noise	<68dBA				
Protection level	IP20				
Colour	RAL 7035				
Weight	420Kg				
Dimensions	800x800x1900mm				
COMMUNICATION					
Communication interface	Ethernet, USB, 2xRS232 as standard, RS485 optional (slot version)				
Display	Color LCD touch screen				
Protocols	ModBUS and ModBUSTCP				
CERTIFICATES AND APPROVALS					
EMC	EN61000-6-4, EN61000-6-2, EN61000-3-11, EN61000-3-12				
Safety	EN62109-1, EN62109-2				
Directives	Low Voltage Directive: 2006/95/EC, EMC Directive: 2004/108/EC				
Guide for connection to the power grid	CEI0-16, A70, PO12.3				

Reliable Power