SEAPOWER
Electrical Systems

mt CONVERTER

SFC Series 100KVA-50 MVA
3:3 FREQUENCY CONVERTER

MODULAR
SERVICE
PF= 0.9 POWER FACTOR
MARINE
INDUSTRY
TRANSPORT
MEDICAL

Overview

The Marine Type SFC system allows power systems that require 60Hz power to be fed from 50Hz networks, or systems that require 50Hz supply to be fed from 60Hz networks. In addition, it is also used to meet the different voltage standards required by the loads.

System Operation

The Marine Type SFC system consists of one or more rectifier and inverter modules, which consist of power electronics components with a modular structure. The system has a double conversion structure and first converts the AC voltage to filtered DC voltage with the rectifier module, then the inverter module converts this filtered DC voltage to the AC frequency and voltage standard that the load needs.

The Marine Type SFC can operate in parallel with different voltage sourcessuch as generators and other SFCs. Load sharing is done without the need for any communication, thanks to its programmable droop control feature.

Marine Type SFC takes the load without any interruption from sources such as generators by connecting to live busbars under energy due to its remote synchronization feature.

Highlights

- High reliability and quick maintenance through its modular structure
- Low cost of ownership.
- Minimum spare parts requirement
- Ability to work in parallel with other sources with droop control.

Field of Applications

- Industrial loads that need a 50/60Hz or 60/50Hz conversion.
- Ship to Shore power or shaft alternator applications for fuel savings and carbon emission reduction.
- Static Frequency Converter (SFC)
- Shore Power Converter (SPC)
- Active Voltage Conditioner (AVC)
- Energy Storage System (ESS)
- Static Synchronous Compensator (STATCOM)
- GreenPort Applications
- Reactive Power Compensation Applications of generating isolated source at different frequencies and feeding loads from unregulated networks.

mt CONVERTER

3:3 PHASE FREQUENCY CONVERTER

SEAPOWER Electrical Systems

SFC SERIES TECHNICAL SPECIFICATIONS 100KVA-50 MVA

GRID - INPUT

Voltage	380 – 480V ±10% (different input voltages with input transformer 208/690VAC)
Maximum Supply Voltage	110%
Nominal Input Frequency	50/60Hz
Frequency Tolerance	±15Hz
Grid Standard	3 phase or 3 phase + Neutral
Overvoltage Category	III
Current Harmonic	<3% THDi (at nominal load)
Power Factor	>0.99

LOAD - OUTPUT

System Capacity	100kVA to 50 MVA 0.9 pf (higher powers with parallel connection)
Voltage	380 – 480V (different output voltages with output transformer)
Frequency	50 or 60Hz (more different frequency options on order)
Voltage Harmonic	<2.5% THDv (at linear load)
Overload Capacity	120% 10 min. 150% 30 sec.
Short-Circuit Rating	200% 2 sec.
Static Voltage Sensitivity	±1%
Frequency Sensitivity	±0.1%
Efficiency	96%

GENERAL

Cabinets IP Option		IP20 Cabinet or Rack IP42 Cabinet Only IP54 - IP65 (Optional)
User Panel		7 inch. Toucpanel with colour TFT
Operating Temperature		0 – 50°C
Cooling	Air	Forced Air Cooling with a fan that speed is adjusted according to the load
	Liquid	Optional (Liquid cooling 6lt/min flow rate per 100kw. Non corrosive coolant 0 – 40°C)
Temperature Effect		2% power loss per 1°C up to 50°C above 40°C.
Capacity Derating With Elevation		1% power loss for every 100m up to 2000m over 1000m.
Humidity		<95% without condensation
Aquistic Noise		65-75 dBA
Standards		ISO 9001, ISO 14001, ISO 45001, IEC62103 / EN50178; CE Marine Certificates on Request BV, DNV, GL, ABS, RINA, CCS(++)

DIMENSION & WEIGHT

Cabinet Dimensions (mm)	Contact us for Dimensions.

Main Features

- By parallel connection up to 50MVA can be supplied.
- High efficiency power conversion
- Output voltage in clean and full sinusoidal waveform
- High power factor with regenerative power and PWM rectifier structure with low current IGBT
- High reliability operation due to the modular structure and spare module.
- Fully isolated output with optional output transformer
- 50/60Hz wide input voltage range
- Small footprint design
- Touchscreen with color graphic display
- Wide range of communication options
- Output cable voltage drop compensation
- Uninterrupted load transfer between sources
- Load sharing with SFCs of different power and generators
- Bi-directional power flow