



MARINE TYPE
APPROVED WITH MARINE CERTIFICATIONS
AND MARINE COMPONENTS



MODULAR STRUCTURE
SEPERATE RECTIFIER AND INVERTER
MODULES ENSURES EASY REPAIR



USER FRIENDLY HMI
ALL PARAMETERS MONITORABLE OVER
USER FRIENDLY TOUCH PANEL



SHOCK & VIBRATION RESISTANT
RUGGED STRUCTURE RESISTANT TO
STRONG SHOCKS AND VIBRATIONS
(OPTIONAL VIBRATION ABSORBER PADS)



ENCLOVE Energy: MARINE TYPE FREQUENCY CONVERTER

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 OPERATIONS

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 sources such as generators and other SFCs. Load sharing is done without the need for any communication, thanks to its programmable droop control feature.

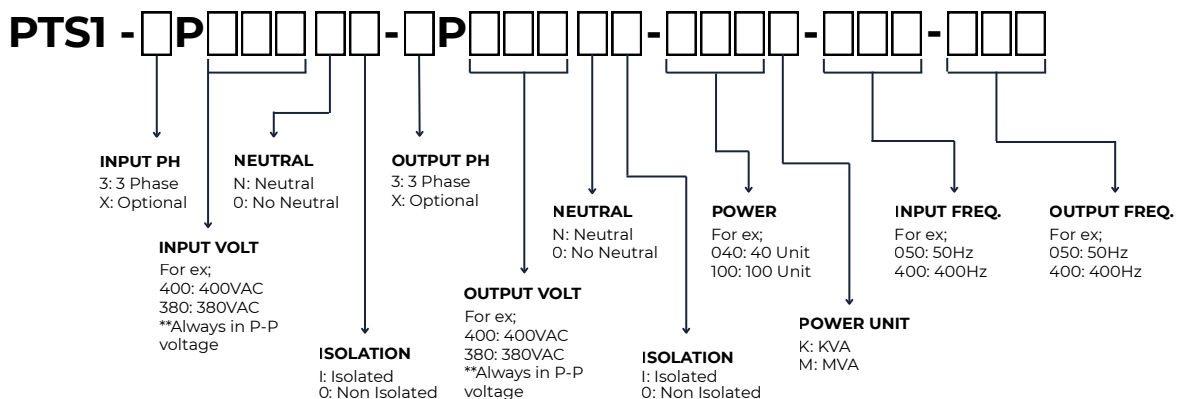
Marine Type SFC takes the load without any interruption from sources such as generators by connecting to live busbars under energy due to its remote synchronization feature.

MAIN FEATURES

- By parallel connection up to 40MVA 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
- Seamless load transfer between sources
- Uninterrupted load transfer between sources
- Load sharing with SFCs of different power and generators
- Bi-directional working due to four quadrant operation without any problem and feeding to the mains. Power can always flow to both directions.

POWER RANGE	40kVA - 40MVA
MODEL NAME	PTS-XPXXXNI-XPXXXNI-XXX-XXX-XXX
INPUT	
Voltage	380 – 480V ±10% (different input voltages with input transformer)
Maximum Supply Voltage	±10%
Nominal Input Frequency	50/60 Hz
Frequency Tolerance	±15Hz
Input Connection	3P or 3P+N (with or without neutral)
Overvoltage Category	III
Current Harmonic	<3% THDi (at nominal load)
Power Factor	> 0.99
OUTPUT	
Power	40 kVA to 40 MVA
Power Factor	0.9
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	10 mins. @ <120% Load 30 sec. @ <150% Load
Short Circuit Rating	2 sec. @ 200% Load
Crest Factor	3:1
Static Voltage Sensitivity	±1%
Frequency Sensitivity	±0.1%
Efficiency	>96% (without isolation transformers)
GENERAL	
Cabinet Type	Standalone
Cabinet Color	RAL7032, RAL7035 (Others Optional)
Ingress Protection	IP20 (up to IP55 - Optional)
User Panel	7 inch. Toucpanel with colour TFT
Operating Temperature	0 – 50°C
Cooling Type	Forced Air Cooling with a fan that speed is adjusted according to the load Optional (Liquid cooling 6lt/min flow rate per 100kw. Non corrosive coolant 0 – 40°C)
Temperature De-Rating	2% power loss per 1°C up to 50°C above 40°C.
Operating Altitude	1% power loss for every 100m up to 2000m over 1000m
Humidity	<95% without condensation
Acousitic Noise	65-75 dBA
Standards (General)	ISO 9001, ISO 14001, ISO 45001, IEC62103 / EN50178; CE
Standards (Marine)	Marine Certificates on Request (BV, DNV GL, ABS, RINA, CCS, LR)
Dimensions	Contact Us For Dimensions
Others	Cabinet Heater, Cabinet Lighting, Service Plug

* Our company has the right to change the model, visual and technical specification information of the products without prior notice.



POWER RANGE	40kVA - 40MVA
MODEL NAME	PTS-XPXXXNI-XPXXXNI-XXX-XXX-XXX
INPUT	
Voltage	380–480V ±10% (different input voltages with input transformer)
Maximum Supply Voltage	±10%
Nominal Input Frequency	50/60 Hz
Frequency Tolerance	±15Hz
Input Connection	3P or 3P+N (with or without neutral)
Overvoltage Category	III
Current Harmonic	<3% THDi (at nominal load)
Power Factor	> 0.99
OUTPUT	
Power	40 kVA to 40 MVA
Power Factor	0.9
Voltage	115VAC/440VAC ±%1 (3 PHASE)(MIL-STD-1399 (Tip III) compliance for marine applications)
Frequency	400Hz ±%0.1 (MIL-STD-1399 (Tip III) compliance for marine applications)
Voltage Harmonic	<2.5% THDv (at linear load)
Overload Capacity	10 mins. @ <120% Load 30 sec. @ <150% Load
Short Circuit Rating	2 sec. @ 200% Load
Crest Factor	3:1
Static Voltage Sensitivity	±1%
Frequency Sensitivity	±0.1%
Efficiency	>93%
GENERAL	
Cabinet Type	Standalone
Cabinet Color	RAL7032, RAL7035 (Others Optional)
Ingress Protection	IP20 (up to IP55 - Optional)
User Panel	7 inch. Toucpanel with colour TFT
Operating Temperature	0 –50°C
Cooling Type	Forced Air Cooling with a fan that speed is adjusted according to the load Optional (Liquid cooling 6lt/min flow rate per 100kw. Non corrosive coolant 0 – 40°C)
Temperature De-Rating	2% power loss per 1°C up to 50°C above 40°C.
Operating Altitude	1% power loss for every 100m up to 2000m over 1000m
Humidity	<95% without condensation
Acousitic Noise	65-75 dBA
Standards (General)	ISO 9001, ISO 14001, ISO 45001, IEC62103 / EN50178; CE
Standards (Marine)	Marine Certificates on Request (BV, DNV GL, ABS, RINA, CCS, LR)
Standards (Military)	MIL-STD-167-1 Standard Compliance / MIL-T-17221B & VDE530 Standard Compliance / MIL-STD-461E Compliance
Dimensions	Contact Us For Dimensions
Others	Cabinet Heater, Cabinet Lighting, Service Plug

* Our company has the right to change the model, visual and technical specification information of the products without prior notice.

