

Wärtsilä JOVYPHASE GPC

PRODUCT LEAFLET



By the Global Power Converter Wärtsilä JOVYPHASE GPC we offer a reliable shore-to-ship power solution for safe power transfer from the public electric power grid to the ship whilst port lay days. The GPC shore power converter automatically adjusts the onshore network to the on-board system, no matter what the shore voltage and frequency are. The transformer can be operated in parallel to the on-board generators for a short time. This allows a seamless transfer to the shore connection.

AVOIDANCE OF POLLUTION PROBLEMS

All over the globe there are diverse mains voltages and frequencies. Owners of yachts are particularly affected by this problem whilst port lay days. An on-board electrical system designed for the European standards cannot be connected to the grid in the USA and vice versa. This incompatibility of on-board and port (local) networks means that even in port the yacht has to be supplied by the on-board generator - a loud and expensive necessity causing pollution problems and particle discharge as well as noise and vibration. The GPC shore power converter automatically adjusts the onshore grid to the on-board system and allows a seamless transfer to the shore connection.

STATE OF THE ART IGBT TECHNOLOGY

The global power converter Wärtsilä JOVYPHASE GPC is designed as a static converter using state of the art IGBT technology. Its input contains a rectifier system, which automatically detects the on-shore mains voltage and frequency and adjusts the transformer to those conditions. The rectifier supplies the IGBT inverter, which turns the DC- voltage into a three-phase network with low distortion factor. The consumer on board receives a high-quality, fault-free power supply. The double power conversion blocks out any faults from the shore network. A battery buffer to increase the supply stability is available as an option. Systems with a redundant or cascade design can also be supplied. Wärtsilä JOVYATLAS offers shore power converters type GPC as an onboard solution or as 20" or 40" container system for port side installation. The power range starts from 60 kVA up to 1.5 MW.

THOUGHT-OUT DESIGN AND EASY MAINTENANCE

The Wärtsilä JOVYPHASE GPC is distinguished by modular design and easy-maintenance. All components are accessible from the front of the switch cabinet. The use of carefully selected, high quality materials ensures fault-free long term operation on board any ship. Classification approvals according to German Lloyds standards, Lloyds Register of Shipping, Det Norske Veritas, American Bureau of Shipping, Bureau Veritas etc. are warranted. A MODDBUS interface can be used to carry out remote fault analysis. Independent of the vessels position the Wärtsilä JOVYATLAS service center can read and analyze all measured values via SAT-COM link. This remote diagnostic system saves time and money. Onsite the ship there is a connection to the on-board management system possible. A variable programmable interface creates the connection to the ship's BUS-System. Onsite the ship there is a connection to the on-board management system possible. A variable programmable interface creates the connection to the ship's BUS-System.

TECHNICAL DATA

Input voltage	3 x 260 - 458V without transformer
Input frequency	30 Hz - 70 Hz
Input power factor	PFC ~ PF1
Output voltage	most popular on-board voltages
Tolerance of output voltage	static $\leq \pm 1\%$, dynamic $\pm 3\%$ (at load change from 0 onto 100 % at linear load)
Output frequency	50 or 60 Hz
Harmonic distortion (THD)	$\leq 2\%$ (linear load) $\leq 4\%$ (non-linear load)
MTBF	240 000 hours
Operation Mode	online
Overload	110 % permanent 130% for 1 s
Classification temperature	add. to Lloyd's Register and most marine classification societies
Interfaces	RS 485, MODBUS, SNMP, TCP/IP, Profinet

OPTIONAL AVAILABLE

- Remote control via TCP/IP
- Isolation Supervision (only with isolating transformer)
- Transducer
- Further customized options available on request

TYPES

Termination	Output power [kVA]	Dimensions without transformer W x H x D [mm]	Dimensions with transformer W x H x D [mm]
Wärtsilä JOVYPHASE GPC 200	200	1200 x 2000 x 800	1800 x 2000 x 800
Wärtsilä JOVYPHASE GPC 300	300	1800 x 2000 x 800	2400 x 2000 x 800
Wärtsilä JOVYPHASE GPC 400	400	1800 x 2000 x 800	2400 x 2000 x 800
Wärtsilä JOVYPHASE GPC 500	500	3000 x 2000 x 800	2 x 1800 x 2000 x 800
Wärtsilä JOVYPHASE GPC 640	640	3000 x 2000 x 800	2 x 2400 x 2000 x 800

- **RELIABLE SHORE-TO-SHIP POWER SUPPLY**
- **SEAMLESS AND RELIABLE TRANSFER TO THE SHORE SUPPLY**
- **HIGHEST EFFICIENCY**
- **MODULAR DESIGN**
- **EASY TO MAINTAIN**
- **AVOIDS POLLUTION AND NOISE DURING HARBOUR TIMES**
- **HOT-SWAPPABLE**
- **PLUG-AND-PLAY POWER MODULES**

Fig.1 Plug-and-play module Wärtsilä JOVYPHASE GPC

