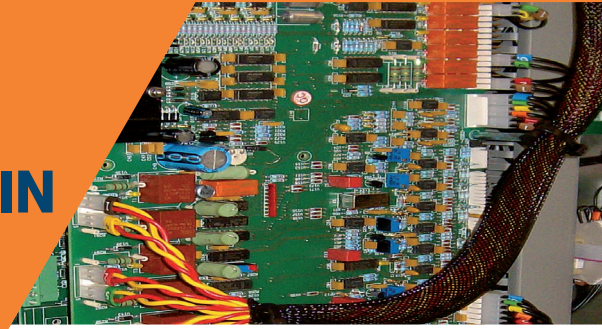


TTC Wärtsilä JOVYREC THYRIDIN

PRODUCT LEAFLET



Thyristor rectifiers of the type TTC Wärtsilä JOVYREC THYRIDIN offer an optimal solution for DC power supply of consumers with high performance values. The integrated digital thyristor rectifier control meets the highest requirements of modern and secure power supply. Thanks to these diverse options the devices can be adjusted to the respective application. The performance values can be designed according to customers' specifications. Performance increase is feasible via parallel operation of maximum three devices.

UP-TO-DATE TECHNOLOGY AND SECURE POWER SUPPLY

In the rectifiers of the TTC Wärtsilä JOVYREC THYRIDIN generally rectifier bridges in B6C circuits are applied. Optionally also rectifiers with fully controlled 12-pulse rectifier bridges can be provided for specific applications. The control board AT90 is the heart of the thyristor control, an AVR microcontroller with ISP flash and CAN controller. All control and signal interfaces important for rectifier operation as well as a RS 232 interface for the connection of an external computer are made available on the controller board.

The LCD panel of TTC Wärtsilä JOVYREC THYRIDIN rectifiers enable simple setting of all measurement values. All operating parameters are clearly and user-friendly indicated. Additionally various warn and fault messages as well as battery operation are notified via LEDs.

As a standard the following messages are available via potential-free contacts and LED messages: collective alarm, battery operation, battery under voltage, rectifier on, battery operation. Optionally a series of additional messages and monitoring via additional LEDs or relay cards are feasible, e.g. manual switch to emergency operation, manual temperature adjustment via panel, compensation of voltage drop in the load line, parallel operation for performance increase up to maximum three devices etc. We gladly advise you about the multiple options.

Wärtsilä JOVYATLAS provides thyristor rectifiers of the type TTC Wärtsilä JOVYREC THYRIDIN for most diverse

requirements and applications. Whether applications under increased ambient temperatures, shock or vibration stresses – we gladly respond to the specific requirements of our customers.

USE AS UPS SYSTEM FEASIBLE

By using rectifiers combined with batteries uninterruptible DC power supply (UPS systems / DC-UPS systems) can be ensured. These thyristor-controlled rectifiers with parallel-connected batteries are necessary to protect electrical DC consumers with higher performances against the consequences of grid failure. Lead as well as nickel-cadmium batteries can serve as energy storage systems. The rectifiers offer a high amount of reliability and dispose of a vast monitoring concept. The electronic control of the output voltage functions according to the IU characteristic in accordance with DIN 417773 and therefore provides efficient and gentle loading of the connected batteries. Further characteristics as IUI, IUU, IUU/T etc. are programmable. Application areas for DC UPS systems with thyristor technology are: transformer stations, power plants, oil and gas industries as well as shipping and rail transport.

TTC Wärtsilä JOVYREC THYRIDIN systems also convince as load rectifiers, which can be applied for gentle charging or discharging of batteries with different voltage. For export devices with other grid voltage inputs are available on request, all common output voltages are available.

TECHNICAL DATA

Input	Voltage	400 V/230 V +10% -15% further voltages on request
	Frequency	50 Hz / 60 Hz
	Frequency tolerance	± 5%
	Power factor at full load	ca. 0,95 inductive
Output	Voltage	24 V, 48 V, 60 V, 110 V, 220 V, 440 V further voltages on request
	Voltage tolerance	static ± 1 %
	Ripple	max. 5 % without battery
	Current	40 A - 1000 A
Characteristic		IU for UGV moreover that: IUI, IUU
Mode of operation		permanent operation
Protection class		IP 20 (further protection classes optional available)
Control		digital, microprocessor controlled

- **DC POWER SUPPLY FOR LARGE PERFORMANCE RANGES**
- **DIGITAL THYRISTOR CONTROL**
- **HIGH OPERATIONAL SAFETY**
- **CUSTOMISED MANUFACTURING**
- **NUMEROUS OPTIONS**
e.g. counter cell installations, deep discharge contactor, additional messages via additional LEDs or relay, earth fault monitoring, galvanic separation and more

The systems of the type TTC Wärtsilä JOVYREC THYRIDIN are customer-specifically manufactured and therefore detailed technical data are only available on request. You are most welcome to contact our personnel of sales or engineering department.

Fig.1 Technical drawing Thyristor switches

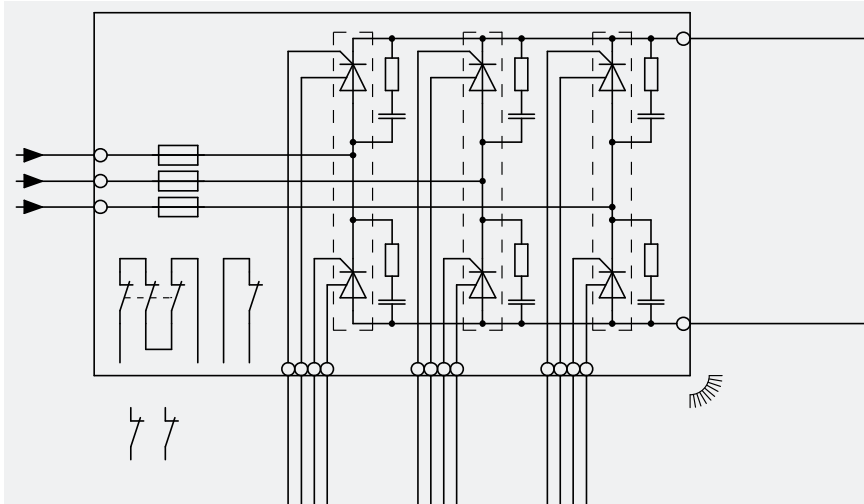


Fig.2 TTC Wärtsilä JOVYREC THYRIDIN

