

Success Story

UNITROL® 1010 Automatic Voltage Regulator (AVR)

Successfully installed in a waste heat recovery system on a marine application - Certified by DNV GL

UNITROL® 1010 Automatic Voltage Regulator (AVR) has been installed in a waste heat recovery system on a marine application for the first time. About four percent of the full power output of this diesel engine is recovered thereby reducing prime energy consumption.



UNITROL® 1010 Automatic Voltage Regulator (AVR)

The Story

In a collaboration between ABB and MAN Diesel & Turbo, the first turbo compound system including power turbine and generator (TCS-PTG) for marine applications has been developed. ABB supplied the generator with the UNITROL® 1010 used as the excitation system in a control cabinet for generator control including protection and synchronization. The complete system is assembled at MAN Diesel & Turbo in Augsburg, Germany, where final factory acceptance tests are being finalized.

Customer need and benefit

The first system will be used for a large container vessel, built at Samjin Shipbuilding in Weihai, China. The prime mover is a two-stroke diesel engine with 27MW output power. The TCS-PTG will recover 4 percent of the output power by directing the exhaust gas through a turbine. The 1 MW electrical output power is used mainly for cooling the containers. This means a stand-alone auxiliary gen-set can be switched off to save fuel.

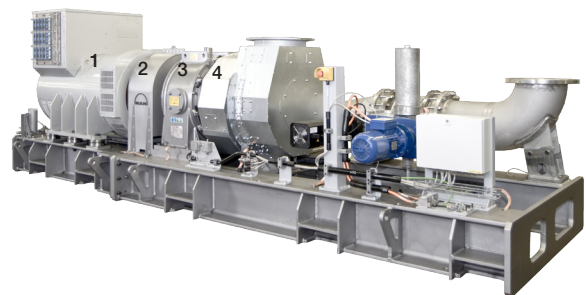
ABB Response

MAN Diesel & Turbo and ABB see a growing potential on waste heat recovery systems due to global energy saving targets. The system today is optimized for two-stroke diesel engines and can be used for marine as well as land-based power plants, where upgrading of already installed engines can be easily done. For this application, the UNITROL® 1010 shows its strength due to the built-in software functions, such as rotating diode monitoring, extended supervision

and monitoring as well as automatic synchronization. This simplifies the control cubicle and reduces costs by shortening assembly and test times. At the same time the reliability is increased by using fewer components and a simplified system.

UNITROL® 1010 and UNITROL® 1020 feature marine class certificates by DNV and is certificated by Germanischer Lloyd.

The UNITROL® 1000 product family has a long and proven history in marine applications. In addition, other land-based systems for waste heat recovery systems are booming, where UNITROL® 1010 and UNITROL® 1020 can show their strengths.



TCS-PTG20 - the latest development of MAN Diesel & Turbo with an UNITROL® 1010 in the control cabinet | 1 Generator | 2 Coupling | 3 Gear box | 4 Power turbine

For more information please contact:

ABB Switzerland Ltd

Excitation Systems
and Synchronizing Equipment

Austrasse

CH-5300 Turgi, Switzerland

Phone: +41 (0)58 589 24 86

Fax: +41 (0)58 589 23 33

Email: pes@ch.abb.com

www.abb.com/UNITROL