

ET 805 STEAM POWER PLANT 20kW WITH PROCESS CONTROL SYSTEM



Complete plant consisting of steam generator (left), steam turbine (right) and control station (front)

The steam power plant ET 805 is the result of years of GUNT experience in the field of educational steam plants. The size of the plant models real power plant operation. The plant uses state-of-the-art components and technology to ensure a realistic and highly practical educational experience. The plant is equipped with a synchronous generator for parallel mains or isolated operation. The important process of synchronisation when delivering electrical energy to the grid can therefore be studied.

Specific learning objectives in power plant technology can be addressed in addition to the teaching of fundamentals in power engines and energy engineering. Plant operating procedures such as start-up, close-down, emergency shut-down and maintenance can be practiced.

The water-tube boiler starts up quickly so the overall start-up time of the plant is less than 30 minutes.

Observation of safety regulations ensures safe operation at any time.



Steam turbine with throttle valve and generator (background)



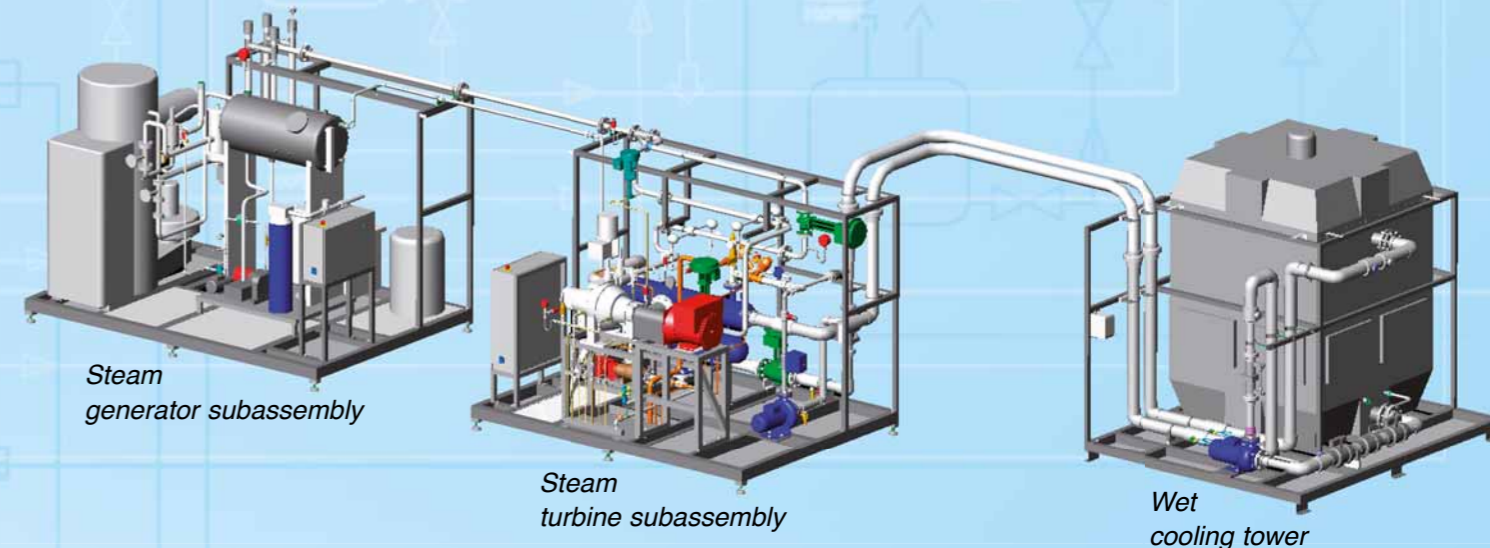
Wet cooling tower with cooling water pump

THE STEAM POWER PLANT FEATURES

- complete, fully functional steam power plant for engineering education and technical training
- closed steam/water circuit
- gas-fired/oil-fired water-tube boiler with a steam generating capacity of approx. 600kg/h
- electrically heated superheater with water separator
- feed water treatment consisting of ion exchanger, metering pump for chemicals and feed water tank with integrated pre-heating and degassing
- single-stage steam turbine with Curtis wheel
- shaft sealing with carbon rings and sealing steam
- electronic speed control via PLC and electro-pneumatic control valve
- mechanical protection against overspeed with trip valve
- 20kVA synchronous generator with modern, digital synchronisation device (PPU) for parallel mains or isolated operation
- water-cooled condenser with condensate and vacuum pumps
- wet cooling tower with fan and cooling water pump
- control station with complete instrumentation and modern LCD screens (operation via touch screen)
- modern, digital process control, as is common practice in industry, based on CAN-bus and PLC, with network capability
- equipped with data acquisition
- safety monitoring and emergency shut-down via PLC with alarm and warning logger
- extensive manual and instructional material
- additional accessories such as fuel tank, compressed air supply and exhaust gas system upon request

Detailed technical information available from your GUNT partner

Modular design enables highest flexibility for individual lab set-up of the plant



The plant consists of three individual assemblies which can be placed to fit in the available space.

- steam generator with feed water treatment and superheater
- steam turbine with generator, condenser and vacuum generation
- wet cooling tower with cooling water pump
- ...and control station with PCs and monitors