

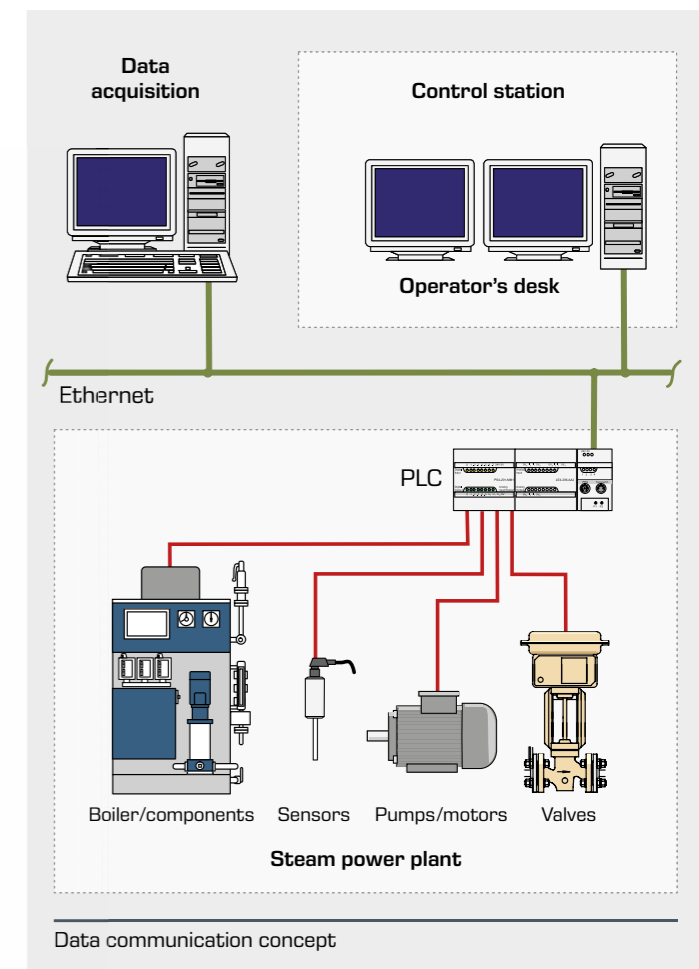
## ET 833 Steam power plant 1,5 kW with process control system

### Complete, fully functional steam power plant based on ET 830

|   |   |
|---|---|
| High performance steam generator heated with fuel oil, steam output of 200 kg/h | Control station with complete instrumentation on LCD monitors                   |
| Electrically heated superheater   | Operation via touch screen  |
| Single-stage industrial steam turbine, power 1.5kW at 3000 min <sup>-1</sup>    | Modern, digital process control system based on field bus and PLC               |
| Water-cooled condenser with condensate and vacuum pumps                         | Integrated data acquisition and calculation of performance parameters           |
| Feed water treatment with water softening                                       | Safety monitoring and emergency shut-down via PLC with alarm and warning logger |
| Separate wet cooling tower with high-capacity cooling water pump                | Extensive manual and instructional material                                     |
| Plant remote control via actuating valves                                       |   |

### ET 833 features a broad variety of learning objectives

- design and function of steam power plant consisting of feed water treatment, steam generator, superheater, steam turbine, condenser and cooling tower
- start-up, operation and shut-down of a steam power plant
- determination of optimal operating parameters
- determination of power input and output
- determination of component efficiencies and overall plant efficiency
- familiarisation with modern plant control via PLC
- familiarisation with pressure, level, flow and temperature control loops
- maintenance and monitoring procedures



- 1 steam generator,
- 2 feed water pump,
- 3 condenser,
- 4 steam turbine,
- 5 feed water tank,
- 6 generator,
- 7 control station,
- 8 cooling tower,
- 9 cooling water pump