

# PLC

## Programmable logic controller

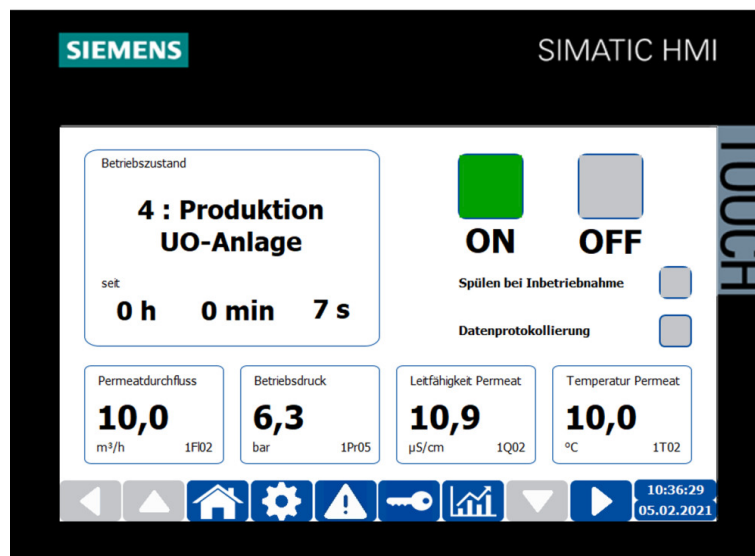
Equipment of a standard reverse osmosis unit with programmable logic controller (PLC) Siemens S7-1200 (this eliminates the microprocessor controller RO digital). The PLC is characterized by intuitive menu navigation and allows optimal control and evaluation of the plant operation. The use of standardised components and protocols in industrial standard facilitates the connection to on-site control systems with Siemens components. In contrast to microprocessor controllers, subsequent expansion or adaptation of the controller is possible at extra cost.

### BENEFITS

- Self-explanatory menu navigation and intuitive operating concept
- Optimal control and assessment of the operating status
- Controller complies with current industry standard
- Setup of remote access to unit possible (optional)

### APPLICATIONS

- Visualisation and control of an RO system with automatic logging of all relevant operating parameters
- For RO series UO-D (FU), UO-D AS/FU and UO-D BW/FU



PLC operating screen

# PLC

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### DESCRIPTION

#### Scope of delivery

- Adaptation of the RO instrumentation according to Herco standard for operation with PLC
- 7" touch panel (TP700C) and all required electrical components
- CPU, HMI and all required digital/analogue I/O cards (= assemblies)
- Software programming for standard option PLC
- Adaptation of electrical plan and documentation to standard option PLC
- System piped and wired ready for connection. Electrical structure acc. to VDE 0100 Part 600, VDE 0113 Part 1

#### Functions

- Visualisation of the system (P&ID), the current operating status and of the operating data
- Languages of the plain text display: German / English / others on request for an extra charge
- Recording of all relevant operating parameters with storage of the data as a csv file on an SD card
- Graphical illustration of the system, the measured values and operating states
- Display of the warning and error messages in an alarm list
- Various security functions with password for access management
- Interfaces such as Profinet, Profibus, Modbus, BacNet optionally available
- Smart server function for access from the same IP address range, remote access can be optionally set up

#### Available inputs

- DIGITAL: 4x flow rate (permeate, concentrate recirculation, concentrate, VSE if applicable), motor protection switch of high-pressure pump, level permeate tank RO start/stopp (tank min/max, hard water protection, external stop, 2x level dosing (pre-empty/empty) and 1x universal input (configurable))
- ANALOGUE: 4x pressure (inlet pressure pre-filter, inlet pressure pump, operating pressure, concentrate pressure), permeate conductivity, permeate temperature and 2x optional inputs (configurable, e.g. for level permeate tank, level tank KVP)

#### Available outputs

- DIGITAL: 1x activation of high pressure pump, 3x activation of valves (24 VDC, for feed water valve, permeate valve, concentrate flushing valve), 2x dry-contact relay outputs, change-over contacts, for collective fault signal and collective warning signal, 1x control dosing pump, 2x control KVP if applicable (pump and valve) and 1x universal output (configurable)
- ANALOGUE: flow (used for VSD (FU) pump control, 4-20 mA, and conductivity permeate (4-20 mA))

### TECHNICAL DATA OF SERIES

Product name	Description	Item number
PLC for RO units	For product series UO-D FU, UO-D AS/FU and UO-D BW/FU	800 002