

FILTRATION PILOT PLANT

Mod. FTR/EV
Mod. FTRa/EV

manual
automated



INTRODUCTION

This filtration plant mainly consists of a sand filter and of an activated carbon filter; filtered water is collected into a tank of stainless steel from which samples for proper laboratory analyses can be extracted. An in-line turbidimeter enables to measure the turbidity of water flowing in and out of filters. Process control, data acquisition and supervision are automatically carried out by a microprocessor controller and by a specific control and supervision software (only for mod. FTRa/EV) that enables the remote control of various operational parameters.

TRAINING PROGRAM:

The process unit enables to develop and analyze the following issues:

- mechanical filtration
- chemical filtration
- main parameters affecting filtration
- influence of feed flow rate on filtration
- automatic PID control (only for mod. FTRa/EV)
- plant supervision (only for mod. FTRa/EV)

TECHNICAL CHARACTERISTICS:

Mod. FTR/EV

- Framework of AISI 304 stainless steel with castors
- Sand filter of borosilicate glass with decreasing particle size and capacity of 30 l
- Activated carbon filter of borosilicate glass with capacity of 30 l
- 4 pressure gauges, with range of 0 to 10 m of water column
- Centrifugal pump with casing and rotor of AISI 304 stainless steel and flow-rate of 3000 l/h
- Variable area flowmeter of AISI 304 stainless steel, with range of 100 to 1000 l/h
- Metering pump of plastic material for sodium hypochlorite, with flow rate of 3 l/h
- Metering pump of plastic material for flocculant, with flow-rate of 3 l/h
- 2 feed tanks of AISI 304 stainless steel with capacity of 120 l
- Tank of AISI 304 stainless steel for collecting the filtered water with capacity of 200 l
- Thermoresistance Pt 100 with sheath of AISI 316 stainless steel
- Board-type electronic temperature indicator
- Switchboard IP55, complying with EC conformity mark, including plant synoptic and ELCB
- Connecting lines and valves of AISI 304 and 316 stainless steel

Power supply: 230 Vac 50 Hz single-phase - 1,5 kVA
(Other voltage and frequency on request)

Dimensions: 2150 x 750 x 2000 mm

Weight: 460 kg

Mod. FTRa/EV

Besides being provided with all the technical characteristics of mod. FTR/EV, this model also includes the following additional equipment:

- Pneumatic control valve of stainless steel AISI 316 for feed flow rate of water, $C_v = 2.5$
- Electropneumatic converter (4 to 20 A / 0.2 to 1 bar)
- Digital microprocessor PID controller
- Electronic turbidimeter for measuring the turbidity of the water flowing in and out of filters, with programmable range and 4 to 20 mA output signal
- Supervision software for Windows: it enables to control ON-OFF signals, analog signals coming from PID controller, real-time trend and historical trend

REQUIRED

UTILITIES (PROVIDED BY THE CUSTOMER)

- Compressed air (female valve of ¼"): 0.5 Nm³/h @ 6 bar (only for mod. FTRa/EV)
- Tap water (valve with ½" hose connector)
- Water floor drain

ACCESSORIES (NOT INCLUDED)

- Instrument for water analysis (e. g.: turbidimeter for mod. FTR/EV)
- Personal Computer running Windows (only for mod. FTRa/EV)

SUPPLIED WITH

**THEORETICAL – PRACTICAL –
EXPERIMENTAL HANDBOOK**



VARIATIONS OF THE PLANT UPON REQUEST:

This equipment can be modified upon specific request of the Customer.