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MDS

MONOCHLORAMINE DOSING SYSTEM

emec
SIMPLE AS WATER

MDS

MONOCHLORAMINE DOSING SYSTEM

MDS NH₂Cl is a compact, automatic system designed for the production of monochloramine in aqueous solution for water treatment purposes, within the scope of use specified in these instructions.

MDS NH₂Cl simultaneously doses two chemicals, ammonia (at a known percentage) and sodium hypochlorite (at a known percentage), into the water inside the reactor. Generation is monitored by the HMI and can be adjusted by a flow meter with the main water flow.

The system includes three protections:

- **A protection for the NH₃ dosing pump**
- **A protection for the NaClO dosing pump**
- **A protection from the minimum flow reading of the dilution water meter**

The generation of NH₂Cl occurs inside a reactor with external water flow to protect the reactor. Inside the reactor, the two reagents react with the dilution water at a concentration of approx. 2 g/l (2000 ppm).

TECHNICAL SPECIFICATIONS

- HDPE box dim. 750 x 1500 Depth 560 mm
- 7” colour touchscreen HMI controller
- NH₂Cl production: from 50 to 5000 g/h
- 2 self-priming electronic dosing pumps with diaphragm, stepper motor controlled by electronic control system and dosing head with PTFE diaphragm and PVDF valves.
- 2 pressure gauges for reading pump operating pressure with diaphragm separator
- Reagent minimum level sensors
- Leak collection tank
- Safety cover doors
- PVDF reactor



ELEMENTS

DOSING PUMPS

The MDS is equipped with two Prisma series volumetric reciprocating pumps with controlled volume, providing precise control of flow dynamics — essential for process system efficiency. The reciprocating motion results in a sinusoidal flow, meaning the pumped product is delivered in a pulsating, rather than continuous, manner. The flow rate, or pump volume, is controlled by adjusting the diaphragm stroke. Directional valves at the inlet and outlet of the pump head regulate the flow generated by the reciprocating movement of the dosing pump diaphragm.

PRESSURE GAUGE

The pressure gauge enables accurate monitoring of the pump's working pressure..

DIAPHRAGM LIQUID SEPARATOR

The diaphragm liquid separator ensures accurate pressure measurement when corrosive liquids are present, preventing damage to the pressure gauge.

BACK PRESSURE VALVE

The back pressure valve prevents spontaneous liquid flow (siphoning) when the suction tank level is higher than the discharge level.

ULTRASONIC FLOW METER (Control Flow)

Equipped with feedback control, the ultrasonic flow meter ensures accurate and fully automatic adjustment of the dosing process.

KEY FUNCTIONS

- **Homogeneous, continuous dosing**
- **Chemical concentration selection (%)**
- **Dosing mode:**
 - › Automatic calculation of the two reagents based on the required quantity
 - › Concentration setting in %
 - › Proportional dosing setting via signal from the flow meter of the water to be treated (4-20 mA)
 - › Manual dosing setting
- **Integrated dosing flow measurement**
- **Chemical flow control system**
- **Dilution system using ultrasonic flow meter**
- **Dosing pump calibration mode setting**
- **Chemical setting (ammonia, ammonium sulphate, ammonium bicarbonate)**
- **Alarms (all alarms are configured as remote alarms)**
- **Modbus TCP-IP Ethernet communication port**

