Diamantelektroden Produktion GmbH

TEST CELL - technical description

TECHNICAL DESCRIPTION

The application of a new technology especially involves uncertainties. Tests and pre-tests become necessary. The pro aqua test system was designed especially for our customers so that they can get information about our new technology easily and quickly. Resulting findings and determined data are finally the basis for improvement.

PRODUCT

the proaqua-testsystem consists of the proaqua-test-cell, pole reversing unit, wiring and installation device (installed on a plastic sheet). The cell can only be used in standig (vertical) position regarding inflow and outflow.

TECHNICAL DATA: PRO AQUA TEST-CELL

- Diamond electrodes: 3 pieces
- Area per diamond electrodes: 42 cm²eff
- Total area of diamond electrodes: 126 cm²
- Distance between electrodes: 2 mm
- Current density: max. 200 mA/cm²
- Bonding electrodes: Ru-Ir coated titanium sheets
- Case material: PP (standard), plexiglass (optional), PVDF (optional)
- Sealing: Viton
- Flow rate: max. 200 l/h
- Temperature of treated fluid: max. 60°C

TECHNICAL DATA OF RECOMMENDED POWER SUPPLY UNIT:

- Input voltage: 230 V/AC
- Output current: 0 - 10 A
- Output voltage: 0 - 120 V/DC
- Type: linear and controllable

pro aqua Diamantelektroden Produktion GmbH
A-8712 Niklasdorf, Parkring 1, +43 (0)3842-81516-0, info@proaqua.cc, www.proaqua.cc

TEST CELL - technical description

TEST SET-UP

Two possibilities for a test set-up are demonstrated below. Figure 1 demonstrates the test “Recycling” and figure 2 the test “Flow-through”. Please also note comment-1.

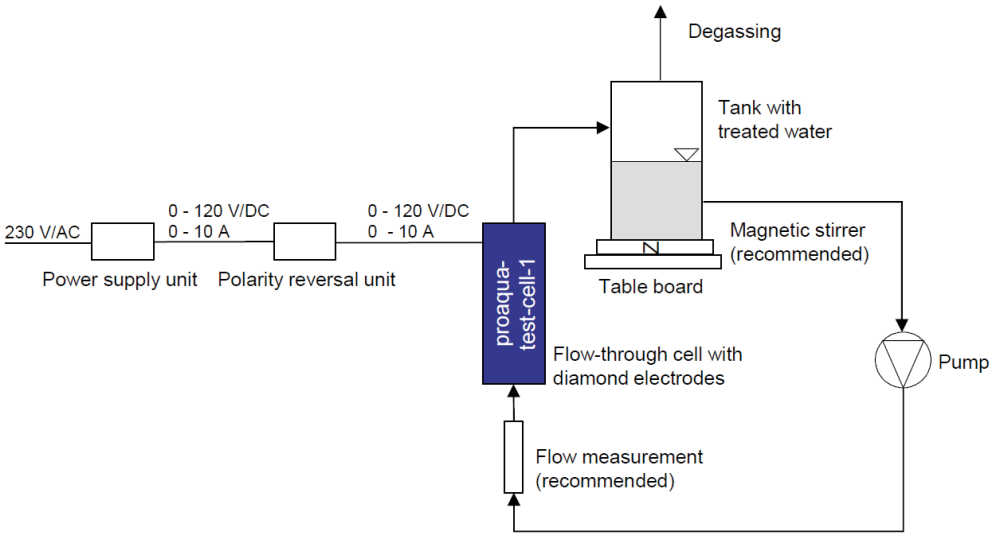

Figure 1: Test: Recyling

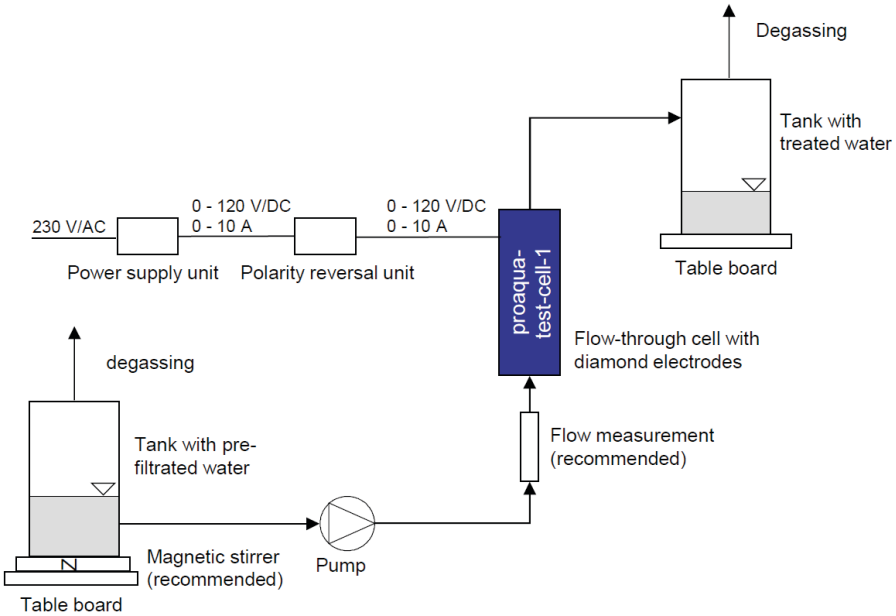

Figure 2: Test: Flow-through

TEST CELL - technical description

comment-1:

- Please also regard the legal and normative safety rules and regulations of the respective country during
- testing.
- pro aqua Diamantelektroden Produktion GmbH does not assume responsibility/liability for the implementationof the tests in Figure 1 and Figure 2.
- Please make sure that only specifically qualified persons do the testing.

CURRENT, VOLTAGE AND ELECTRICAL CONDUCTIVITY

The generation of oxidizers depends on electrode surface and current density. The cell potential is directly influenced by the distance between the electrodes and the conductivity. Finally, the relevant parameter for each application must be determined in pre-tests, preferably in consideration of the conditions in-situ.

For the proaqua-test-cell the distance between the electrodes is 2 mm and the total electrode area is 126 cm² (3 electrodes a`= 42 cm² each). The area of 42 cm² determines the current denisty resp. the total current. The electrical conductivity of the treated fluid has to be identified by a technical measurement. On the basis of the conductivity and the current density the required voltage can be estimated (see figure 3).

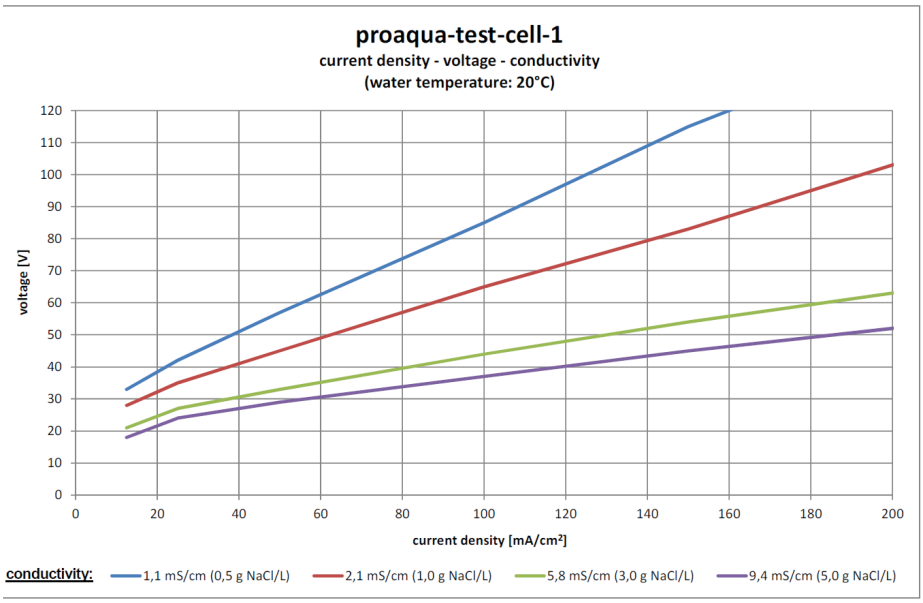

Figure 3: Current density, voltage and electrical conductivity

comment-2

Figure 3 and the recommended current density ranging are meant as an orientation to facilitate the determination of an optimal cell operation. pro aqua Diamantelektroden Produktion GmbH cannot assume responsibility/liability.