

Title (en)

Apparatus for monitoring and indicating the current distribution in an electrolyzer.

Title (de)

Vorrichtung zum Überwachen und Anzeigen der Stromverteilung in einem Elektrolyseur.

Title (fr)

Dispositif de contrôle et de visualisation de la répartition du courant dans un électrolyseur.

Publication

**EP 0099795 A1 19840201 (FR)**

Application

**EP 83401356 A 19830701**

Priority

FR 8211907 A 19820707

Abstract (en)

1. Device for the monitoring and visualization of the distribution of the current in alkali metal halide electrolysis cells having a mercury or amalgam cathode, this system being characterized in that it comprises, for each electrolysis cell, a combination of means (A) for measuring and monitoring the distribution of the current at each anode and the voltage between each group of anodes and the corresponding cathode portion, comprising : means (1) for measuring the current intensity ( $I_1$ ,  $I_2$  ...  $I_n$ ) of each anode, means (2) for summation ( $\Sigma I$ ) of these current intensities, means (3) for detecting the mean value ( $\Sigma I/n$ ) of these current intensities, means (4) for comparing each current intensity ( $I_1$ ,  $I_2$  ...  $I_n$ ) with their mean value ( $\Sigma I/n$ ) increased by a fraction which can attain 50 % of this mean value, and for triggering (6) an alarm if necessary, means (5) for localization of the defective anode following the abovementioned comparison, means (7) for measuring the voltage between each group of anodes and the corresponding cathode portion ( $U_1$  ...  $U_p$ ), means (8) for calculating a voltage ( $U$ ) adopted as reference, means (9) for comparing the said voltage values ( $U_1$  ...  $U_p$ ) measured at (7) with the voltage value ( $U$ ) adopted as reference, and for triggering (6) an alarm if necessary, means (15) for localizing the group of anodes giving rise to an unacceptable voltage as a result of the abovementioned comparison of voltages, and a combination of means (B) which permit the instantaneous and continuous visualization of this distribution of the current, of the voltage and of the exceeding of the intensity and voltage thresholds, comprising : a device for displaying the voltage values ( $U_1$  ...  $U_p$ ) (14) and the said voltage value ( $U$ ) adopted as reference (11), this device being connected to the means (7) for measuring the voltage ( $U_1$  ...  $U_p$ ) and, where appropriate, for calculating (8) the value of the said voltage ( $U$ ) adopted as reference, an electroluminescent device (12) constituting a plurality of luminous scales, each scale corresponding to the measurement of the current intensity of one anode, the said luminous scales being arranged side by side and displaying the distribution of the current in the cell, this device (12) being connected to the means (1) for measuring the current ( $I_1$ ,  $I_2$  ...  $I_n$ ) via an analogue/digital converter (13).

Abstract (fr)

L'invention concerne un dispositif destiné aux installations d'électrolyse. Ce dispositif est individualisé au niveau de chaque cellule de l'installation. Il comprend un ensemble de moyens de mesure et de contrôle de la répartition du courant et de la tension (1), (7), (4), (9) et un ensemble de moyens de visualisation instantanée et continue de cette répartition du courant, de la tension et du dépassement de seuils préalablement fixés (12), (14), (11). Ce dispositif est particulièrement destiné aux cellules d'électrolyse d'halogénures de métaux alcalins utilisant une cathode à mercure.

IPC 1-7

**C25B 15/02**

IPC 8 full level

**C25B 15/02** (2006.01)

CPC (source: EP)

**C25B 15/02** (2013.01)

Citation (search report)

- [A] FR 2248336 A1 19750516 - SIEMENS AG [DE]
- [A] DE 2652774 A1 19780524 - SIEMENS AG
- [A] FR 2228541 A1 19741206 - OLIN CORP [US]

Cited by

US4721947A; CN112226787A; EP1979715A4; WO2007087728A1

Designated contracting state (EPC)

AT BE CH DE GB IT LI LU NL SE

DOCDB simple family (publication)

**EP 0099795 A1 19840201**; **EP 0099795 B1 19861230**; AT E24551 T1 19870115; DE 3368693 D1 19870205; FR 2529913 A1 19840113; FR 2529913 B1 19841221

DOCDB simple family (application)

**EP 83401356 A 19830701**; AT 83401356 T 19830701; DE 3368693 T 19830701; FR 8211907 A 19820707