AB FIA
An Engineering Company
with a Chemistry Profile

Automated Salt Deposition Monitor (ASDM)

ASDM predicts the contamination level to avoid flashover

Insulator flashover happens when soluble and/or non-soluble contaminants cover the insulator surface which results in a reduction of the surface resistance[1]. FIA's ASDM helps to predict the contamination level on the outdoor ceramic insulators surface. This can help as a mean to warn overhead lines operators about the advent of insulator flashover.



Main Cabinet
Main cabinet with pilot insulator on top, shown from side with wash basin (lid closed).

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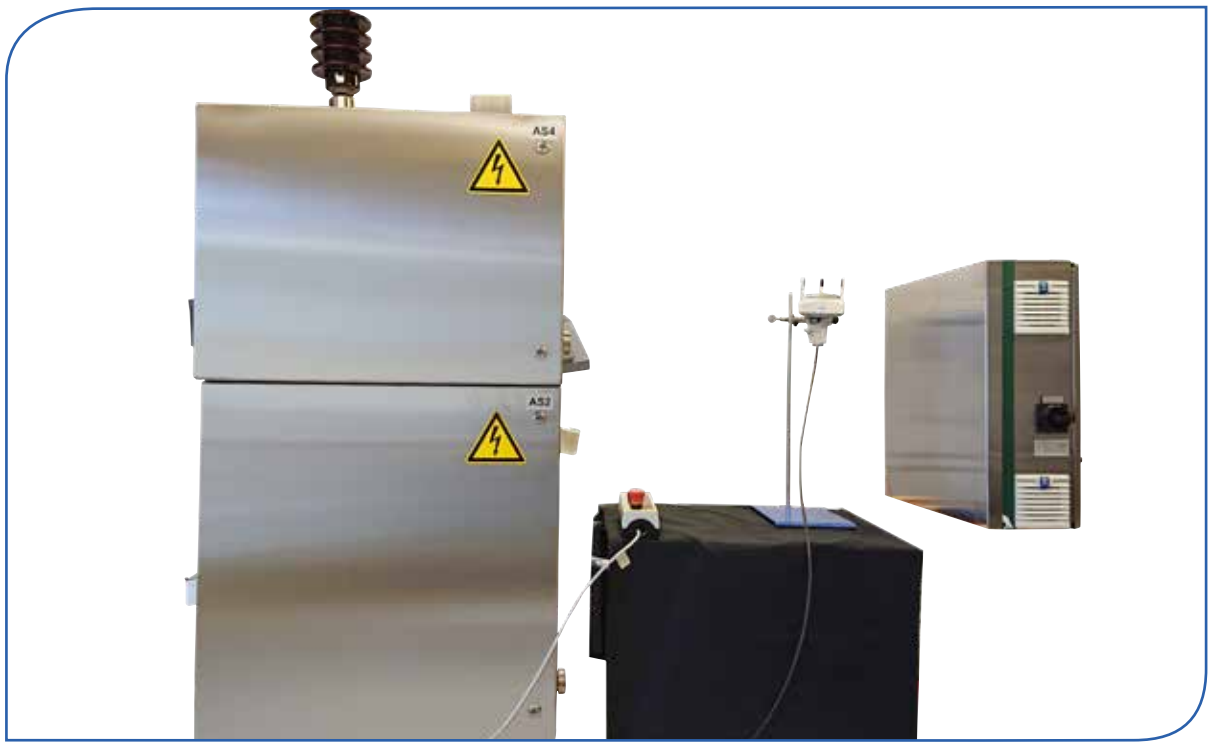


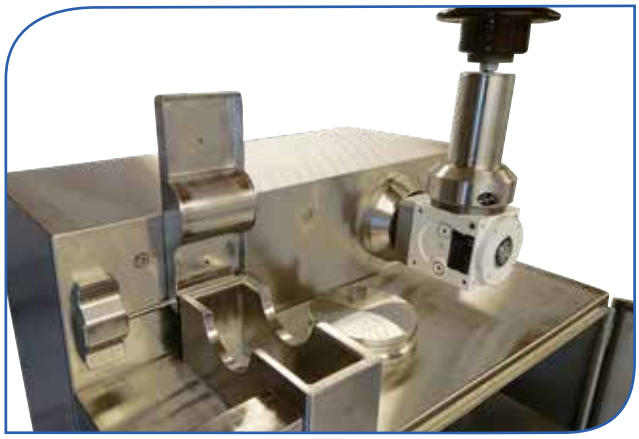
Complete System

Complete system with pilot insulator on the top. The main cabinet from the side facing the doors. also shown is the control cabinet and the anemometer, each module located where relevant and convenient.



Operator Panel

Operator panel with touch-screen controller.



Wather Bath

Water bath for rinsing the pilot insulator.

ASDM Equipment

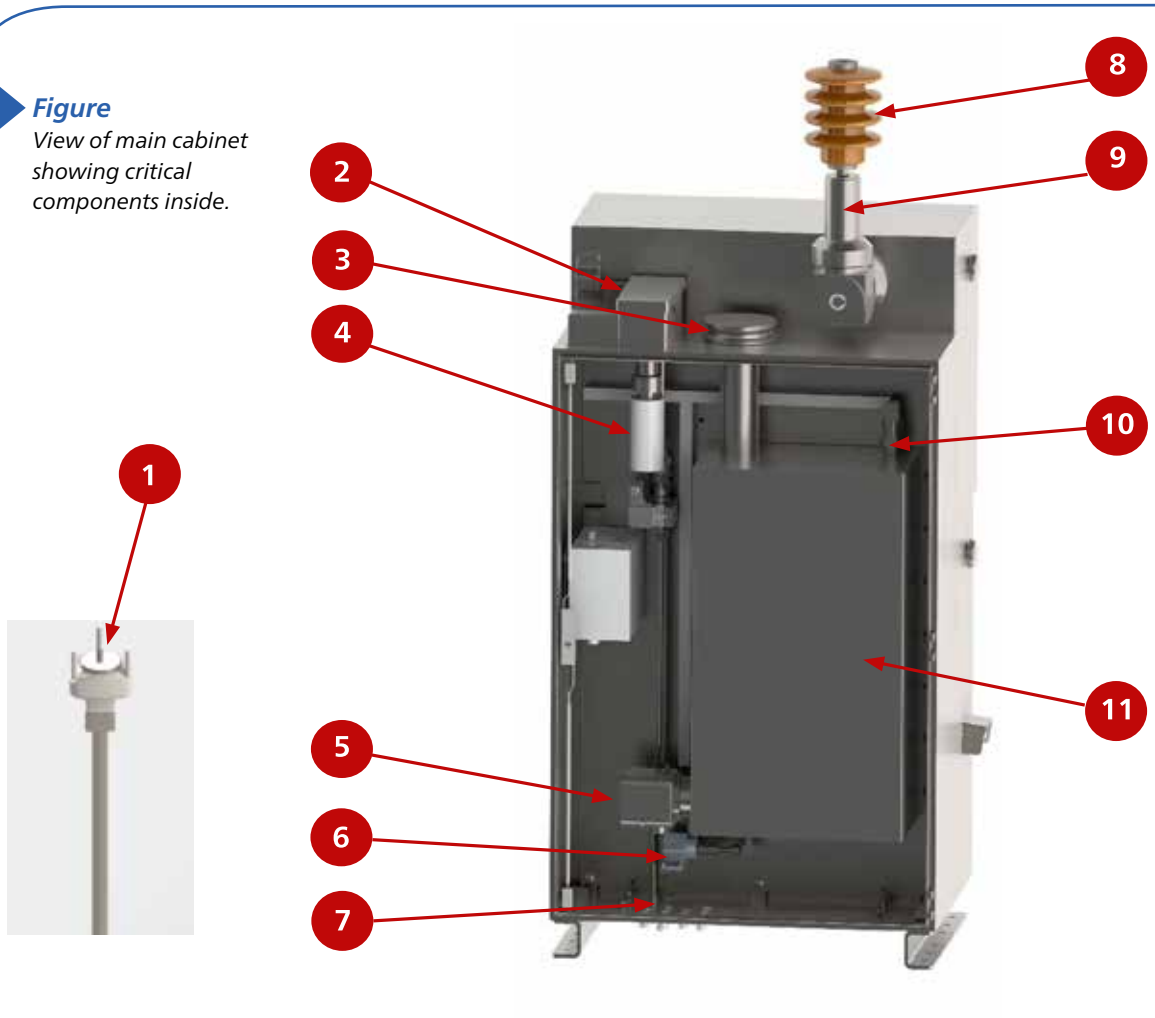
The ASDM consists of an equipment with a pilot insulator exposed to the same condition as the operational insulators in a, e.g., converter station. Many stations are situated in demanding areas, typically close to a shoreline. By frequently automatically monitoring the Equivalent Salt Deposit Density (ESDD) it helps the operators to understand the build-up of contaminants on the insulator surface. The ASDM also measures wind and wind direction, enabling it to give a prediction of potential flashover conditions.

The equipment is class IP64 and all outdoor parts are compatible with the demanding environment, such acid proof steel AISI 316, equivalent to corrosivity class C5-M. The user interface for monitoring and control may be positioned remotely in an adjacent building.

The equipment is a modernized version of historical constructions installed at, e.g., nuclear power plants. The information from the equipment can be used to decide when there is a need to wash the hot line.

FIA's equipment has passed detailed technical reviews by demanding customers and our service team has passed high security screens and made installations at restricted locations.

Figure
View of main cabinet showing critical components inside.

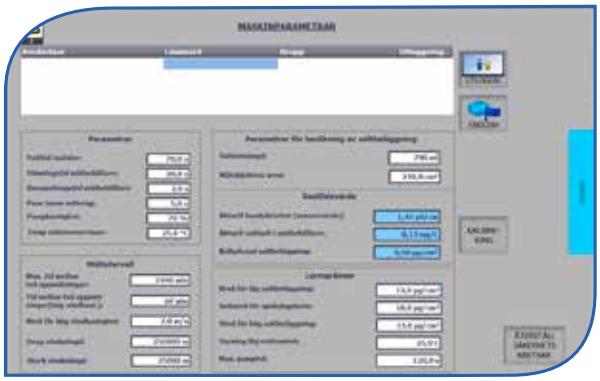


Position	Description
1	Anemometer (positioned where most relevant)
2	Wash basin with level indicator, sonication and conductivity probe
3	Water tank opening
4	Valves for water level and supplies for sonication and conductivity measurements.
5	Heater water tank
6	Water pump
7	Exhaust water basin
8	Reference/pilot isolator
9	Isolator arm, rotation up/down and axial
10	Level indicator water tank
11	Water tank thermostated



Main Screen

Main screen of the operator panel (language will be according to the country of installation). Showing the states of the machine and current weather conditions. Modes of operation gives further detailed screens. Of pivotal importance is the prediction "Time to next flush" based on the salt deposition, historical and prevailing weather conditions.



Setting Screen

Settings screen for parameters, measurement periodicity, alarm levels.



Logger Screen

Logger screen graphical and numerical values of wind direction and velocity, and salt deposition over time.

Order Information

You find all our products on the online store at **https://shop.fia.se/**. Request a quote or send a line to i@fia.se and we can tell more.

Product	Article Number
Automated Salt Deposition Monitor (ASDM)	F1231

For a general company introduction refer to **www.fia.se**

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1. Abdelrahman K. Abouzeid, Ayman El-Hag & Khaled Assaleh (2018) Equivalent Salt Deposit Density Prediction of Silicone Rubber Insulators Under Simulated Pollution Conditions; Electric Power Components and Systems, 46:10, 1123-1133, DOI: 10.1080/15325008.2018.1488303

AB FIA
Medicon Village, Building 401
223 81 Lund, Sweden
+46 46 13 90 00
i@fia.se • **www.fia.se**