



## **Airport Traffic Sensor System**

Type ISA

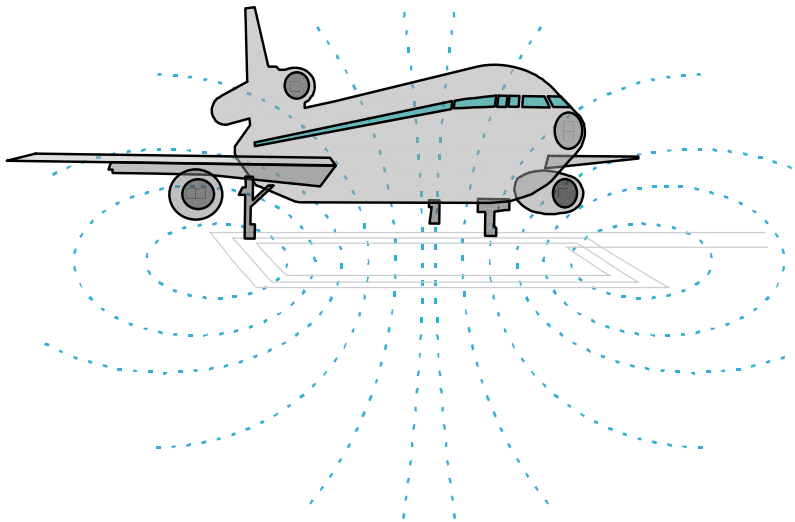
# Using high reliable Airport Traffic Sensor for aircraft and vehicle detection in runway/ taxiway area

For improvement of safety on airports

To improve the integrity of radar traffic surveillance

For protection of safety critical areas (e.g. runway incursion)

For monitoring of Stop bar acceptance by Airplane

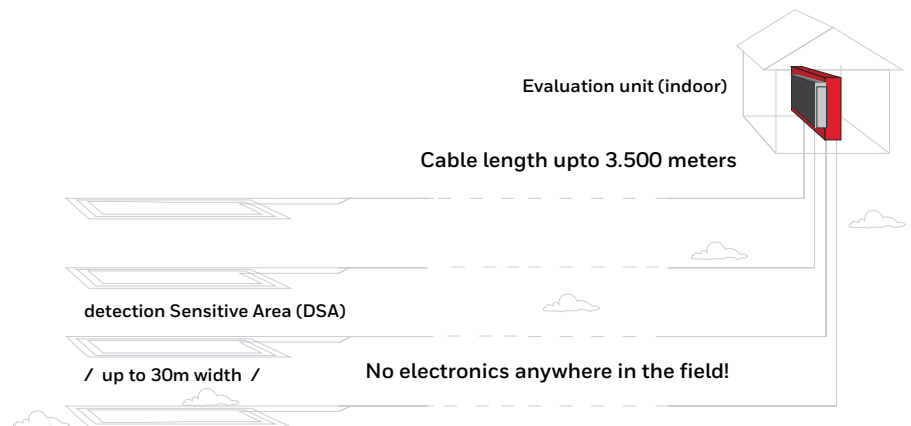


## Function

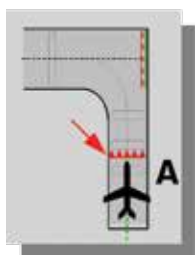
- Detection based on the change of low frequency magnetic field generated by microcomputer based signal evaluation
- Simple cable in airfield activated by remote enhanced microprocessor operation provides a high sensitivity and automatic calibration
- Robust against interferences, 10 times better than our previous offering
- Well proved technology
- More than 1.300 sensors installed on 16 airports worldwide
- Provides extremely high availability and integrity
- Continuous measurement and fault handling of the system

## Sensor system consist of

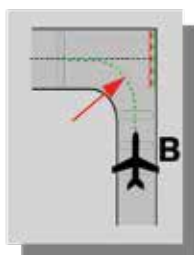
- detection sensitive area (DSA) formed by outdoor copper cable
- standard communication cable for signal transmission
- well protected indoor electronic for signal evaluation



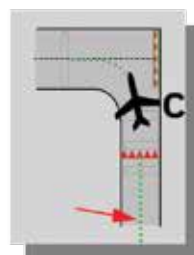
## Typical application: "Runway Entry" - STB/TXC control



Aircraft on presence sensor (A), taxiway lights on, stop bar on, exit taxiway lights off.



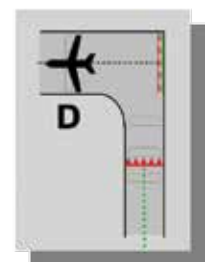
Taxiway lights off, stop bar off, exit taxiway lights on, aircraft passing overrun sensor (B).



Aircraft on exit taxiway sensor (C), stop bar on, exit taxiway lights between stop bar and exit taxiway sensor off, taxiway lights on.



Waiting for take off clearance.



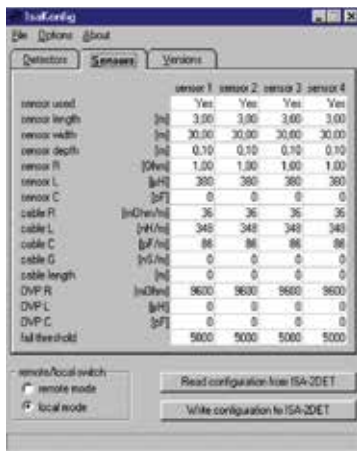
Aircraft on departure sensor (D), exit taxiway lights completely off, stop bar on, taxiway lights on.

## Evaluation unit

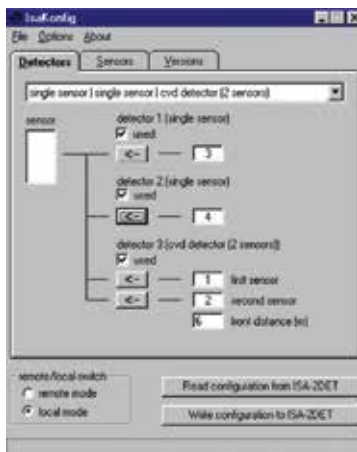
- Evaluation unit ISA-3DET for up to four individual sensors.
- Indication of engagement of areas.
- Indication of different errors like open circuit or short circuit.
- Service plug for configuration (RS232) during commissioning.
- Interface to control and monitoring system available as:
  - Serial communication interface (single or redundant)
  - Parallel output interface via opto coupling dry contacts.
- CVD function. Classification, velocity and direction.

## Service –commissioning configuration interface

- The service program for ISA-3DET is used to configure the different sensor arrangements as given by the requirements of the airport and for testing the correct function of the sensors.
- A portable PC is connected via RS232 interface to the service plug at the front of the ISA-3DET for this purpose.
- During commissioning mechanical and electrical parameters for the actual installed sensors have to be entered as well as the type of detection sensitive area (detector) used the actual installed sensors have to be entered as well as the type of detection sensitive area (detector) used.
- Easily data transfer from ISA2-2DET



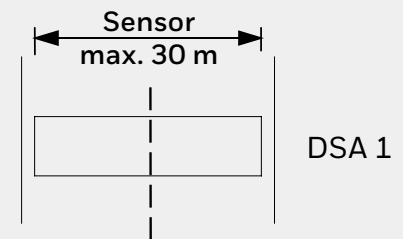
Folder for input of mechanical and electrical parameters for the actual installed sensors



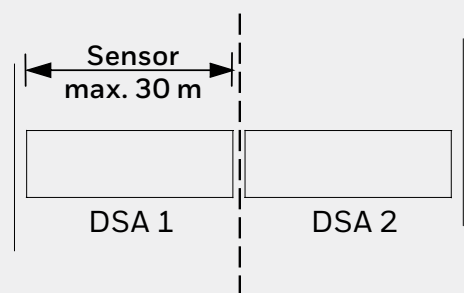
Folder to define type of detector used

## Arrangement of DSA

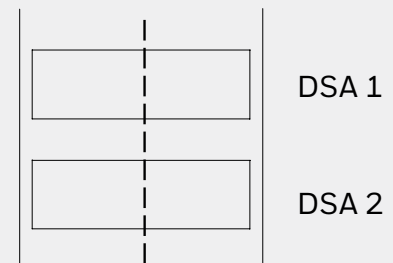
- Arrangement of detection sensitive areas to detect presence, incursion, lead-on and departure



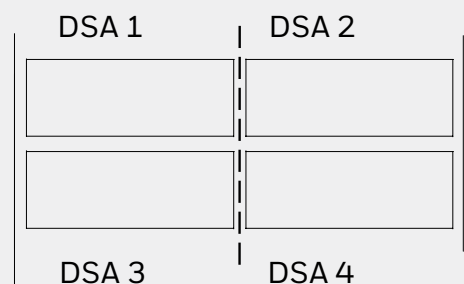
One DSA for Taxiway up to 32m



Two DSA for Taxiway/Runway up to 65m



cvd configuration, 2 DSA for



cvd configuration, 4 DSA for taxiway/runway up to 65 m

## The Sensor System Consists of:

### In the field

- sensor cable: Oelflex 400P, 4 x 1,5 (11 mm Ø)
- sensor dimension 3 m x 5 m up to 4,5 m x 30m
- telephone cable (x times two pair core 0,8 mm Ø)  
type:A- 2YF(L)2Y
- length up to 3500 m between sensor and evaluation unit ISA

### Technical Data

- Reaction time less than 300ms
- Error detection time less than 300ms
- Permanent self tests and automatic system calibration through mathematical procedures
- Aircraft/vehicle detection in four classes
- Continues measurement for each sensor

### Customer Training (on request)

- Design Training (one day)
- Maintenance Training (one day)

### Cabinet

- 19" mounting rack incl. power supply and over voltage protection available for:
  - five ISA-2DET with serial interface (single or redundant)
  - eight ISA-2DET with parallel interface

### Highlights

- Up to 3500 m distance between sensor and evaluation unit ISA
- Continuously measurements
- Detection of presence, incursion, lead-on and departure
- Detection of classification, direction and velocity using special arrangement ("cvd configuration")
- No electronics in the field
- Robust sensor cable and proved installation allow laying cable across gaps in pavement
- Redundant power supplies (optionally)
- Redundant communication to CMS (optionally)
- Proved installation of more than 1.300 sensors on 16 airports world-wide

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