ISA Delhi Section

Setting the Standard for Automation™

Fertilizer, Food & Pharma Symposium – 2022

"Building Sustainability through Advanced Automation"

ISA-D: "Fertiliser , Food and Pharma Symposium-2022"

“ Vasudhaiva Kutumbakam”

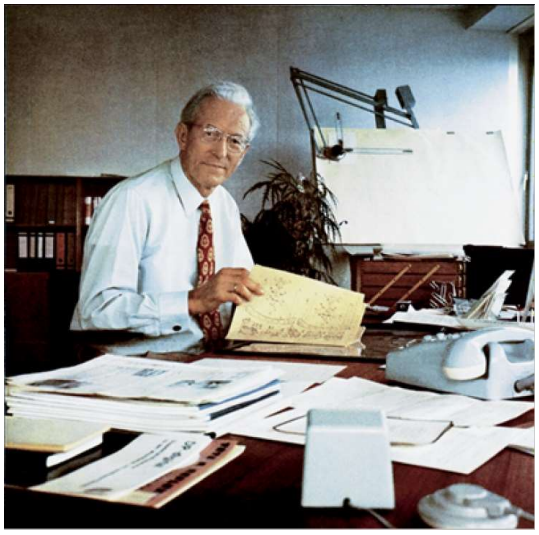
“One Earth One Family One Future”

SICK, Germany

SICK
Sensor Intelligence.

SICK, Germany at a Glance

- Global Headquarters in Waldkirch, Germany
- Company founder: Dr. Erwin Sick
- Founded in 1946: more than 70 years of sensing technology
- Presence in more than 80 countries: With almost 50 subsidiaries
- Widest product and technology range in the sensor industry
- Innovation leader in optical sensor technology



SICK, India

SICK
Sensor Intelligence.

SICK, India at a Glance

- Head Office in Mumbai.
- Started India Subsidiary in 2005.
- Sales & Service Office in Major Metros.
  - Mumbai, Delhi, Kolkata, Chennai.
  - Bangalore, Hyderabad, Pune, Ahmedabad, Baroda.
- Customer Facility Center - Factory at Naigaon, Mumbai

Analyzer Shelter Reference

SICK
Sensor Intelligence.

Reliance 3mtrs X 3mtrs

Analyzer Shelter Reference

SICK
Sensor Intelligence.

Reliance 3mtrs X 3mtrs

Analyzer Shelter Reference

Analyzer Systems Hazardous Area

SICK
Sensor Intelligence.

SICK, Sensor Intelligence

SICK
Sensor Intelligence.

Wide product range + experience + expertise = efficient solutions for you

SICK
Sensor Intelligence.

- **Analyzer solutions**
- Automation light grids
- Detection and ranging solutions
- Distance sensors
- **Dust measuring devices**
- Encoders and inclination sensors
- Fluid sensors
- **Gas analyzers**
- **Identification solutions**
- Magnetic cylinder sensors
- Motor feedback systems
- Opto-electronic protective devices
- Photoelectric sensors
- **Proximity sensors**
- Registration sensors
- Software products
- Safety switches
- sens:Control – safe control solutions
- System solutions
- Traffic sensors
- **Ultrasonic gas flow measuring devices**
- Vision

Solution in Fertilizer industry

SICK
Sensor Intelligence.

Gas Analysis

Simple, fast, and low maintenance

- Gas transmitters are the logical next step when it comes to creating gas analyzers that can serve as field instruments.
- Requires barely any additional technical aids
- In many cases, there is no need for costly sampling and gas conditioning either.

Measurement stability

- Laser spectroscopy tuned to O2 wavelength for high selectivity and reliability
- 0.2% O2 accuracy
- Calibration interval once per year

Process Gas Analysis

Perfectly tailored to the measurement task

- The extractive measurement technology: extracts a partial gas flow from the gas duct
- Gas conditioning under constant conditions
- Measurement technology from one source:
- From gas sampling and conditioning right through to the numerous analyzer modules
- **Trace measurement of $CO+CO_2$ and H_2 before the ammonia synthesis process**

Emission Monitoring Solution

Single point Solution

- Our efficient gas analyzers precisely and reliably measure the concentration of pollutants in the stack. This results in **accurate emission data** for submission to the authorities.

- We offer complete turnkey installations including CEMS, data acquisition, and data evaluation, developed by our in-house systems engineering. **Walk-in shelters** not only protect the measuring systems but also offer the plant operator and certifying authorities a protected environment for commissioning, maintenance, regular inspections, and calibrations.

- Monitoring and checking – Sensors from SICK not only assist in complying with the emission limit values, but also provide reliable data as verification for the monitoring authority. In addition, remote maintenance systems from SICK provide measuring convenience in daily operation and reduce maintenance costs.

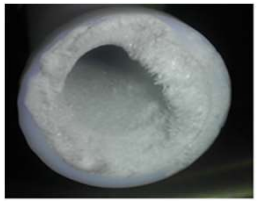
Particulate Monitoring in Fertilizer industry

SICK
Sensor Intelligence.

Particulate Monitoring in NPK Plant

Every Challenge have its own unique solution

Challenges in NPK stack



- Water Droplets.
- Salt Formation.

Particulate Monitoring in NPK Plant

Every Challenge have its own unique solution

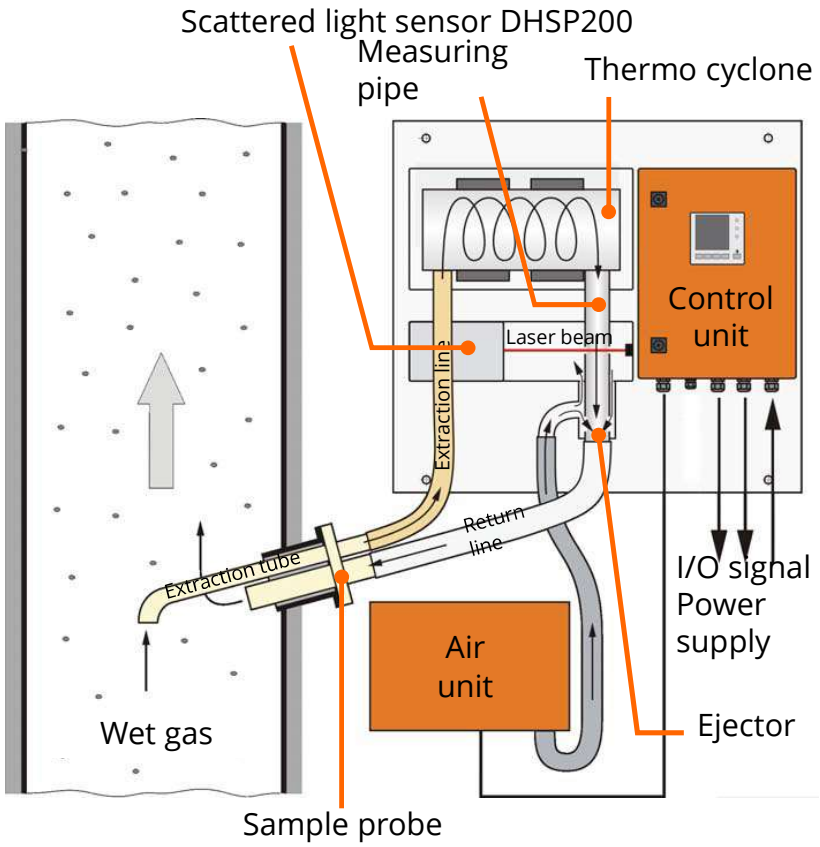
- **Low-maintenance** dust measuring devices with different measuring methods for monitoring particulate Matter in flue gas. This variety always guarantees the **ideal dust measurement** for each plant.

Particulate Monitoring in NPK Plant

Every Challenge have its own unique solution

Principle of operation – ejector principle

- Instrument air to the ejector produces an under-pressure towards the cyclone exit.
- Due to this under-pressure the thermo cyclone, extraction line and tube with nozzle are evacuated → sample gas is driven through the system.
- Extracted sample gas will be heated up above dew point → all droplets and aerosols are evaporated.
- Dry gas with dry particles enters the measuring pipe and passes the measuring cell → the particle concentration is measured using the scattered light principle
- After leaving the measuring pipe and ejector → sample gas with blowing air will be returned to the duct.

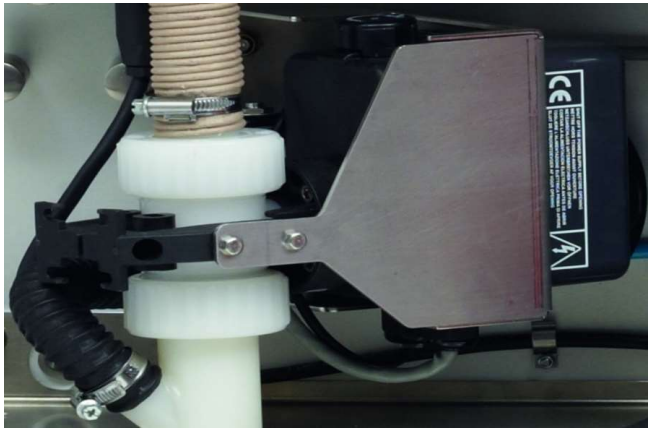


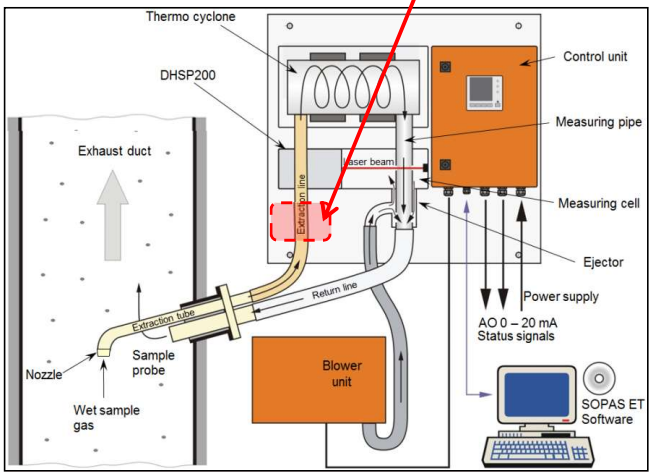
Particulate Monitoring in NPK Plant

Every Challenge have its own unique solution

Back Purging Unit

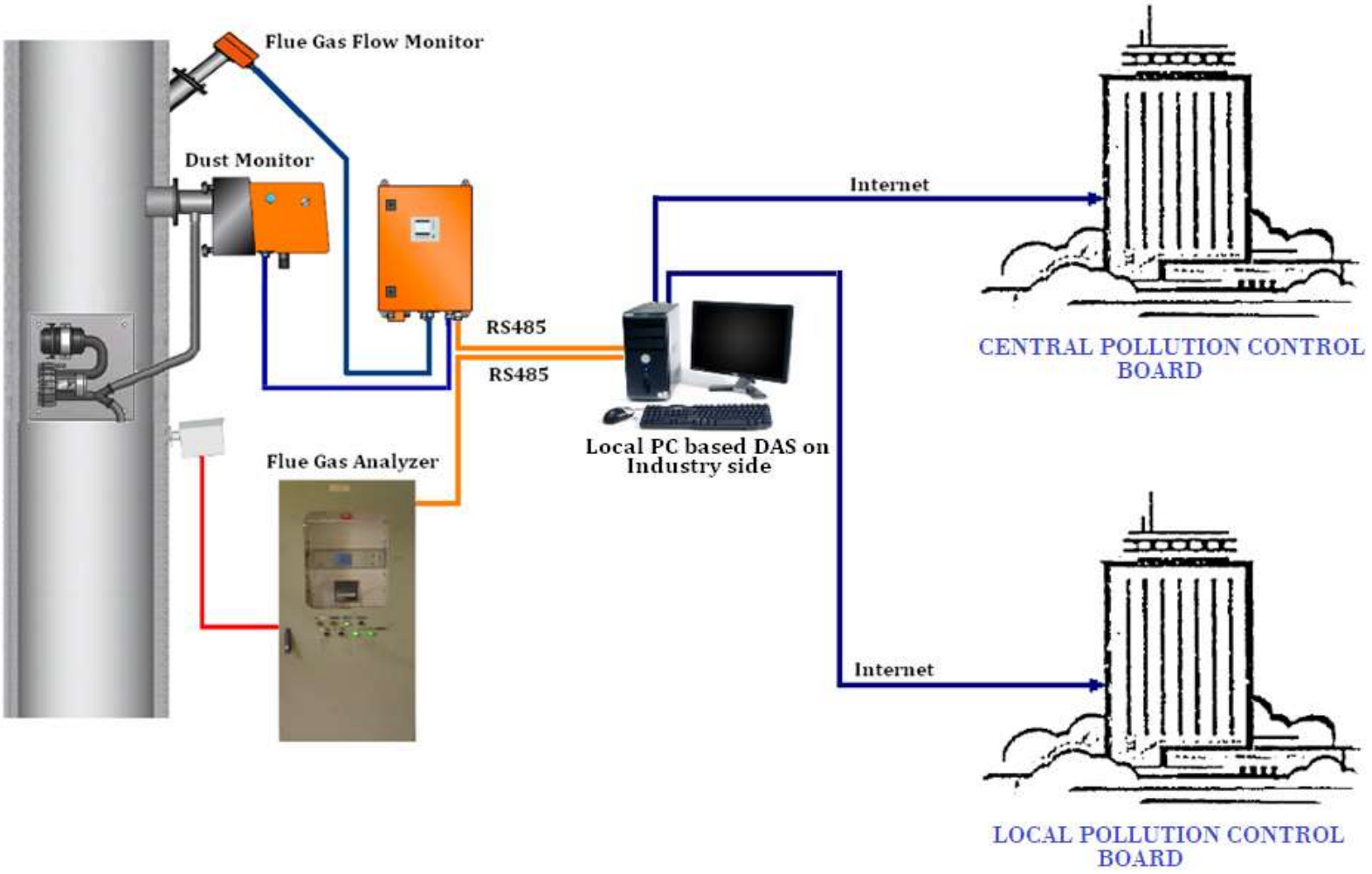
- Cleans the extraction line and extraction tube
- Uses external compressed air / Water
- Automatic cleaning during check cycle possible.





Single Point Solution

Analysis to Reporting



Single Point Solution

Partner Next Door

- Factory at Naigaon with Inventory of Spares.
- Large Installation base Across the country in all sectors.
- Experience in Connectivity with CPCB and SPCB.
- Analyzers of high quality, global leader in CEMS.
- Design, Engineering, Manufacturing, Integration, Testing & Transportation to site.
- Remote Services.

Questions?

SICK
Sensor Intelligence.

धन्यवाद