sdt
INSPIRE & CONNECT

SDT
SMART
HUB

Environment Data for Intelligent Insights

SDT is a leading provider of industrial digital transformation solutions and quantum-grade technologies.

SDT SMART HUB

The SDT Smart Hub is a powerful sensor system that incorporates early notification for intelligent environmental monitoring.

Unlike standard sensors, the Hub integrates humidity, temperature, water level, gas, and open/close sensors (for attached doors) for all-in-one coverage. As a result, the Smart Hub enables total instantaneous data control, working in the background to seamlessly deliver information accessible via an online dashboard.

The Smart Hub is the evolution of urban planning and smart city engineering.

Smart Sensor System

Temperature
Get alerts for fires or high temperatures

Humidity
Check the relative humidity of the site

Water Level
View water levels and flooding in real-time

Gas
Monitor toxic gases such as carbon monoxide or hydrogen sulfide

Open/Close
Check whether manholes, flood gates, or doors are properly secured

Sustainable Smart Hub

The Smart Hub manhole is made of a patented polymer plastic* and is stronger and lighter than iron, steel, or aluminum.

*Plasticized compound surpasses European CE certification standard EN124 for PP, PVC-U manhole lids (materials tested for smart city capability).

Underground Wireless Communication
Stable LTE connectivity despite obstruction from an underground environment and standard city construction materials.
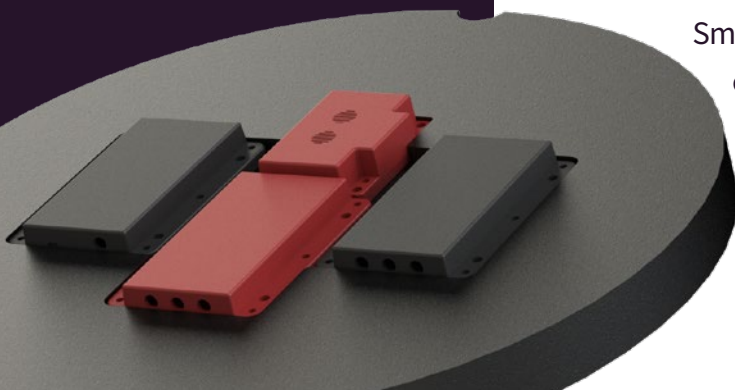
High Strength and Durability
The Smart Hub is highly durable and has a stress rating for loads greater than 45 tons, reducing replacement costs and additional resource usage.

Eco-friendly Material
The Smart Hub is constructed from a recyclable, eco-friendly new polymer product, made from 100% previously recycled plastic, and has received a green certification in Korea.

Better Urban Aesthetic
Smart Hubs easily blend with local urban design by the customizing manholes with vibrant or muted colors.

◀ SDT Smart Hub attached to manhole cover

SDT Smart Hub Usage

The Smart Hub acts as a prevention system that reduces and mitigates the risk of fires, harmful gas exposure, and flooding. The Hub brings environmental safety and quality control standards to local infrastructure, enterprises, and administrators. Maintenance insights from smart-enabled sensors offers an unparalleled display of site conditions and the ability to eliminate unnecessary maintenance procedures, while mitigating losses from downtime.

The Smart Hub is a patented plastic material that allows seamless LTE communication despite unusual connectivity challenges such as an underground placement or signal obstruction from standard construction materials. The device brings facilities up-to-date with modern remote monitoring technology that is not possible with legacy environmental monitoring systems.

SDT's engineering teams have gone to extraordinary lengths to maximise battery lifespan without sacrificing any smart capabilities. The computing architecture uses the Cortex-M4 core processor with stable LTE Cat. M1 communication and is powered by 32mAh batteries. Our smart power regulation guarantees 1 year of usage before battery replacement.

Data Storage

Data storage from the Smart Hub can be customized to user-specified public or private cloud locations or on-premise SDT ECN servers. This database customization enables users to retrieve historical data and analyse their environment over time in order to design new safety procedures and applications.

Why Smart Hub ?

Plug-and-Go

Set up is easy with SDT Smart Hub. The Smart Hub is fully functional and sends data to the cloud as soon as it is activated, with unlimited sensor network scalability

Reduced Maintenance Costs

Reduce maintenance costs by 20% and increase equipment availability by up to 10% by having connected infrastructure. Advance notice for equipment failures or problems at installation sites eliminates the need for more frequent maintenance rounds.

Centralized Control

Get alerts and important notifications anywhere. SDT Smart Hub automatically sends warning status and emergency alerts to our custom dashboard application for every site installation.

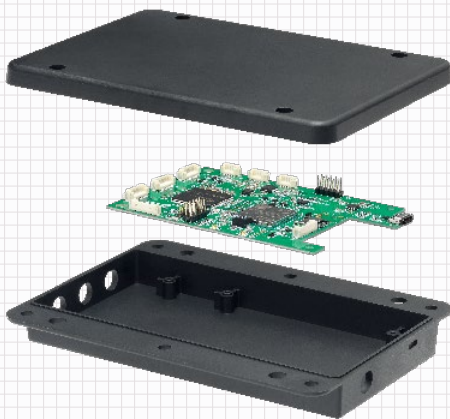# SDT Smart Hub Key Features

- Easy installation
- Customized dashboard with unlimited accounts
- Automatically mapped of install locations
- Flood, fire, and dangerous gas concentration alerts
- Low power & low network strength warning
- PSA Certified security-first engineering
- Secure data transmisison
- 1 year standard battery warranty Warranty period may vary depending on the communication method, cycle, etc.
- Low-power wireless communication using LTE Cat.M1

*All sensors or data storage architecture may be customized upon consultation (e.g. CO sensors may be replaced with H_2S)

1 Main Board
2 Sensor Board
3 Battery Case

Product Specification

Sensor	• Temperature: -40℃ to 125℃ • Relative Humidity: 0~100% • CO: 0~250 PPM • O_2: 0~25 % • H_2S: 0~100 PPM • CH_4: 0~50,000 PPM • Magnetic Contact: Door Open & Close • Ultrasonic Water Level Monitoring • Real-time Location Service (GPS)
MCU	• Core: Arm Cortex-M4, 80MHz
Cloud	• Amazon AWS Others available upon request

Dimension	• Size (Width x Length x Height):
	  [Main Assembly] 130 x 180 x 30 mm
	  [Sensor Assembly] 100 x 120 x 35 mm
	  [2 x Battery Assembly] 130 x 180 x 30 mm
	• Water resistance: IPX8
	• Operating temperature: -20~50℃
	• Housing: Polycarbonate (PC)

Main Board Layer
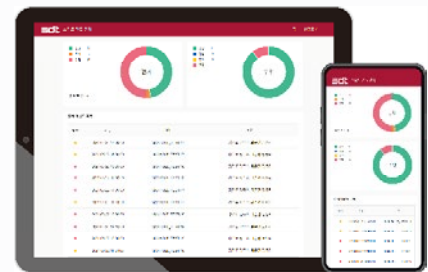
Sensor Board Layer

SDT SMART HUB DASHBOARD

Check device and site data in real time on the SDT Smart Hub Dashboard to reduce emergency response times. The dashboard offers industry-leading site management for organizations everywhere.

✔ Share Data and Track Everything

Easy access to historical data logs makes it simple to manage facilities of any size or share information interdepartmentally. Real-time sensor updates allow on-site service teams to keep ahead of schedule by taking rapid action before problems arise. Now administrators can get all the info they need in one place.

Together, the Smart Hub and Smart Hub Dashboard are transforming the future of smart infrastructure, by uniting workers, site administrators, and management with the resources they need to solve issues - reducing dangerous liabilities or critical situations with more accuracy and speed than ever before.
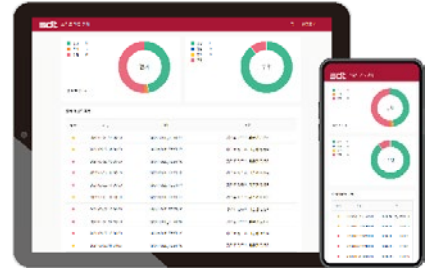
✔ Navigate your on-site jobs safer, faster, and more efficiently

Prepare for on-site visits before arrival

Allocate the proper resources for routine maintenance

Automatically notify all responsible individuals at the same time

Access data anywhere using mobile device

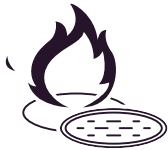| Dashboard Information	
Key Features	• Unlimited accounts • Set access level by account • Full historical logs • Alarms and notifications for critical reports • Customized whitelabel [Optional]
Device Data	• Search for location and status by region • View the number of events per sensor • View all events in a selected area • Battery usage display
Environment Data	• Site status chart (Normal, Critical, Intermittent) • Water level chart (Good, Fair, Caution, Danger) • Door open/close • Fire hazard alarm • Gas hazard alarm • Temperature & Gas real-time display

Smart Hub Dashboard

Facility and infra operations have never been easier with all the environmental sensor data that operators need, all in one place. Check device and site data in real time on the SDT Smart Hub Dashboard. Experience the best remote environmental monitoring solution for any situation.

Managing multiple sites has never been easier

Safety First

Smart Hub Technology Preventing Urban Disasters

Fire or Explosions

Fires can be difficult to detect until they are out of control, which can result in serious injuries.

Sewage Backflow

High rain falls can cause sewage backflow, which results in health hazards and expensive repairs.

Asphyxiation or Poisoning

Unmonitored gas levels inside sewers pose a frequent and real danger to workers.

Other Injuries & Hazards

Unregulated open gates or doors can cause severe fall-related injuries or fatalities, or lead to unauthorized access to facilities.