

INSTRUTEL IOT STACK

Ins_Things Edge Inos



“Make technology affordable for System Builders with Ready to Deploy Platforms”.



Value



We deliver ready-to-deploy solutions that accelerate ROI for system builders

Flexibility



Our IoT product stack is customizable and can be adapted to Business needs and Field Conditions

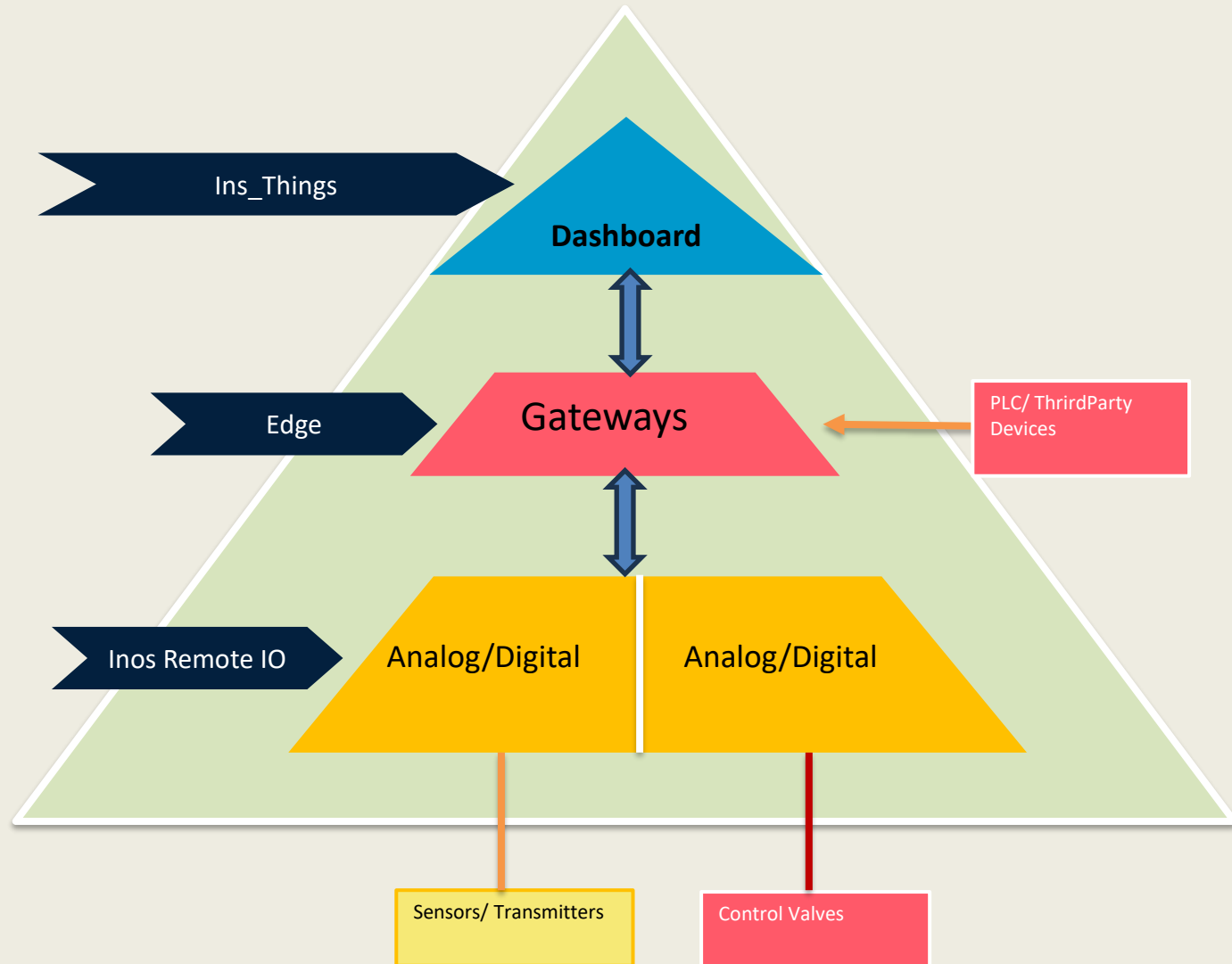
Scalable



Can be Adopted to different domain verticals and can be scaled on demand

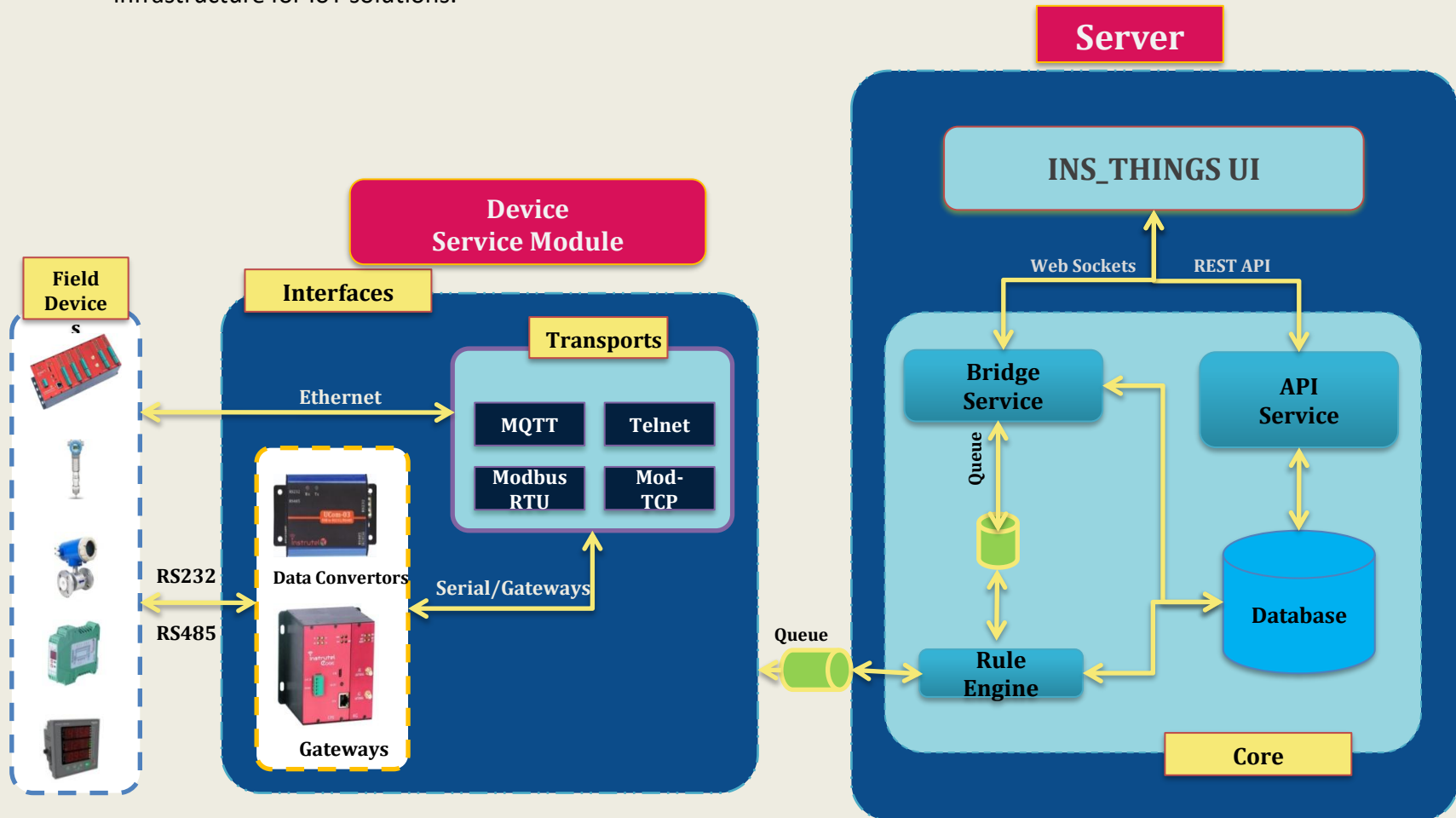


WHAT WE OFFER



INS_THINGS is a comprehensive IoT platform that enables the collection, processing, visualization, and management of data from connected devices and sensors.

It provides real-time dashboards, device management, rule engines for complex event processing, and integrations with various protocols like MQTT, HTTP, and Modbus making it a scalable server-side infrastructure for IoT solutions.





Data Collection & Processing

- Gathers telemetry data from devices using various protocols (MQTT, CoAP, HTTP) and converts it into a usable format.

Device Management:

- Provisions, monitors, and manages IoT devices, assets, and customers.

Data Visualization:

- Creates customizable, real-time dashboards with widgets to display device data and insights.

Rule Engine:

- Builds complex workflows to process incoming data, trigger alarms, and control devices.



Devices

Devices represent field-level hardware used to collect real-time data from instruments like energy and industrial equipment (like PLC etc). These devices act as the data source layer for the INS_THINGS platform.

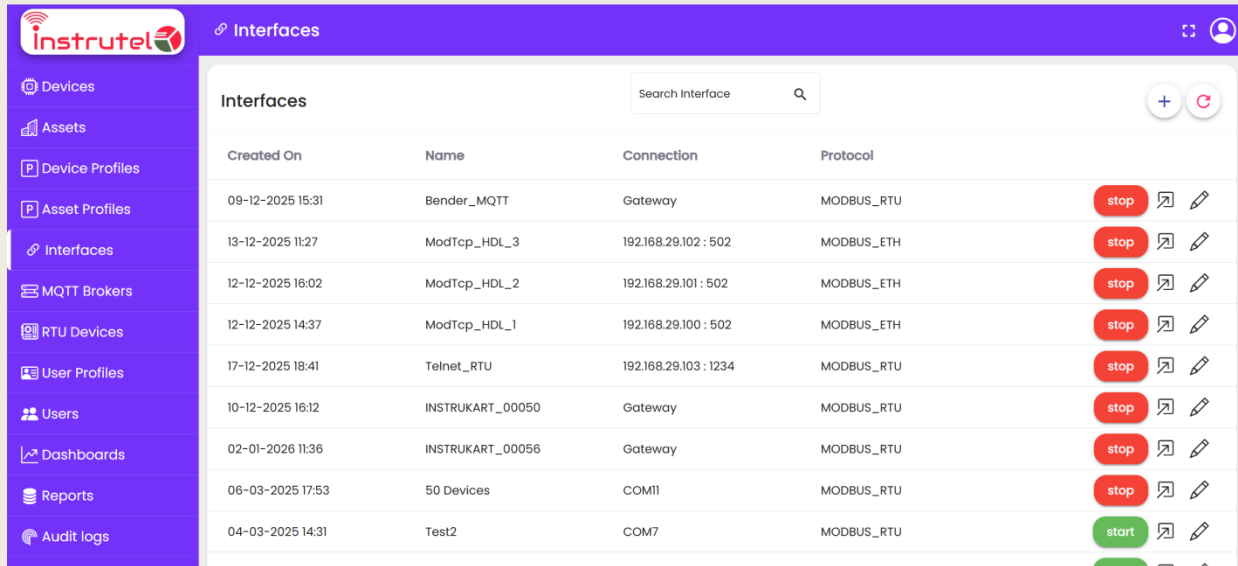
The screenshot displays the 'RTU Devices' management page in the Instrutel application. The page features a sidebar with navigation options: Devices, Assets, Device Profiles, Asset Profiles, Interfaces, MQTT Brokers, RTU Devices (selected), User Profiles, Users, Dashboards, Reports, and Audit logs. The main content area shows a table of RTU devices with the following data:

Created On	Mfg.Partnumber	Description	
01-03-2025 12:44	Elite-500 [Manufacturer : SECURE]	Energy Meter	
01-03-2025 12:18	Elite-445 [Manufacturer : SECURE]	Energy Meter	
26-02-2025 10:21	Inos_EA08 [Manufacturer : INSTRUTEL SYSTEM PVT LTD]	8 Analog Outputs ModTCP/ MQTT	
25-02-2025 18:33	inos_d008-R [Manufacturer : INSTRUTEL SYSTEMS PVT LTD]	Relay Module	
25-02-2025 18:14	inos_A08 [Manufacturer : INSTRUTEL SYSTEMS PVT LTD]	8 Channel Analog Output Module	
25-02-2025 17:01	inos_A80 [Manufacturer : INSTRUTEL SYSTEMS PVT LTD]	8 Channel Analog Inputs Module	
	inos_d0012		

- Supports devices from different manufacturers.
- Maintain reusable device definitions.
- Bulk import devices for faster on boarding.
- Search devices instantly.
- Each device links to detailed register/parameter configuration.

Interfaces – Data Collection & Communication Layer

Interfaces define how field devices communicate with the INS_THINGS platform. They act as the bridge between RTU devices and the software, enabling real-time data collection using industry-standard protocols.



The screenshot displays the 'Interfaces' management page in the Instrutel web application. The interface includes a search bar and a table with columns for 'Created On', 'Name', 'Connection', and 'Protocol'. Each row also features a status button (stop or start) and edit/delete icons.

Created On	Name	Connection	Protocol	Status	Actions
09-12-2025 15:31	Bender_MQTT	Gateway	MODBUS_RTU	stop	🔗 ✎
13-12-2025 11:27	ModTcp_HDL_3	192.168.29.102 : 502	MODBUS_ETH	stop	🔗 ✎
12-12-2025 16:02	ModTcp_HDL_2	192.168.29.101 : 502	MODBUS_ETH	stop	🔗 ✎
12-12-2025 14:37	ModTcp_HDL_1	192.168.29.100 : 502	MODBUS_ETH	stop	🔗 ✎
17-12-2025 18:41	Telnet_RTU	192.168.29.103 : 1234	MODBUS_RTU	stop	🔗 ✎
10-12-2025 16:12	INSTRUKART_00050	Gateway	MODBUS_RTU	stop	🔗 ✎
02-01-2026 11:36	INSTRUKART_00056	Gateway	MODBUS_RTU	stop	🔗 ✎
06-03-2025 17:53	50 Devices	COM11	MODBUS_RTU	stop	🔗 ✎
04-03-2025 14:31	Test2	COM7	MODBUS_RTU	start	🔗 ✎

Supported Communication Types

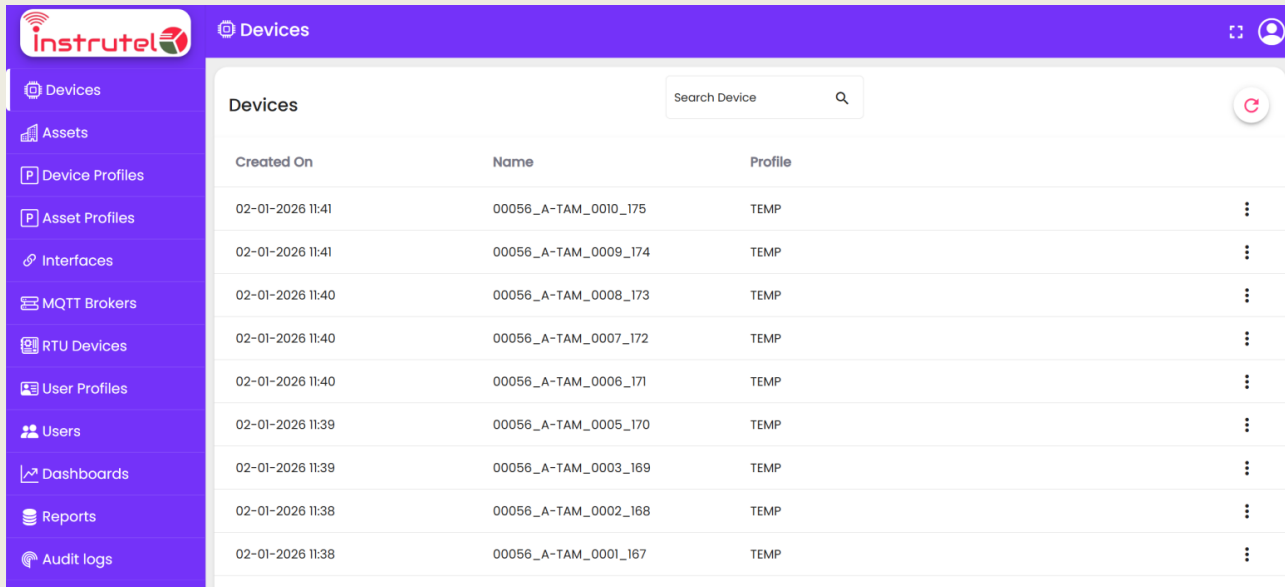
- Ethernet-Based Interfaces
 - Modbus TCP (ModTCP)
 - Modbus RTU over Ethernet
- Serial-Based Interfaces
 - Modbus RTU (COM ports)
- Gateway-Based Interfaces
 - MQTT Protocol

Key Features

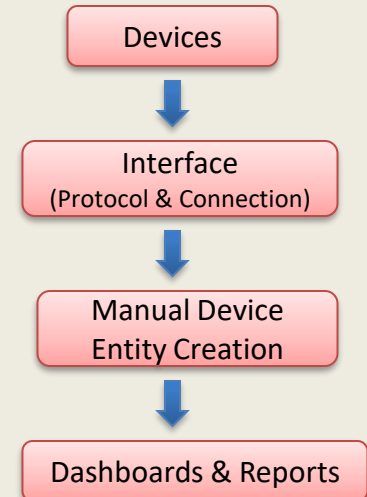
- **Multi-Protocol Support**
 - Ethernet, Serial, and MQTT Gateway communication Modbus RTU over Ethernet
- **Flexible Connectivity**
 - IP-based, COM-port-based, and gateway-based connections
- **Start / Stop Data Collection**
 - Control data polling with a single click with password protection
- **Scalable Interface Management**
 - Supports multiple interfaces for large deployments

Overview

Devices are manually created monitoring entities in INS_THINGS. When an RTU device is added to an interface, users can manually create device entities that represent actual monitoring points used for dashboards, reports, and analytics.



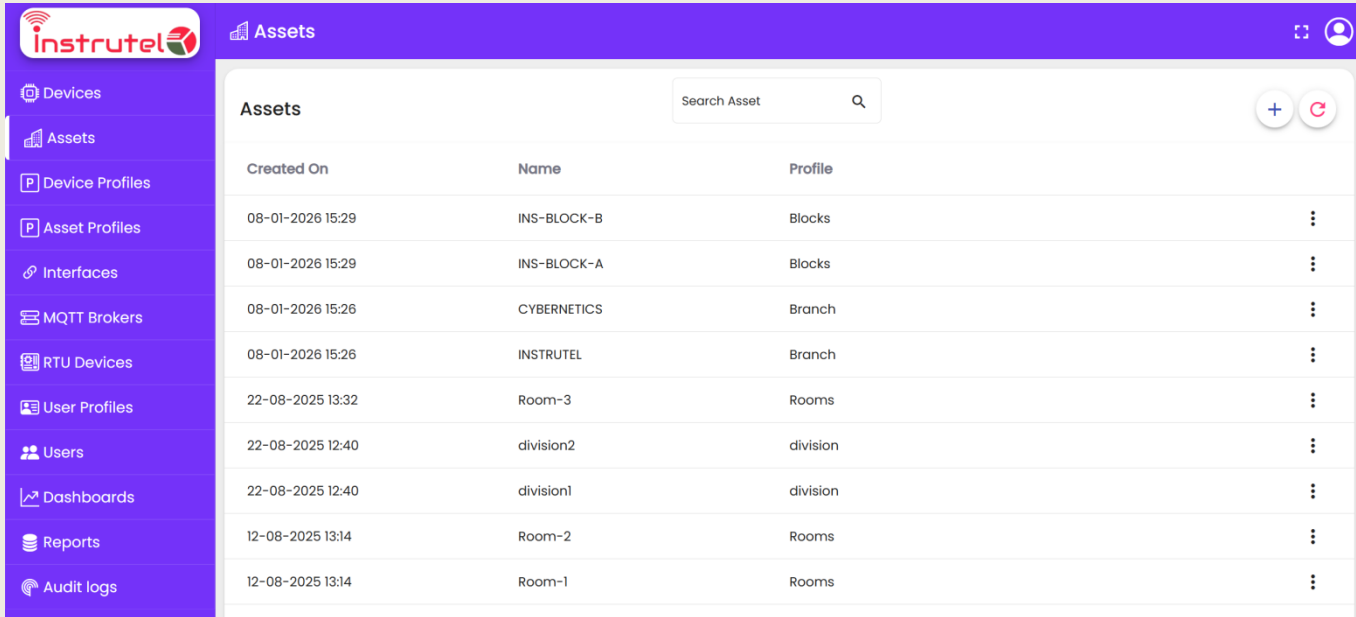
Created On	Name	Profile
02-01-2026 11:41	00056_A-TAM_0010_175	TEMP
02-01-2026 11:41	00056_A-TAM_0009_174	TEMP
02-01-2026 11:40	00056_A-TAM_0008_173	TEMP
02-01-2026 11:40	00056_A-TAM_0007_172	TEMP
02-01-2026 11:40	00056_A-TAM_0006_171	TEMP
02-01-2026 11:39	00056_A-TAM_0005_170	TEMP
02-01-2026 11:39	00056_A-TAM_0003_169	TEMP
02-01-2026 11:38	00056_A-TAM_0002_168	TEMP
02-01-2026 11:38	00056_A-TAM_0001_167	TEMP



Key Features

- **Manual Device Entity Creation**
 - Users create devices based on RTU device and interface configuration
- **Profile-Based Configuration**
 - Devices follow predefined device profiles for structured data
- **Controlled Mapping**
 - Full control over which RTU parameters become monitoring devices
- **Central Device Entity Management**
 - View, manage, and organize all devices in one place

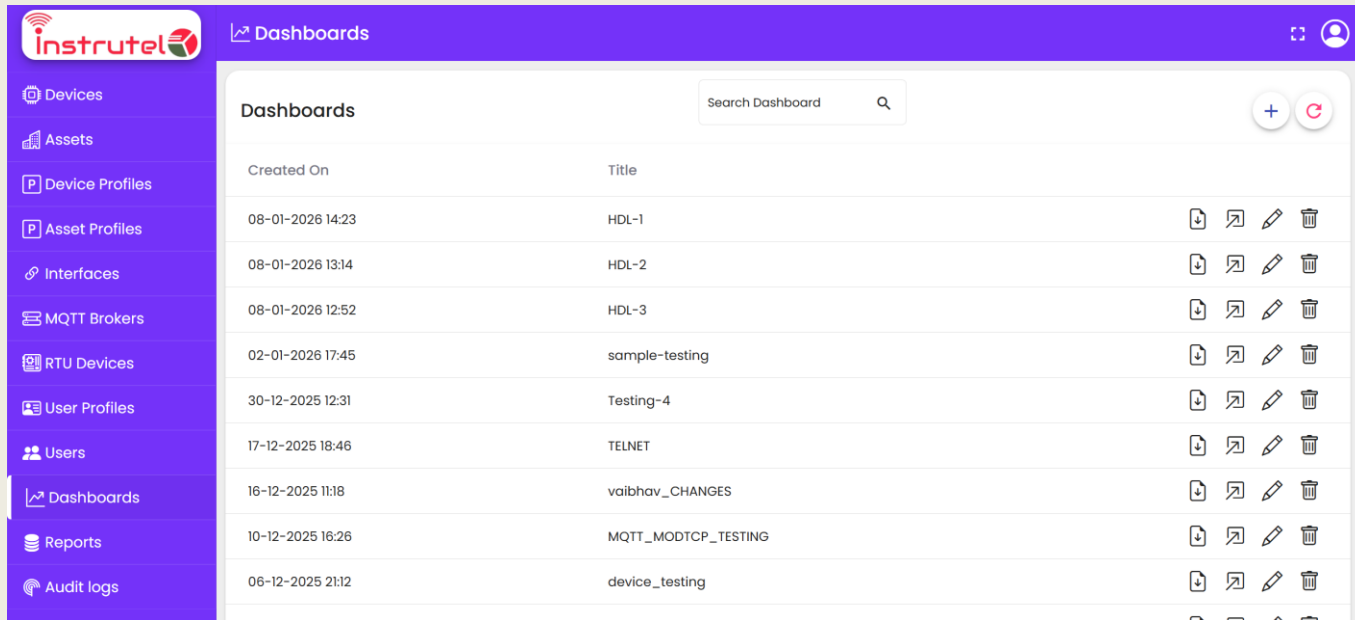
The Assets module allows users to create, organize, and manage physical or logical assets such as branches, blocks, divisions, and rooms. These assets form the foundation for location-wise data visualization and monitoring.



Created On	Name	Profile	
08-01-2026 15:29	INS-BLOCK-B	Blocks	⋮
08-01-2026 15:29	INS-BLOCK-A	Blocks	⋮
08-01-2026 15:26	CYBERNETICS	Branch	⋮
08-01-2026 15:26	INSTRUTEL	Branch	⋮
22-08-2025 13:32	Room-3	Rooms	⋮
22-08-2025 12:40	division2	division	⋮
22-08-2025 12:40	division1	division	⋮
12-08-2025 13:14	Room-2	Rooms	⋮
12-08-2025 13:14	Room-1	Rooms	⋮

- Enables location-wise data monitoring in dashboards.
- Improves data organization and clarity.
- Simplifies device-to-location mapping.
- Helps management analyze performance across branches, blocks, or rooms.
- Provides a scalable foundation for future expansion.

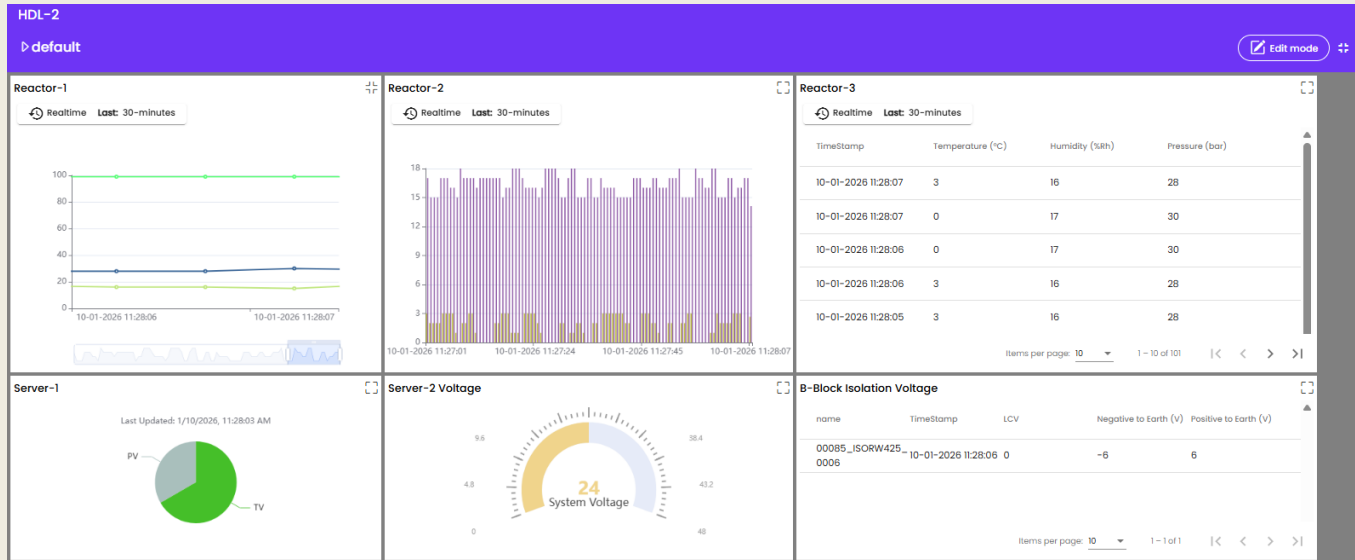
Dashboards provide a visual layer to monitor real-time and historical data collected from field devices. Users can design dashboards using multiple widgets to gain instant insights into operations.



Key Features

- **Multiple Dashboards Support**
 - Create dashboards per plant, block, line, or system
 - **Widget-Based Design**
 - Each dashboard contains multiple widgets
 - **Editable Layout**
 - Drag-and-drop widgets in edit mode
 - **Reusable Dashboards**
 - Copy dashboards for faster setup
- Centralized operational visibility.
 - Faster decision-making.
 - Converts raw field data into clear visual insights for faster decisions.

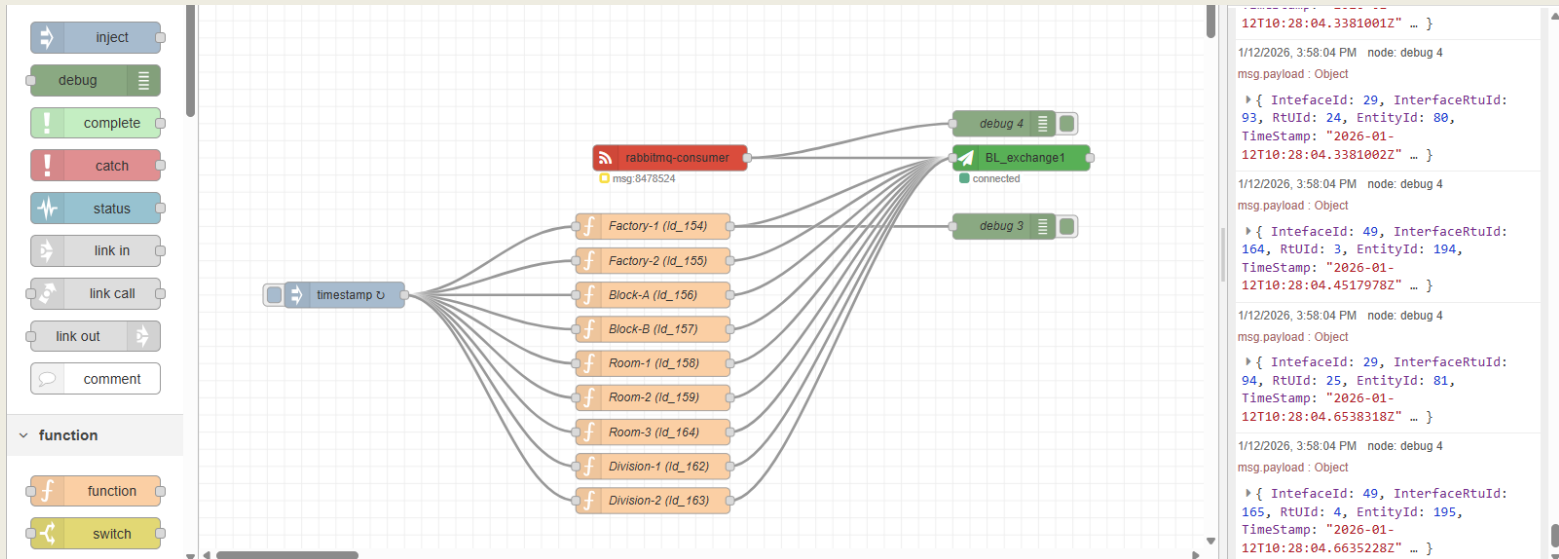
Widgets are the building blocks of dashboards. Each widget represents real-time or historical data using intuitive visual formats.



Key Features

- **Real-Time & Time-Range Data**
 - Real-time (last 30 minutes)
 - Custom time window selection
- **Auto Refresh**
 - Live updates without page reload
- **Full-Screen View**
 - Expand widgets for detailed analysis
- **Reusable Dashboards**
 - Copy dashboards for faster setup
- Centralized operational visibility.
- Faster decision-making.
- Converts raw field data into clear visual insights for faster decisions.

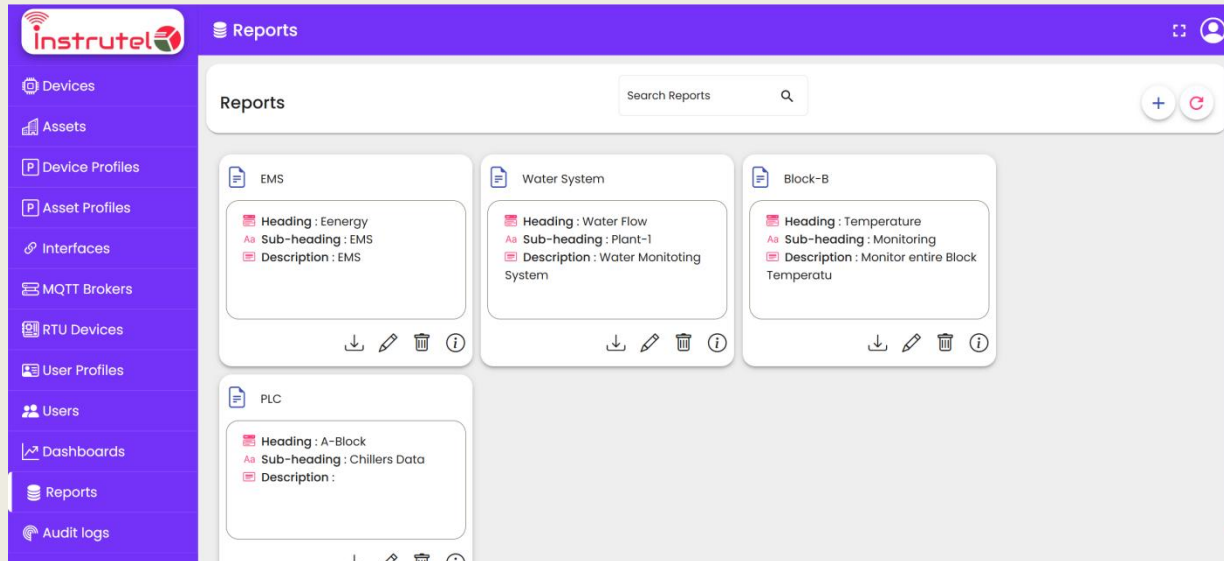
Make your business logic with Node-Red with pre configured INS_THINGS node modules. With all required APIs and Rule Nodes your business logic can be integrated with third-party applications and the most flexible No-Code industry proven Node-Red environment



Key Features

- **Pre Configured Rule nodes** for standard requirements like Utilities
- **Alarms**
 - Create Alarms and Acknowledgments with
 - Mail and SMS Integrations
- **Third Party Integrations:**
Integrate with any applications with available APIs
- **Multiple Rule Chains**
Create Multiple Applications like Energy, Water, Warehouse for a customer.

The Reports module enables users to create structured report templates and download historical data collected from devices in a well-formatted and shareable manner.



Key Features

- **Reusable Report Templates**
 - Create once, reuse multiple times
- **Application-Specific Reports**
 - Energy, Water, Temperature, PLC, etc
- **Centralized Report Management**
 - All reports accessible from a single place
- Easy access to historical data.
- Standardized reporting across the organization.
- Supports compliance, audits, and analysis.

Users can define custom report templates by selecting device entities and required parameters, making reports highly flexible and relevant to specific business needs.

The screenshot shows the 'Add New Report' interface in the Instrutel system. The left sidebar contains navigation options: Devices, Assets, Device Profiles, Asset Profiles, Interfaces, MQTT Brokers, RTU Devices, User Profiles, Users, Dashboards, Reports, and Audit logs. The main area is titled 'Add New Report' and contains the following fields:

- Report Name*: Block-B
- Report Heading*: Temperature
- Report Sub-heading: Monitoring
- Description: Monitor entire Block Temperature

Below the fields is a table with the following structure:

Sr.No	Entity	Property Keys	Actions
1	inos_A80_96	A80_03, A80_04, A80_05, A80_06	[Red Trash Icon]
2	inos_A08_97	A08_08, A08_05, A08_06, A08_07, A08_04, A08_02	[Red Trash Icon]
	Entity	Property Keys	

At the bottom of the table is a red button labeled 'Add Report'.

Key Features

➤ Entity-Based Report Design

- Select one or multiple device entities

➤ Parameter-Level Selection

- Choose only required parameters

- Avoids unnecessary data overload.

- Ensures meaningful and relevant reports.

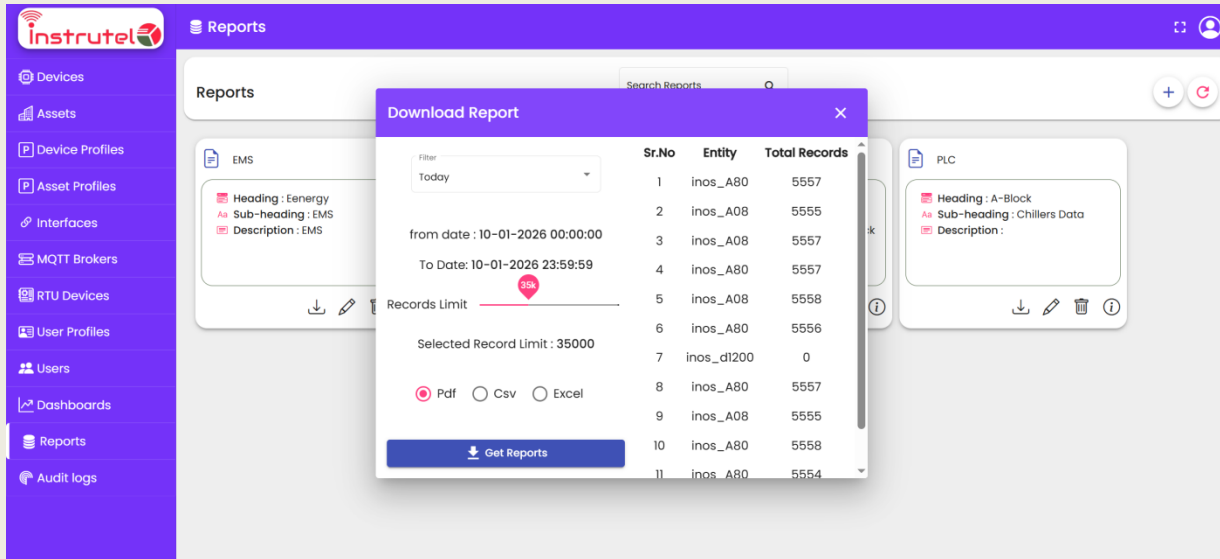
- Reduces manual data processing.

Example Use Cases

- Block-wise temperature monitoring.
- Energy consumption reports.
- PLC and chillers performance reports.

Report Download – Flexible Filters & Export Options

Once a report template is created, users can download reports on demand by applying filters such as date range, record limit, and file format.



The screenshot displays the Instrutel Reports interface. A 'Download Report' dialog box is open, showing a table of reports and various filtering options. The table lists reports with their serial numbers, entities, and total record counts. The dialog also includes a date range selector, a records limit slider, and export format options (Pdf, Csv, Excel).

Sr.No	Entity	Total Records
1	inos_A80	5557
2	inos_A08	5555
3	inos_A08	5557
4	inos_A80	5557
5	inos_A08	5558
6	inos_A80	5556
7	inos_d1200	0
8	inos_A80	5557
9	inos_A08	5555
10	inos_A80	5558
11	inos_A80	5554

Key Features

- **Custom Date Range Selection**
 - Download reports for specific periods
- **Record Limit Control**
 - Manage large data volumes efficiently
- **Multiple Export Formats**
 - PDF for sharing
 - Excel for analysis
 - CSV for integration
- **Entity-Wise Record Visibility**
 - Displays record count for each selected device entity

Audit Logs – Complete System Activity Tracking

Audit Logs record every important action performed by users in the INS_THINGS platform. This ensures traceability, accountability, and transparency across the system.

Date	User	Action	Entity	Old Data	New Data	
10-01-2026 11:01:50	hari.d@instrutel.com	Update	ReportEntity	{'CreatedOn' ...	{'CreatedOn' ...	(i)
10-01-2026 11:01:50	hari.d@instrutel.com	Update	ReportEntity	{'CreatedOn' ...	{'CreatedOn' ...	(i)
10-01-2026 11:01:50	hari.d@instrutel.com	Update	ReportEntity	{'CreatedOn' ...	{'CreatedOn' ...	(i)
10-01-2026 11:01:50	hari.d@instrutel.com	Update	ReportEntity	{'CreatedOn' ...	{'CreatedOn' ...	(i)
10-01-2026 11:01:49	hari.d@instrutel.com	Update	Report	{'CreatedOn' ...	{'CreatedOn' ...	(i)
10-01-2026 11:01:19	hari.d@instrutel.com	Update	ReportEntity	{'CreatedOn' ...	{'CreatedOn' ...	(i)
10-01-2026 11:01:19	hari.d@instrutel.com	Update	ReportEntity	{'CreatedOn' ...	{'CreatedOn' ...	(i)
10-01-2026 11:01:19	hari.d@instrutel.com	Update	ReportEntity	{'CreatedOn' ...	{'CreatedOn' ...	(i)

Key Features

➤ User Activity Tracking

- Captures who did what and when

➤ Entity-Level Logging

- Logs changes across reports, devices, assets, and configurations

➤ Before & After Data Visibility

- Shows old data vs updated data

➤ Search & Filter Support

- Quickly find logs based on user, action, or entity

➤ Read-Only & Secure

- Logs cannot be modified by users

- Ensures accountability of user actions.

- Helps in troubleshooting and root-cause analysis.

- Supports compliance and audit requirements.

- Improves system security and trust

Our Edge Devices are categorized into three broad categories.

- 1) For Third Party Devices Integration/ Field Devices Integration
- 2) Connected IO Intelligence on the Edge
- 3) Edge Devices for OEMs

Edge



Application

For connecting RTU devices on RS485/Ethernet to Cloud

Features

- 1) Inbuilt 4G GSM
- 2) Connect upto 30 Devices
- 3) Remotely Configurable
- 4) Transmits data in configured intervals
- 5) Abstracts field parameters by converting data to JSON

Swift



Application

Intelligence on Edge. Control and Transmit data to cloud

Features

- 1) Inbuilt 4G GSM
- 2) Connect Analog and Digital Sensors
- 3) Build Customizable business logics.
- 4) Control Relays, Valves
- 5) Transmits data in configured intervals
- 6) Abstracts field parameters by converting data to JSON

INS_Sbc1600



Application

Intelligence on Edge. Made for Machine OEMs for connected assets.

Features

- 1) 24 DI, 16DO, 16AI, 8 AO
- 2) 2 RS485 Ports
- 3) Build User Application in minimum time
- 4) Connect assets and control in realtime

Remote I/O systems bridge the gap between a central controller (PLC, DCS) and field devices (sensors, actuators) located away from the control panel. These systems consist of remote I/O modules installed near field devices, connected to a central controller through a communication network. The remote modules handle signal conditioning, data acquisition, and control functions, reducing wiring complexity and simplifying plant layout.

1. **Benefits of Remote I/O Systems for Indian Industries Enhanced Efficiency and Productivity:** Remote I/O minimises cabling needs, reducing installation time and maintenance costs. This allows for flexible plant layouts, easier system expansion, and faster troubleshooting.

2. **Improved Data Acquisition and Control:** Remote I/O systems offer real-time data acquisition from various field devices, enabling better process monitoring and control. This translates to optimized production processes, improved product quality, and reduced downtime.

3. **Increased Scalability and Flexibility:** Remote I/O systems can be easily expanded to accommodate additional I/O points as production needs evolve. This modularity allows industries to adapt to changing demands without significant infrastructure overhaul.

4. **Reduced Costs and Increased Safety:** By minimising cabling and simplifying wiring, remote I/O systems contribute to lower installation and maintenance costs. Additionally, with fewer cables in the control room, the risk of electrical hazards decreases, improving overall safety.



Digital Outputs



Digital Inputs



Analog Inputs



Analog Outputs



Industry Verticals

Railways

For 25KV Traction
control and
Monitoring

- Transmission lines Voltage, Health and Power
- Circuit Breakers Status and Control
- BMs Breakers and Control

Pharma/ Bulk Drugs

•Utilities

- Boilers
- Compressors
- Energy
- Water

Advantage of
having one single
dash boards for
different
parameters

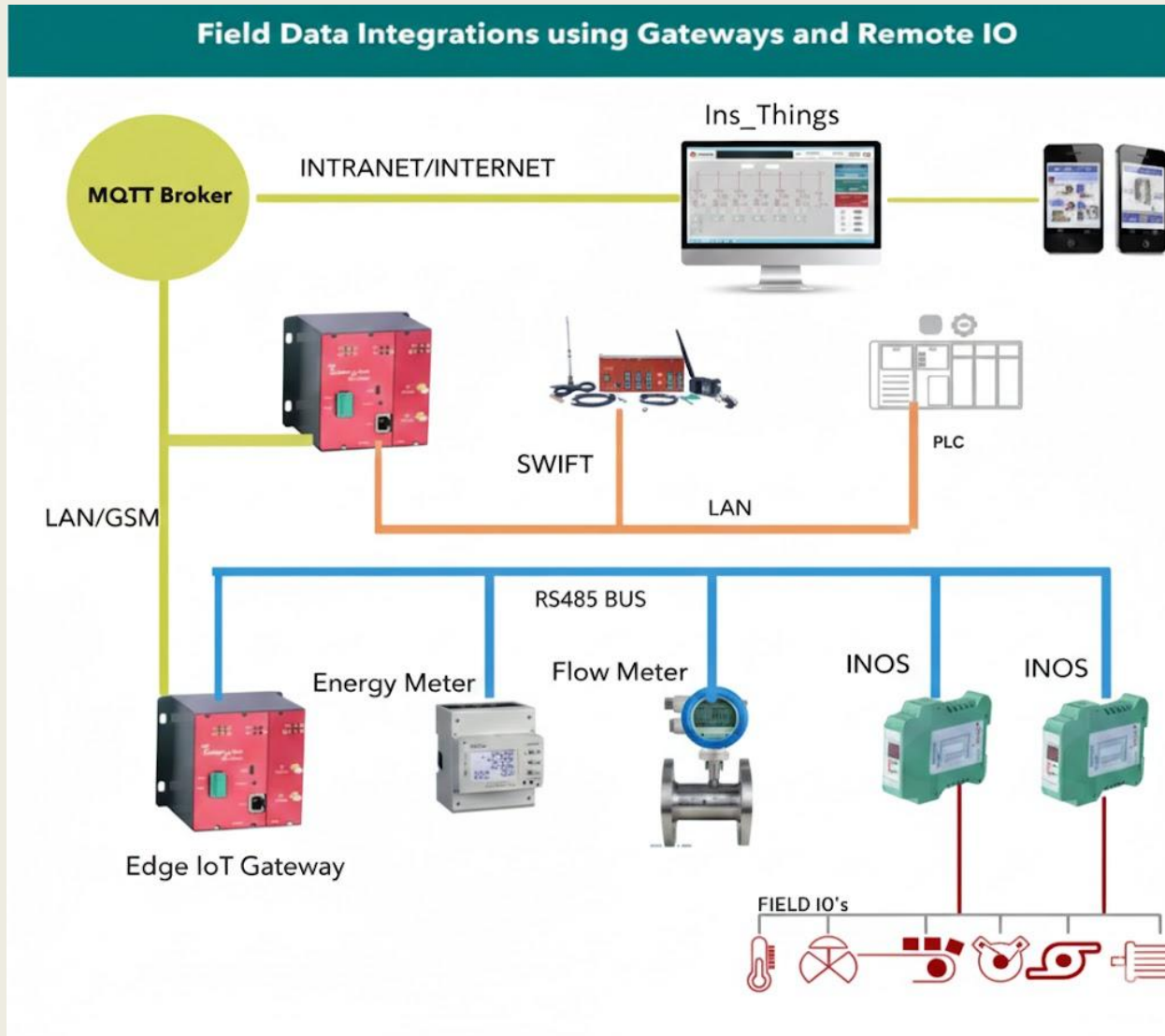
Solar Energy

- Monitor Solar energy generation in real time
- Monitor Energy generated in a Day-Month-Year



IoT Stack Application

The image depicts the real-time integration of various modules of IoT Stack working along with third-party devices for real-time monitoring applications.



Use case

Thanks for **your
interest.**

**Contact us on
nbk@instrutel.com
9989822468**