

# WIRELESS MONITORING SOLUTIONS



inter-  
teknik



# CONTINUOUS WIRELESS MONITORING OF ON-LOAD LV/MV ELECTRICAL DEVICES

Inter-Teknik surface temperature sensors / ambient temperature and humidity sensors

- Operating under load (dielectrically resistant)
- Wireless communication
- Integration into main system via industrial communication protocol
- Continuous monitoring of surface temperature and humidity at critical points
- Easy installation
- Short-Term Return on investment (ROI) performance

Approximately, 25% of electrical faults/fires are due to loose connections, and about 20% are due to ambient conditions.

- Time and cost savings with predictive maintenance
- Predetermination of fault sources
- Dew point detection
- Smart load management
- OPEX reduction by optimisation of allocation site teams
- Improving SAIDI and SAIFI indexes
- Maximizing system uptime
- Maximizing machine uptime
- Eliminate need for periodic testing



## LONG LASTING BATTERY

With its innovative algorithm, our sensors offer a battery life of up to  $\geq 5$  years.

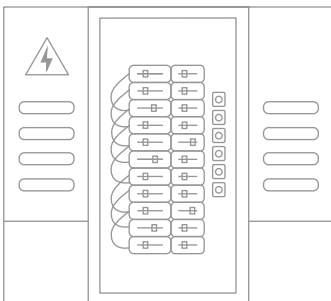


# FIELDS OF APPLICATION

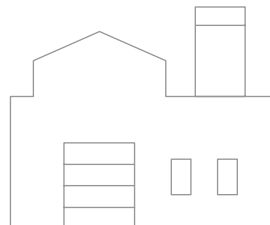
- Low Voltage Switchboards
- Medium Voltage Switchgear
- Transformer Substations
- Electrical Infrastructure of Industrial Facilities
- Bus-bar Monitoring
- Transformer / Reactor Monitoring
- Climatic Environment
- Disconnecter / Circuit Breaker Monitoring

More often than not, excessive temperature rise in bus-bars can be considered as a harbinger of a major problem or fire. These hidden problems must be observed by means of periodic maintenance, but taking such precautions may become complex due to the following reasons.

- Inaccessibility to the intended location, and visual impairment to monitor all points (For instance, bus-bars)
- Safety of maintenance operators
- Facility's lack of tolerance for power outages due to maintenance



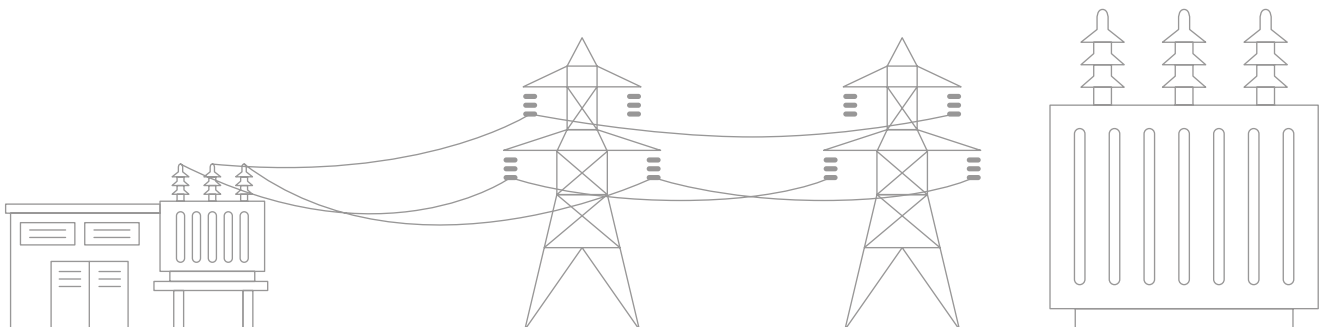
Switchgear/switchboard



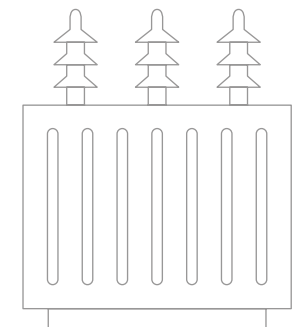
Factory



Industrial Plant



Substation



Transformer



Capacitor Bank Monitoring



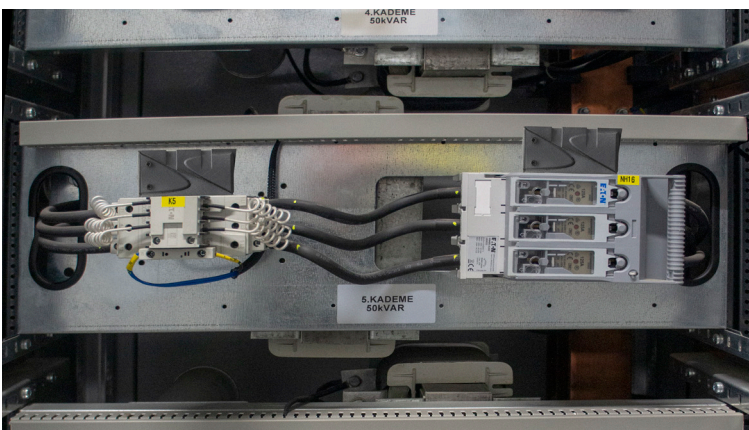
Busbar Monitoring



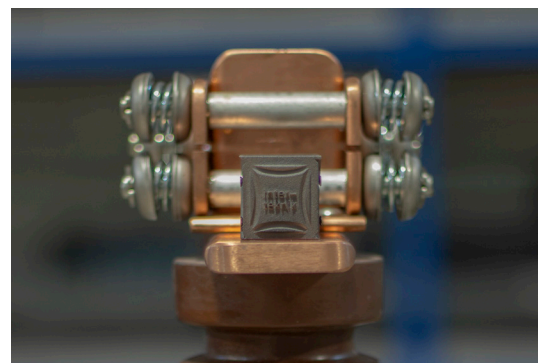
Transformer Substations



Circuit Breaker Monitoring



Industrial Facilities

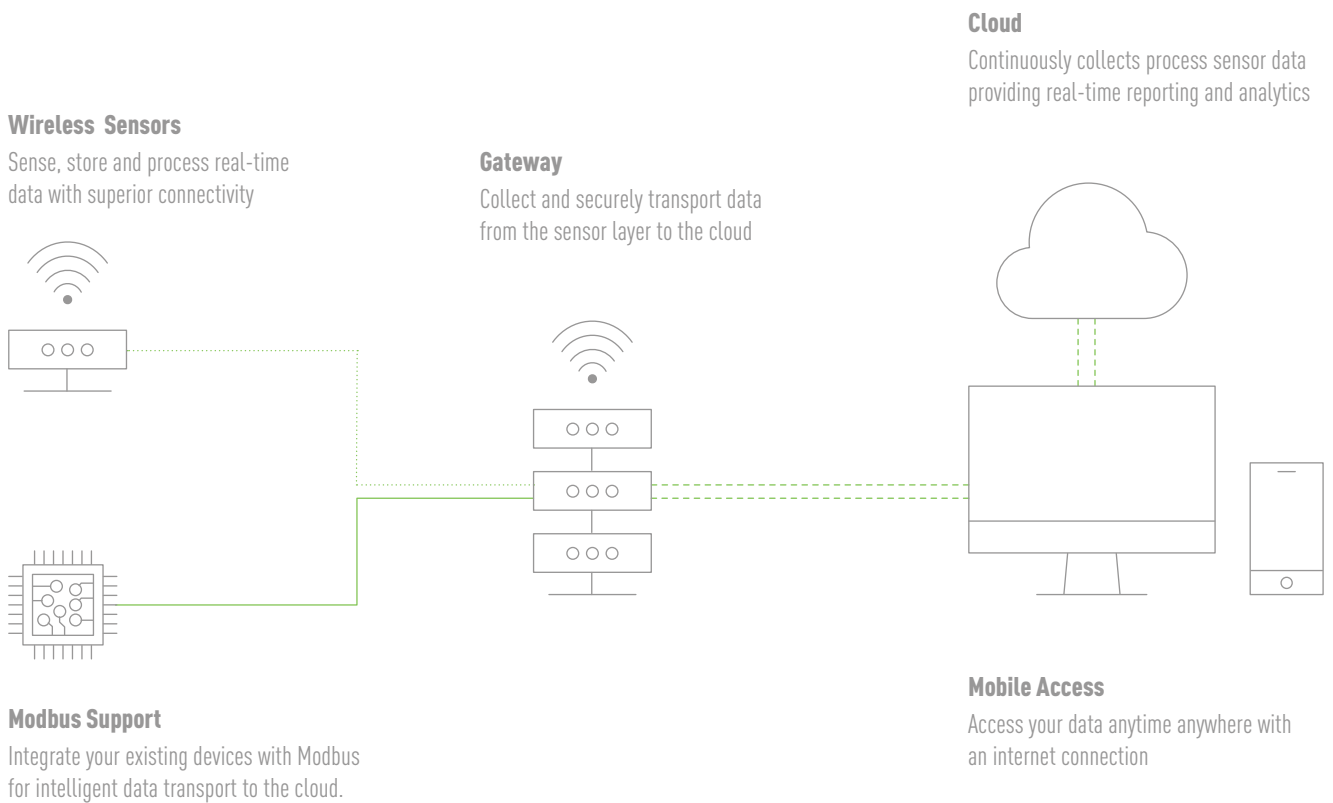


Disconnecter

# SPECIFICATIONS

- Battery life of up to  $\geq 5$  years without replacement
- Communication distance of up to 60 meters

## System Architecture



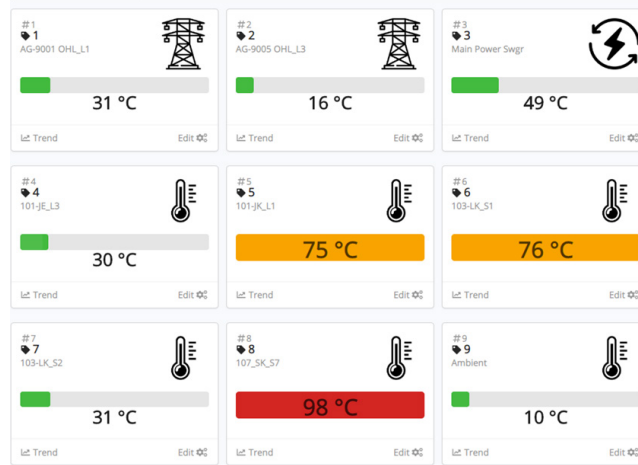
## TECHNICAL SUPERVISION BY OUR EXPERIENCED TEAM

- System commissioning
- SCADA and DCS Integration
- Fault detection
- Real-time alarms
- Data management consultation
- Analysis of sensor data
- Training of field operators

# WEB INTERFACE

In facilities where no SCADA system is available, the temperature can be monitored by using Web interface.

## Home Page



## Wireless Temperature Monitoring System - Alarm Page

Show 50 entries Search:

Alarm Time	Sensor ID	Alarm Message
2020-04-25 00:01:00.000	32	- alarm (level-2) limit has been exceeded! Temperature: 52°C
2020-04-25 00:02:00.000	26	- warning (level-1) limit has been exceeded! Temperature: 11°C
2020-04-25 00:03:00.000	49	- alarm (level-2) limit has been exceeded! Temperature: 70°C
2020-04-25 00:04:00.000	45	- alarm (level-2) limit has been exceeded! Temperature: 63°C
2020-04-25 00:05:00.000	40	- alarm (level-2) limit has been exceeded! Temperature: 94°C
2020-04-25 00:06:00.000	11	- alarm (level-2) limit has been exceeded! Temperature: 65°C
2020-04-25 00:07:00.000	47	- warning (level-1) limit has been exceeded! Temperature: 89°C
2020-04-25 00:08:00.000	16	- alarm (level-2) limit has been exceeded! Temperature: 12°C
2020-04-25 00:09:00.000	25	- warning (level-1) limit has been exceeded! Temperature: 99°C
2020-04-25 00:10:00.000	32	- warning (level-1) limit has been exceeded! Temperature: 81°C
2020-04-25 00:11:00.000	14	- warning (level-1) limit has been exceeded! Temperature: 98°C
2020-04-25 00:12:00.000	17	- warning (level-1) limit has been exceeded! Temperature: 84°C
2020-04-25 00:13:00.000	23	- warning (level-1) limit has been exceeded! Temperature: 37°C
2020-04-25 00:14:00.000	20	- alarm (level-2) limit has been exceeded! Temperature: 30°C
2020-04-25 00:15:00.000	49	- alarm (level-2) limit has been exceeded! Temperature: 79°C
2020-04-25 00:16:00.000	23	- warning (level-1) limit has been exceeded! Temperature: 70°C
2020-04-25 00:17:00.000	30	- warning (level-1) limit has been exceeded! Temperature: 77°C
2020-04-25 00:18:00.000	8	107_SK_S7 - alarm (level-2) limit has been exceeded! Temperature: 92°C
2020-04-25 00:19:00.000	5	101-JK_L1 - alarm (level-2) limit has been exceeded! Temperature: 15°C
2020-04-25 00:20:00.000	41	- warning (level-1) limit has been exceeded! Temperature: 15°C
2020-04-25 00:21:00.000	45	- alarm (level-2) limit has been exceeded! Temperature: 96°C
2020-04-25 00:22:00.000	2	AG-9005 OHL_L3 - alarm (level-2) limit has been exceeded! Temperature: 42°C
2020-04-25 00:23:00.000	28	- warning (level-1) limit has been exceeded! Temperature: 33°C

## Configuration Page

Sensor Diagnostics

Sensor Configuration

# Sensor No	Sensor ID	Description	Warning Limit	Alarm Limit
1	1	AG-9001 OHL_L1	60	90
2	2	AG-9005 OHL_L3	60	90
3	3	Main Power Swgr	75	110
4	4	101-JE_L3	55	75
5	5	101-JK_L1	55	75
6	6	103-LK_S1	60	80
7	7	103-LK_S2	60	80
8	8	107_SK_S7	60	80
9	9	Ambient	45	60

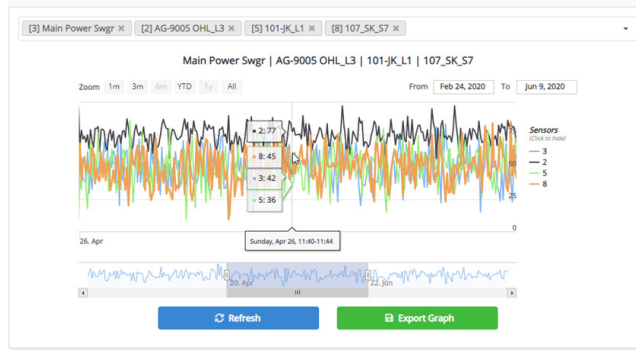
To Add/Remove sensor(s) Open Configuration Wizard

SCADA/DCS Communication Parameters

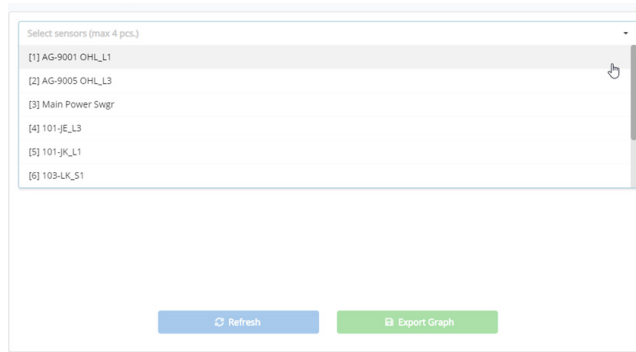
Data Log Period:



## Trend Page



## Trend Page (Filtering Sensor Nodes)













## Trend Page (Graphics View)



## Configuration Page

# Sensor No	Sensor ID	Description	Warning Limit	Alarm Limit
3	3	Main Power Swgr	75	110

Sensor Icon

Cancel Save

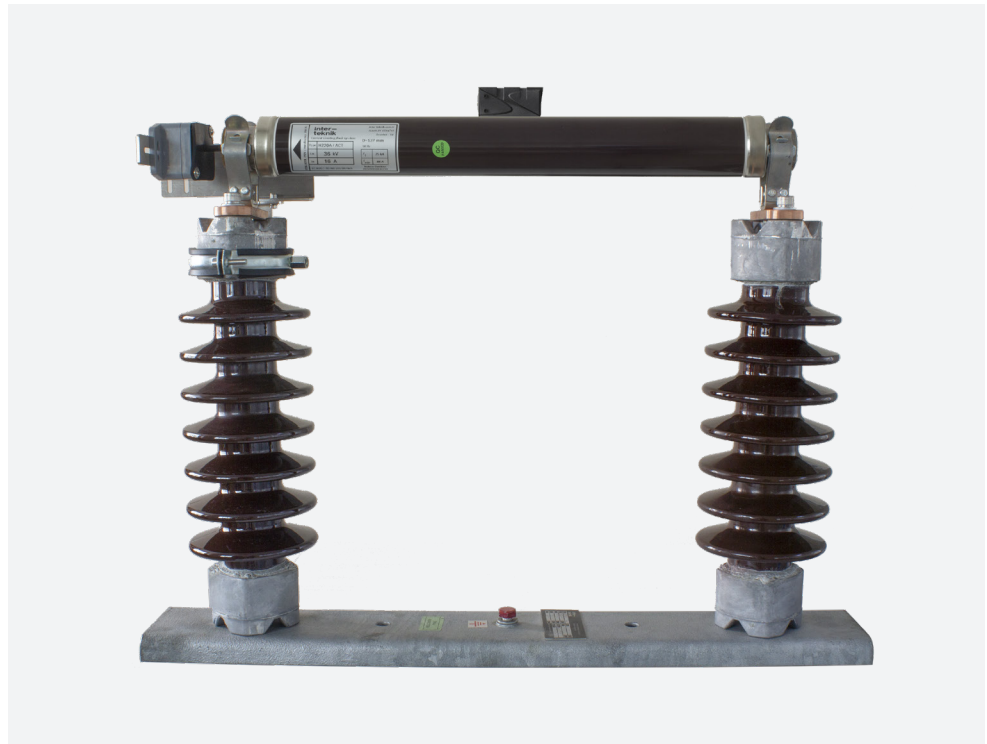


# YOUR SOLUTION-PARTNER FOR MONITORING MV FUSES

In fuse-protected medium voltage lines, the status of striker pin of the fuse is usually monitored visually in outdoor switching stations. In order to provide uninterrupted energy, monitoring of status of fuse pin is of utmost importance. Nonetheless, every so often, inaccessibility to the site renders such conventional visual monitoring inconvenient.

With our wireless fuse monitoring solutions, you can monitor the status of the fuse and minimize power outages.

Using LoRa (Long Range Wifi) technology, our sensors can transmit data up to 15 km.\*



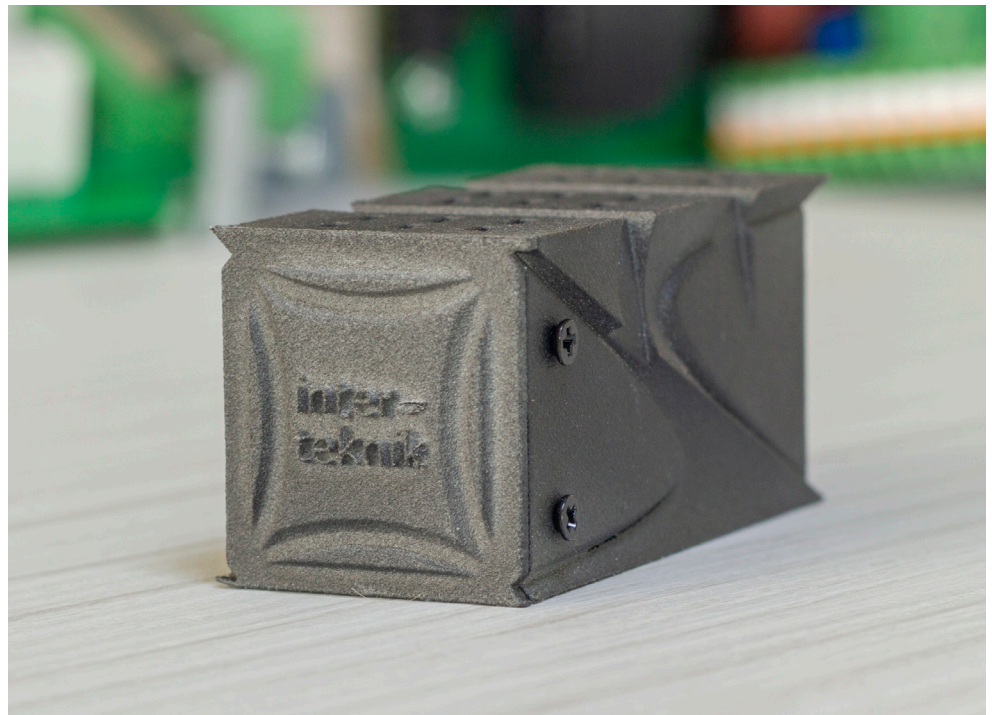
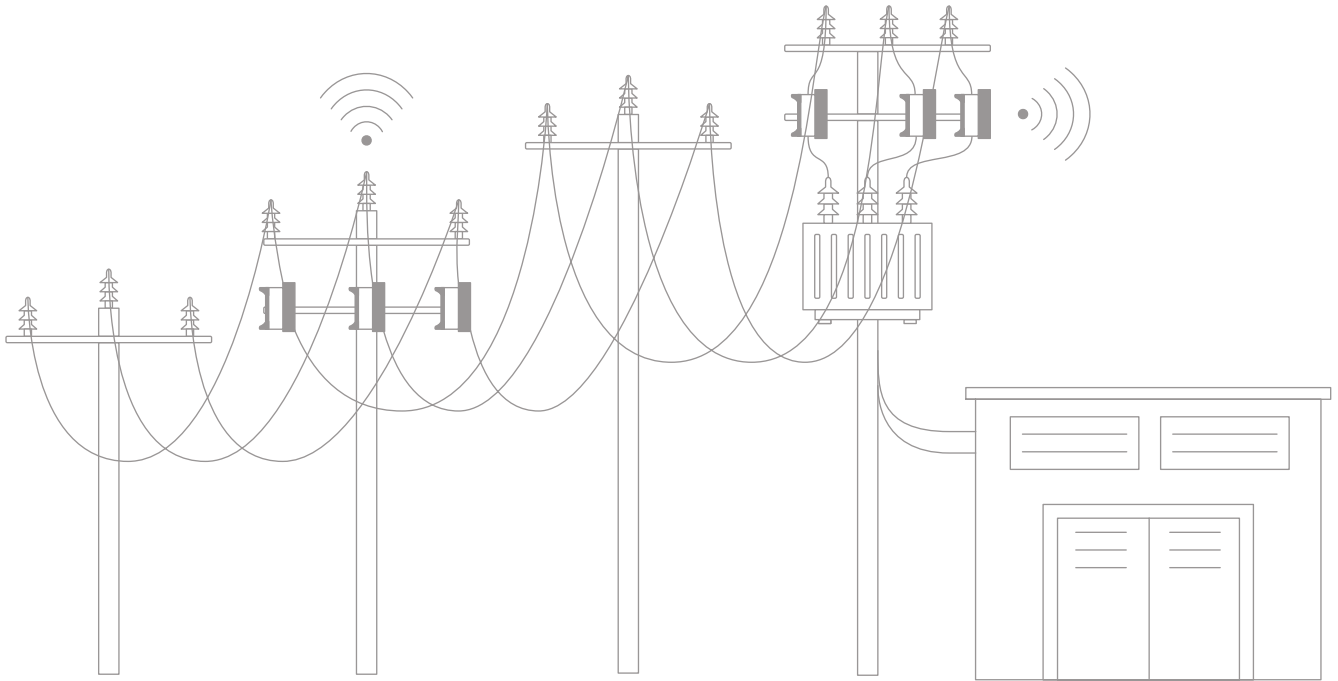
## ADVANTAGES

- Wireless communication
- Easy installation
- Remote monitoring and customizable alarms
- Instant notification upon power cuts
- Pinpointing faulty line & pole determination, effective workforce guidance
- Minimizing downtimes

\* Varies according to environmental conditions.

# SPECIFICATION

- Minimal installation time
- Does not require constructional changes in the existing system
- Battery life of up to  $\geq 5$  years without replacement
- Communication distance of up to 15km.





**[www.inter-teknik.com.tr](http://www.inter-teknik.com.tr)**

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