

ISAAC GRIDIAN Co., Ltd.

Company Profile



Smarter Grids, Safer Future

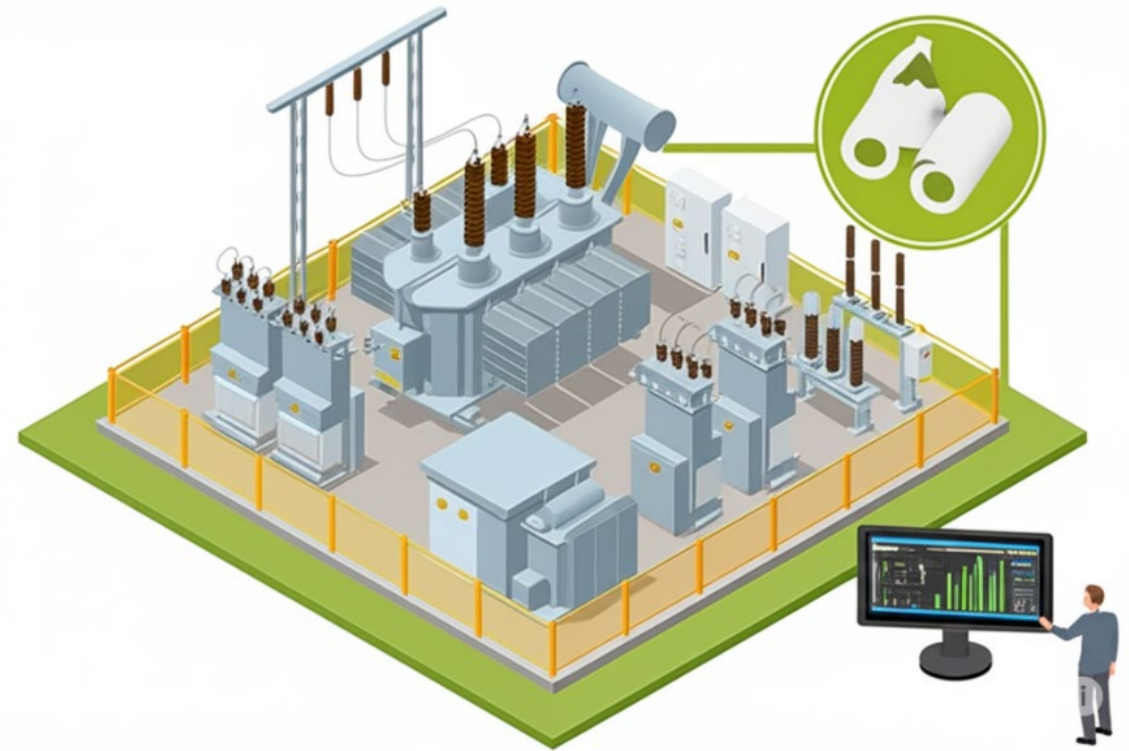


Table of Contents



Company Overview

- About
- Major Milestones

Core Business Area

- Preventive Diagnostic Solutions for Power Equipment
- Gas Insulated Switchgear (GIS) / Incoming Panel (DONGNAM & ISAAC GRIDIAN Consortium) (for export to North America)
- Control Panel / Electrical Engineering
- Energy Saving Solutions (Energy Saver)

Preventive Diagnostic Solutions for Power Equipment

- GIS Diagnostic Key Sensors & Devices
- Transformer Diagnostic Key Sensors & Devices

GIS/ Incoming Panel (for export to North America)

- GIS(170kV/72.5kV/29kV/25.8kV)
- Incoming Panel

Control Panel / Electrical Engineering

- HVAC / Control Panel

Energy Saving Solutions

- Energy Saver (PV, ESS, Financial Services)

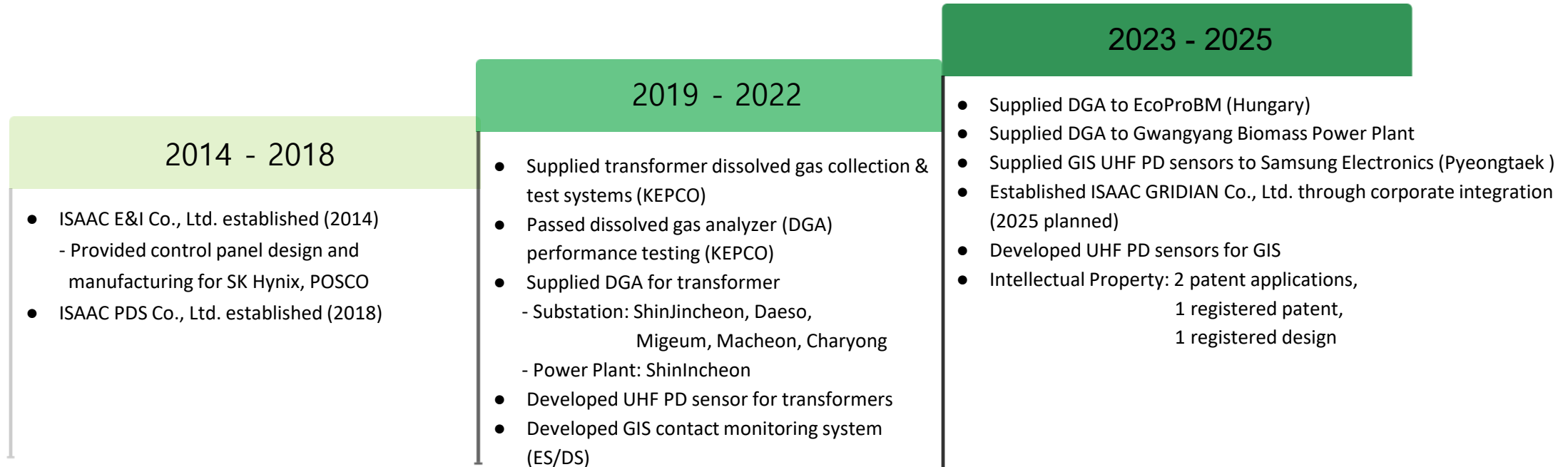
Major Certifications & Intellectual Property

Key Clients

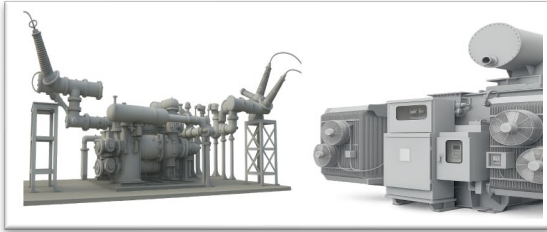
Table of Contents

ISAAC GRIDIAN is a dedicated energy subsidiary of ISAAC Engineering Co., Ltd., providing preventive diagnostic solutions for power equipment, control panel manufacturing, GIS/Incoming Panel manufacturing and energy-saving solutions. The name ISAAC GRIDIAN is a combination of Grid and Guardian, embodying the philosophy of “a technology company that safeguards energy infrastructure and ensures safety”.

Milestones



Core Business Area



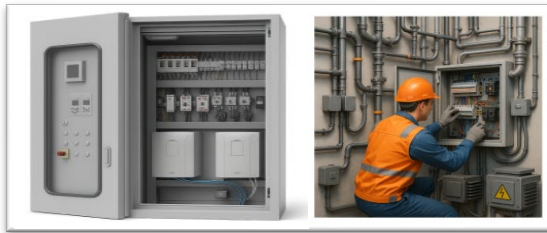
Preventive Diagnostic Solution

Advanced sensor and diagnostic solutions for early failure detection in transformers and GIS, enabling accident prevention through proactive monitoring and analysis.



Gas Insulated Switchgear (GIS) / Incoming Panel (DONGNAM & ISAAC GRIDIAN Consortium) (for export to North America)

GIS(170kV/72.5kV/29kV/25.8kV) / Incoming Panel Manufacturing.



Control Panel Engineering

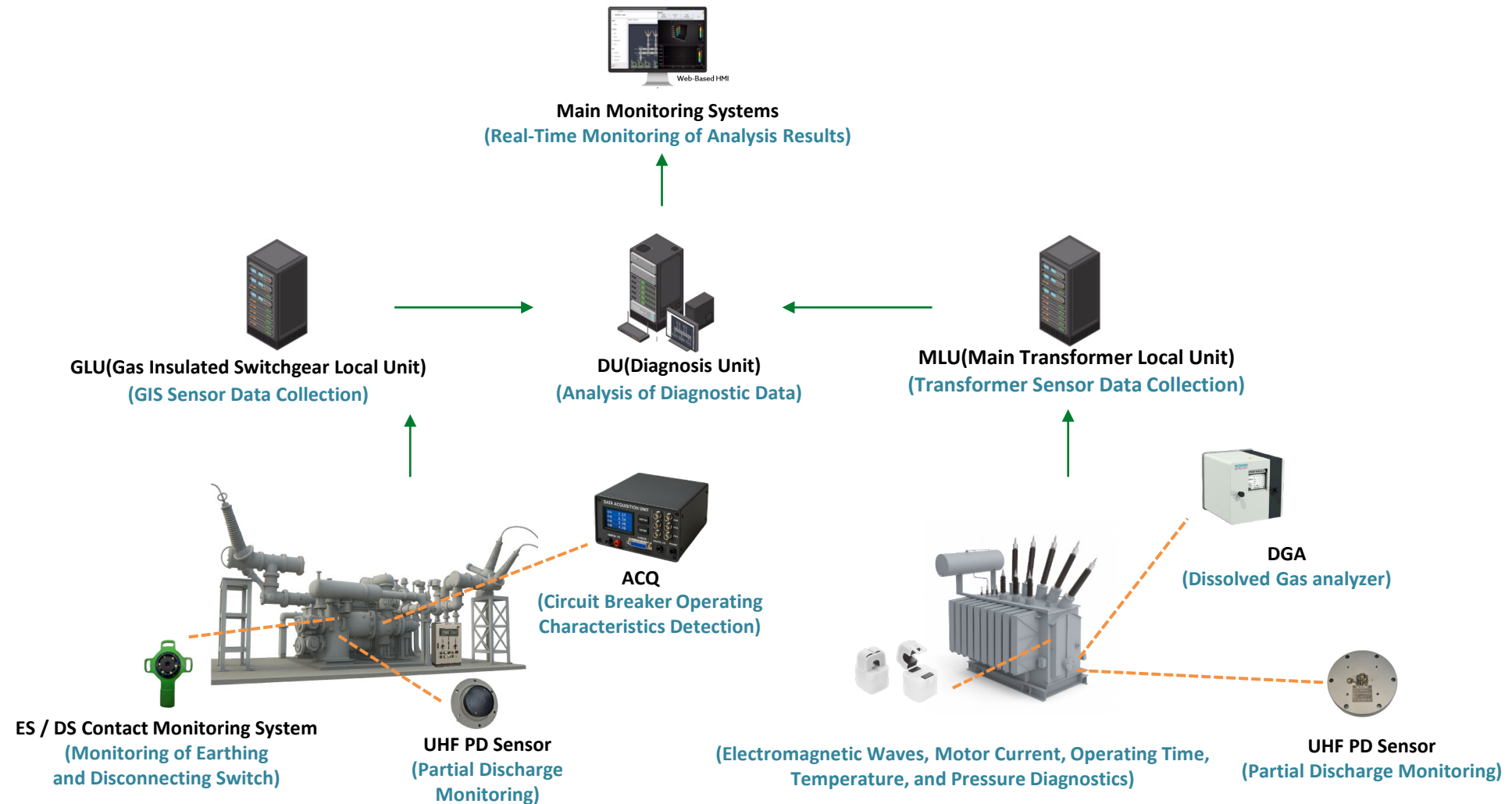
Advanced control panel solutions for semiconductors, steel, automation, HVAC, and ESS, along with safe and reliable electrical and instrumentation services tailored for industrial facilities.



Energy Saving Solutions (Energy Saver)

Energy optimization through power usage analysis, supported by PV, ESS, and financial services.

Predictive Diagnostic Solution Overview



Preventive Diagnostic Solutions : Key Sensors and Devices for GIS Preventive Diagnostics

UHF PD Sensor

IEC60270 / IEC62478 / CIGRE D1.25, B3.17 • Average Effective Height : Above 2mm \geq 80% • Average Effective Height : Above 6mm



Patch Type

- Operation Frequency Range 100MHz ~ 1,500MHz
- Sensor Sensitivity IEC60270 Apparent Discharge / Below 5pC PD Detection(Above -40dBm)
- Average Effective Height 100MHz ~ 1,800MHz / 11mm(500MHz ~ 1,500MHz / 13mm)



Monopole Type

- Operation Frequency Range 100MHz ~ 1,500MHz
- Sensor Sensitivity IEC60270 Apparent Discharge / Below 5pC PD Detection(Above -40dBm)
- Average Effective Height 100MHz ~ 1,800MHz / 12mm(500MHz ~ 1,500MHz / 15mm)

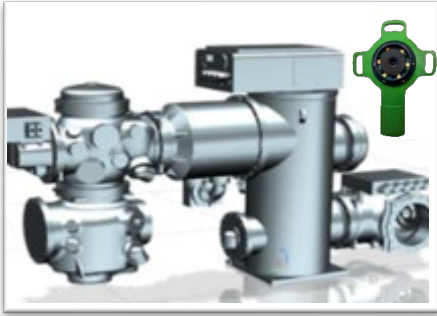


Spacer Type

- Operation Frequency Range 100MHz ~ 1,500MHz
- Sensor Sensitivity IEC60270 Apparent Discharge / Below 5pC PD Detection(Above -40dBm)
- Average Effective Height 100MHz ~ 1,800MHz / 13mm(500MHz ~ 1,500MHz / 13mm)

Preventive Diagnostic Solutions : Key Sensors and Devices for GIS Preventive Diagnostics

ES/DS Contact Monitoring System



- Real-Time Monitoring of Disconnecter/Earthing Switch Positions
- Supports up to 60 Cameras, 7 Cameras per Bay



Visual Data of Earthing Switch Contact



Visual Data of Disconnecting Switch Contact

Preventive Diagnostic Solutions : Key Sensors and Devices for Transformer Diagnostics

UHF PD Sensor



Drain Valve Type

- Operation Frequency Range 300MHz ~ 1,500MHz
- Sensor Sensitivity IEC60270 Apparent Discharge / Below 100pC PD Detection(Above -40dBm)



Manhole Type

- Operation Frequency Range 300MHz ~ 1,500MHz
- Sensor Sensitivity IEC60270 Apparent Discharge / Below 100pC PD Detection(Above -40dBm)

Preventive Diagnostic Solutions : Key Sensors and Devices for Transformer Diagnostics

Dissolve Gas Analyzer



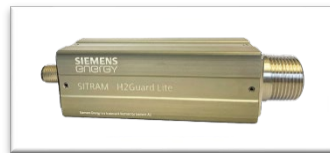
SITRAM Mutisense 9

- Real-Time Analysis of 8 Dissolved Gases and Moisture Content in Insulating Oil (H_2 , C_2H_2 , CO , CO_2 , CH_4 , C_2H_4 , C_2H_6 , O_2 , H_2O)
- High-Precision Analysis Based on NDIR and Microelectronic Sensors: Accuracy Within $\pm 5\%$, Range 1–10,000 ppm



SITRAM Mutisense 5

- Real-Time Analysis of 4 Dissolved Gases and Moisture Content in Insulating Oil (H_2 , C_2H_2 , CO , C_2H_4 , H_2O)
- NDIR & Microelectronic Sensors: $\pm 5\%$ Accuracy, 1–10,000 ppm Range



SITRAM H2Guard Lite

- Real-Time Analysis of Dissolved Hydrogen in Transformer Oil (25–5,000 ppm)
- Early Detection of Partial Discharge and Winding Faults via Hydrogen Concentration

Preventive Diagnostic Solutions : Key Sensors and Devices for Transformer Diagnostics








Moisture Removal System for Insulating Oil







SITRAM Dry

- Continuous Removal of Moisture from Transformer Insulation Paper, Significantly Extending Insulation Life
- ☐ Installation Time: Within 1 Day

Gas Insulated Switchgear (GIS) / Incoming Panel Manufacturing (DONGNAM & ISAAC GRIDIAN Consortium) (for export to North America)

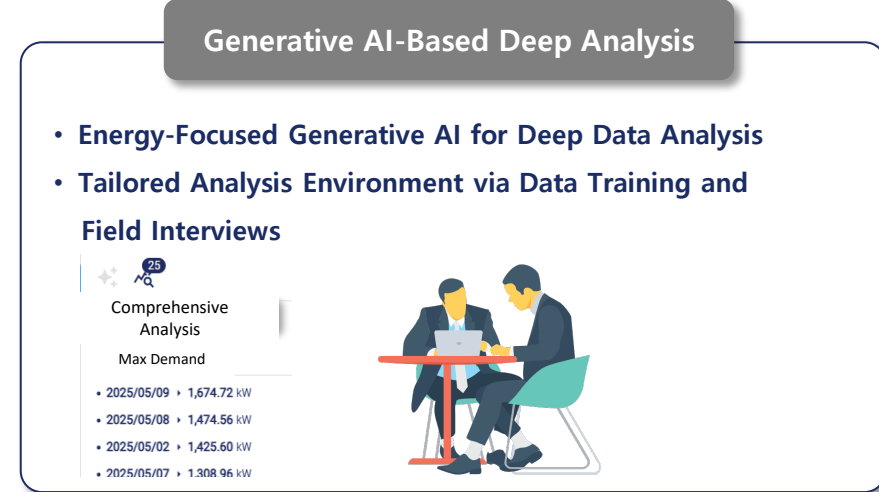
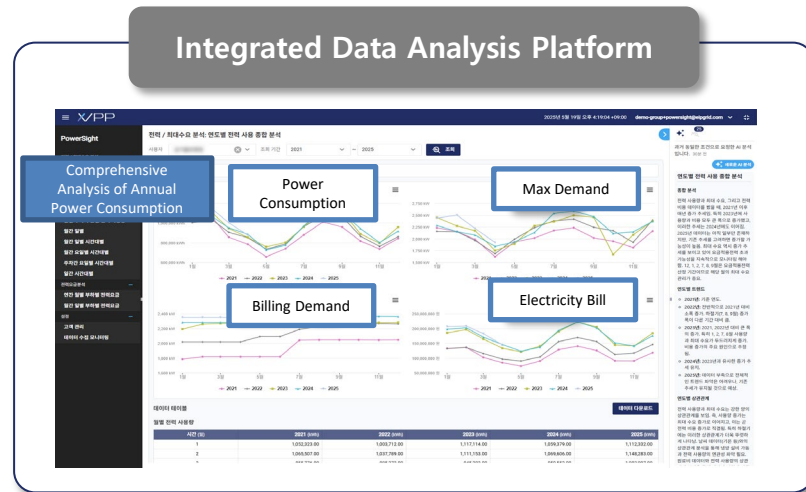
Milestones		Products	Major Sales Record
1980s	1984 Aug : DONGNAM Corp. established	<div style="text-align: center;"> GIS  <p>170kV</p>  <p>72.5kV</p>  <p>29kV</p>  <p>25.8kV</p>  <p>25.8kV(Eco-Friendly)</p> Gas Insulated Load Break Switch (LBS)  Incoming Panel  </div>	*CCT(Circuit)
1990s	1996 Nov : Acquired ISO 9001 & ISO 14001		Customer: Korea National Railway -Product: GIS(170kV/72.5kV) -Total Sales Volume: 109 CCT
2000s	January 2003 : Developed 25.8kV GIS (25kA, 600/2000A) December 2007 : Developed 170kV GIS (50kA, 1200/2000A) May 2009 : Developed 72.5kV GIS (20kA, 1200/200A) April 2010 : Developed 170kV GIS (50kA, 4000A) September 2014 : Developed revised 170kV GIS (20kA, 1250/2000A) August 2015 : Developed revised 29kV GIS (20kA, 2000A) December 2015 : Developed revised 170kV GIS (50kA, 4000A) April 2019 : Developed 25.8kV Gas-Insulated Load Break Switch (Underground Type), 4 Circuits December 2020 : Developed 25.8kV Eco-Friendly Switchgear		Customer: Korea Electric Power Corporation(KEPCO) -Product: GIS(170kV) -Total Sales Volume: 456 CCT -Product: GIS(25.8kV) -Total Sales Volume: 290 CCT

Control Panel Engineering

Major Products	Production Capacity	Core Competitiveness
<div data-bbox="261 358 523 771">  <p>PLC Panel</p> </div> <div data-bbox="261 799 523 1206">  <p>Drive Panel</p> </div>	<div data-bbox="979 352 1510 634">  <p>Hwaseong Plant:</p> <ul style="list-style-type: none"> •Area: 660 m² •Simultaneous Production: 80 units •Equipment: 2.4 Ton Hoist × 1 </div> <div data-bbox="979 799 1510 1080">  <p>Gunpo Plant:</p> <ul style="list-style-type: none"> •Area: 1,085 m² •Simultaneous Production: 150 units •Equipment: 3 Ton Hoist × 2 </div>	<p>Competitive Price</p> <p>Short Lead-Time Mass Production System</p> <p>In-house Design Team & Consistent Quality</p>

Energy Saver

Energy Saver analyzes power usage data to provide optimized energy-saving simulations, along with PV, ESS, and financial services for implementation.



Energy Saving Solution

“Net Zero Broadcasting Begins Here.”

- Based on optimized simulation results, we provide design, installation, and commissioning services for applicable PV and ESS solutions.
- We offer customized financial products tailored to infrastructure investment needs.

Certifications & IP : KOLAS-Certified UHF PD Sensors for GIS and Transformers

TEST REPORT

Dt&C Co., Ltd.
40, Yuseong-ro, Yuseong-gu, Daejeon
Tel: 021-221-2884 Fax: 021-221-2822

1. Report No. DRCKREL2410-0484
2. Customer
Name: ISAAC POS
Address: #2705, 130 Heungdeokjungang-ro (Heungdeok-dong, U-TOWER),
Gyeonggi-do, Yongin-si, Gyeonggi-do
3. Use of Report: For quality control
4. Product Name / Model Name: Patch Type UHF Sensor / IS-POS-G25SP
5. Test Method Used: IEC 60099-2-1: 2007, IEC 60099-2-2: 2007, IEC 60099-2-4: 2007,
IEC 60099-2-30: 2008
6. Date of Test: October 01, 2024 ~ October 11, 2024
7. Location of Test: ☒ Permanent Testing Lab ☐ On Site Testing
(Address: 38, Baengnyeong-ro, 200beon-gil, Cheongju-si, Gyeonggi-do, Korea)
8. Testing Environment: Temperature (23 ± 4) °C, Humidity (60 ± 5) % R.H.
9. Test Result: Refer to the attached Document
The results shown in this test report refer only to the samples tested unless otherwise stated.
This laboratory is not accredited for the test results reported. ***
Tested by: Name: NamGyu Lee Technical Manager: Name: KiDeok Kim
Affirmation: Name: NamGyu Lee Name: KiDeok Kim
The above test report is the accredited test result by Korea Laboratory Accreditation Scheme
which signed the K-LAS MARK.
October 22, 2024
Dt&C Co., Ltd.
Accredited by KOLAS, Republic of Korea
If this report is required for confirmation of authenticity, please contact to info@dtc.co.kr
This test report is published in paper or release in other form without the approval of Dt&C Co., Ltd.
Page: 1 / 10

TEST REPORT

Dt&C Co., Ltd.
40, Yuseong-ro, Yuseong-gu, Daejeon
Tel: 021-221-2884 Fax: 021-221-2822

1. Report No. DRCKREL2410-0748
2. Customer
Name: ISAAC POS
Address: #2705, 130 Heungdeokjungang-ro (Heungdeok-dong, U-TOWER),
Gyeonggi-do, Yongin-si, Gyeonggi-do
3. Use of Report: For quality control
4. Product Name / Model Name: Patch Type UHF Sensor / IS-POS-G25SP
5. Test Method Used: Request of customer
6. Date of Test: October 08, 2024
7. Location of Test: ☒ Permanent Testing Lab ☐ On Site Testing
8. Testing Environment: Temperature (21 ± 4) °C, Humidity (60 ± 5) % R.H.
9. Test Result: Refer to the attached Document
The results shown in this test report refer only to the samples tested unless otherwise stated.
This test report is not related to KOLAS accreditation.
Tested by: Name: NamGyu Lee Technical Manager: Name: KiDeok Kim
Affirmation: Name: NamGyu Lee Name: KiDeok Kim
October 22, 2024
Dt&C Co., Ltd.
If this report is required for confirmation of authenticity, please contact to info@dtc.co.kr
This test report is published in paper or release in other form without the approval of Dt&C Co., Ltd.
Page: 1 / 10

TEST REPORT

Dt&C Co., Ltd.
40, Yuseong-ro, Yuseong-gu, Daejeon
Tel: 021-221-2884 Fax: 021-221-2822

1. Report No. DRCKREL2410-0470
2. Customer
Name: ISAAC POS
Address: #2705, 130 Heungdeokjungang-ro (Heungdeok-dong, U-TOWER),
Gyeonggi-do, Yongin-si, Gyeonggi-do
3. Use of Report: For quality control
4. Product Name / Model Name: Patch Type UHF Sensor / IS-POS-G25SP
5. Test Method Used: IEC 60099-2: 2013
6. Date of Test: October 14, 2024 ~ October 18, 2024
7. Location of Test: ☒ Permanent Testing Lab ☐ On Site Testing
(Address: 38, Baengnyeong-ro, 200beon-gil, Cheongju-si, Gyeonggi-do, Korea)
8. Testing Environment: Temperature (23 ± 4) °C, Humidity (60 ± 5) % R.H.
9. Test Result: Refer to the attached Document
The results shown in this test report refer only to the samples tested unless otherwise stated.
This laboratory is not accredited for the test results reported. ***
Tested by: Name: NamGyu Lee Technical Manager: Name: KiDeok Kim
Affirmation: Name: NamGyu Lee Name: KiDeok Kim
The above test report is the accredited test result by Korea Laboratory Accreditation Scheme
which signed the K-LAS MARK.
October 22, 2024
Dt&C Co., Ltd.
Accredited by KOLAS, Republic of Korea
If this report is required for confirmation of authenticity, please contact to info@dtc.co.kr
This test report is published in paper or release in other form without the approval of Dt&C Co., Ltd.
Page: 1 / 10

특허증
CERTIFICATE OF PATENT

특허
Patent Number 제 10-2852983 호

출원번호
Application Number 제 10-2023-0191202 호

출원일
Filing Date 2023년 12월 26일

등록일
Registration Date 2025년 08월 27일

발명의 명칭
Title of the Invention GIS 스위치 회상 감시 장치

특허권자
Patentee 이삭앤지니어링(주)(110111-*****)
경기도 군포시 군포항단상1로 15(주곡동)

발명자
Inventor 통독서방면에 기재

위의 발명은 「특허법」에 따라 특허원부에 등록되었음을 증명합니다.
This is to certify that, in accordance with the Patent Act, a patent for the invention has been registered at the Korean Intellectual Property Office.

2025년 08월 27일

특허청장
COMMISSIONER,
KOREAN INTELLECTUAL PROPERTY OFFICE

김완기

특허청
Korean Intellectual Property Office

Patent Registration No. 10-2852983 / Switchgear Viewing System for Gas Insulated Switchgear

Patent Application No. 10-2024-0036430 / GIS Switch Image Monitoring System and Method

Design Application No. 30-2025-0006023 / UHF Sensor Antenna for Partial Discharge Detection in Gas-Insulated Switchgear

Certifications & IP : KEPCO Research Institute DGA Device Performance Test and Related Patents

KEPCO

8006 대전광역시 유성구 문지리 105 TEL 042-865-0808 FAX 042-865-0809
 전력연구원 용원전설비연구원 P.L. 이준권 jg.lee@kepcor.co.kr

문서번호: 전력자(송변)-1527 경기도 군포시 군포동단신로 15
 기 일: 2022. 7.18 이차에너지사업
 주 소: 이차에너지사업
 방 조: 13981


8월 유증가스 분석장치 성능시험 결과 알림

1. 귀 사의 무공해 발전을 기원합니다.
 2. 귀 사에서 요청한 유증가스 분석장치 성능시험과 관련하여 전력연구원에서 실시한
 시험 결과를 아래와 같이 알려드립니다.

가. 전 정 사 : 이차에너지사업(주)
 나. 시험대상 : SETRAM Multisense 5088400, 898400
 다. 시험기간 : 2021. 5. 23(월) ~ 2022. 7. 18(월)
 라. 적용규격 : 한국전연구원배양규격(GS-0025-0072)
 마. 시험결과 : 합격

분석장치 유형	검출대상 가스	시험 항목	성능시험 결과
3종 가스 검출장치	H ₂ , CO, C ₂ H ₆	오차 30% 이내	합격

사. 시 령 료 : 6,306,300 원(부가세제외)
 ○ 시험료 납부계좌 : 농협중앙회 478-01-002271 한국전력공사. 앞.

전력연구원장 



Installation Photo of DGA at KEPCO Substation

Patent Registration No. 10-2023-0191202 / GIS Switch Image Monitoring Device

Patent Application No. 10-2024-0036430 / GIS Switch Image Monitoring System and Method

Design Application No. 30-2025-0006023 / UHF Sensor Antenna for Partial Discharge Detection in Gas-Insulated Switchgear

Key Clients



LS Power Solution



ELECTRONICS

Electric



Contact

Address : 2nd Floor, Bugok-dong 1234-8, Gunpo-si, Gyeonggi-do, Republic of Korea

Email : sanghyup.rhee@gridian.co.kr

Office : +82 31 8091 0895

Mobile : +82 10 5874 6757