

# Railway Solution

## Products & Services



For more than 40 years, the priorities of our engineering teams have always been to advise and listen to our customers, by providing a secure, robust, innovative and sustainable railway solution.

Among others, the 9000 Series relays are our leading products specially designed to railway power infrastructure protection. Moreover, numerous complementary services enhance our 9000 series, empowering you to anticipate, define, and successfully achieve all your projects.

Through training, diagnosis of your current installation, product manufacturing, and on-site intervention, ICE SAS continually supports Railway Infrastructure Operators.



- Made in France
- Engineering and support by ICE SAS
- Dedicated to customer needs
- For both AC and DC railway networks
- From manufacturing to decommissioning
- IEC 60255, EN 50124-1 compliance
- EMC IEC 61000-4-\*, EN 50121-5 compliance
- IEC 61850 and Modbus protocols
- IEC 60255-27 and \*-26 CE marking
- Advanced HMI
- Easy-to-use

### OUR TRADEMARKS



## AC PRODUCTS

ICE SAS offers a wide range of protection relays for AC railway applications.

Thanks to our know-how acquired for more than 40 years in railway infrastructure protection, our range of protection relays has been specially designed to cover all your needs as an operator of traditional and high-speed railway infrastructures (HSR), helping you to shape your future, with the use of IEC 61850 edition 2 communication protocol.



- PDZI9000 - AC Catenary protection - 25 kV or 2x25 kV  
Protects the catenaries on 25 kV or 2x25 kV 50/60 Hz networks
- PGT9000 - AC Traction Group protection  
Protects fixed electric traction installations responsible for the power supply on 25 kV or 2x25 kV 50/60 Hz networks

- NPI800 - Digital protection of phase and homopolar current
- NPIDR800 - Digital protection of phase and homopolar current with or without directional criterion and recloser
- NPIH800 - Digital homopolar current protection
- NPU800 - Digital protection of phase voltage, frequency and/or homopolar
- NPUH800 - Digital homopolar voltage protection
- LDN2 - Location of catenary faults
- DPR800 - Pumping effect detector



- NP900 Series - IEC 61850  
Protection, control, measurement and monitoring IED

- AP900 Series  
Arc Flash Protective Relays



- NPDT620 / NPDT630  
Differential transformer digital protection with two or three windings and, depending on the version, with restricted earth

## DC PRODUCTS

ICE SAS offers a full range of protection relays for traditional DC networks and urban transportation.

Thanks to our know-how acquired for more than 40 years of creating products dedicated to railway protection, our 9000 Series relays will ensure simple and complete operation of your DC power supply infrastructures.



- DDL9000 - DC Catenary protection - Catenary voltage up to 3 kV  
Protects the fixed electric traction installations responsible for supplying catenaries with direct current up to 3 kV
- DFF9000 - DC Fundamental Frequency detector  
Monitors the presence of the AC fundamental frequency (50/60 Hz)



# MORE THAN 10,000 KM OF TRACTION FEEDERS PROTECTED ALL OVER THE WORLD

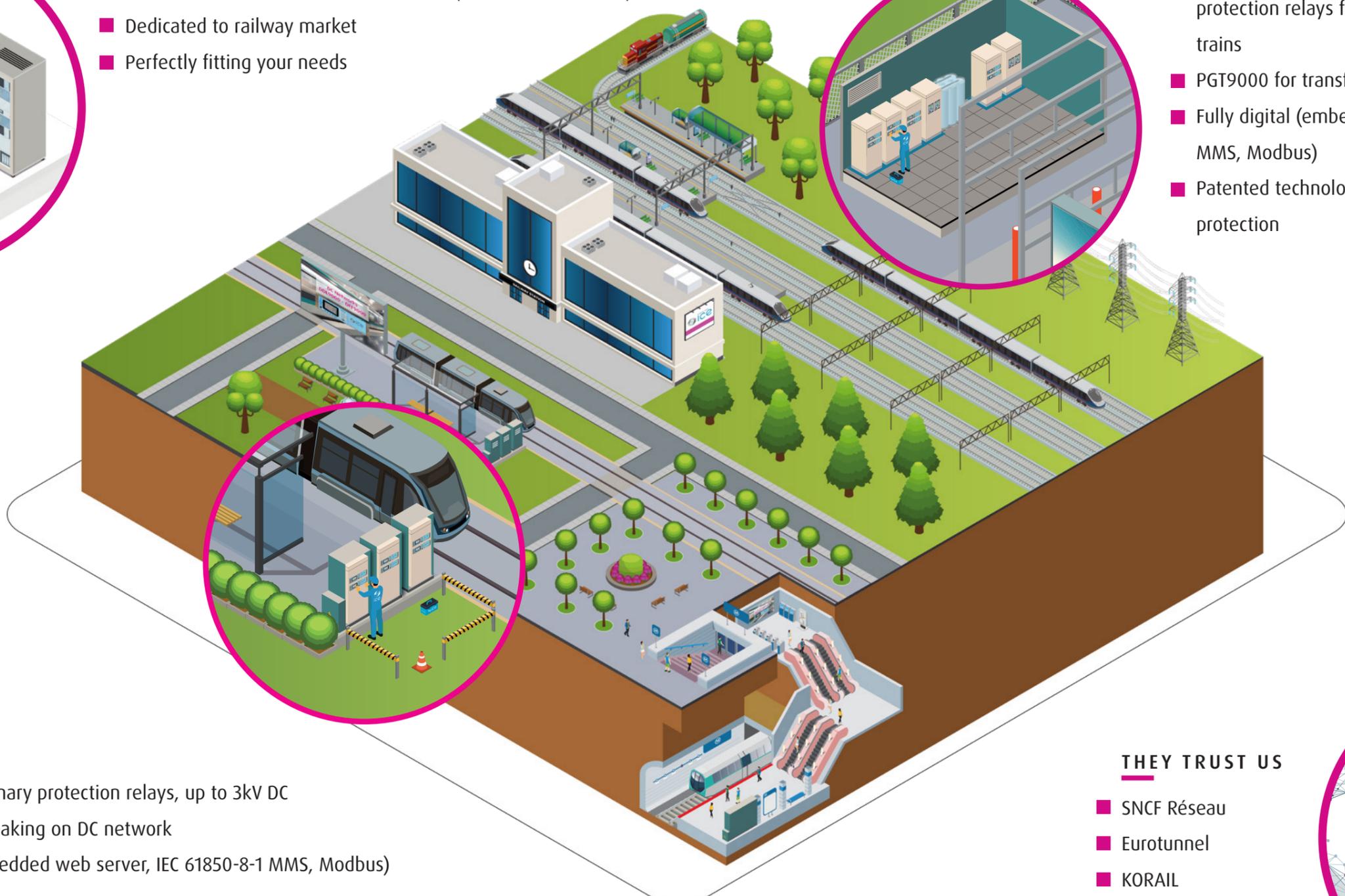
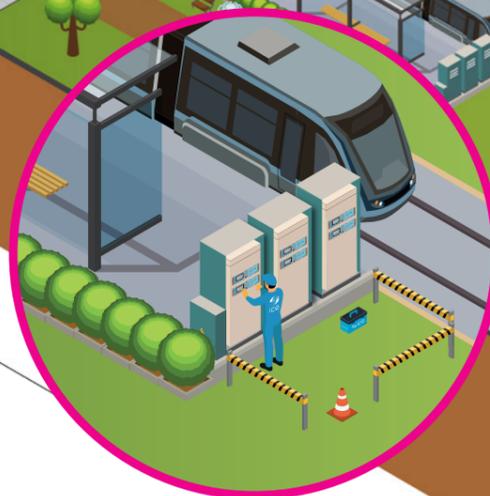
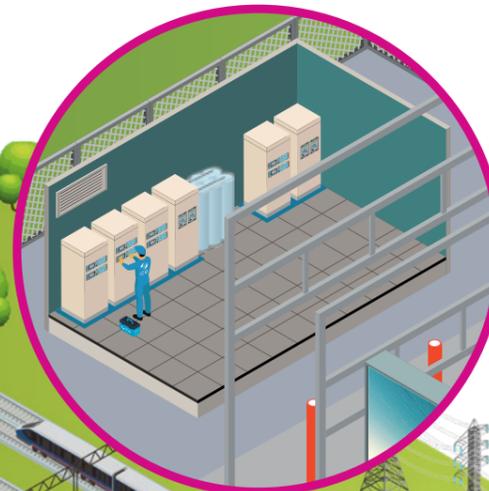
- High quality standards for all products and services (ISO 9001)
- Sustainable solutions for a better world (ISO 14001 - EcoVadis)
- Dedicated to railway market
- Perfectly fitting your needs

- PDZI9000 25kV AC and 2x25kV AC catenary protection relays for traditional and high-speed trains
- PGT9000 for transformer group protection
- Fully digital (embedded web server, IEC 61850-8-1 MMS, Modbus)
- Patented technologies for parallel railway protection

- DDL9000 DC catenary protection relays, up to 3kV DC
- DFF9000 for AC leaking on DC network
- Fully digital (embedded web server, IEC 61850-8-1 MMS, Modbus)

## THEY TRUST US

- SNCF Réseau
- Eurotunnel
- KORAIL
- STIB
- ONCF
- AURIZON
- ...





# SERVICES & QUALITY SYSTEM

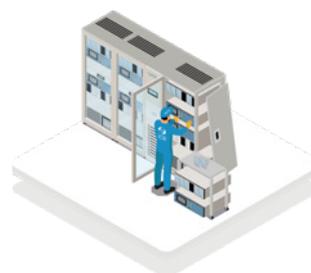
Our commitment to high quality standards (ISO 9001) and sustainable solutions (ISO 14001 – EcoVadis) ensures that our products and services not only meet but exceed expectations. With a focus on the railway market, we offer solutions that are perfectly tailored to your specific needs.



Studies  
Engineering



Training



Installations  
On-site interventions



GENERATION

TRANSMISSION

DISTRIBUTION

RAILWAY

INDUSTRY



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• ISO 19443 : 2018 • ISO 9001 : 2015 • ISO 14001 : 2015 certified •



The specifications and drawings given are subject to change and are not binding unless confirmed by our specialists.

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