

Medium voltage ANSI metal-clad digital switchgear



ABB has integrated proven technologies in ANSI medium voltage metal-clad switchgear, enabling customers to meet current performance requirements, while adapting to the increased sophistication of future power distribution systems. These innovative technologies are now offered across the medium voltage switchgear product portfolio and are UL certified.

The digital switchgear design incorporates current sensors, which do not saturate, and voltage sensors instead of bulky PTs which require compartments, directly reducing inventory, maintenance and overall operational costs.

This design increases personnel safety and fewer equipment failures providing the most reliable solution on the market.

Digital switchgear offers many direct benefits, including:

Lower operation costs and increased efficiency

- Complete PT compartments are eliminated resulting in the need for less switchgear space
- Reduced space requirements result in lower costs for switchgear housing
- Broad application range of sensors reduces inventory requirements
- No core losses result in significant energy savings during operation resulting in less energy required to operate the switchgear

Safe, reliable and accurate

- Fewer wires to install, commission and maintain
- Ethernet connectors replace many wire terminal lugs, resulting in fewer failure opportunities and increased safety
- No access to dangerous CT secondary signals
- Ferro-resonance-free solution without conventional PTs
- Current sensors are based on the Rogowski coil design and do not saturate
- No need for multi-ratio current transformers
- One sensor covers all current ranges

Flexible design changes and quick delivery

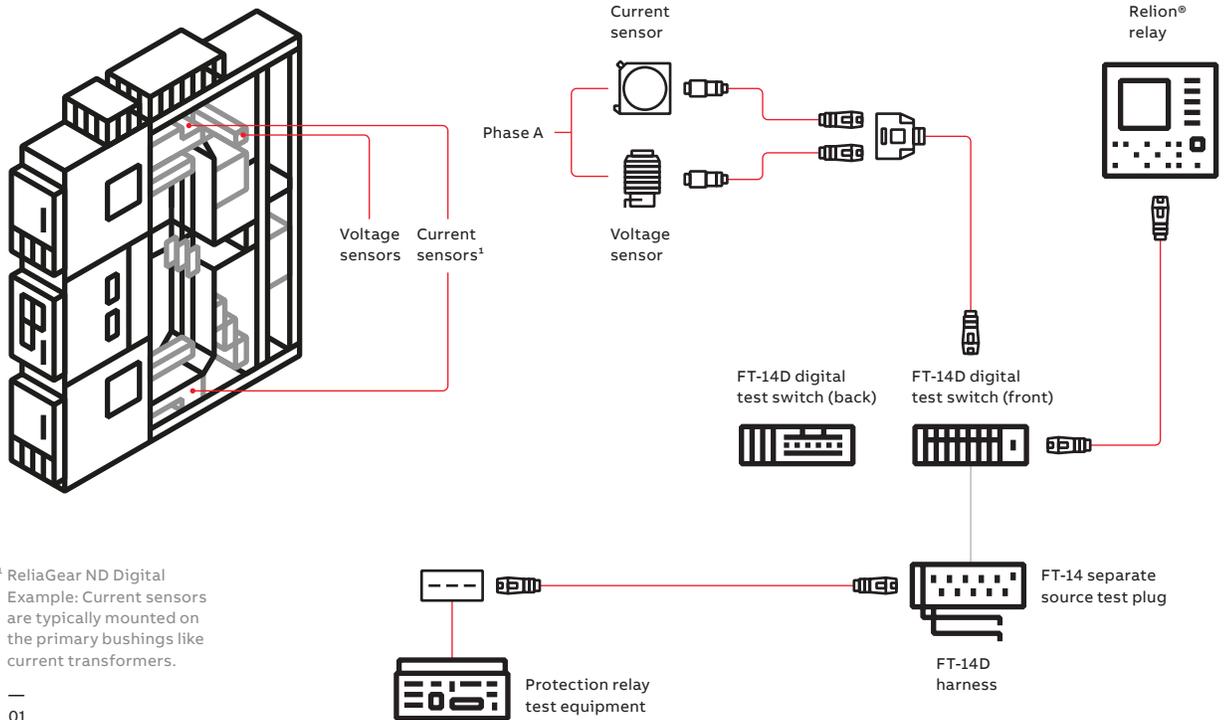
- Sensors facilitate late design changes such as changing loads within the same frame
- Most changes can be realized within the IED's logic
- Optimized set-up for quick and easy switchgear sourcing
- The CT and PT data is not required at early project stage reducing time for receipt of project documentation
- Reduced engineering and simplified configuration selection yielding in lower project administration cost

Working smarter

- Continuously self-supervising, with maximized error protection for troubleshooting
- Relion relays fully support the IEC 61850 standards for communication and interoperability of substation automation devices
- Relays support both parallel redundancy protocol and high-availability seamless redundancy protocol meaning they can overcome a failure of a link or switch within near-zero switchover time

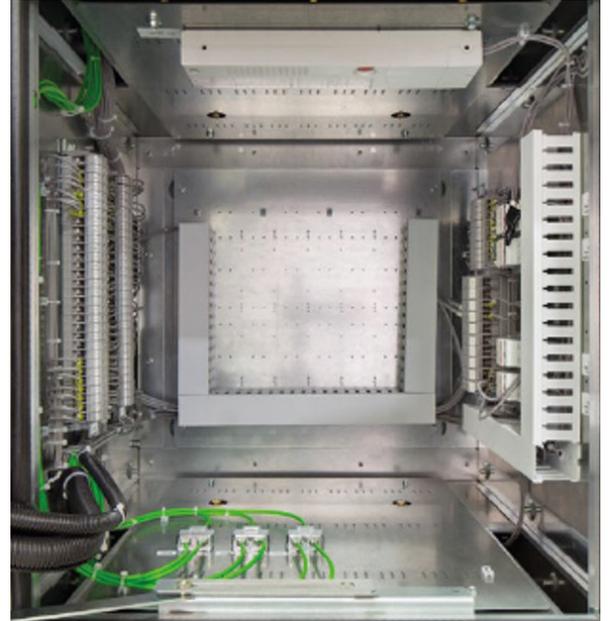
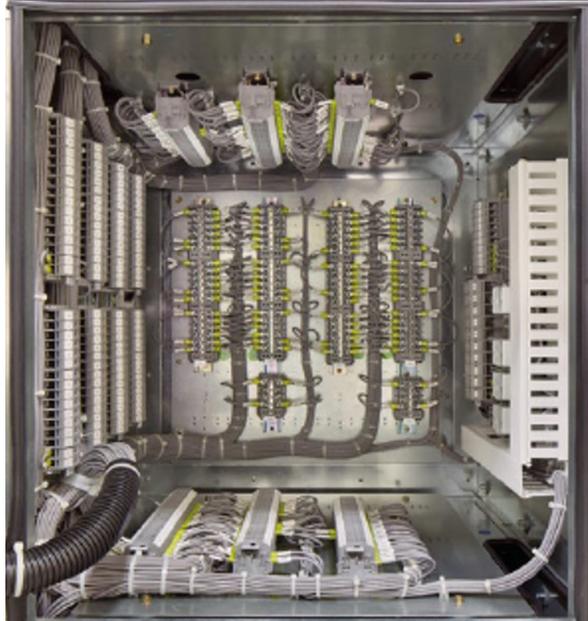
Reduced environmental impact

- Less energy required to operate the switchgear
- Less material is used in design
- Saves up to 150 tons of carbon dioxide (for a typical substation with 14 conventional switchgear frames over 30 years of operation)



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Typical low voltage
compartment of
conventional (left) and
digital (right) switchgear

Refer to Figure 01 and 02 for construction and a visual comparison of the design.



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The digital design is compatible across our product lines of medium voltage switchgear.

Product name	Voltage class			Maximum main bus (A)	Short circuit (kA)	Arc-resistant	Dimensions (in) W x H x D
	5 kV	15 kV	27 kV				
Advance	•	•		4000*	25, 31.5, 40, 50, 63	N/A	36 x 95 x (85 or 92)
Advance 27***	•		•	2000	16, 25	N/A	36 x 95 x 92
ReliaGear ND	•	•		2000	25, 31.5	N/A	26 x 104 x 77 for 1-H 26 x 104 x 85 for 2-H
SafeGear	•	•		4000*	25, 31.5, 40, 50	2, 2B, 2BC	36 x 129.5 x (85 or 92)**
SafeGear HD	•	•		4000*	50, 63	2, 2B	36 x 129.5 x 112**

* 4000 A rating is forced-air-cooled

** Heights include plenum and vent box with handle in closed position

*** Currently not available with UL label

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