

Vigilohm

Insulation Monitoring Devices

AN1

What is an “I.T.” / ungrounded system, and Why customer would go for it

Customer case

- . Our Schneider Electric experience tell us that in 80% of the cases, a circuit breaker trips due to a ground fault.
- . However, many applications cannot allow / afford a leakage current to ground stops the process, or endanger people working on site.
- . This is why an I.T. / ungrounded architecture is to be implemented, to allow operations carry on transparently, while securing people from an electrical shock, even in case of ground fault.
- . IT architecture is applicable in LV and MV systems

Our recommendation

- . All critical applications should be powered with an I.T. system, with low capacitance, and monitored accordingly.

It is already :

- > **mandatory**, in Group2 *Medical Premises* such as Operation rooms, as well as in *Marine*, acc to EACS
- > **implemented** in critical process sites, such as :
 - . *O&G*, where a spark could lead to fire or explosion
 - . *Steel, Alu, Glass industries*, where process interruption is heavily costly
 - . *Utilities, Airports, Seaports, Mining, Railways, Water Waste Water,, Photovoltaic, ...*

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Benefits

IT system improves

- Process continuity, *no trip at 1st fault*
- Operations costs, *no disrupted process, no wasted production, no immobilized staff...*
- Return on investment, *as savings through service continuity quickly offset the investment. And acc to IEC 60364-4-43 (2008), it is not recommended to pull the Neutral in such systems*
- Product lifetime, *lower stress of products*
- Effective preventive maintenance actions, *fault identified and fixed before tripping, possible analysis based on R&C data recording*
- Resilience against fire & explosion *very limited risks due to a spark or overcurrent*

More to know on:
Insulation
Monitoring
Devices

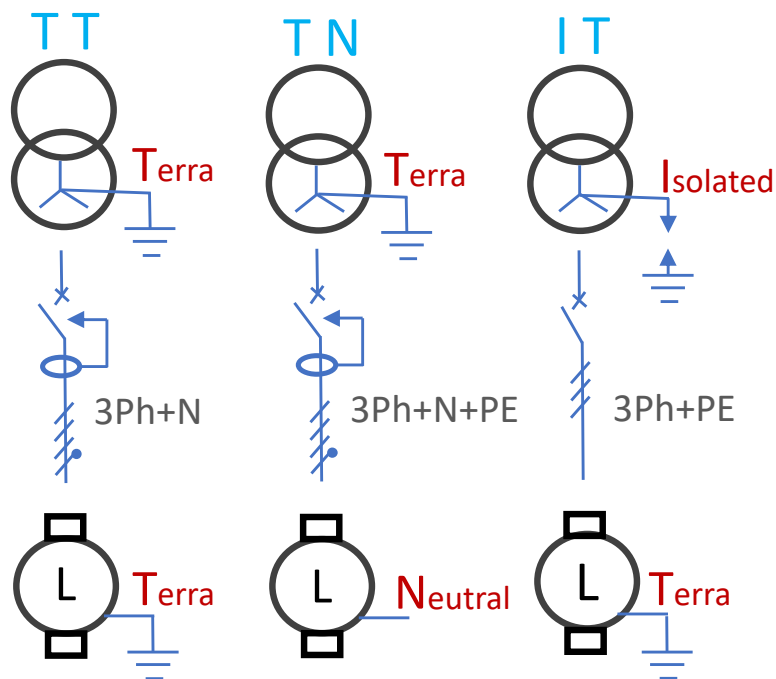
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What is an “I.T.” system ?



According to IEC 61364-4-41

TT system stands for:

- (T) Transformer's Neutral is grounded
- (T) Exposed conductive parts / Loads are grounded

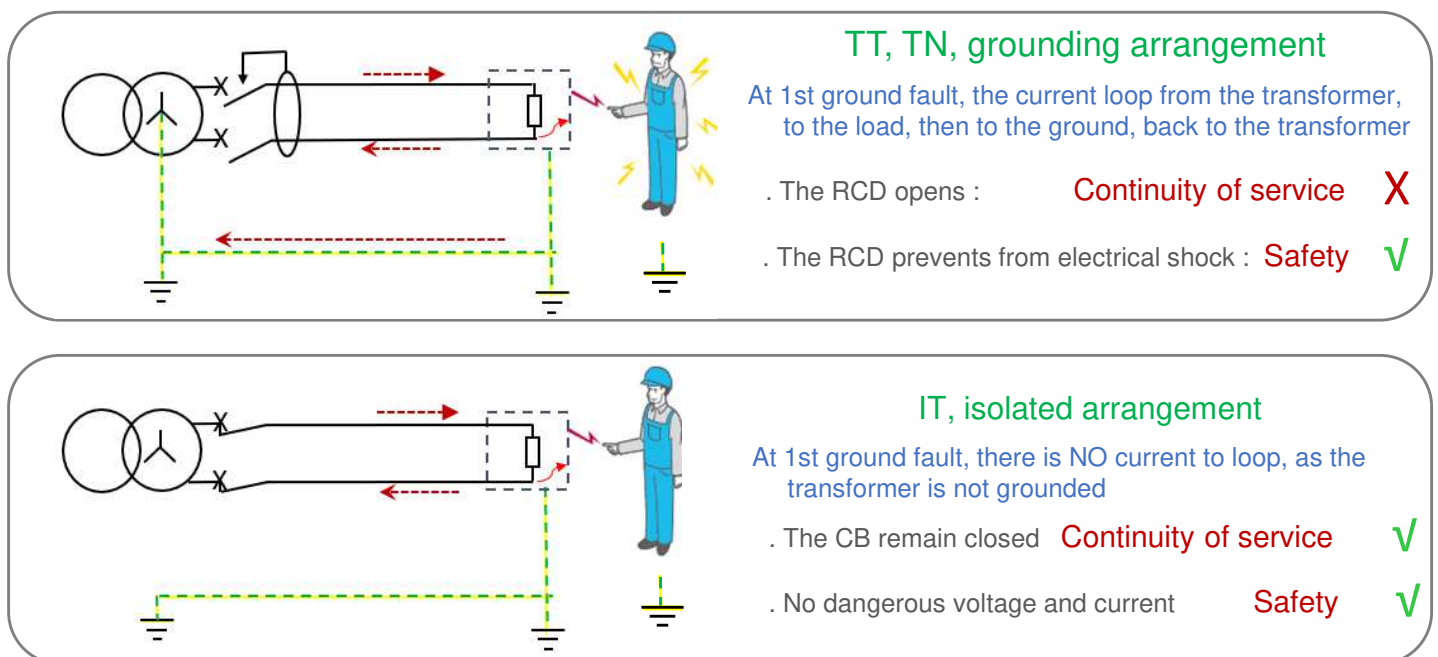
TN system stands for:

- (T) Transformer Neutral is grounded
- (N) Exposed conductive parts are connected to Neutral thru PE or PEN

IT system stands for:

- (I) Transformer Neutral is Isolated
- (T) exposed conductive parts are grounded thru PE

How continuity of service and safety are ensured



But, if Continuity of Service & Safety remains in case of ground fault, How do I know there is a fault ?
-> Go to “Vigilohm, Insulation Monitoring Devices”

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