FACT SHEET

TYPE OF PROTECTION "OIL IMMERSED"
EX O - IEC/EN 60079-6 STANDARD UPDATE

IEC/EN 60079-6 part Ex "o" was published in March 2020. This standard is relevant for equipment for use in explosive gas environments marked with type of protection liquid immersion "o".

This factsheet details the changes to the standard and how this may impact your product.

IEC 60079-6 is a global standard for equipment intended to be used in explosive gas environments marked with type of protection liquid immersion "o". The standard has recently been updated.

IEC/EN 60079-6 part Ex "o"

Liquid immersion "o" is a rarely used form of protection, where the electrical circuits are submerged in oil to keep the gas away from them. This method is suitable for items such as power transformers

Oil Immersed Equipment is currently marked Ex ob or Ex oc, dependent on the zone it is intended for use in.

Key changes in the revised standard include:

- The scope of the standard for Zone 2, Oil Immersed Equipment (Ex oc) has been extended to permit voltages of up to 245kV.
- In order to ensure safety at the higher voltages a new annex has been included in the IEC 60079-6 standard, Annex D.
- This scope extension requires equipment above the 15kV limit for Ex oc to be fitted with safety devices in accordance with clause 4.7.3 of the standard and a pressure relief devices that isolates power from the equipment when the devices is activated.
- The minimum liquid depth is now determined by the high voltage test in clause D 4.6 (high voltage dielectric strength tests).
- All high voltage (HV) cables above 15 kV shall be armoured and shielded.
- If an on-load tap changer is present, it must be of a type which cannot produce arcs or sparks during switching.
- Because mineral- and silicone-based oils (the most common fluids used for Ex o equipment) are hygroscopic, meaning they absorb moisture from the air, a sealed design is the only practical choice to increase maintenance intervals and reduce failure risks.

The implications

This is an extension to the existing requirements, allowing additional equipment to be approved to this standard. Existing equipment should already comply with the requirements of the standard. However, equipment with higher voltage levels are now able to be approved to this standard, allowing manufacturers additional approval options in the future.

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