

Tunnel Transformer, 125kVA, 3300:400V, with Fire Suppression

Part No. A7043099 - Tunnel Transformer, 125kVA, 3300 to 400V with Fire Suppression

Over the last 12 months the Blakley team has been heavily involved in supplying equipment to many of the tunnel projects currently being undertaken in the UK. A recent development has been the incorporation of fire suppression equipment in tunnel transformers. Although dry type, air cooled transformers do not present an obvious fire hazard, due to the number of transformers to be installed and the consequences should a fire develop, it was decided to err on the side of caution and incorporate fire suppression equipment in the larger tunnel transformers being supplied.

The transformers are rated at 125kVA and housed in robust, non-vented, steel enclosures providing protection to IP55. The transformers are fitted with an incoming and outgoing 500A Victor half coupler. These heavy duty mining connectors enable the line of transformers to be quickly extended as the tunnel progresses. Some of the transformers on the project are fitted with 400V and 110V sockets but the units shown in the image above incorporate an outgoing MCCB / RCD to supply a remote 400V tunnel distribution assembly, which is fitted with socket outlets and other switchgear.

Fire Suppression System

The fire suppression extinguishant is Novec 1230, which is a clean, non-conductive extinguishing agent, which is stored in a cylinder located at one end of the enclosure. The suppression system utilises a fire detection tube, which has a dual purpose: it acts as the fire detector and it is also a source of extinguishant. The tubing is routed around the transformer core and other electrical components. When high temperatures are detected, the tube bursts and extinguishant is discharged from the ruptured tube directly at the source of heat. Extinguishant is also discharged from strategically placed nozzles located within the enclosure. The whole system operates pneumatically and an external power source is not required.

The fire suppression system incorporates two falling pressure switches, which indicate (i) a leaking system and (ii) low pressure. A rising pressure switch indicates that a discharge event has taken place. Enclosures are also fitted with red, mushroom headed, emergency stop buttons. The emergency stop button and the rising pressure switch can be utilised to operate the supply protection, in order to isolate the electrical supply, which will help prevent a fire from re-igniting once the extinguishant has been discharged.

If you would like to discuss the incorporation of fire suppression equipment within a tunnel transformer or distribution assembly, please contact the Blakley Projects Team who will be pleased to be of service.