

UniGear type ZVC

Medium voltage, arc-proof, air-insulated,
fused vacuum contactor switchgear



FAQ

What type of HV fuses can be used in UniGear Type ZVC?

HV fuses complying with the following requirements are suitable to use in **UniGear type ZVC**.

- Be designed for motor starting duty.
- Be tag mounted style with type TA2 tags to BS2692.
- Be fitted with a striker pin with characteristics conforming to "heavy type", Table XII of BS2692.
- Have maximum dimensions of 82mm dia. and 454mm fixing centres over tags.

Refer to our brochure for recommended fuse types.

Why are clip mounted fuses not an option?

UniGear type ZVC design optimises the space available to achieve the highest performance. This philosophy is emphatically demonstrated by the HV fuse chambers which are integrated into the contactor/isolator epoxy resin moulding. Tag type fuses, which are widely accepted as the market norm for motor starting fuses, offer greatest opportunity to achieve a compact, effective arrangement of HV fuses and tripping mechanism. particularly when parallel fuses are required.

DIN style clip mounted fuses are not compatible with effective layout of encapsulated conductors and fuse chambers in the contactor/isolator epoxy resin moulding.

What is the procedure for selecting the HV fuses?

The following base data is a pre-requisite for fuse selection.

- System voltage and fault current.
- Motor full load current, motor starting current, starting time of the motor from zero to full speed and the maximum number of starts per hour.

Manufacturers test data (or even design data is not always readily available at the time UniGear type ZVC switchgear should be ordered. In this case assumptions must be made based on the specified kilowatts for the machine, the type of drive (e.g. pump, fan, compressor) and the application process.

- For full load current (FLC) calculation, assume p.f. and efficiency are 0.9.
- Assume starting current is 5 x FLC.
- For starting time assume 6.0 secs for pumps
15.0 secs for compressors
15-30 secs for fans
or best guess based on knowledge of the process.
- Knowledge of the process will enable a best guess of the number of starts per hour.

Final selection is made by rationalising the ratings across the installation. In HV motor starters the HV fuse is only for short circuit protection. It is permissible to over fuse some of the smaller and mid-range drives in order to rationalise the number of different ratings of HV fuses required in an installation provided no protection grading problems are created.

There are no main busbar support panels. Why?

UniGear type ZVC's compact dimensions provides the benefit of fully utilising the properties of solid insulating materials. Epoxy resin is used to encapsulate the three phase set of riser bars from the contactor compartment to main busbars. This fully insulated unitary moulding includes bridging plates for joining main busbar sections and is extremely strong. These mouldings are spaced 325mm apart in a switchboard line-up providing adequate support for bus systems up to 4000 amps continuous current and 50kA/125kA peak current fault levels. No additional supports are necessary.

This feature of design makes redundant the traditional intercubicle support partitions. A suite of several **UniGear type ZVC** cubicles share a common main busbar compartment which, in a multi-section busbar system, would be closed by a partition plate installed in the bus section circuit breaker panel.