

# Motor Protection Principles

Inter-Teknik HV current-limiting fuses are used for MV motor circuit protections for decades. Proper selection is essential in this application.

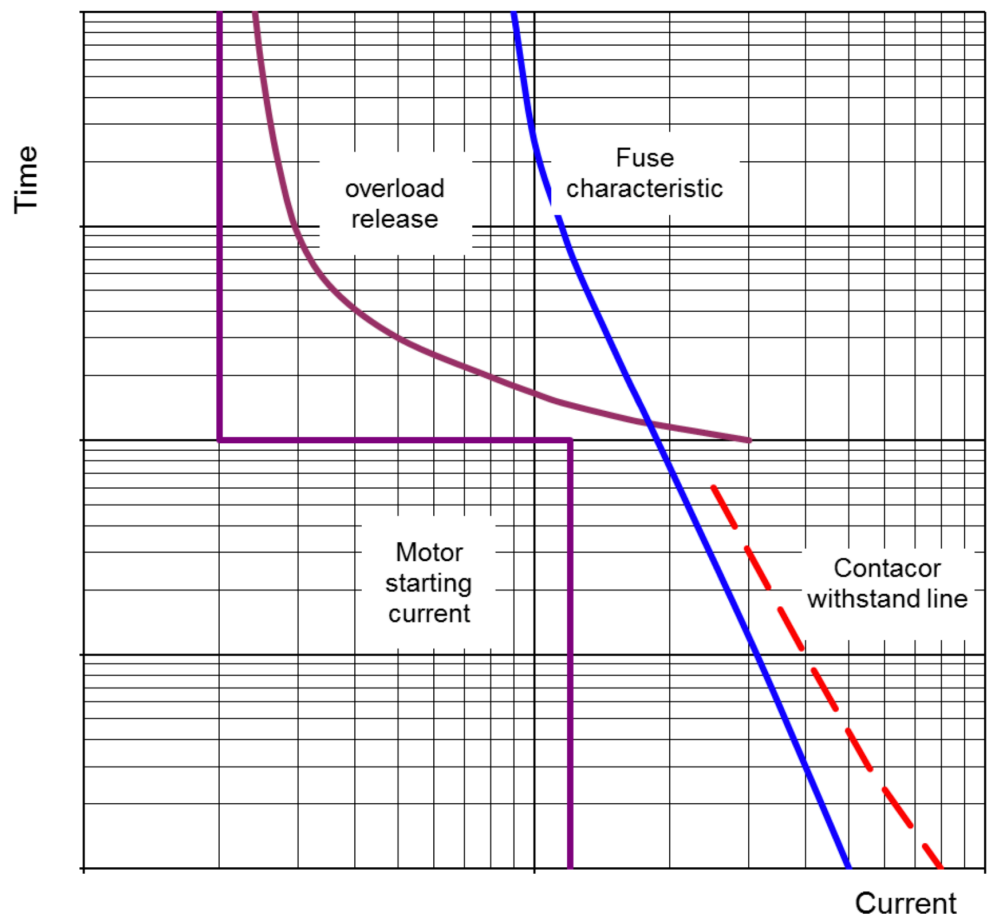
## What Should You Expect From The Fuses In Mv Motor Circuits?

For direct-on-line starting MV motors, fuses are selected to provide short-circuit protection only. Major requirement for fuses in motor circuits is to prevent contact welding of contactors under locked rotor conditions and short-circuit faults. As MV motors usually operate in powerful industrial networks, high breaking capacity is a vital requirement for fuses in MV motor circuits.

## What Do You Need To Consider?

The fuse does not need to provide overload protection as an interlock circuit that triggers a mechanical switching device (e.g., a vacuum contactor commonly cares for this).

Apart from the co-ordination with the contactor, the fuse has to withstand frequent motor starting currents without deterioration. Figure 1 highlights all these major parameters on a graph.



# Selection

Standard motor operating conditions for fuse selection are as follows

- Motor starting current: 6 times the motor rated current
- Duration of starting current: 10 s
- Number of consecutive starts: 2
- Frequency of starts: 6 per hour

Deviations from these standard starting conditions may require different fuse ratings.

## **IMPORTANT**

Thermal protection feature is highly adopted and recommended in this application; particularly due to frequent motor starting currents.

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