

HHD Applications

Protection of Motors Circuits

Introduction

For the needs of motor circuit protection, the most popular ranges of SIBA fuses are the following;

Product Group	Characteristics	Article Number	Fusing Selection
HHD BM	Back-Up - Motor	30xxx5y.(Amp)	Preferred
HHD - BMR	Back-Up - Motor	30xxx55.(R-Rating)R	Preferred
HHD (DIN Standard)	Back-Up	30xxx1y.(Amp)	Alternate

It is mandatory to ensure that the correct graph be utilized for the selected "Product Group" fuse determining the fuse current rating, otherwise malfunctions may occur. IEC 60644 defines the "k-factor", which is in principle is a safety factor. The SIBA graphs include this safety factor, therefore, the complicated handling of this factor can be avoided without compromising safety. Whenever possible, fuses with "Back-Up Motor" characteristics is to be preferred use due to their very low power losses. If in doubt, SIBA should be consulted.

Selection

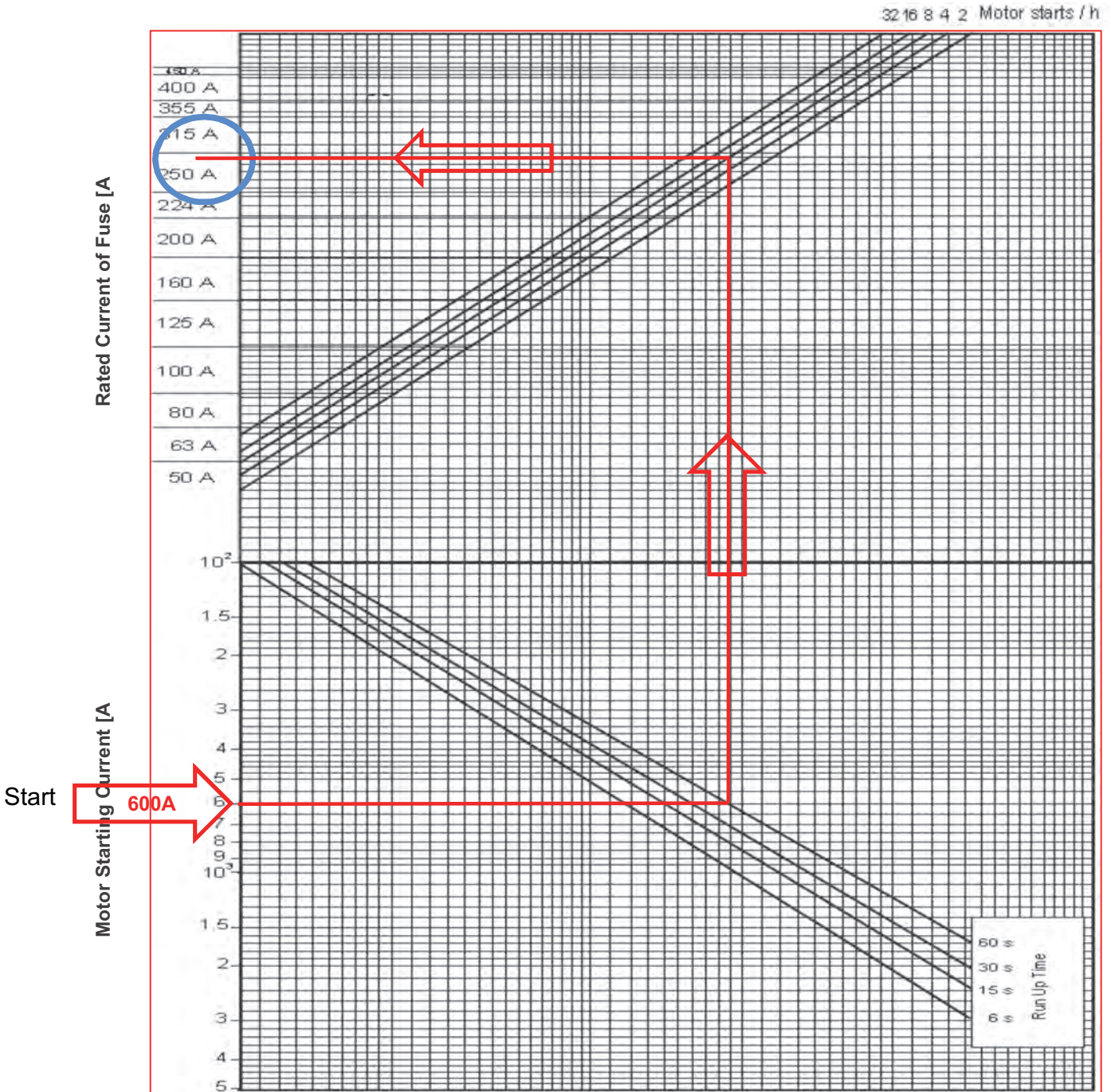
Fuse Selection requires the need to consider the following parameters;

- **Motor Data** - Rated Voltage($U_{M-Rated}$), Power Factor($\cos\phi_M$), Rated Power($P_{M-Rated}$) and Efficiency(η_M).
- **System Data** - Run up time, number of starts per hour - Maximum two starts permissible in succession.
- **Fuse Preselection** - Rated voltage and mechanical dimensions according to operating and assembly requirements.
- **Motor Starting Current**- (If not known, typical is $6xI_{M-FLC}$), **FLC** - Full Load Current of motor.
- **Check** - that the rated current of motor is < 70% of the fuses current rating, if not use next higher current rating and recheck that proper usage has been achieved.
- **Consult SIBA** in cases of special conditions that are not considered standard such as, maximum temperature > 40° C, run-up times > 60s, number of starts > 32/h, auto transformer or soft start. If in doubt about the application, please contact us to assist for proper fuse performance.

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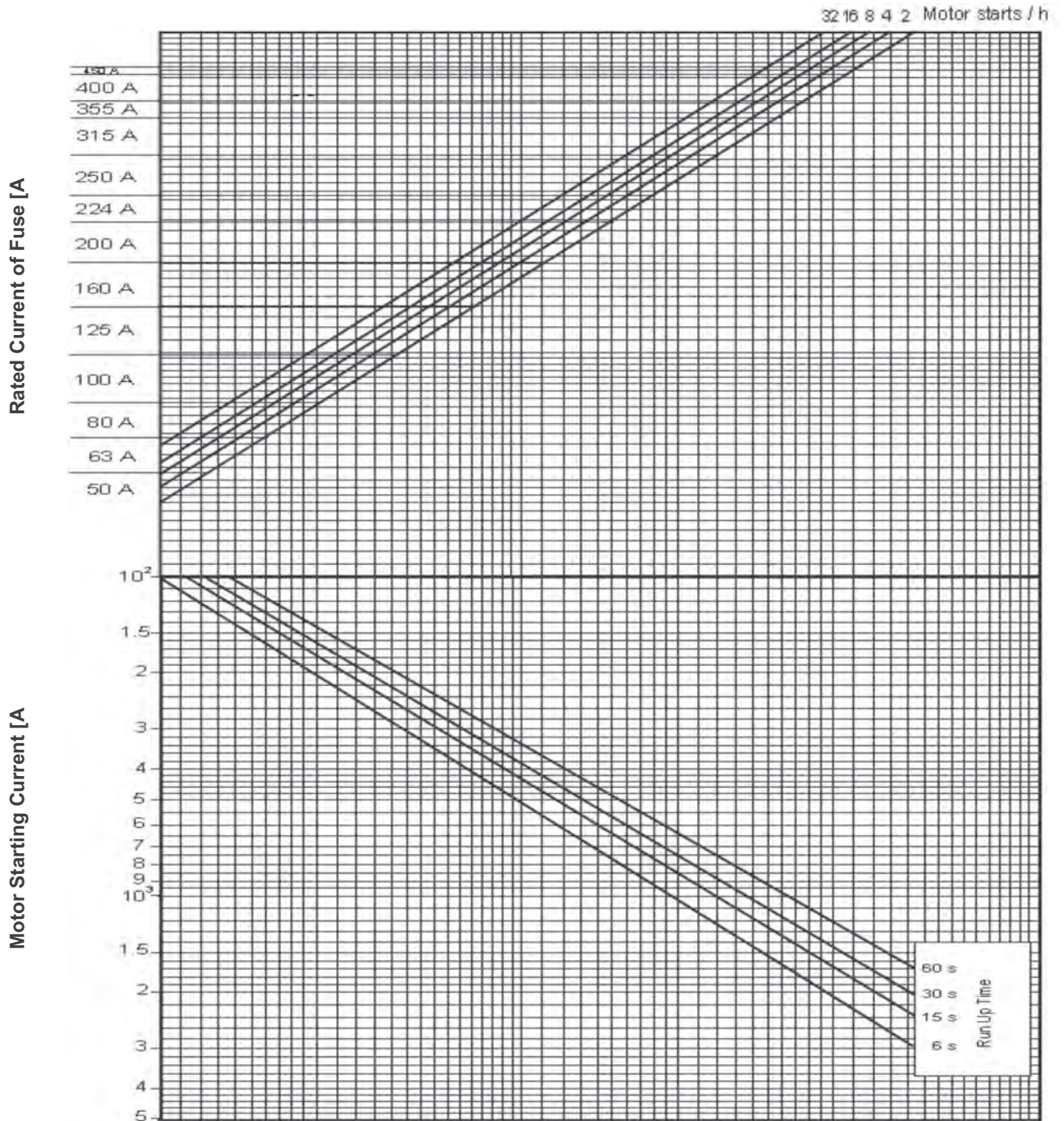
Example for Fuse Selection



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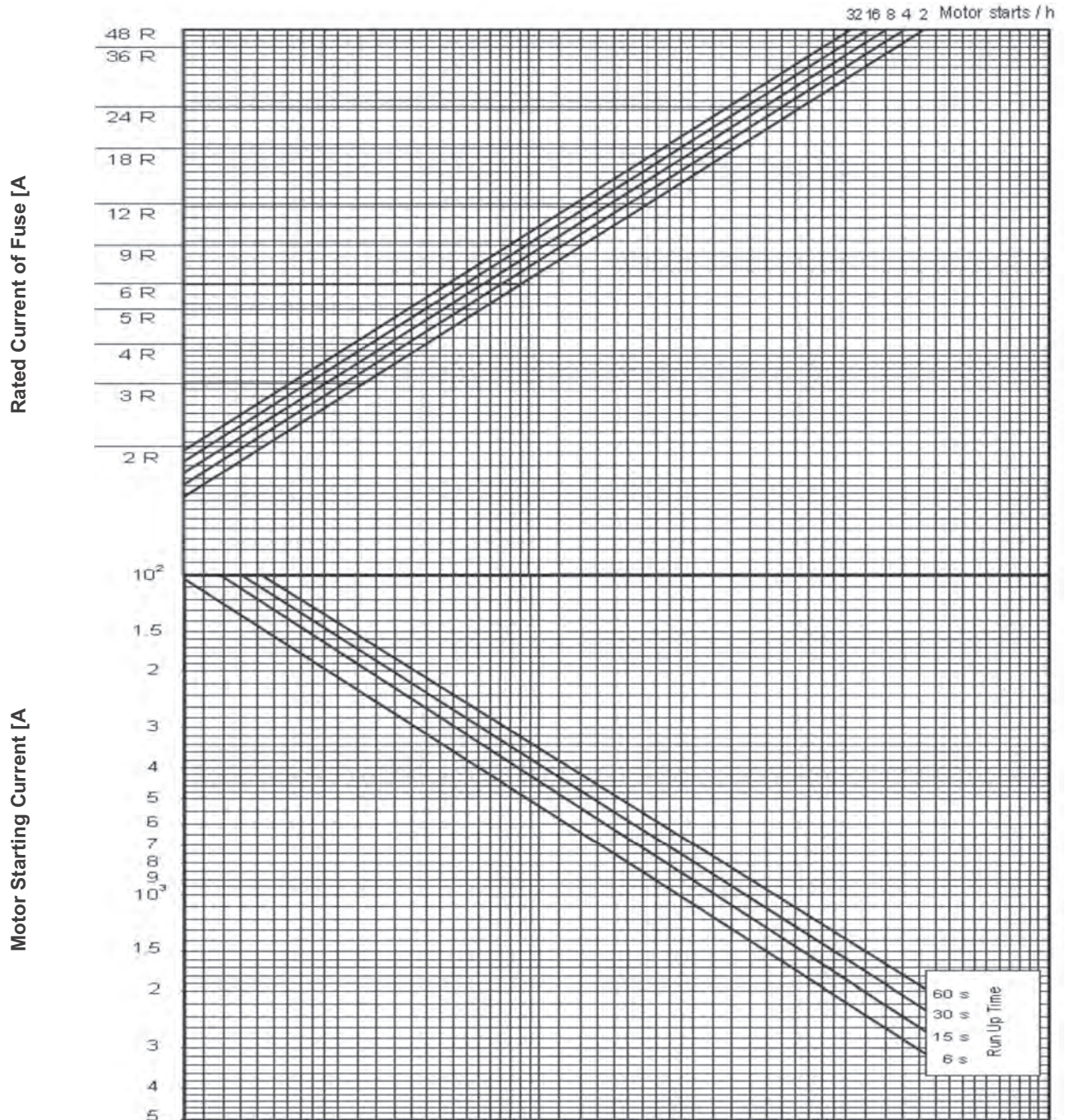
HHD-BM Fuse Selection Graph for 30xxx5y.(Amp) Series



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HHD-BR and Fuse Selection Graph for 30xxx55.(R-Rater)R Series



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HHD-B Fuse Selection Graph for 30xxx1y.(Amp) Series

