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MICROMASTER 440 Sizes FX / GX

Installation Guidelines, Reactor and Filter

Line commutating reactor

For high supply fault levels, a line reactor is required in order to protect the drive inverter (or drive converter) against excessively high harmonic currents and therefore to protect it against overload. A line reactor also limits the harmonics to permissible values. The harmonic currents are limited by the total inductance comprising the line reactor and line feeder inductance.
The line commutating reactor should be installed between the EMC filter and drive inverter/converter.
The inputs and outputs can be interchanged due to the actual design of the reactor.

L1
L2
L3

L3
L2
L1

Line supply

EMC filter, Class A

The EMC filter reduces the cable-borne radio interference voltage, caused by the drive inverter. In conjunction with the line commutating reactor, the limit values according to EN 55 011, limit value Class A1 (industrial networks) for grounded line supplies is achieved.

L1
L2
L3

Motor

CAUTION
All reactors and filters are "stand-alone" units, with degree of protection IP00.
The EMC filter, Class A may not be used in conjunction with a line commutating reactor.
The cables between the filter, reactor and drive inverter should be kept as short as possible.

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If a line reactor is not used, then the line feeder inductance must be correspondingly higher. This means that R_{SC} (ratio of the system fault level at the line connection point to the apparent drive inverter output) must be sufficiently low.

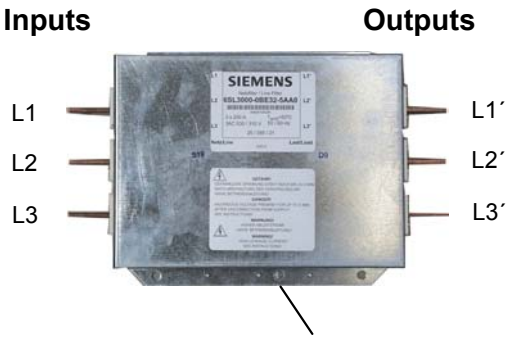
$R_{SC} = S_{k\ line}$ / (output of the drive inverter in KW*1.08)

The factor of 1.08 is obtained from the efficiency and the line supply power factor of the drive inverter **$Vk_{LINE} = 1/ Rsc_{line}$*100**

MICROMASTER 440 inverters (90-200kW) are designed for a V_k of at least 2.33%. With the equation
Vk total = Vk_{LINE} + 2%, generally, it is necessary to use a line commutating reactor.

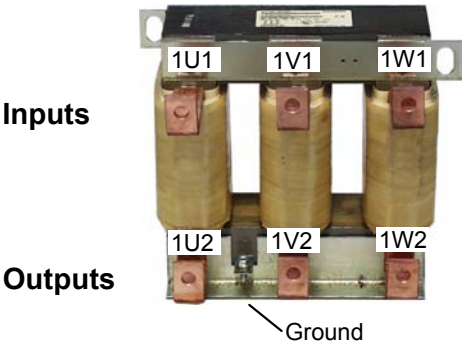
The power supply company (power utility company) should be contacted for the system fault level. It can also be taken from the rating plate of the upstream transformer. In practice, it is often difficult to determine this data which is the reason that we always recommend that the drive inverter is used with a line reactor.

Filter connections



Grounded through a large surface area to the drive inverter (e.g. through a mounting panel)

Reactor connections



The inputs and outputs can be interchanged as a result of the reactor design.

Ordering overview

MRPD MICROMASTER 440	Motor output (constant torque) in kW	MRPD line commutating reactor	MRPD EMC filter, Class A
6SE6440-2UD38-8FA0	90	6SL3000-0CE32-3AA0	6SL3000-0BE32-5AA0
6SE6440-2UD41-1FA0	110	6SL3000-0CE32-8AA0	6SL3000-0BE34-4AA0
6SE6440-2UD41-3GA0	132	6SL3000-0CE33-3AA0	6SL3000-0BE34-4AA0
6SE6440-2UD41-6GA0	160	6SL3000-0CE35-1AA0	6SL3000-0BE34-4AA0
6SE6440-2UD42-0GA0	200	6SL3000-0CE35-1AA0	6SL3000-0BE36-0AA0