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MAGNETIC STARTER

A magnetic starter is an electromagnetically operated switch which provides a safe method for starting an electric motor with a large load. Magnetic starters also provide under-voltage and overload protection and an automatic cutoff in the event of a power failure. A magnetic starter is controlled by a circuit which has a much lower power level than the switched circuit. Unlike a circuit breaker, contactor is not intended to interrupt a short circuit current.

Magnetic starters are widely used in many branches of industry to control electric motors, lighting, heating, capacitor banks, thermal evaporators, and other electrical loads. The physical size of contactors ranges from a device small enough to pick up with one hand, to large devices approximately a meter (yard) on a side.

Electromagnetic contactors can be used not only for switching at normal mode condition, but also for protection against the voltage drop in the network. Electromagnet cannot keep a contactor in moving system with voltage decreasing and it is spontaneously switched off.

A magnetic starter is a device designed to provide power to electric motors. It includes a contactor as an essential component, while also providing under-voltage and overload protection and an automatic cutoff in the event of a power failure.

A magnetic starter has a contactor and an overloadrelay, which will open the control voltage to the starter coil if it detects an overload on a motor. Overload relays may rely on heat produced by the motor current to operate a bimetal contact or release a contact held closed by a low-melting-point alloy.

The overload relay opens a set of contacts that are wired in series with the supply to the contactor feeding the motor. The characteristics of the heaters can be matched to the motor so that the motor is protected against overload. Recently, microprocessor-controlled motor digital protective relays offer more comprehensive protection of motors.

Magnetic starters are divided into:

1. Motor soft starters;
2. Enclosed motor starters;
3. The Direct On Line Motor Starters.

Magnetic starters are commonly found on equipment drawing several horsepower or higher. Examples include woodworking machinery such as cabinet saws or shapers. Machines with smaller loads, such as a drill press or most handheld tools normally use only a switch instead. Magnetic starters are stock components for many machines, and aftermarket starters are also available for use as replacements or for retrofitting older machines.