

Technical note

Secure uptime



Secure uptime

Voltage fluctuations occur even in the most stable networks. Long cabling or a temporary high power outtake, exceeding that which a generator is dimensioned for, are two examples of how voltage fluctuations come about.

With conventional contactor technology these fluctuations could lead to chattering contacts, phase-losses or welding contacts. A motor running uncontrolled can result in costly stoppage or even pose a risk for persons' safety.

With ABB's new contactor and motor protection range the risk of contact welding is practically eliminated. Reduced servicing work and secured uptime saves many millions of dollars for our customers. How does AF do it?

Distinct pull-in and drop-out values

The coil interface of the AF contactor ensures that there is always enough energy to keep its contacts closed. Its distinct pull-in and drop-out values ensures that the contacts are either opened or closed, which eliminates the chattering or "humming" related to conventional contactor technology.

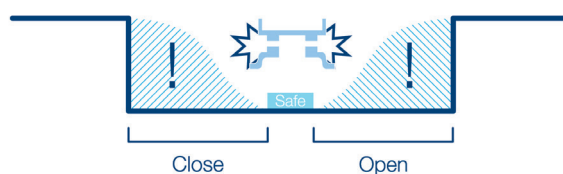
Immunity to sags and dips

A sag is a complete drop (0 V) in voltage under a short period of time (20ms). A conventional contactor would open during a sag. Side-equipment would have to be invested in to ensure that enough voltage is continuously fed through the coil, even through short voltage interruptions.

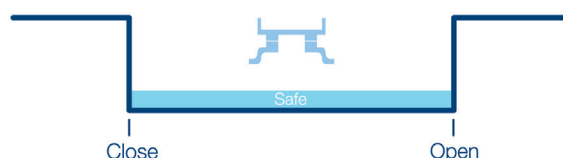
A dip is a small drop in voltage (>0 V). A conventional contactor would lose some of its holding force which would allow for the contacts to separate. The standing arc between the contacts can potentially melt the contact materials, which would weld when closed again.

The AF contactor can withstand dips and sags of up to 20 ms. The AF technology stores enough energy to withstand sags and dips and meets the sag immunity standard SEMIF47-0706.

Conventional contactor

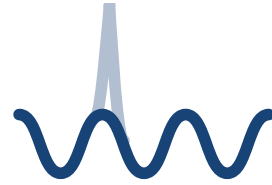


AF contactor



Built-in surge suppression

Another benefit of the AF technology is that it absorbs surges. Surges could with conventional technology potentially harm surrounding equipment and the amplitude can reach several kilovolts. Thanks to the AF technology the surges never reaches the control circuit completely eliminating the need of a surge suppressor.



Coordination

A starter combination often consists of a switching device (AF contactor), an overload protection device (thermal- or electronic overload relay) and short-circuit protection device (Manual motor starter or circuit breaker). All products are carefully configured for consistent reliability, whether complete solution or single product. We offer two types of coordination according to IEC 60947-4-1 (EN 60947-4-1).

Coordination type 1: In short-circuit conditions, the contactor or starter does not endanger persons or installations and will not continue to operate without being repaired or having parts replaced.

Coordination type 2: In short-circuit conditions, the contactor or starter does not endanger persons or installations and will continue to operate. The risk of contacts light welding is accepted.

