

Remote Reset and Ground Fault Protection

Overload Relay Protection Modules

The CEP7-EGF and CEP7-EGJ side modules provide additional protection against ground fault trips. Experts seem to agree that approximately 80% of all short-circuit faults start as low level arcing ground fault. Early detection of a ground fault problem can avoid catastrophic failure at the height of production.



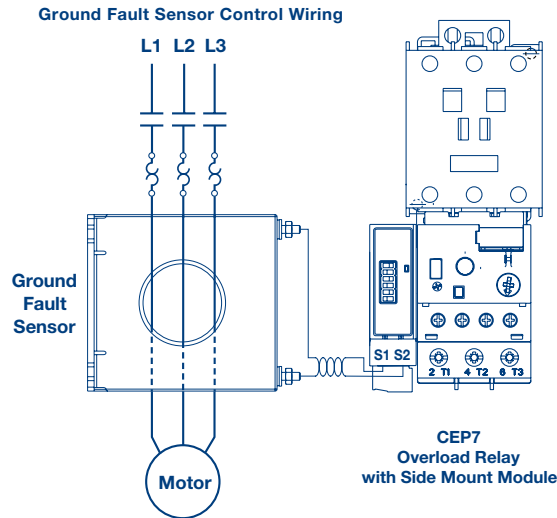
Why your motor needs protection from ground fault

The Sprecher + Schuh CEP7-EE_ overload relay can be equipped with a side-mount ground fault module, CEP7-EGF, which will detect and trip the overload relay when a ground fault condition exists. Alternatively the ground fault detection can be combined with stall protection, CEP7-EGJ, where motors are subjected to frequent overloaded conditions. The ground fault detection range can be adjusted and LED's are used to indicate status. Ground fault relays are designed to be used with donut shaped current transformers called ground fault sensors.

Ground faults often start from a break in insulation or perhaps simply from excess condensation of water on motor windings during down time. The ground fault arc will grow into a serious phase-to-phase fault finally reaching a magnitude requiring detection and response from the short-circuit device. Once the short-circuit device has tripped the damage to equipment and possibly personal injury has already occurred. Applications can include dirty water or clean water treatment plants, wash down areas of industrial plants, pumping applications and of course marine applications.

Ground fault current is sensed by passing all lines carrying current to and from a motor through the window of a special current transformer called a ground fault sensor. If all the current to the motor returns through the lines in the sensor window, no significant current will be induced in the sensor secondary. If, however, ground fault current returns via a path external to the sensor, such as via the conduit walls, a current will be induced in the sensor secondary. This current will be sensed and amplified by solid state circuits. If the ground fault current is larger than the selected ground fault trip level of the overload relay, the overload relay will trip.

Ground Fault Protection Modules



CEP7-EGJ Operational LED

Status LED:	Steady Green - Module is powered up.
	Flashing LED - The number of flashes followed by a pause identifies the specific trip code as follows:
	(1) Flash - overload trip
	(2) Flash - phase loss trip
	(3) Flash - ground fault trip
	(4) Flash - jam trip
Fast Flash - Impending trip Ground fault detected and CEP7 not yet capable of tripping.	
Steady Red - Hardware fault. Internal hardware fault detected and CEP7 trip attempted.	

Overload Relay Reset Mode	SW1	Manual: 1	Automatic: 0
Ground Fault Current Range	SW2	SW3	
20...100mA	0	0	
100...500mA	0	1	
0.2...1.0A	1	0	
1.0...5.0A	1	1	
Ground Fault Trip Level	SW4	SW5	SW6
Disable/Off	0	0	0
20% Max GF Current	0	0	1
35% Max GF Current	0	1	0
50% Max GF Current	0	1	1
65% Max GF Current	1	0	0
80% Max GF Current	1	0	1
90% Max GF Current	1	1	0
100% Max GF Current	1	1	1
Overload Relay Type	SW7	3 Phase : 1	1 Phase: 0
Jam Protection	SW8	Enable: 1	Disable: 0

CEP7 Ground Fault Sensor Selection

Sensor Type	Maximum Current	Frequency	Turns Ratio	Sensor Window I.D.	Maximum Recommended Cable Size	For use with CEP7-EGF and CEP7-EGJ and contactor...	Catalog Number	Price
	45A	50/60 Hz	1000:1	19.1mm (0.75 in.)	8 AWG @ 600V	CA7-9...CA7-37	CEP7-CBCT1	50
	90A	50/60 Hz	1000:1	39.6mm (1.56 in.)	2 AWG @ 600V	CA7-9...CA7-85	CEP7-CBCT2	175
	180A	50/60 Hz	1000:1	63.5 mm (2.50 in.)	250MCM (120mm ²) @ 600V	CA7-09...CA6-180	CEP7-CBCT3	226
	420A	50/60 Hz	1000:1	82.3 mm (3.25 in.)	350MCM (185mm ²) @ 600V	CA7-09...CA6-420	CEP7-CBCT4	287



CEP7-ERID VALUE KITS

Intelli-buttons and your choice of the side-mounted modules can be ordered as (a) individual components, (b) the combination of necessary parts can be ordered as a kit or (c) you can have these kits installed in any control panel built by Sprecher + Schuh that contains a CEP7-EE_ overload relay. Check out our Intelli-button flyer for the Value Kit ordering details.