

EGF Series CurrentWatch Current Sensors



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Product Description

The CurrentWatch EGF Series from Eaton’s Electrical Sector is a family of ground fault (earth leakage) sensors. Ground fault sensors help protect people, products and processes from damage by ground fault conditions by monitoring all current-carrying conductors in grounded single- and three-phase delta or wye systems.

The EGF Series with solid-state outputs offers the benefit of reliable, long-lasting solid-state switches. Solid-state design provides unlimited switch operating life, superior resistance to shock and vibration, zero off-state leakage, high switch speeds and high input-output isolation.

The EGF Series with mechanical relay outputs is available in solid-core housings with a choice of NO or NC SPST latching relays and a SPDT Form C relay with auto-reset.

Application Description

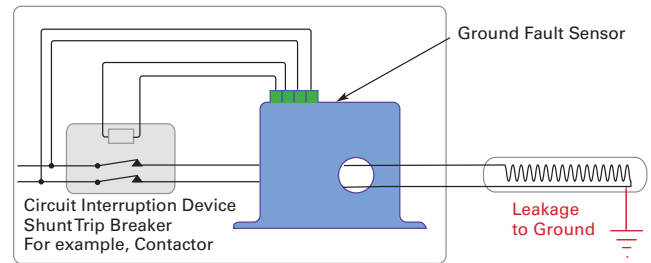
Typical Applications

- **Personnel Protection (Typically 5 mA)**—Detects sensitive ground fault conditions, which could cause injury to people, and functions as a sensor and alarm trigger when applied as an input to an overall ground fault protection system
- **Equipment Protection (Typically 10 or 30 mA)**—For applications where personnel protection is not the primary concern, higher setpoint capability helps eliminate nuisance tripping while still providing adequate ground fault detection to protect machine electronics
- **Regulatory**—Meets requirements as stipulated by governmental and industrial regulatory groups for ground fault sensing

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Example Application—Insulation Breakdown Monitoring



“Zero Sequence” Operating Principle

In three-phase delta and wye systems, under normal conditions, current in the “hot” leg of a two-wire load is equal in magnitude but opposite in sign to the current in a neutral leg. As a result, the electromagnetic fields surrounding these two conductors cancel, producing a “zero sum current.” As soon as current leaks to ground (fault condition), the two currents become imbalanced and a net magnetic field results. The CurrentWatch EGF Series sensors monitor this field and trip the contacts when the leakage rises above the setpoint.

For the most current information on this product, visit our Web site: [www.eaton.com](http://www.eaton.com)

For Customer Service in the U.S. call 1-877-ETN CARE (386-2273), in Canada call 1-800-268-3578. For Application Assistance in the U.S. and Canada call 1-800-426-9184.

#### Features

- **Broad Range of Options to Meet Application Needs**—NO or NC, solid-state or mechanical relays, normally energized or normally de-energized contacts
- **Setpoint Options Maximize Ease-of-Use and Application Flexibility**—Field selectable 5, 10 or 30 mA setpoints on the EGF “tri-set” models make user adjustments fast, sure and convenient
- **Compatible with Standard Equipment**—Application on single- and three-phases systems, ideal for use with shunt trip breakers, and magnetically isolated from monitored circuit and control power
- **Agency Approved**—UL and CE Certified, accepted worldwide

#### Standards and Certifications

- UL 1053, Class 1 Recognized
- CE



#### **⚠ DANGER**

**THIS SENSOR IS NOT A SAFETY DEVICE AND IS NOT INTENDED TO BE USED AS A SAFETY DEVICE. This sensor is designed only to detect and read certain data in an electronic manner and perform no use apart from that, specifically no safety-related use. This sensor product does not include self-checking redundant circuitry, and the failure of this sensor product could cause either an energized or de-energized output condition, which could result in death, serious bodily injury, or property damage.**

#### Product Selection

##### EGF Series CurrentWatch Current Sensors

#### Solid-State Output Sensors

##### Solid-Core Housing



Power Supply	Setpoint	AC Solid-State Output	DC Solid-State Output	Contacts	Catalog Number	
<b>Solid-Core Housings</b>						
120 Vac	Fixed, 50 mA	Solid-state, NO, 1A at 240 Vac	—	Normally energized	<b>EGF1NOACNE050</b>	
				Normally de-energized	<b>EGF1NOACDE050</b>	
		Solid-state, NC, 1A at 240 Vac	—	Normally energized	<b>EGF1NCACNE050</b>	
				Normally de-energized	<b>EGF1NCACDE050</b>	
		—	Solid-state, NO, 0.15A at 30 Vdc	Normally energized	<b>EGF1NODCNE050</b>	
				Normally de-energized	<b>EGF1NODCDE050</b>	
	—	Solid-state, NC, 0.15A at 30 Vdc	Normally energized	<b>EGF1NCDCNE050</b>		
			Normally de-energized	<b>EGF1NCDCDE050</b>		
	120 Vac	Fixed, 100 mA	Solid-state, NO, 1A at 240 Vac	—	Normally energized	<b>EGF1NOACNE100</b>
					Normally de-energized	<b>EGF1NOACDE100</b>
			Solid-state, NC, 1A at 240 Vac	—	Normally energized	<b>EGF1NCACNE100</b>
					Normally de-energized	<b>EGF1NCACDE100</b>
—			Solid-state, NO, 0.15A at 30 Vdc	Normally energized	<b>EGF1NODCNE100</b>	
				Normally de-energized	<b>EGF1NODCDE100</b>	
—		Solid-state, NC, 0.15A at 30 Vdc	Normally energized	<b>EGF1NCDCNE100</b>		
			Normally de-energized	<b>EGF1NCDCDE100</b>		
120 Vac		Tri-set adjustable, 5, 10 or 30 mA	Solid-state, NO, 1A at 240 Vac	—	Normally energized	<b>EGF3NOACNET3</b>
					Normally de-energized	<b>EGF3NOACDET3</b>
			Solid-state, NC, 1A at 240 Vac	—	Normally energized	<b>EGF3NCACNET3</b>
					Normally de-energized	<b>EGF3NCACDET3</b>
	—		Solid-state, NO, 0.15A at 30 Vdc	Normally energized	<b>EGF3NODCNET3</b>	
				Normally de-energized	<b>EGF3NODCDET3</b>	
—	Solid-state, NC, 0.15A at 30 Vdc	Normally energized	<b>EGF3NCDCNET3</b>			
		Normally de-energized	<b>EGF3NCDCDET3</b>			