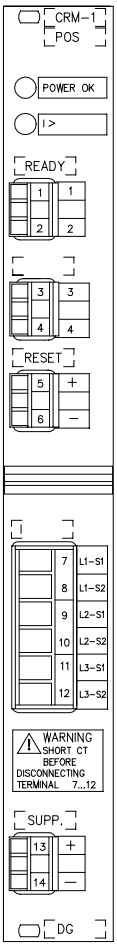
CRM-1 Current Protection Relay Module

Datasheet

4921240094A



CRM-1, Current Relay Module:

- ***Separate protection for:***
  Short circuit or
  Differential current

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The CRM-1 module is an extension module for the Delomatic system and is to be mounted in a Delomatic DGU rack along with the other modules.

The CRM-1 current relay module can be configured to carry out:

- short circuit protection or
- differential current protection (protection against internal short circuits)

The function is factory set and must therefore be stated when ordering.

Basically CRM-1 measures three AC currents. If one or more of these exceed the set point, a timer will start. When the timer runs out, a relay output is activated to trip the generator breaker/de-excite the generator.

Under normal circumstances the limits and timer are set via the Delomatic. For safety reasons, the setting can also be carried out using the on-board DIP-switches. As the CRM-1 has its own power supply, it will continue operating even if the Delomatic system fails.

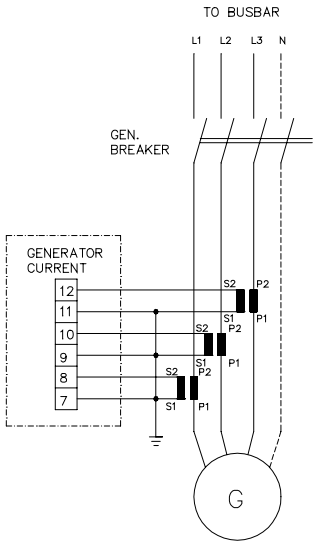
Please note that the only visual difference between the two versions is the front label on top of the unit saying “SHORT CIRCUIT” or “DIFFERENTIAL”.

Dimension/weight:	Width 30.5 mm (6 TE) / 0.5 kg (1.1 lb)		
Supply:	External supplied with 24V DC +30/-20%, internal from back-plane. External fuse max. 2A slow blow.		
Power consumption:	Typically 2W, max. 2.5W. CT burden per phase typically 0.3VA, max. 1VA.		
LED:	“Power OK”: Green LED indicates that external power supply is within limits.		
	“I>”: Red LED indicates that the setpoint for the differential current has been exceeded.		
Galvanic separation:	Test voltage 2.0/1.0kV 50 Hz – 1 min. acc. to GL, LR and DNV.		
Measurement:	Accuracy:	For I<Inom.:	±2% of Inom.
		For I>Inom.:	±2% of actual value
		Delay:	±5% of selected setting
Range:	0.5mA to 10A, 45 to 65 Hz.		
Current transformers:	Matched pairs, class 0.5, saturation level 5 to 10 x Inom.		
Overload rating:	10A cont., ≤ 75A for 10 s and ≤ 300A for 1 s.		
Resolution:	Time:	50 ms	
	Current:	5mA	
Relay rating:	250V 5A (AC), 250V 1A (DC)		
Terminals:	Current inputs 4 mm2, others 2.5 mm2		
Flammability:	Plastic parts self-extinguishing acc. to UL94-VO.		
Environment:	Temperature:	Reference:	+15...+30°C
		Nominal:	-10...+55°C
		Operational:	-25...+70°C
		Storage:	-40...+70°C
Climate:	Class HSE acc. to DIN 40040.		
Protection:	IP20 when mounted.		
Approvals:	CE-marked and type approved by LR, GL, DNV, ABS, BV, RINA and CNK.		

Selection of CTs

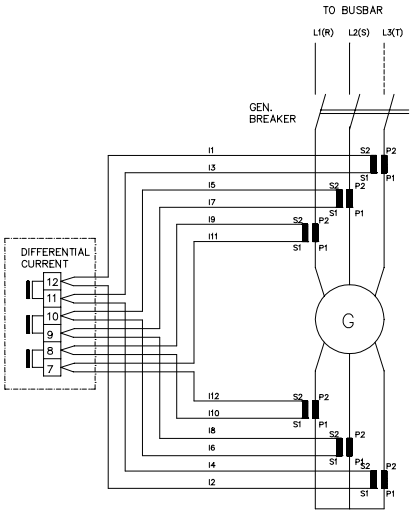
Make sure that the selected CTs are within linear working area even under short circuit conditions. Please contact generator manufacturer for information regarding generator short circuit current capabilities and select the CTs according to these data.

Wiring diagram, AC inputs, short circuit protection



Wiring diagram, AC inputs, differential current protection

IMPORTANT: As the CRM-1 uses a non-compensated differential current measuring method, it is essential that the wires from the current transformers to the CRM-1 have comparable impedances.

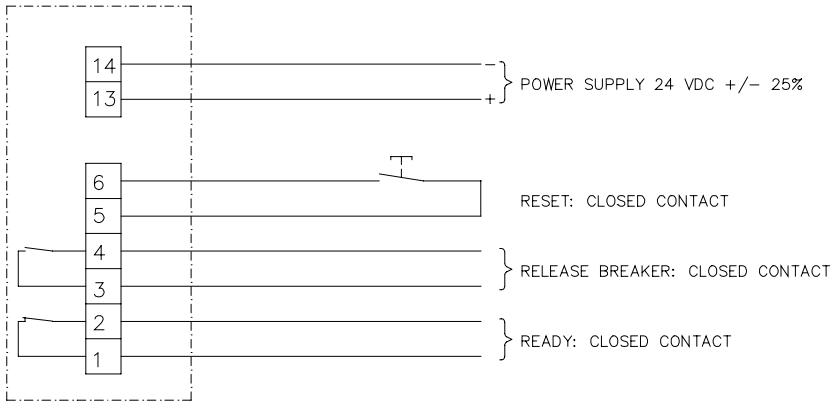


The wire pairs to be of equal impedance:

I1 = I2
I3 = I4
I5 = I6
I7 = I8
I9 = I10
I11 = I12

Control and power supply wiring

NOTE: In order to make the CRM-1 operational, the power supply on terminals 13 and 14 must be connected.



Errors and changes excepted.

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