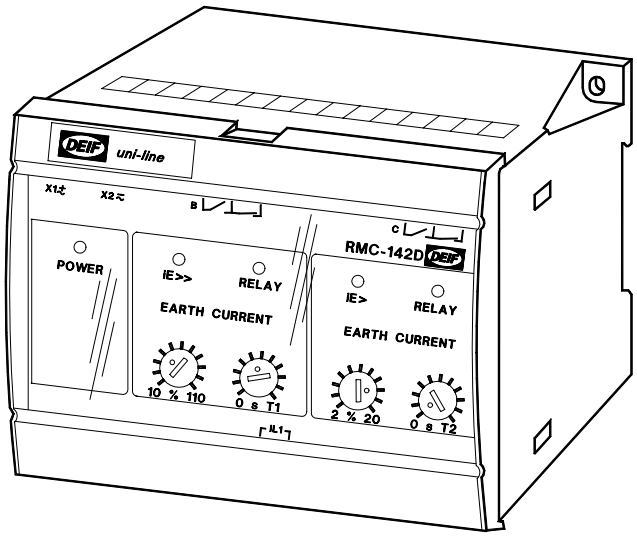
Installation and start up instructions

Stator Earth Fault Relay RMC-142D

uni-line

4189340158C (UK)



- *Earth fault protection: iE>> and iE>*
- *Built-in filter for 3rd harmonic*
- *LED indication of fault condition*
- *Timer controlled tripping*
- *LED indication for activated relay*
- *35 mm DIN rail or base mounting*

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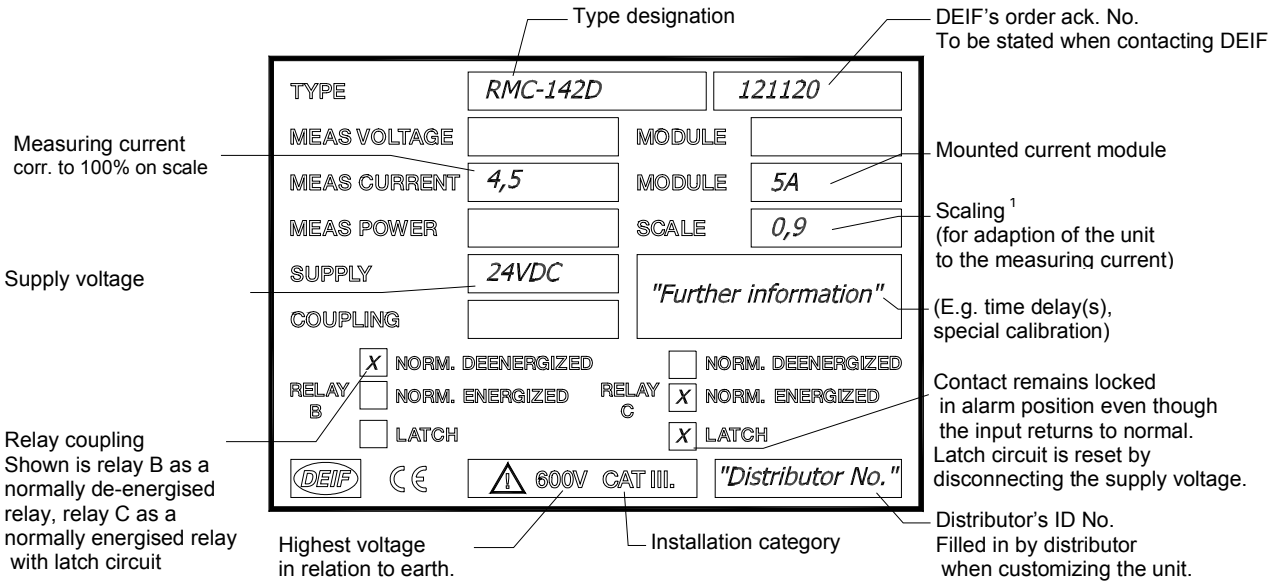
DEIF A/S

1. Description

This stator earth fault relay type RMC-142D forms part of a complete DEIF series (the *uni-line*) of relays for protection and control of generators.

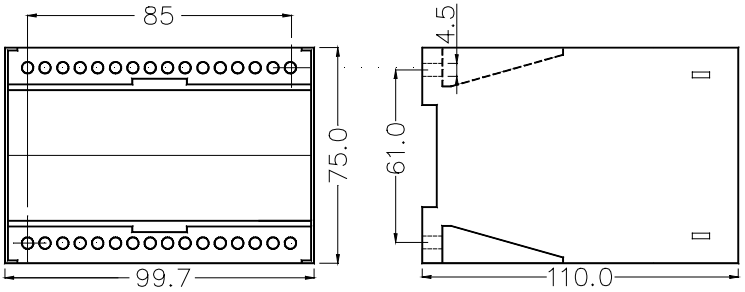
2. Label

The relay is provided with a label with the following data:



Note: The relay is provided with a 200 ms power-up relay, ensuring correct function of the relay on connection of the auxiliary voltage. Normally energised contacts (”NE”) are not activated (contact does not open/close) until 200 ms after connection of the auxiliary voltage. Likewise, the relay is provided with a 200 ms power-down circuit, ensuring supervision and maintenance of any set point exceeding for 200 ms after disconnection of the auxiliary voltage.

3. Mounting instructions



The RMC-142D is designed for panel mounting, being mounted on a 35 mm DIN rail, or by means of two 4-mm screws.

Weight: Approx. 0.600 kg

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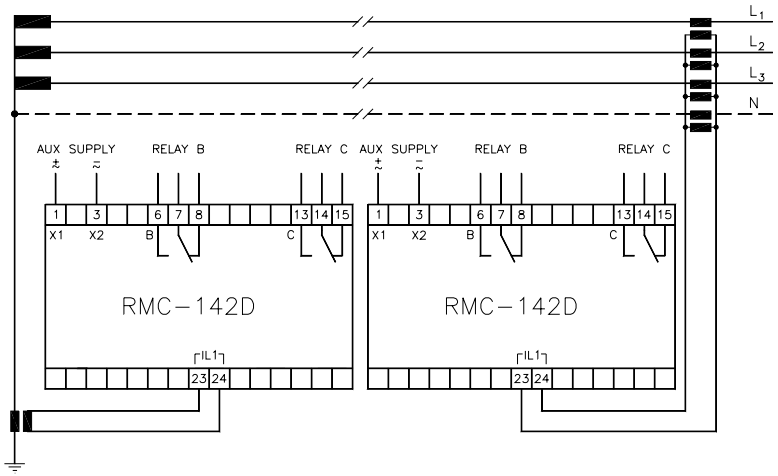
The design of the relay makes mounting of it close to other *uni-line* units possible, however make sure there are min. 50 mm between the top and bottom of this relay and other relays/units.

The DIN rail must always be placed horizontally when several relays are mounted on the same rail.

4. Connection diagram



A 2A fuse may protect the auxiliary supply connection.

The relay is protected against ESD (electrostatic electricity), and further special protection against this during the mounting of the relay is not necessary.

5. Start up instructions

5.1 Setting and indication

Setting of	LED/relay	
Earth current set point: (10…110%) of I_n **Time delay:** (0-T1) 0…1/0…5/0…10 s	IE>>	Yellow LED is lit when the set point has been exceeded, but the output contact has not yet been activated. The contact is activated and the red LED is lit after the timer has expired.
Earth current set point: (2…20%) of I_n **Time delay:** (0-T2) 0…20/0…60/0…120 s	IE>	Yellow LED is lit when the set point has been exceeded, but the output contact has not yet been activated. The contact is activated and the red LED is lit after the timer has expired.

At the factory the time delays are set according to the order specifications.

Normally the settings of the RMC-142D are selected to ensure optimum protection of the voltage source (generator, transformer, line), however without causing unwanted disconnections.

Unwanted disconnections may occur in installations based on 3 or 4 CTs with the secondary windings coupled in parallel. In connection with a short circuit between 2 phases, the short circuit current arising thereby may get so high that a differential signal occurs because of the different saturation characteristics of the applied CTs.

In order to avoid this, the disconnection limit must be selected with due consideration of the characteristics of the applied CTs. Alternatively a cable transformer must be applied instead of 3 (4) current transformers.

RMC-142D is provided with a special filter suppressing the harmonic currents. This filter suppresses the 3rd harmonic 18db (8 times), so that the latter does not influence the measurings. However, in certain cases the 3rd harmonic is so high that the disconnection limit must be set accordingly.

If shortest possible time delay is selected (50 ms), unwanted disconnection may occur during synchronisation caused by a pulse signal which may be transmitted in connection with the switching on of the voltage source and unbalance of the applied CTs (saturation).

In order to avoid this, connection of the auxiliary voltage to the relay in connection with the switching on of the voltage source is recommended.

The built-in power-up circuit (200 ms) will then ensure that the relay is not activated until 200 ms after switching on the voltage source.

6. Technical specifications

Frequency range: 40…50/60…70Hz

Max. input current: 4 x I_n, continuously,
20 x I_n for 10 s (max. 75A)
80 x I_n for 1 s (max. 300A)

Load: Max. 0.3VA per phase

Relay contact: 2 changeover switches

Contact rating: 250V-8A-2000A (AC), 24V-8A-200W (DC)

Response time: <50 ms

Galv. separation: Between input, output and aux. supply: 3250V-50Hz-1 min.
Consumption: (Aux. supply) 3.5VA/2W