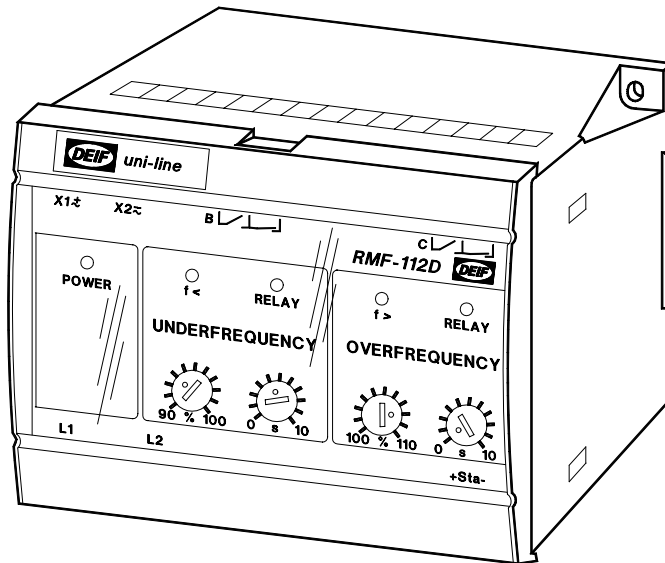


## Frequency relay type RMF-112D

uni-line

4189340238B (UK)



- Combined underfrequency and overfrequency relay
- For single and 3 phase networks
- LED indication of fault condition
- Timer controlled tripping
- LED indication for activated relay
- 35 mm DIN rail or base mounting



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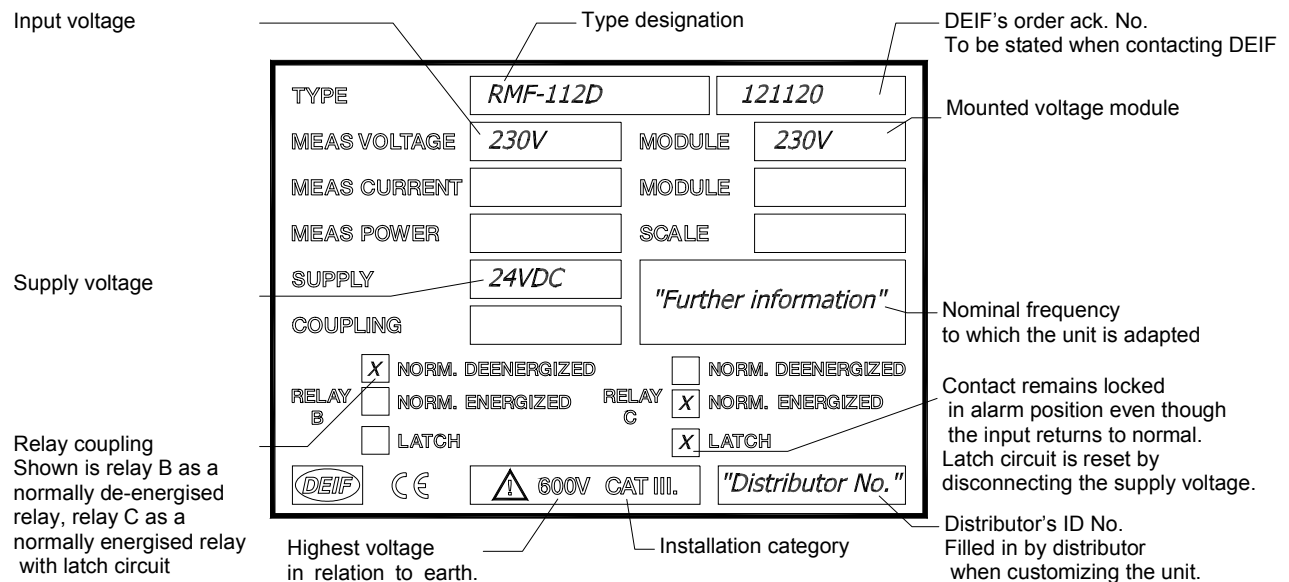


## 1. Description

This combined underfrequency and overfrequency relay type RMF-112D forms part of a complete DEIF series (the *uni-line*) of relays for protection and control of generators.

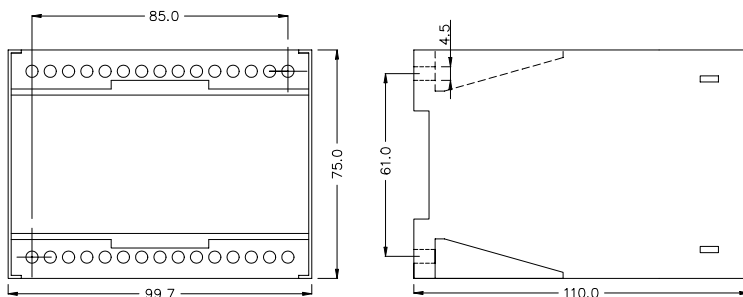
## 2. Label

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



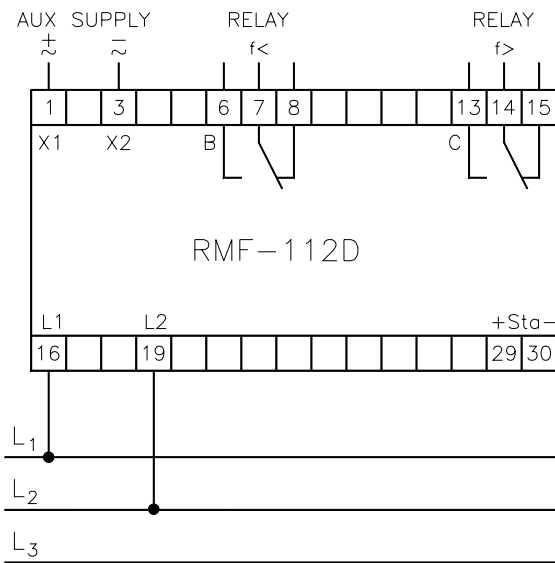
The RMF-112D is designed for panel mounting, being mounted on a 35 mm DIN rail, or by means of two 4-mm screws.

Weight: approx. 0.650 kg

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.

The RMF-112D may be connected between 2 phases or between 1 phase and neutral. The RMF-112D is to be configured so that the input of the relay corresponds to the connected voltage.

The unit is equipped with a self-monitoring function. The self-monitoring function supervises the microprocessor and hereby verifies if the programme is running correctly.

	<b>Power LED</b>	<b>Status output</b>
Supply voltage not connected or not acceptable.	OFF	OFF
Supply voltage is accepted and the unit is running correctly.	Constant green light	ON
Supply voltage is accepted but the unit is running wrongly.	Flashing green light 2-3Hz	OFF

**GL applications only:** For applications approved by “Germanischer Lloyd” the status output must be connected to an alarm system. For applications with more than one *uni-line* product the status outputs of the units can be connected in series to the same alarm input. When the units are connected in series the flashing green power LED will indicate the unit that is running wrongly.

## 5. Start up instructions

### 5.1 Setting and indication

Setting of	LED/relay	
<b>Underfrequency set point:</b> (90...100%) of $f_n$ (80...100%) of $f_n$ at $f_n = 55\text{Hz}$	"f<"	Yellow LED is lit when the set point has been exceeded, but the output contact has not yet been activated.
<b>Overfrequency set point:</b> (100...110%) of $f_n$ (100...120%) of $f_n$ at $f_n = 55\text{Hz}$	"f>"	Yellow LED is lit when the set point has been exceeded, but the output contact has not yet been activated.
<b>Time delay:</b> (0...10 s)	The contact is activated and the red LED is lit after the timer has expired.	

As set points and time delays values suitable to the equipment to be protected (the unit/generator) are selected.

If several RMF-112D relays are installed, the underfrequency contact may be applied to trip selected loads, thus reducing the total load.

This function is obtained by selecting different combinations of set point values and time delays for the individual RMF-112D relays.

**Note:** To prevent unwanted underfrequency alarms, the relay is provided with an undervoltage detector, ensuring that the relay will not be activated until the measuring voltage has reached 60% of  $U_n$ .

When setting the set points on the front of the RMF-112D an accuracy of  $\pm 10\%$  of the scaling may normally be obtained.

If a higher accuracy is required, the unit (the generator) connected to the relay must be regulated, until the requested set point value is reached.

On exceeding of the set points, the relevant yellow LED of the RMF-112D is lit.

## 6. Technical specifications

Voltage range:	60...120% of $U_n$
Overload:	1.2 x $U_n$ , continuously, 2 x $U_n$ for 10 s
Load:	2k $\Omega$ /V.
Frequency range:	40... <u>45...65</u> ...70Hz.
Nominal frequency ( $f_n$ ):	50Hz, 55Hz or 60Hz
Relay contacts:	1 changeover switch per relay
Contact rating:	250V-8A-2000A (AC), 24V-8A-200W (DC)
Contact voltage:	Max. 250V (AC). Max. 150V (DC).
Response time:	<90 ms.
Galv. separation:	Between inputs and outputs: 3250V-50Hz-1 min.
Consumption:	(Aux. supply) 4VA/3.5W
Status output:	Open: 10...30V DC Closed: max 5mA