

ANSI codes 27/59

Type RMV-142D

- **Undervoltage/overvoltage**
- **Single phase measurement**
- **LED indication of fault condition**
- **Timer controlled tripping**
- **LED indication for activated relay**
- **35 mm DIN rail or base mounting**

Application

The protective voltage relay type RMV-142D forms part of a complete DEIF series of relays for protection and control of generators.

The RMV-142D is type approved by major classification societies and is applicable to both marine and land-based installations.

Voltage relays performing a 3 phase measurement are also available:

- RMV-112D for undervoltage/overvoltage
- RMV-122D for overvoltage
- RMV-132D for undervoltage

The RMV-142D is a combined undervoltage and overvoltage relay ($U< + U>$) and is applied for protection of generators, motors and transformers against adverse system voltage conditions.

Measuring principle

The relay measures the voltage of one phase (single phase measurement) or measures the voltage between 2 phases, providing an RMS measurement of sinusoidal voltages.

If the voltage either drops below the lower set point, or exceeds the upper set point, the associated output is activated.

The set point values are set on the front of the relay by means of potentiometers.

Timer functions

When the voltage drops below the lower set point or exceeds the upper set point, the associated timer starts and will run as long as the fault condition prevails. The delay does not depend on the exceeding of the set point. If the fault disappears, the timer is reset.

When the timer expires, the contact and its built-in hysteresis circuit are activated, and the associated red LED is lit.

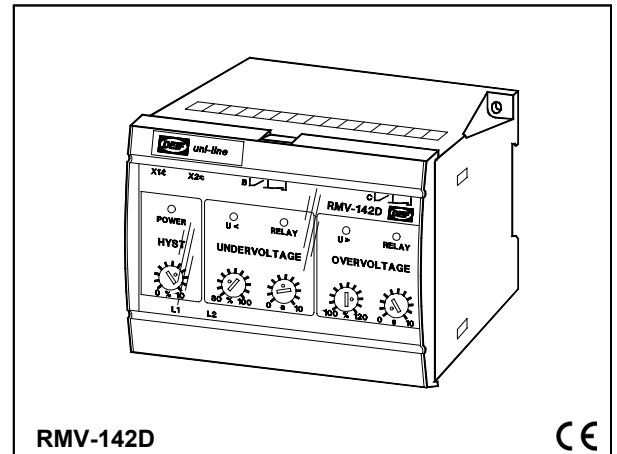
Hysteresis

The relays are provided with an adjustable hysteresis (common to both contacts), i.e. a difference of 1...10% of U_n between energising and de-energising of the relay. The relay is deactivated when the fault voltage equals or is less than the preset hysteresis.

Voltage relays

uni-line

4921240128D



Relay outputs

The RMV-142D is provided with 2 outputs:

- undervoltage ($U<$) a minimum contact (normally energised/normally de-energised)
- overvoltage ($U>$) a maximum contact (normally energised/normally de-energised)

The contact may be set to open or to close on activation.

Normally energised contact

Recommended for land-based installation for warning and alarm purposes.

In case of an auxiliary supply drop-out, the contact is immediately activated.

Normally de-energised contact

Recommended for marine installations for regulating and control purposes.

An auxiliary supply failure will not result in an unwanted activation of the contact.

Latch circuit

The contact can then be locked in its warning position, even if the input voltage returns to normal (add "L" to contact type in order specifications, if this is required).

The latch circuit is reset by disconnecting the auxiliary supply.

Power-up/power-down circuits

The relays are provided with a 200 ms power-up circuit, ensuring the correct function of the relay on connection of the auxiliary voltage.

Note: Normally energised contacts are not activated (contact does not open/close) until 200 ms after connection of the auxiliary voltage.

Likewise, the relays are provided with a 200 ms power-down circuit, ensuring supervision and maintenance of any set point exceedings for 200 ms after disconnection of the auxiliary voltage.

Type RMV-142D

Technical specifications

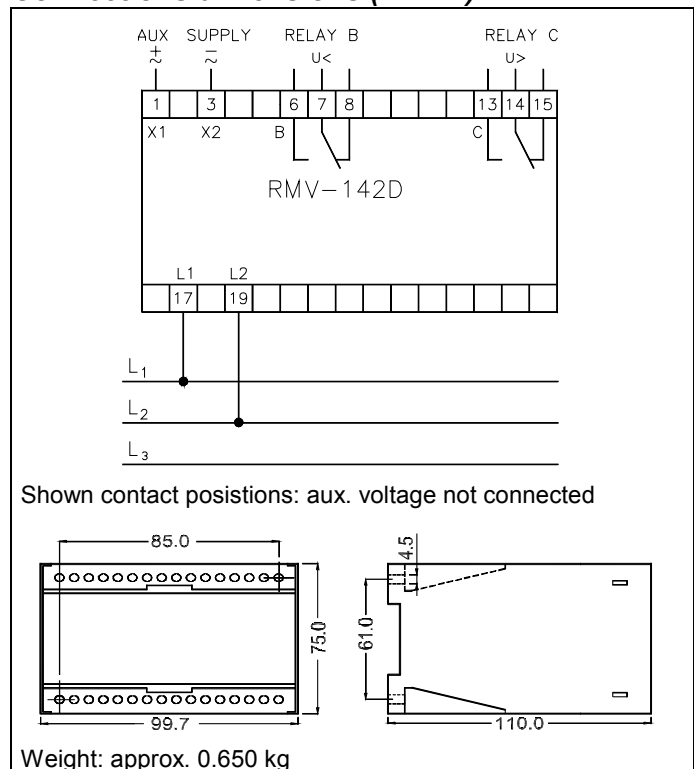
Meas. range (U_n):	(See supply voltage - AC ranges).
Frequency range:	40...45...65...70Hz.
Max. input voltage:	1.2 x U_n , continuously, 2 x U_n for 10 s.
Load:	2k Ω /V.
Outputs:	1 minimum + 1 maximum contact
contact type:	Relays B + C: normally energised ("NE"), or normally de-energised ("ND") with or without latch circuit ("L")
relay contacts:	1 change-over switch per relay
contact ratings:	250V-8A-2000VA (AC) 24V-8A-200W (DC) (200 x 10 ³ change-overs at resistive load)
contact voltage:	Max. 250V (AC). Max. 150V (DC).
Response time:	<100 ms.
Temperature:	-25...70°C (operating).
Temperature drift:	Set points: max. 0.2% of full scale per 10°C.
Galvanic separation:	Between inputs and outputs: 3250V - 50Hz - 1 min.
Supply voltage (U_n):	57.7-63.5-100-110-127-200-220-230- 240-380-400-415-440-450-660-690VAC $\pm 20\%$ (max. 3.5VA) 24-48-110-220V DC -25/+30% (max. 2W).
Climate:	HSE, to DIN 40040.
EMC:	To EN 50081-1/2, EN 50082-1/2, SS4361503 (PL4) and IEC 255-3.
Connections:	Max. 4 mm ² (single-stranded). Max. 2.5 mm ² (multi-stranded).
Materials:	All plastic parts are self-extinguishing to UL94 (V1).
Protection:	Case: IP40. Terminals: IP20, to IEC 529 and EN 60529.
Type approval:	The uni-line components are approved by the major classification societies. For current approvals see www.deif.com or contact DEIF A/S.

Settings and indication

Setting of	LED	Relay
Undervoltage limit: (80...100%) of U_n	"U<"	Yellow LED is lit when input voltage is lower than the preset limit, but the relay has not yet been activated.
Overvoltage limit: (100...120%) of U_n	"U>"	Yellow LED is lit when the input voltage exceeds the preset limit, but the relay has not yet been activated.
Time delay: (0...10 s) in seconds	"RELAY"	Relay is activated and red LED lit after the timer has expired.
Hysteresis: (1...10%) of U_n		Relay contact is reset when the fault voltage equals or is less than the preset hysteresis.

The relays are furthermore equipped with a green LED marked "POWER" for indication of power ON. Once the relay has been mounted and adjusted, the transparent front cover may be sealed, preventing unwanted change of the setting.

Connections/dimensions (in mm)



Order specifications

Type – Meas.volt. (U_n) – Relay B – Relay C – Supply volt.
Example:
 RMV-142D – 400V AC – ND – ND – 24V DC

Due to our continuous development we reserve the right to supply equipment which may vary from the described.



DEIF A/S, Frisenborgvej 33
DK-7800 Skive, Denmark

Tel.: +45 9614 9614, Fax: +45 9614 9615

E-mail: deif@deif.com, URL: www.deif.com

