

VOLTAGE MONITORING-RELAY

- Monitoring of: **3-phase / 4-wire mains (100 / 110 V transformer mains)**
- Signalling function: **active signal on activate or de-energized mains**
- With auxiliary supply, time-delay optional



Operation

The relay RUAT-A/0 is designed for 3-phase / 4-wire mains to trip in the case of total voltage fail on all 3 phase-to-neutral-voltages, or, on the other hand, to trip in case of at least one single star voltage exceeding the adjusted limiting value (depending on U< or U> version).

The tripping voltage range is available from 10 to 50% U_N , thus taking shutdown cycles in line sections into consideration, where the voltage after the interruption gets not instantaneously less enough due to voltage buffering by consumers or line-capacity. In case of earth-fault in resonant-earthed systems, the faultless lines become 1.73 times of nominal voltage. The overload withstand capability of the measuring circuit in the RUAT-A/0 relay is 200% of rated voltage (U_N). The relay therefore is especially qualified for busbar monitoring.

Relating to the signalling function the relay is obtainable in two different versions. In function U> the operate condition of the relay corresponds to an active line, in function U< the operate condition corresponds to an de-energized line. On failure of the auxiliary voltage, the contact-position in the wiring diagram is valid – independent of measuring-circuit voltage and function U> / U< (see tab.1). The line-status is displayed by two LED's:

- upper LED „U> U_G “active mains (standard = green)
- lower LED „U< U_G “de-energized mains (standard = red)

The LED state changes without time delay, the relay trips with an adjustable pickup- resp. dropout delay.

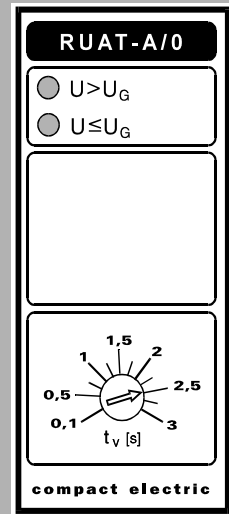
The RUAT-A/0 relay is enclosed in a plastic case which fits into a special 14 pin plug-in socket. The socket (type U or K) provides 14 screw terminals $2 \times 4 \text{ mm}^2$.

Specifications

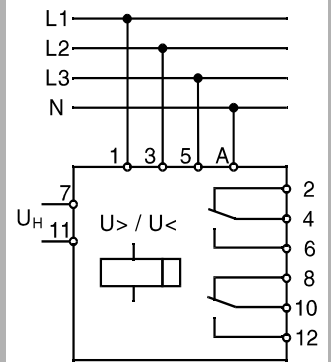
(other values on request)

- Rated voltage U_N : a) 3 x 100 / 57 V AC
b) 3 x 110 / 63 V AC
 - Setting range: possible range: 10 - 50 % U_N
a) fixed value (factory setting)
b) setpoint adjustable within the appliance
c) setpoint adjustable with a front-potentiometer
 - Auxiliary voltage U_H ...: a) 24 V DC b) 110 V DC c) 220 V DC
 - Signalling function: a) "U>" (power signalling function):
the relay trips on active mains
b) "U<" (security signalling function):
the relay trips on de-energized mains
 - Delay time: a) undelayed (U>: 10 ms, U<: 40 ms)
b) 0.1 ... 3s
c) 1 ... 10s
 - Time delay direction ...: a) pickup delay b) dropout delay (see tab. 1)
- Please specify the desired **values** and **functions** on order.

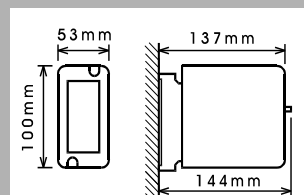
RUAT-A/0



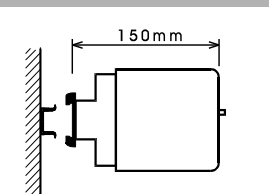
front view



wiring diagram



Socket Type U



Socket Type K

dimensions

VOLTAGE MONITORING RELAY

RUAT-A/0

Auxiliary voltage:

Auxiliary voltage range : +/- 15% of rated value
Power consumption..... : ≤ 2 VA

Measuring voltage:

Measuring voltage range..... : 10 ...50% U_N
Overload : 200% U_N (continuous)
Disengaging ratio : $\leq 3\%$ (Hysteresis)
Frquency range..... : 40 to 60 Hz
Operating temperature : 0 to +60 °C

Insulation (IEC 255-5)

Measuring circuit - relay contacts : 4 kV AC / 1 min
Measuring circuit - auxiliary circuit : 2.5 kV AC / 1 min
Auxiliary circuit - relay contacts : 4 kV AC / 1 min
Impulse test : 5 kV 1.2 / 50 μ s

Output relay

(2 changeover contacts)
Rated / Max. switching voltage : 250 V / 440 V AC
Rated / Max. switching current : 8 A (UL: 10 A) / 14 A AC
Rated switching power : 2000 VA ($\cos \varphi = 1$)
Make-break capacity : 250 V / 8 A AC ($\cos \varphi = 1$)
220 V / 0.6 A AC ($\cos \varphi = 0.8$)
1.3 * 10⁶ operating cycles)
300 V / 0.2 A DC
40 V / 8 A DC
Mechanical endurance : 20 * 10⁶ operating cycles
Contact material : Ag Cd O

Mechanical resistance

IEC 255-21-1 class 1
IEC 255-21-2 class 1
IEC 255-21-3
Operating position : any position

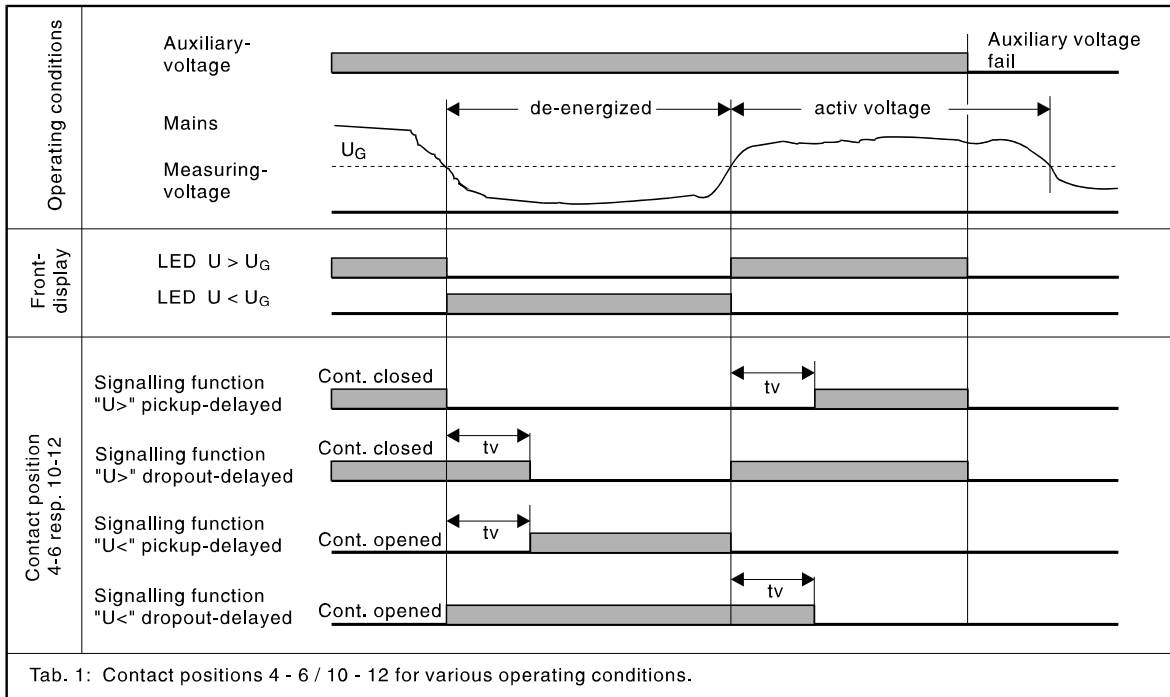
Electromagnetic compatibility

EN50082-2 (Industry)
IEC 255-22-1 1 MHz disturbance / 2.5 kV
IEC 255-22-2 (IEC801-2) ESD / 8 kV
IEC 801-3 HF / 10 V/m
IEC 255-22-4 (IEC801-4) Burst 2 Kv

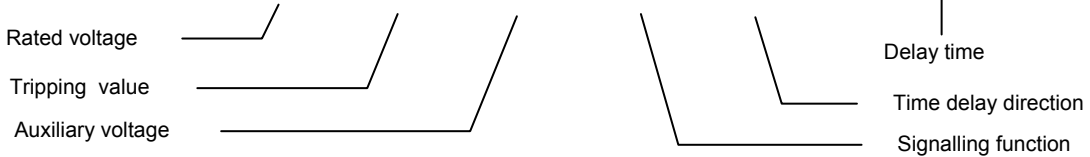
Radiation emission: EN50081-1

Maximum EMC interference (rated voltage applied):

Set point : < 3%
Delay time : < 10%
Protection degree : IP 40
Case material : Polycarbonat
Flame retardance : UL 94 V-0, self-extinguishing
Weight : 0.3 kg



Order exampe: **RUAT-A/0 - 100V - 20%fix - 220 V DC - U> - pickup delay. - 0,1...3s**



Specifications are subject to change without notice



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