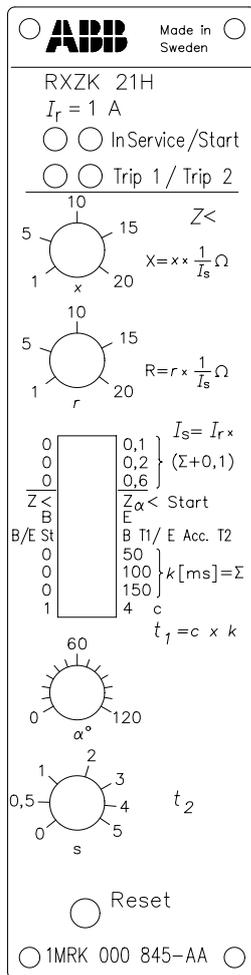


CONNECTION AND SETTING GUIDE



Rated current of the relay, I_r (available variants: 1 A or 5 A)

LED indicators:

- In service (green): indicates relay in service.
- Start (yellow): indicates operation of $Z < / Z_{\alpha} <$ Start (no time delay).
- Trip1 (red): indicates operation of $Z <$ after the set time delay t_1 .
- Trip2 (red): indicates operation of $Z <$ after the set time delay t_2 .

Potentiometer (P1) for setting of the reactive reach X.

Potentiometer (P2) for setting of the resistive reach R.

10-pole programming switch (S1) for setting of the scale-constant I_s , non-directional or directional start function $Z < / Z_{\alpha} <$, binary input function of Block and Enable modes, time delay t_1 for the function $Z <$ Trip1.

Potentiometer (P3) for setting of the characteristic angle α .

Potentiometer (P4) for setting of the time delay t_2 for the function $Z <$ Trip2.

Reset push-button.

Fig. 1 Front layout

CONNECTION:

The RXZK 21H relay requires a dc-dc converter type RXTUG for auxiliary voltage supply $\pm 24 \text{ V}$. Connection of the voltage RL shall be made only when the binary input is used.

The relay is delivered with a short-circuiting connector RTXK for mounting on the rear of the terminal base. This connector will automatically short-circuit the current input when the relay is removed from its terminal base.

NOTE! The auxiliary voltage supply should be interrupted or the output circuits should be blocked to avoid the risk of unwanted alarm or tripping, before the relay is plugged into or withdrawn from its terminal base.

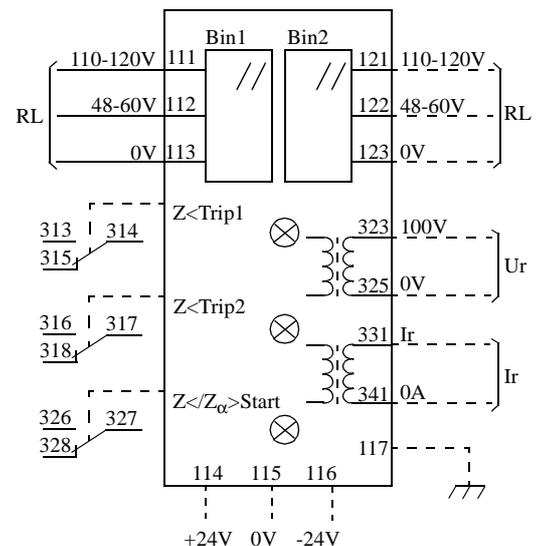


Fig. 2 Terminal diagram

SETTINGS:

All settings can be changed while the relay is in normal service.

1. Setting of the scale-constant I_s .

The scale constant I_s is equal to the rated current I_r times the sum of the set value of the switches S1:1, S1:2 and S1:3 plus 0,1. The setting range is from 0,1 to $1,0 \times$ the rated current I_r .

2. Setting of the under-impedance function ($Z<$)

The setting range of the under-impedance function is expressed as $Z = jX + R$, where X and R are individually set as follows:

2.1 Setting of the reactive reach (X).

The operate value is set with potentiometer P1 according to the formula $X = x * 1/I_s$ (Ω), where x is the set value of P1. The setting range of P1 is 1-20. Setting range of X is 1-200 Ω for $I_r = 1$ A and 0,2 - 40 Ω for $I_r = 5$ A.

2.2 Setting of the resistive reach (R).

The operate value is set with potentiometer P2 according to the formula $R = r * 1/I_s$ (Ω), where r is the set value of P2. The setting range of P2 is 1-20. Setting range of R is 1-200 Ω for $I_r = 1$ A and 0,2 - 40 Ω for $I_r = 5$ A.

3. Setting of the directional function.

Set the programming switch S1:4 to " $Z<$ " for non-directional function or to " $Z_{\alpha}<$ " for directional function.

4. Setting of the characteristic angle.

The characteristic angle, α , is settable between 0° to 120° . The angle is adjusted with potentiometer P3.

5. Setting of the time delay t_1 .

The time delay has definite-time characteristic. The setting is done with the switches S1:7, S1:8, S1:9 and S1:10. $t_1 = c \cdot k$ where k is the sum of the set value of the switches S1:7, S1:8 and S1:9, and c is 1 or 4 depending on the position of switch S1:10. The setting range is 0 - 1,2 s.

6. Setting of the time delay t_2 .

The time delay has definite-time characteristic. The setting range is 0 - 5 s. The setting is done with potentiometer P4.

7. The binary input.

There are two binary inputs (Bin 1 and Bin 2) on the relay. Bin 1 (terminals 111/112-113) is used for blocking and enabling functions according to the setting of switches S1:5 and S1:6.

S1:5 on "B" and S1:6 on "B/E St" will block all functions except $Z_{\alpha}<$.

S1:5 on "B" and S1:6 on "B T1/E AccT2" will block $Z<$ Trip1.

S1:5 on "E" and S1:6 on "B/E St" will enable the function $Z</Z_{\alpha}<$ Start.

S1:5 on "E" and S1:6 on "B T1/E AccT2" will accelerate the $Z<$ Trip2 function to an instantaneous function. The time delay is bypassed.

Bin 2 (terminals 121/122-123) is used for resetting of the LED indicators. The functions are activated when a voltage RL is applied to the binary inputs.

INDICATION

There are four LED indicators. The trip indicators seal-in and are reset manually by the "Reset" pushbutton or electrically via the binary input, while the start indicator resets automatically when the relay resets.

When the "Reset" pushbutton is depressed during normal operating conditions, all LEDs except "In service" will light up.

When connecting RXZK 21H to the auxiliary voltage, the relay performs a self test. The "In service" LED is alight, after performing the self test and when the relay is ready for operation. In case of a fault, the LEDs will start flashing.

TRIPPING AND START OUTPUTS

The RXZK 21H relay has one start output for the $Z</Z_{\alpha}<$ function and two tripping outputs for the $Z<$ function with the time delay t_1 and t_2 . Each output is provided with one change-over contact. All outputs reset automatically when the impedance increases to a value over the resetting value of the relay.

ESD

The relay contains electronic circuits which can be damaged if exposed to static electricity. Always avoid to touch the circuit board when the relay cover is removed during the setting procedure.