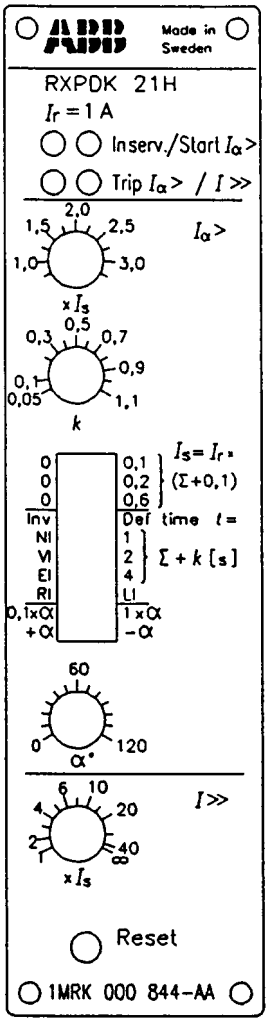

Fig. 1 Front layout

CONNECTION AND SETTING GUIDE

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

LED indicators:
In serv. (green): indicates relay in service.
Start I_α>(yellow): indicates operation of I_α> (no time delay).
Trip I_α> (red): indicates operation of I_α> after the set time delay.
I>> (red): indicates operation of I>> (no time delay).

I_α> (Low set directional stage):
Potentiometer (P1) for setting of the operate value for the function I_α>.

Potentiometer (P2) for setting of the inverse-time factor k or definite-time delay t for the function I_α>.

10-pole programming switch (S1) for setting of the scale-constant I_s, time-delay characteristic, definite-time delay and characteristic angle α.

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

I>> (High set non-directional stage):

Potentiometer (P4) for setting of the operate value for the function I>>.

Reset push-button.

CONNECTION:

The RXPDK 21H relay requires a dc-dc converter type RXTUG for auxiliary voltage supply ±24 V. Connection of 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output circuits should be blocked to avoid the risk of unwanted alarm or tripping, before the relay is plugged into or withdrawn from its terminal base.

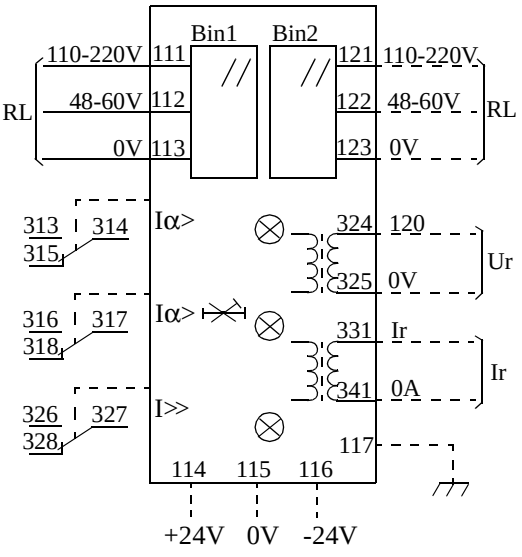

Fig. 2 Terminal diagram

SETTINGS:

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

1. Setting of the scale-constant I_S.

I_S is common for both directional stage $I_\alpha>$ and the high set stage I>>.

It is set with the programming switches S1:1, S1:2 and S1:3, from 0,1 to 1,0 × the rated current I_r.

2 Setting of the directional stage $I_\alpha>$ operate value.

The operate value is set with potentiometer P1 according to $I_\alpha> = P1 \times I_s$. (The directional stage operates for $I \times \cos(\varphi - \alpha) > I_\alpha>$)

3. The directional stage time delay.

The directional stage has six time characteristics, which are programmed on the programming switches S1:4 to S1:8.

Definite-time delay.

Set the programming switch S1:4 to position "Def time t=", where t=Σ+k. Switches S1:5 to S1:7 are used for the main adjustment, Σ = 0 - 7 s, and potentiometer P2 is used for the fine adjustment k = 0,05 - 1,1 s. The minimum time delay is 50 ms and the maximum time delay is 8,1 s.

When selecting this characteristic, the position of switch S1:8 ("RI" or "LI") has no influence.

Inverse-time delay.

Set switch S1:4 in position "Inv". The inverse-time characteristic is selected with the switches S1:5 to S1:8 (NI = Normal Inverse, VI = Very Inverse, EI = Extremely Inverse, RI = ASEA RI-relay inverse, LI = Long-time Inverse).

By setting the selector switch S1 a precedence order is applied, from top (S1:5) to bottom (S1:8). That is, if the "NI" characteristic is selected (the switch in the left hand side position), it overrides the settings of switches S1:6 to S1:8. Another example; if the "LI" characteristic shall be used, the switches S1:5 to S1:8 must all be in the right hand side position.

After setting the time characteristic, the time-delay is determined by the time factor k, which is adjusted with potentiometer P2 and the magnitude of the current.

4. Setting of the characteristic angle

The characteristic angle, α, is settable between -12° to +12°, or -120° to +120°.

Set the programming switch S1:10 for determining -α or +α. Set the programming switch S1:9 to "0,1×α" for the characteristic angle 0°-12°, or "1×α" for the characteristic angle 0°-120°. The angle is adjusted with potentiometer P3.

5. Setting of the non-directional stage I>> operate value.

The operate value is set with potentiometer P4 according to $I>> = P4 \times I_s$.

This function can be blocked by setting potentiometer P4 to "∞".

6. The binary input.

There are two binary inputs on the relay. Input 1 (terminals 111/112-113) is used for external blocking of the directional low-set delayed stage. The directional low-set start and non-directional high-set stage will be unaffected. Input 2 (terminals 121/122-123) is used for remote reset 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 serv." will light up.

When connecting RXPDK 21H to the auxiliary voltage, the relay performs a self test. The "In serv." 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 RXPDK 21H relay has one start and one delayed tripping output for the directional stage, and one tripping output for the non-directional stage. Each output is provided with one change-over contact. All outputs reset automatically when the current decreases to a value below 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.