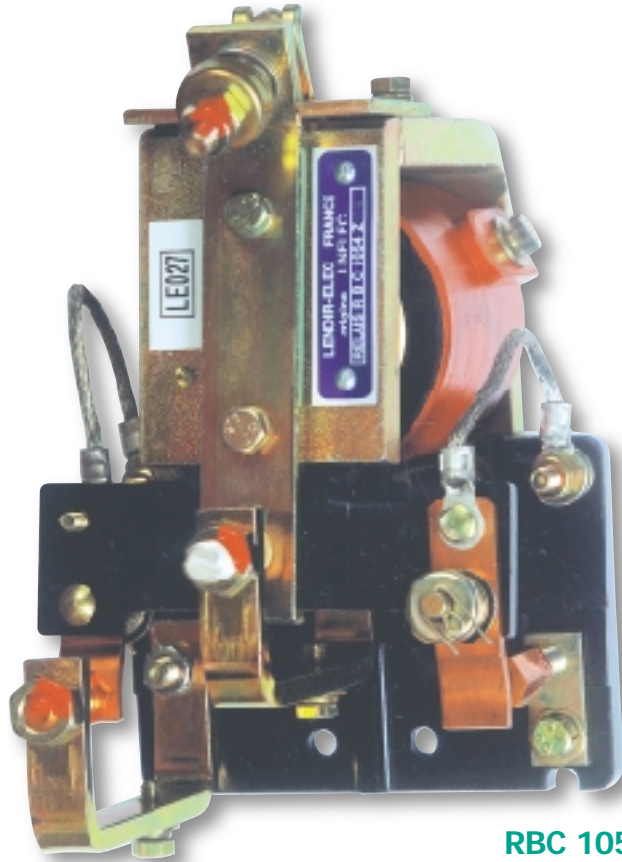


Magnetic RBC 1054 Z relays



RBC 1054 ZA,
RBC 1054 ZB,
RBC 1054 ZD,
RBC 1054 ZBA,
RBC 1054 ZBP,
RBC 1054 ZCD,
RBC 1054 ZCH,
RBC 1054 ZCP,
RBC 1054 ZDB,
RBC 1054 ZDK,
RBC 1054 ZBQ,
RBC 1054 ZBM,
RBC 1054 ZCT,
RBC 1054 ZLT,
RBC 1054 ZPC.



RBC 1054 Z Relay
Voltage-triggered

This equipment can be used as:

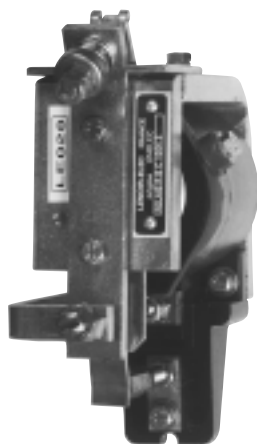
- instant voltage-triggered or current-triggered control relay,
- voltage-triggered, current-triggered or magnetically delayed on opening of the circuit control relay (delay on opening 1.2 sec. max.),
- reverse-current relay,
- synchronizing relay,
- regenerative braking control relay.

Type of applications: industries, metros, tramways, travelling cranes...



Magnetics DC relays

72. RBC 1054 Z



Use

This device is used as:

- Instantaneous, voltage-triggered or current-triggered control relay.
- Control relay, magnet-controlled time delay on opening of circuit, voltage-triggered or current-triggered.
- Reverse-current relay.
- Synchronizing relay.
- Regenerative braking control relay.

Description

RBC 1054 Z relays include:

- 1 solid magnetic circuit: lower section of armature hinged if device has at least 1 arc-blowout contact, upper section if relay has no arc-blowout contacts.

- Contacts normally made of copper (silver on request):

- 1 contact NO or NC,
- 2 contacts NO or NC,
- 3 contacts 3 NC, 1 NC + 2 NO.

The table below gives number, position and form of contacts according to the type of relay. Relay installation is intended for insulated rods 30 x 21 or 44 x 24.

Relay delivered with 0.25 mm gap plate 0.5 - 0.2 and 0.1 plates can be delivered on request.

The device can be equipped with mechanical latching with manual release on request..

RBC 1054 ZA Volmétrique

| Contacts number | position | Type of relay | NO contact | | | NC contact without arc-blowout | | | Weight (kg) |
|-----------------|------------------------|------------------|---------------------|------------------|--------------------|--------------------------------|-------------------|-------|-------------|
| | | | without arc-blowout | | with arc-blowout | 15 A | 2A ⁽²⁾ | | |
| | | | 15 A | 2 A | 6 A ⁽¹⁾ | | dry | blade | |
| 1 | central | ZA | ● | - | - | - | - | - | 2.250 |
| | | ZCT | - | ● | - | - | - | - | 2.250 |
| | | ZD | - | - | ● | - | - | - | 2.750 |
| | | ZB | - | - | - | - | ● | - | 2.250 |
| | | ZCH | - | - | - | - | - | ● | 2.250 |
| 2 | lateral | ZBA | ● ⁽³⁾ | - | - | - | - | - | 2.800 |
| | | ZBM | ● | - | - | ● | - | - | 2.800 |
| | | ZCD | - | - | ● ⁽³⁾ | - | - | - | 3.800 |
| | | ZBQ | ● | - | ● | - | - | - | 3.300 |
| 3 | 1 central 2 lateral | ZBP | ● ⁽³⁾ | - | - | - | ● | - | 3.000 |
| | | ZDB | - | - | - | ● ⁽³⁾ | ● | - | 3.000 |
| | ZCP | ● ⁽³⁾ | - | - | - | - | ● | 3.000 | |
| | ZDK | - | - | ● ⁽³⁾ | - | - | ● | 4.000 | |

Technical features

| | | | | |
|--|---|-----|--|-----|
| Operating voltage | | V | 600 | |
| NO or NC 15 A without arc-blowout | thermal nominal current | A | 15 | |
| | current switch-off rating ⁽⁴⁾ under voltage | V | 250 | 600 |
| | resistive circuit | A | 1.5 | 0,6 |
| | inductive circuit | A | 1 | 0,4 |
| NO with arc-blowout | thermal nominal current current switch-off rating ⁽⁴⁾ | A | according to arc-blowout coil capacity | |
| Standard coils Other values and/or 10000 V dielectric strength on request. | instantaneous voltage-triggered relays | V | 92 - 127 - 220 - 250* | |
| | delayed voltage-triggered relays | V | 130 - 250* | |
| | instantaneous current-triggered relays | A | 2 to 8000 | |
| | delayed current-triggered relays | A | 100 - 125 - 150 - 200 - 500* | |
| | reverse-current relays | | | |
| | shunt coil | V | 6 - 12 - 16 - 38 - 48 - 60 - 95 - 115 - 167 - 220 | |
| | series coil | V | 2 - 5 - 10 - 100 - 200 - 320 - 350 - 600 - 900 - 1000 - 2000 - 3500 - 5000 | |
| | average consumption of voltage-triggered coils | W | 20 | |
| min. closing ampere-turns | | 400 | | |
| Minimum ratio between closing and opening voltages | | | 1.2 | |

(1) can be equipped with 1-2-3-4-16-25 or 30 A coil.

(2) dry: without penetration, with blade: penetration by bending of blade.

(3) 2 contacts of this type.

(4) for normal settings, special settings may reduce them to a large extent.

* for other values, consult us.

When you order, please let us know:

- the RBC type, name and kind of contacts.
- the nominal voltage or the nominal current of the closing coil.
- the closing range and, if necessary, the opening range.
- if the relay has to be equipped with a mechanical latching with manual release.
- if an arc-blowout coil is to be supplied with the relay, please specify its amperage.
- if instant or delayed on opening operation is required.



**Instantaneous control relay:
voltage-triggered or current-triggered.**

The relay coil, connected to the terminals of the circuit to be controlled, closes the device when the voltage or current reaches a determined value.

- Closing can occur from 30 % of coil rated voltage or current.
- Opening can be set at closest to 80 % of closing voltage or current.

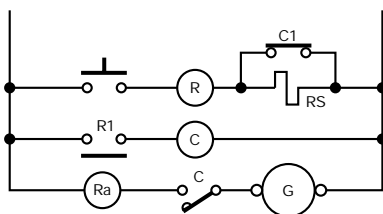
**Control relay magnetically delayed
on opening of circuit:
voltage-triggered or current-triggered.**

Same closing and opening characteristics as for instantaneous relays.

Delay on opening:

- 0.8 seconds max when trip coil is short circuited by inserting a series-connected resistor.
- 1.2 seconds max when relay coil is equipped with a retarding turn.

Reverse-current relay.



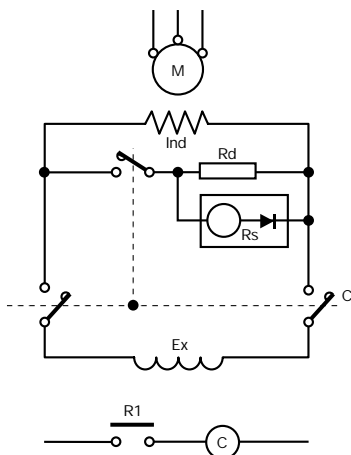
The device includes 2 coils:

- 1 series coil.
- 1 shunt coil.

The relay is closed by its shunt coil R. Relay contact R1 closes contactor C. Contactor C switches the series coil Ra of the relay into the circuit. Contactor C inserts an RS resistance in series with the shunt coil R of the relay by contact C1.

This resistor RS is calculated to bring the ampere-turns to the minimum required to hold the relay closed. The relay remains closed whilst the current is in the correct direction, the ampere-turns of coils R and Ra are summed. The relay opens, the contactor opens as soon as the current changes direction in generator G.

Synchronizing relay.



The RBC 1054 Z relay (1 NC contact) equipped with a retarding turn is used as synchronizing relay for starting synchronous motors. The relay coil is set into service by a selenium diode.

On energization of motor M, inductor Ind closed on discharge resistor Rd, a current appears at the terminals of the assembly Rs (coil + diode) and the relay closes.

Current frequency reduces as start-up progresses.

When synchronism is reached, the interval between 2 rectified half-waves is sufficient to open the relay.

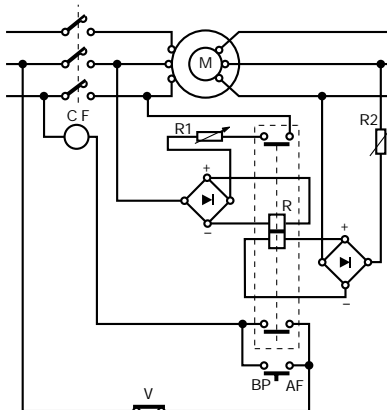
Contact R1 of the relay closes contact C.

Contactor C inserts Ex and opens the discharge resistor circuit Rd.

Specify on order:

- Voltage at terminals of Rd, motor stopped, to close the relay.
- Maximum voltage reached during start-up for choice of diode.

Regenerative braking control relay.



The device includes a coil with 2 windings in opposition.

They are connected, via a rectifier, one to the terminals of the stator, the other to the terminals of the rotor of motor M.

When braking is commanded, rotor voltage is equal to 2 VR (VR = normal rotor voltage).

Relay R must open for voltage 2 VR only.

Closing the relay switches the stator winding into service:
- rotor voltage decreases from 2 VR to VR,
- motor speed falls from normal to 0.

Zero speed corresponds to end of braking and opening of relay.

- BP AF: "Braked stop" push-button.
- CF: braking contactors.
- R1 - R2: adjustable resistors.
- V: electronic locking contact of "Normal run" contactor.