Module- and Application Description

PROCONTROL P
Interposing Relay

83R513 – Rxxxx

**Description**

The interposing relay is used as an interface between the drive control unit and switchgear located in the motor control centre. It possesses two relays which are driven via the inputs E3, E4 and E5. The connected switchgear is operated by the relay contacts via the outputs K21, K23 or K31, K32, K33. The annunciation signal "Disturbance in the motor control centre" is connected at the inputs E1, E2 and is available at the outputs A1, A2 as potential-free contacts.

The inputs E3, E4, E5 can be driven from drive control units of:
- the order outputs BE, BA resp. BO, BZ and BV of the drive control units
- contact driven outputs
- 100 mA output stages

The inputs E3, E4, E5 are protected against polarity reversal.

**Annunciation function**

For the annunciation of a disturbance from the motor control centre a voltage convertor with potential separation is built into the relay module. Depending upon the relay type, when the inputs E1, E2 are driven, the disturbance annunciation is given by normally closed or normally open contacts at the outputs A1, A2. For this, A2 must be connected to US of the associated drive control unit.

The annunciation signal is available at output A1.

**Mechanical construction**

Weight approx. 0.2 kg

This module design for snap-fitting onto rails type 35 acc. to DIN 46 277, Page 3 and connections on the front side for flat connectors A2, 8 x 0.8 acc. to DIN 46 244 allows easy installation in any motor control centre and is particularly suitable for use in the tiers of the modular low voltage switchgear system MNS.

Creep- and airgap distances are in accordance with IEC 158 and VDE 01 10 class C.

When driving the inputs E3, E4 and E5 care must be taken that only 1 relay may be driven at a time. The relay coils are equipped with quenching diodes. The inputs E3, E4, E5 are protected against polarity reversal.

<table>
<thead>
<tr>
<th>Variant</th>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>83 R513/R2</td>
<td>E1, E2</td>
<td>A1, A2</td>
</tr>
<tr>
<td>83 R513/R3</td>
<td>E1, E2</td>
<td>A1, A2</td>
</tr>
<tr>
<td>83 R513/R6</td>
<td>E1, E2</td>
<td>A1, A2</td>
</tr>
<tr>
<td>83 R513/R7</td>
<td>E1, E2</td>
<td>A1, A2</td>
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</table>

220V ~ 50/60 Hz
220V d.c
normally open
like R2
normally open
110V ~ 50/60 Hz
125V - 60 Hz
110V d.c.
125V d.c.
normally open
like R6
normally closed
Function diagram
Variant R2 and R6

Connection diagram
The relay is used in conjunction with various drive control units. The following diagram shows application of the interposing relay type 83R513/R2 with the drive control 83SR04/R1210.
Technical data

Power dissipation

\[ P = 2.7 \text{ W} \]

Input values

**E1, E2**

- Voltage range

  83R513/R2/R3
  - 220 V \( \sim \) 50/60Hz  \(+10\%, -15\%\)
  - 220 V d.c.  \(+10\%, -15\%\)

  R513/R6/R7
  - 110 V \( \sim \) 50/60Hz  \(+10\%, -15\%\)
  - 125 V \( \sim \) 60 Hz  \(+10\%, -15\%\)
  - 110 V d.c.  \(+10\%, -15\%\)
  - 125 V d.c.  \(+10\%, -15\%\)

Current consumption

Rest voltage in not driving status

\(<1 \text{ V- bzw. } < 8 \text{ V~}\)

**E3, E4, E5**

- Relay coll driving

  Voltage range

  at \(-15 \text{ C}\)  \(15.5 \ldots 37 \text{ V}\)
  at \(+50 \text{ C}\)  \(17.5 \ldots 27.5 \text{ V}\)

  Coil resistance at \(+20\text{ C}\)  \(880 \text{ Ohm } \pm 10\% +120 \text{ Ohm}\)

  Current consumption taking into account the entire voltage- and temperature range  \(9\ldots36\text{mA}\)

Output values

**A1, A2**

- Annunciation „Disturbance in the motor control center“, potential-free contacts

  83R513/R2/R6  normally open
  83R513/R3/R7  normally closed

  Switching voltage  \(\leq 60 \text{ V}\)
  Switching current  \(\leq 50 \text{ mA}\)

  Loop resistance  \(330 \Omega\)

**K21, K23**

- Contact outputs from relay K02

  normally open

**K31, K32, K33**

- Contact outputs from relay K03

  changeover contact

Contact load values (K21 . . . K33):

  Switching voltage

  max. \(\leq 250 \text{ V}\)
  min. \(\geq 12 \text{ V}\)

  Continuous current rating  \(\leq 4 \text{ A}\)
  \(\leq 15 \text{ A}\)

  Switching load 220 V~  \(2000 \text{ VA}\)

  \(\leq 24 \text{ V d.c.}\)  \(100 \text{ W}\)
  \(\leq 30 \text{ V d.c.}\)  \(80 \text{ W}\)
  \(\leq 250 \text{ V d.c.}\)  \(50 \text{ W}\)

These values are valid for resistance loads or for inductive loads with the appropriate quenching.
Contact life (guide values)

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<tr>
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<th>Mechanical life</th>
<th>Electrical life</th>
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</thead>
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<tr>
<td></td>
<td>max. $2 \times 10^7$ operations</td>
<td>max. $1 \times 10^6$ operations</td>
</tr>
<tr>
<td>Electrical life</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0,2 A/250 V d.c. ohmic load</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0,35 A/220V a.c. inductive load $\cos \omega$ 0,4</td>
<td>max. $2 \times 10^8$ operations</td>
<td></td>
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</table>

Ambient values

Ambient temperatures: -15°C… +50°C
Continuously permissible in operation
Storage temperature -25°C… +85°C
Humidify classification acc. to DIN 40 040 issue Feb. 73, group F
Mounting position can be freely chosen

Transfer values

Response time typ. 6 ms
Release time typ. 13 ms
Chatter time typ. 4 ms

ORDERING DATA

Type designation: 83R513
Order number: GKWE 858100 Rxxxx

Technical data are subject to change without notice!