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CENTRALINA A MICROPROCESSORE PER CONTROL UNIT WITH MICROCONTROLLER FOR

MIKROCONTROLLER-STEUERUNG FÜR CENTRALE A MICROCONTRÔLEUR POUR
CENTRALITA A MICROPROCESADOR POR
CENTRALKA Z MIKROPROCESOREM DLA
RI.10KI


Libro istruzioni
Operating instructions
Betriebsanleitung
Livret d'instructions
Libro de instrucciones
Książeczka z instrukcjami


## RI10KI Control unit with microcontroller

The control unit with microprocessor RI.10KI can be used to control motors featuring a power not exceeding 750W.

## GENERAL WARNINGS

a) The wire connections and the operating logic should be in compliance with regulations in force.
b) The cables featuring different voltage should be physically detached, or adequately insulated by an additional insulation of at least 1 mm .
c) The cables should be further fastened in proximity to the terminals.
d) Check all connections before powering the unit.
e) Check that settings of the Dip-switches are the required ones.
f) When the unit is powered, the LED "POWER" must light on. In the negative, check the good condition of fuses and the presence of $230 \mathrm{Vac}, 50 \mathrm{~Hz}$ between terminals 1 and 2 (INPUT 230VAC - follow phase/neutral).
g) All normally closed inputs, which are not in use, should be short-circuited with the relevant DipSwitch located near the connection terminal of the inputs.
h) If the rotation direction of the motor is inverted, it is sufficient to invert the wires "APRE" - "CHIUDE" (OPEN - CLOSE) of the motor as well as the limit switches wires "FCA" - "FCC".

Input/Output functions

| Terminal No. | Function | Description |
| :---: | :---: | :---: |
| $(1,2)$ | Input, 230VAC | Power supply of the control unit 230Vac, 50 Hz (Phase: terminal 1 , Neutral: terminal 2). |
| $(3,4,5)$ | Output, Motor | Respectively, Move(3), Move(4) and Common (5). |
| $(6,7)$ | LAMP | To the flashing light at 230Vac |
| (8) | CHIUDE | Input, CLOSE push-button Normally Open (N.O.) contact |
| (9) | APRE | Input, OPEN push-button N.O. contact (it can be switched to "Pedestrian" input) |
| (10) | P.P. | Input, STEP-BY-STEP push-button |
| (11) | STOP | Input, STOP push-button Normally closed (N.C.) contact |
| (12) | FTC | Input, safety devices connection, N.C. terminal (e.g. photocells) |
| (13) | FCA | Input, opening limit switch. N.C. contact |
| (14) | FCC | Input, closing limit switch. N.C. contact |
| $(15,16)$ | +V | Output, common for all inputs |
| (17) | ASC | Input, safety edge. Its activation causes the movement reversion for 1 second if the motor is in the closing phase* |
| (18) | Input, common to the safety edges | Input, common of safety edges. The safety edges MUST NOT BE CONNECTED TO THE COMMON OF THE PUSH-BUTTONS |
| (19) | ASA | Input, safety edge. Its activation causes the movement reversion for 1 second if the motor is in the opening phase* |
| $(20,21)$ | SCA | Open gate indicator light connection, $24 \mathrm{Vac} / 3 \mathrm{~W}$ max. |
| $(22,23)$ | OUT 24VAC | Output, auxiliary power supply, 24Vac (1A max.) |
| $(24,25)$ | Output,2nd channel | N.O. contact, controlled by the second channel of the remote control |
| $(26,27)$ | Input, antenna | Antenna connection for the receiving card of the remote control. Shield= terminal 26 |
| $(28,29)$ | Input, 24VAC | Connection to the secondary of the transformer, 24V |
| $(30,31)$ | Capacitor | Connection to the capacitor |
| $(32,33)$ | Output, 230VAC | Connection to the primary of the transformer, 24 V |
| RTX | Connector to the receiving card of the remote control. |  |

* The inputs of the safety edges are at calibrated resistance.

If a resistive safety edge is used, the relevant jumpers (J2 for ASC and J1 for ASA) should be closed. Conversely, if a mechanical edge is used the jumpers should be left open. In the event the safety edges are not mounted, leave the corresponding jumper open and move the short-circuit Dip-Switch to ON (No. 1 for ASA and no. 2 for ASC).
N.B.: for the safety edge, two inputs are provided, NEVER CONNECT THE SAFETY EDGE TO THE COMMON TERMINAL.
CAUTION: When the control unit is powered, do not touch any metallic parts.

| Dip-Switch Function - SW2 "Select" |  |
| :--- | :--- |
| DSW1 | Operating mode of the "P.P. button" and of the remote control. |
| Off: Open/Stop/Close sequence |  |
| On: Open/Close/Open sequence |  |
| DSW2 |  |
| "Service man" function. The automatic system carries out the opening and closing opera- |  |
| tions as long as the Open and Close push-buttons, respectively are kept pressed. |  |
| Off: Service Man function disabled |  |
| On: Service man function enabled. In this case the Open push-button cannot be used |  |
| as control for pedestrian use. |  |
| "Multiple-flat" function: the "P.P." (STEP-BY-STEP) input does not cause the motor stop- |  |
| ping in the opening phase. At end of opening, the "P.P." input is enabled for the gate |  |
| closure. |  |

The selections which are preset with the Dip-Switches are memorized in the Stop phase. If a variation to the configuration of the Dip-Switches is carried out, the control unit operation is modified after the following stop.

## Dip-Switch SW1 "Bypass" Function

The Dip-Switches "Bypass" allow to short-circuit the normally closed inputs that are not in use.

```
DSW1 Input ASA
    Off= Enabled input
    On= Disabled input (leave the gate open).
DSW2 Input ASC
    Off= Enabled input
    On= Disabled input (leave the gate open).
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DSW3 Input FCC
Off= Enabled input
On= Disabled input.
DSW4 Input FCA
Off= Enabled input
On= Disabled input.
DSW5 Input FTC
Off= Enabled input
On= Disabled input.
DSW6 Input STOP
Off= Enabled input
On= Disabled input.

## Programmable functions

The RI.10KI control unit is equipped with connector to communicate with the programming display. If the display is not used, the control unit can be programmed as follows:
The functions for which it is possible to choose between a range of values can be preset by using the programming push-button (PGM) together with the Dip-switches. The fixed values are indicated with "(def.)".
To store the programmable functions in memory, move the Dip-switches as shown in the table, then press the push-button PGM for at least 2 seconds. The light of the "PGM" LED, which normally flashes, will be steady. When the LED switches off, then the programming has been successfully carried out. At this point, the push-button can be released and the LED start flashing.

## At completion of the programming procedure, move the Dip-switches to the normal positions.

This control unit performs the power circuit integrity test automatically. Should a fault be detected, the unit stops and indicates the fault through two blinks of the PGM led in rapid succession.
The triggering of the thermal switch is considered a fault in the power circuit, and once the thermal protection is reset, the control unit restarts automatically. If the control unit keeps on indicating a faulty operation, even when the motor has cooled down, try to momentarily switch power off.

## Checking the integrity of the power circuit

The control unit has the possibility of checking the integrity of the power circuit (TRIAC).
According to the factory setting, this function is disabled.
To check:

- Set the Dip-switches 1=ON and 8=ON
- Press PGM, the LED blinks twice briefly, then goes out.

With the control activated, in the event of a fault in the power circuit or of tripping of the protection, the control unit does not perform any kind of command.
To deactivate checking:

- Set the Dip-switches 1=ON and 8=OFF
- Press PGM until the blinking LED goes out.

With the control deactivated, even in the event of a malfunction in the power circuit the control unit still performs the command.

| Function | Options |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Dwell time for the automatic closure. | Dsw5 | Dsw6 | Dsw7 | Dsw8 | Seconds |
| Dip-switch 1 $\div 4=$ On/On/Off/Off | Off | Off | Off | Off | 5 |
| The dwell time is reset when the input FTC contact is opened or the Open input contact stays open. | On | Off | Off | Off | 10 |
|  | Off | On | Off | Off | 15 |
|  | On | On | Off | Off | 20 |
|  | Off | Off | On | Off | 30 |
|  | On | Off | On | Off | 40 |
|  | Off | On | On | Off | 50 |
|  | On | On | On | Off | 60 (def.) |
|  | Off | Off | Off | On | 80 |
|  | On | Off | Off | On | 100 |
|  | Off | On | Off | On | 120 |
|  | On | On | Off | On | 140 |
|  | Off | Off | On | On | 160 |
|  | On | Off | On | On | 180 |
|  | Off | On | On | On | 200 |
|  | On | On | On | On | 220 |
| Operating time of the "Pedestrian" function. Dip-switch $1 \div 4=$ On/Off/On/Off | Dsw5 | Dsw6 | Dsw7 | Dsw8 | Seconds |
|  | Off | Off | Off | Off | 5 |
|  | On | Off | Off | Off | 10 (def.) |
|  | Off | On | Off | Off | 15 |
|  | On | On | Off | Off | 20 |
|  | Off | Off | On | Off | 25 |
|  | On | Off | On | Off | 30 |
|  | Off | On | On | Off | 35 |
|  | On | On | On | Off | 40 |
| Operating power. <br> Dip-switch 1 $\div 4=$ Off/On/On/Off | Dsw5 | Dsw6 | Dsw7 | Dsw8 | Percent. |
|  | Off | Off | Off | Off | Min. Pow. |
|  | On | Off | Off | Off |  |
|  | Off | On | Off | Off |  |
|  | On | On | Off | Off |  |
|  | Off | Off | On | Off |  |
|  | On | Off | On | Off |  |
|  | Off | On | On | Off |  |
|  | On | On | On | Off | (def.) |
|  | Off | Off | Off | On |  |
|  | On | Off | Off | On |  |
|  | Off | On | Off | On |  |
|  | On | On | Off | On |  |
|  | Off | Off | On | On |  |
|  | On | Off | On | On |  |
|  | Off | On | On | On |  |
|  | On | On | On | On | Max Pow. |


| Function | Options |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Programmable functions. <br> Dip-switch 1 $\div 4=$ Off/On/Off/Off | DSW5 <br> On= In case of failure of the protection devices, the system switches automatically to "Service Man" operating mode after pressing the push-button for 2 seconds. <br> Off= In case of failure of the protection devices, the system cannot be activated even after pressing the push-button (def.). <br> DSW6 <br> On= Slow down enebled. About 7 seconds before theend of the operating time, the control unit sends a slow down control signal. <br> $\mathrm{Off}=$ Slow down disabled (def.). <br> DSW7= Off <br> DSW8= Off |  |  |  |  |  |
| The work time is regulated with the following menu, after the motor has been started from the limit switch; 7 seconds before the set time has elapsed the control unit starts slowing down (if this has been selected). If the work time is modified before you have been able to see the correct operation of the control unit, you must make it perform a complete manoeuvre (that is with arrival on a limit switch and restarting from the same point). The intervention of the protection edges deactivates slowing down until the first subsequent complete manoeuvre (that is with arrival on a limit switch and restarting from the same point). |  |  |  |  |  |  |
| Operating time. <br> Dip-switch 1 $\div 3=$ Off/Off/On | Dsw4 | Dsw5 | Dsw6 | Dsw7 | Dsw8 | Seconds |
|  | Off | Off | Off | Off | Off | 15 |
|  | On | Off | Off | Off | Off | 18 |
|  | Off | On | Off | Off | Off | 21 |
|  | On | On | Off | Off | Off | 24 |
|  | Off | Off | On | Off | Off | 27 |
|  | On | Off | On | Off | Off | 30 |
|  | Off | On | On | Off | Off | 33 |
|  | On | On | On | Off | Off | 36 |
|  | Off | Off | Off | On | Off | 39 |
|  | On | Off | Off | On | Off | 42 |
|  | Off | On | Off | On | Off | 45 |
|  | On | On | Off | On | Off | 48 |
|  | Off | Off | On | On | Off | 51 |
|  | On | Off | On | On | Off | 54 |
|  | Off | On | On | On | Off | 57 (def.) |
|  | On | On | On | On | Off | 60 |
|  | Off | Off | Off | Off | On | 63 |
|  | On | Off | Off | Off | On | 66 |
|  | Off | On | Off | Off | On | 69 |
|  | On | On | Off | Off | On | 72 |
|  | Off | Off | On | Off | On | 75 |
|  | On | Off | On | Off | On | 78 |
|  | Off | On | On | Off | On | 81 |
|  | On | On | On | Off | On | 84 |
|  | Off | Off | Off | On | On | 87 |
|  | On | Off | Off | On | On | 90 |
|  | Off | On | Off | On | On | 93 |
|  | On | On | Off | On | On | 96 |
|  | Off | Off | On | On | On | 99 |
|  | On | Off | On | On | On | 102 |
|  | Off | On | On | On | On | 105 |
|  | On | On | On | On | On | 108 |

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