

## **Programmierbarer Regler CU-XXX.K4/R/BUS:**

Der programmierbare Regler CU-XXX.K4/R/BUS kann nach Kundenvorgaben programmiert und kalibriert geliefert werden. Über die BUS Schnittstelle können spezifische Werte jedoch auch kundenseitig, wie nachfolgend aufgelistet, eingestellt werden.

Zum Betrieb als reinem Regler mit 3 Analogeingängen, 4 Schaltausgängen, 0-10V Ausgang wird die BUS Schnittstelle nicht benötigt, bei Bestellung dann die gewünschten Funktionen angeben.

Über die RS485 BUS Schnittstelle ist es auch möglich die Eingangs- und Ausgangswerte direkt von der SPS zu kontrollieren, somit kann das Gerät als SPS-Expanderbaustein genutzt werden.

### **Modbus RTU Specifications for device CU-XXX.K4/R/BUS**

#### **Supported Modbus types:**

3 = Holding Register

4 = Input Register

#### **Supportet Modbus functions:**

3 = Read Holding Register

4 = Read Input Register

6 = Write Single Register

16 = Write Multiple Register

#### **Physical Layer:**

RS485, 2400 to 57600Baud,

1/8 unit-load, no terminator required, line polarization integrated

max. 128 devices without repeater

for additional information's about Modbus specifications see <http://www.modbus.org/>

#### **Device Typ:**

Modbus RTU Slave

| <b>Input Register</b> |        |                |               |     |                                                                                                                              |
|-----------------------|--------|----------------|---------------|-----|------------------------------------------------------------------------------------------------------------------------------|
| Signal Name           | Typ    | Modbus address | Default value | Typ | Description                                                                                                                  |
| dev_ver               | uint16 | 0 (30000)      |               |     | Device version                                                                                                               |
| dev_typ               | uint16 | 1              |               |     | Device typ                                                                                                                   |
| in_value(1)           | uint16 | 2              |               |     | Data of Input 1, see in_hw_conf                                                                                              |
| in_value (2)          | unit16 | 3              |               |     | Data of input 2, see in_hw_conf                                                                                              |
| in_value(3)           | unit16 | 4              |               |     | Data of Input 3, see in_hw_conf                                                                                              |
| in_digital_hold       | uint16 | 5              |               |     | Data of Inputs set as digital input.<br>Input set High will be hold until read out<br>.0 Input 1<br>.1 Input 2<br>.3 Input 3 |
| out_value             | unit16 | 7              |               |     | 0-65535: 0-10V                                                                                                               |
| out_rel_value         | unit16 | 7              |               |     | .0 Relays K1<br>.1 Relays K2<br>.2 Relays K3<br>.3 Relays K4                                                                 |
| control_actual_value  | unit16 | 8              |               |     | input mean value (*0,1K)                                                                                                     |
| control_out_value     | unit16 | 9              |               |     | 0-10V out value (+0,1%)                                                                                                      |

| Holding Register |        |                |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------|--------|----------------|---------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Signal Name      | Typ    | Modbus address | Default value | Typ  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| dev_mode         | uint16 | 0 (40000)      | 1             | rem. | Modbus slave mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| dev_address      | uint16 | 1              | 1             | rem. | Modbus slave address                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| dev_baudrate     | uint16 | 2              | 8             | rem. | Modbus Baudrate:<br>0 = reserved<br>4 = 2400 Baud<br>5 = 4800 Baud<br>6 = 9600 Baud<br>7 = 14400 Baud<br>8 = 19200 Baud<br>9 = 28800 Baud<br>10 = 38400 Baud<br>11 = 57600 Baud                                                                                                                                                                                                                                                                                                                                                                                                        |
| dev_parity       | uint16 | 3              | 2             | rem. | Modbus parity bit:<br>0 = No parity (2bit stop)<br>1 = Odd parity (1bit stop)<br>2 = Even parity (1bit stop)<br>3 = No parity (1bit stop)                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| in_hw_conf(1)    | uint16 | 4              | 131           | rem. | <b>For input configuration set to temp. sensor the input value is scaled to Kelvin*10 as example: input value 2731=0°C, 2931 = 20°C</b><br>0 = disable<br>1 = digital (5-24V DC)<br>2 = analog (0-30V)<br>3 = low-analog (0-2,048V)<br>4 = R (*Ohm)<br>128 = PT100 (*0,1K)<br>129 = PT200 (*0,1K)<br>130 = PT500 (*0,1K)<br>131 = PT1000 (*0,1K)<br>132 = NI100 DIN (*0,1K)<br>133 = NI200 DIN (*0,1K)<br>134 = NI500 DIN (*0,1K)<br>135 = NI1000 DIN (*0,1K)<br>136 = NI100 TK5000 (*0,1K)<br>137 = NI200 TK5000 (*0,1K)<br>138 = NI500 TK5000 (*0,1K)<br>139 = NI1000 TK5000 (*0,1K) |
| in_hw_conf(2)    | unit16 | 5              |               | rem. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| in_hw_conf(3)    | uint16 | 6              |               | rem. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| control_setpoint | unit16 | 7              | 2981          | rem. | setpoint (*0,1K)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| control_p_value  | unit16 | 8              | 10            | rem. | p value (*0,1K)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| control_i_value  | unit16 | 9              | 20            | rem. | i value (*50ms)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| control_sensors  | unit16 | 10             | 3             | rem. | set number of sensors conneted (1-3)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| control_out_min  | unit16 | 11             | 1000          | rem. | 0-10V out min value (0-1000 = 0-10V)<br>set out_min > out_max for inverted output                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| control_out_max  | unit16 | 12             | 200           | rem. | 0-10V out max value (0-1000 = 0-10V)<br>set out_min > out_max for inverted output                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| out_rel_on(1)    | unit16 | 13             | 0             | rem. | out K1 switch on value (*0,1K)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| out_rel_on(2)    | unit16 | 14             | 0             | rem. | out K2 switch on value (*0,1K)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| out_rel_off(1)   | unit16 | 15             | 0             | rem. | out K1switch off value (*0,1K)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| out_rel_off(2)   | unit16 | 16             | 0             | rem. | out K2 switch off value (*0,1K)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| out_3p_runtime   | unit16 | 17             | 2000          | rem. | out K3/4 runtime (*50ms)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| out_3p_hyst      | unit16 | 18             | 5             | rem. | out K3/4 hysteresis (*0,1%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

rem. = remanence data

RINCK ELECTRONIC 16.02.2011

Für Rückfragen zum Gerät oder dem BUS Protokoll bitte Firma RINCK ELECTRONIC kontaktieren.  
Weitere technische Daten sind dem Datenblatt C820\_33\_CU-XXX.K4 zu entnehmen.