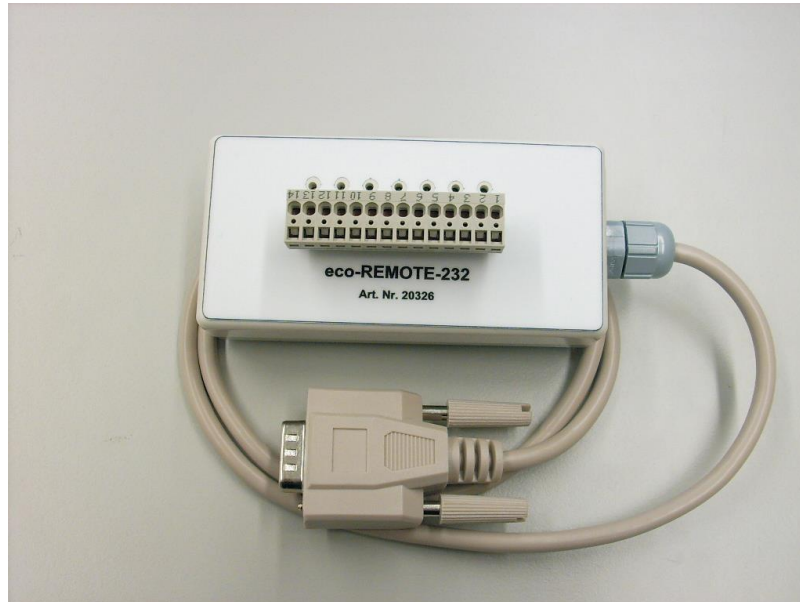


## *eco-REMOTE*



### 1. Use

*eco-Remote* is an interface between the *eco-Control EC200-K (B)* control system and an external controller (e.g. a PLC). It allows the activation of the dosing programs that are on the memory card of the control system.

### 2. Operation

When input 5 is energized, the program number (0 to 24) resulting from the signal values at inputs 0 to 4 is transmitted to the control system. This program is now activated on the control system. The front keypad is disabled while input 5 remains energized. Initialization is caused by an electrical signal at the control system.

### 3. Connecting *eco-Remote*

Plug the connector (RS232) into the control system which must be switched off. Make the power supply and connections at the terminal block (15) (see 5. terminal block / signal values).

#### 4. Switching on *eco-Remote*

1. The power for the eco-Remote is supplied by the attached EC200 (DSUB connector). If required, the eco-Remote could be supplied by an external 24V source connected to terminals 1 + 2
2. Switch on eco-Control

It's not allowed to set input 5 (terminal 13) on high level during Switch on of the eco-Control. The LED next to terminals 1 + 2 will flash during startup of the eco-Remote. The connection with the control system is established after approx. 15 seconds and the LED lights up.

Table 1: LED status lights

lights up	Connection to the control system has been made, waiting time approx. 15 seconds.
flashes twice quickly	Input 5 is energized, data* is being sent to the control system, the front keypad of the control system is disabled.
flashes once quickly	Input 5 has been deactivated, data transfer to the control system stops, the front keypad on the control system is enabled again.
flashes continuously	<ul style="list-style-type: none"> <li>• Connection to the control system is not possible</li> <li>• No SD memory card plugged into the control system</li> <li>• Wrong software version of the control system</li> </ul>

\* Signal values of inputs 0 to 4

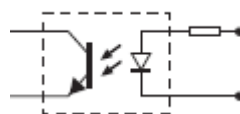
## 5. Terminal Block / Signal Values

Table 2: Assignment of inputs 0 to 4

Program number	Input				
	0	1	2	3	4
0	0	0	0	0	0
1	1	0	0	0	0
2	0	1	0	0	0
3	1	1	0	0	0
4	0	0	1	0	0
5	1	0	1	0	0
6	0	1	1	0	0
7	1	1	1	0	0
8	0	0	0	1	0
9	1	0	0	1	0
10	0	1	0	1	0
11	1	1	0	1	0
12	0	0	1	1	0
13	1	0	1	1	0
14	0	1	1	1	0
15	1	1	1	1	0
16	0	0	0	0	1
17	1	0	0	0	1
18	0	1	0	0	1
19	1	1	0	0	1
20	0	0	1	0	1
21	1	0	1	0	1
22	0	1	1	0	1
23	1	1	1	0	1
24	0	0	0	1	1

Table 3: Terminal block

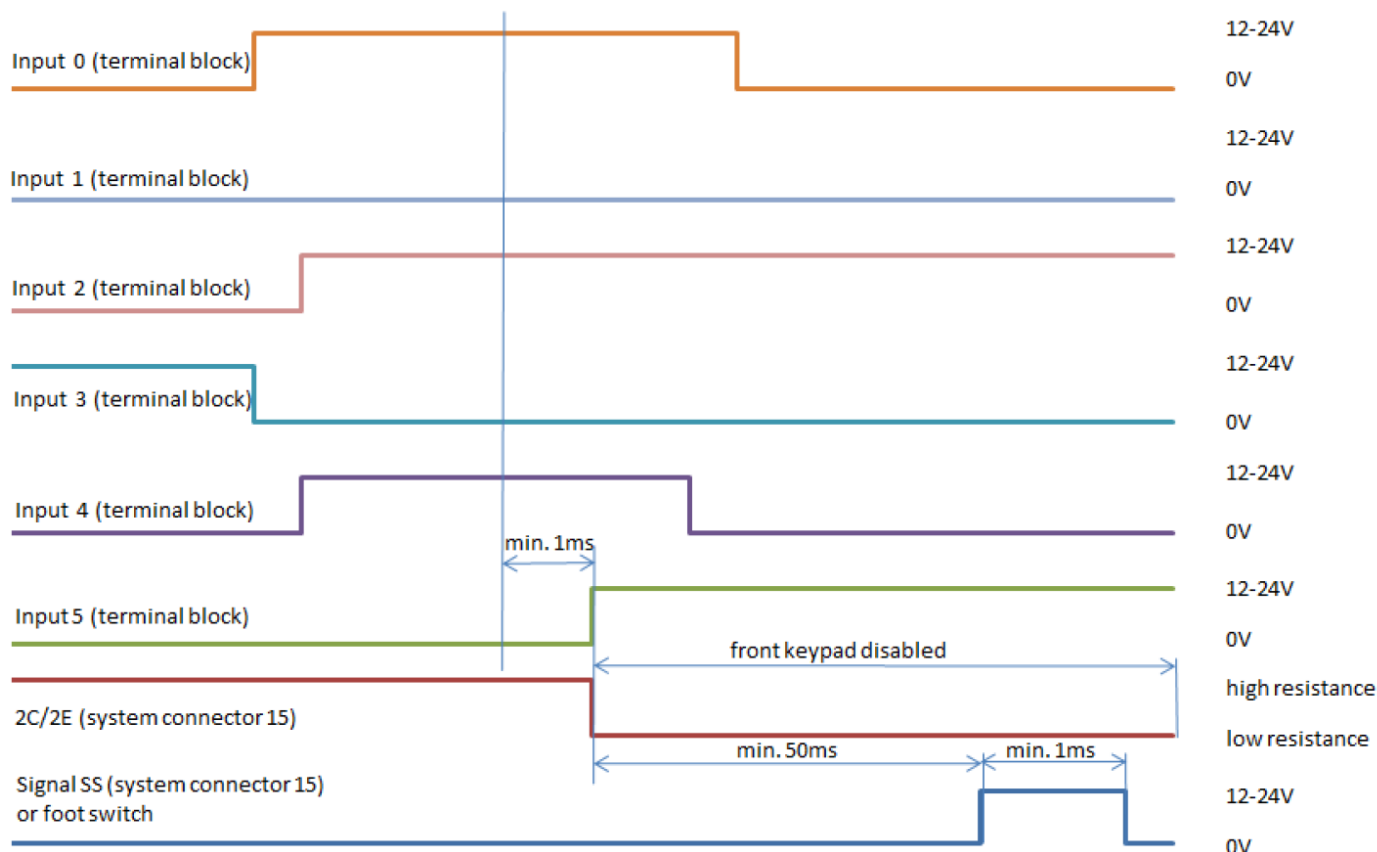
1 ○	A +24V	DC
2 ○	K GND	
3 ○	A +24V	Input 0
4 ○	K GND	
5 ○	A +24V	Input 1
6 ○	K GND	
7 ○	A +24V	Input 2
8 ○	K GND	
9 ○	A +24V	Input 3
10 ○	K GND	
11 ○	A +24V	Input 4
12 ○	K GND	
13 ○	A +24V	Input 5
14 ○	K GND	



A = Anode

K = Cathode

## 6. Signal forms and levels



## 7. Signal sequence, logic

1. Energise inputs 0-4 on the terminal block (dosing program number). The above example shows address 10101 = program number 21.
2. Energize input 5 on the terminal block. Now, the dosing program defined by the level on inputs 0-4 will be activated, the dosing program (see 1.) Please note, that between the last level change on inputs 0-4 and the energizing of input 5 (level change from low to high) there should be an delay of at least 1ms. As long as this input is on high level, an "R" followed by the actual number of the program is shown in the upper left corner of the display. If input 5 is on low level or left open, the keypad of the eco-Control can be used and in the upper left corner of the display an "L" is shown. As long as the input 5 is on high level and until the end of the dosing, the output 2C/2E is on low resistance.
3. If 2C/2E is low resistance (system connector 15), the control system is in *Remote* operating mode and can be activated.
4. Between activating of input 5 and the start of the dosing there should be a delay of at least 50ms. For starting the dosing program either:
  - apply - Signal SS, ext. Start, 1C/1E (system connector 15)
 or
  - activate the foot switch (optional, connector 18)
 The input 5 still has to be energized at this moment!
5. Once the dosing program is complete, the 2C/2E switches to high resistance (system connector 15). The control system returns to *Local* operating mode. On the left upper corner of the display a "L" appears. Another dosing program can be sent (1. to 3.) and executed (4.).

## 8. Troubleshooting

Table 4: error cause

Error	Possible Reason
all LED's off on eco-Remote	<ul style="list-style-type: none"> <li>eco-Remote not connected to eco-Control</li> </ul>
Eco-Remote connected to eco-Control, but no „L“ or „R“ + program number on display	<ul style="list-style-type: none"> <li>eco-Remote connected to eco-Control after switch on of eco-Control</li> <li>Input 5 (terminals 13/14) on high level during startup of eco-Control</li> </ul>
„R“ + program number is shown on display but disappears	<ul style="list-style-type: none"> <li>Input 5 of eco-Remote on low level or left open</li> </ul>
not possible to use keypad on eco-Control	<ul style="list-style-type: none"> <li>Eco-Control is in Remote-mode („R“ shown in left upper corner of display)</li> </ul>