STARLINE®
POOLS & EQUIPMENT

Instructions for programming and use

Starline Roldeck - floorpanel control
RD-2001

Microprocessor-based Roldeck control

CONTENTS.

INFORMATION FOR ENGINEERS.

<u>NOTE</u>
In order to prevent misuse, turn the key switch to the "0" position and remove the key once the Roldeck has been opened or closed.

This Roldeck control has been developed and manufactured following CE regulations.

1   RD-2001 product description

The RD-2001 is a microprocessor-based Roldeck - floorpanel control. The system works without any mechanical limit switches in the Roldeck and floorpanel motors. Sensors built into the motors send pulses to the control unit for limit registration.
The control unit is operated by means of the key pad on the front of the cabinet or by means of the remote programming unit (optional), which can be connected to the cabinet by means of a cable (25 m).
The programme is protected in case of power cuts.

Symbol	General description	
A.	Main switch	
B.	Programming connector	
C.	Programming plug	
D.	Fuse holder mains	250V. 3,1 Amp.
E.	Fuse holder safety lock	250V. 4 Amp.
F.	Remote control receiver (optional) Frequency 433 MHz	
G.	Receiver programming LED	
H.	Receiver programming button	

Symbol	General description	
1.	Mains connection 230V. 50-60 Hz.	
2.	Potential-free switch contacts	Contacts 11-12-13. Max. 230V. 5 Amp.
	Potential-free switch contacts	Contacts 11-12-13. Max. 230V. 5 Amp.
3.	Safety lock connection 24V. Activated by means of selection switch 8:1	
4.	**Floorpanel connection**	
	M2- / M2+.	Motor 24V.
	+, A, B, -	Sensor
	SK-SK.	Level switch connection
5.	**Roldeck connection**	
	M- / M+	Motor 24V.
	+, A, B, -	Sensor
	SK-SK.	Level switch connection
6.	Key switch connection	
7.	Connection: 1-button Roldeck control. Open, Stop, Close	**Selection switch 8:2 off**
	Roldeck water level safety	**Selection switch 8:2 on**
8.	Switch settings:	
	8:1 ON Safety lock activated	
	8:2 OFF 1-button Roldeck control activated	
	8:2 on Roldeck water level safety activated	
	8:3 No function	
	8:4 No function	
9.	Selection switch for delay between mobile floorpanel and Roldeck	
	9:1 ON 7.5 sec. delay	
	9:2 OFF 15 sec. delay	
	9:3 ON 22.5 sec. delay	
	9:4 ON 30 sec. delay	

Please refer to Fig. on page 4.
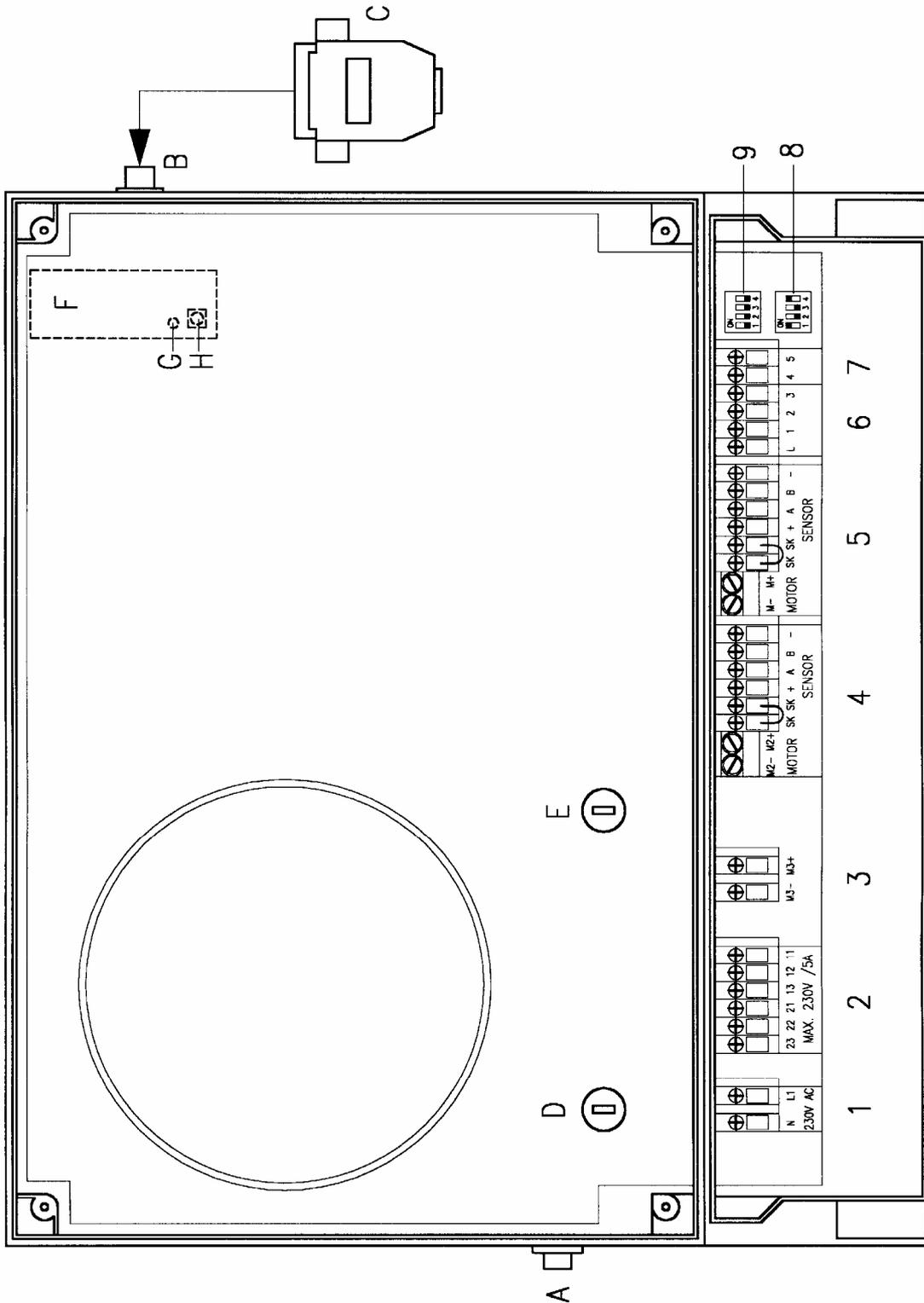
2 FEATURES OF THE ROLDECK - FLOORPANEL CONTROL RD-2001

2.1 Potential-free contacts:
The connections under (pos. 2) are 2 mechanically separate potential-free contacts, which are open or closed when the Roldeck reaches it end limit. The voltage-free outputs may be used for a maximum of 230V. 5 Amp.

2.2 Safety lock:
The Roldeck may be closed off by means of an electromechanical lock. This lock can be plugged straight into connection (pos. 3), which is a 24V output. The lock is closed once the Roldeck reaches its set end limit. When the command 'Roldeck open' is given, the lock is cancelled and the Roldeck motor is started after a pre-set 3-second delay. If the lock works in reverse order relative to the Roldeck, the + and – must be changed over.
The lock will remain open if no positions have been programmed and during the tuning procedure.
To activate this function, the DIP-switch (pos. 7-1) must be set to the ON position.

2.3 1-button operation:
The connection under (pos. 6) may be used to operate the Roldeck by means of a simple switch. Set DIP-switch (pos. 7-2) to OFF position. If this switch replaces the key switch completely, a jumper must be installed between contacts L and 2 on the respective connection.

2.4 Water level safety:
The RD-2001 can be used in two ways to prevent the Roldeck from damage in case of high or low water levels. The two SK, SK contacts can be connected to a level switch after the jumper has been removed. Once contact is broken, the control is immediately switched off completely as a result of which the Roldeck can no longer be operated until the water level has returned to normal causing the contact to be made again.

A second possibility is using the connection under (pos. 6). The DIP-switch (pos. 7-2) must be set to the ON position. Also in this case, a level switch is connected to contacts 4+5. If a connection is made here, the Roldeck will roll up automatically and then lock until contact is broken again (water level to normal).

2.5 Radio control (optional):
Optionally, the RD-2001 may be equipped with an two-channel radio control receiver / transmitter. The main circuit board has a connector (pos. F) on which the receiver can be mounted. The range of transmission in open field is 45 m max. If the RD-2001 is installed in a place where reception poses problems, there is a possibility of mounting the receiver in a separate housing and installing it in a different location (optional). The frequency is 433 MHz.

3 Automatic safety features.

3.1 Electrical safety:
If the current taken by the Roldeck motor and/or the floorpanel motor exceeds the set maximum value (8 Amp) for more than 5 sec. the motor is switched off and a fault is indicated.
This safety is overrun by pressing the "open" or "close" command again.

3.2 Engine speed safety:
While the motor is running, the rotational frequency is checked continuously. Should the motor be jammed, the supply is switched off and a fault is indicated.

3.3 Sense of rotation control:
If the drive runs in the opposite direction of the command that is given (wrong connection), the control locks and a fault is indicated.
This sense of direction control only operates after the control has been programmed.

3.4 Runtime safety:
After each command, an internal timer is activated. After 15 min. the control stops the drive motor (no fault is indicated). This is in order to prevent any possible damage to the control and the drive motors.

Once a fault ("Error") is indicated, check the list of errors to find out the cause. Remove the cause of the error and give the command again.
Depending on which LED lights up ("Roldeck" or "Panel") the location of the error is identified.

3.5 ERROR

ERROR	WARNING LED
Max. current limit	LED error blinks, LED open = off / LED close = off
Wrong engine speed	LED error blinks, LED open = on / LED close = off
Wrong sense of rotation	LED error blinks, LED open = on / LED close = on
STOP / SK	LED error blinks, LED open = off / LED close = on
Lock after power cut	LED ON blinks. Automatic reset after 5 sec.

4 Mounting instructions
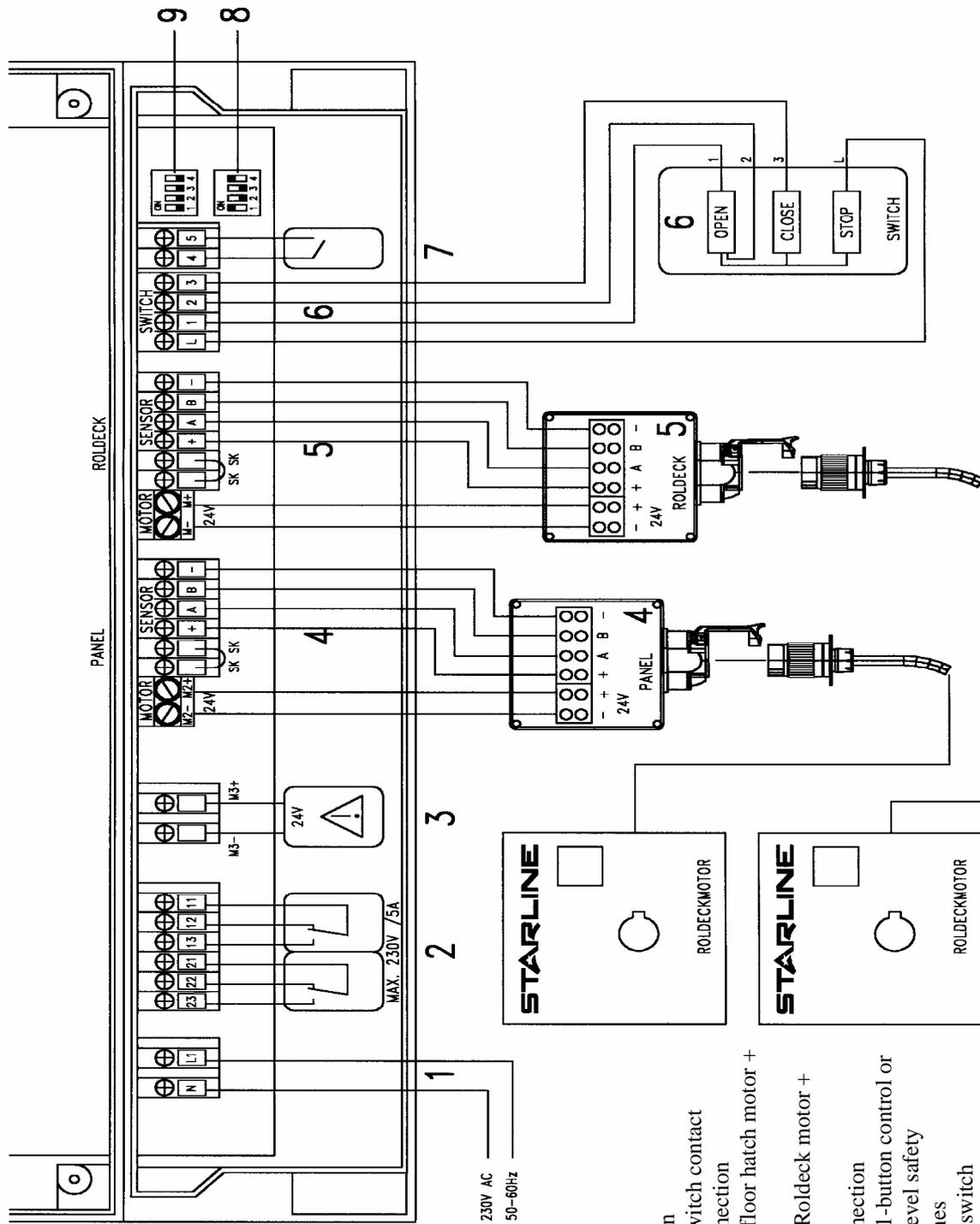
1. 230V connection
2. Potential-free switch contact
3. Safety lock connection
4. Connection for floor hatch motor + sensor
5. Connection for Roldeck motor + sensor
6. Key switch connection
7. Connection for 1-button control or Roldeck water level safety
8. Selection switches
9. Delay selection switch

Mount the RD-2001 on the wall, the connections facing down.

Connect the wires following the connection diagram on page 7.

Floorpanel sensor (pos. 4)
Connect the sensor wire (4x1.5 square) to sensor connections +, A, B, -
Max. wire length 75m.

Floorpanel motor (pos. 4) 24V
Connect the floorpanel motor wire (2x2.5 square) to the motor connection M2-, M2+.

Roldeck motor sensor (pos. 5)
Connect the sensor wire (4x1.5 square) to sensor connections +, A, B, -
Max. wire length 75m.

Roldeck motor (pos. 5) 24V
Connect the Roldeck motor wire (2x2.5 square) to the motor connection M-, M+.

Key switch (pos. 6)
Connect the key switch wire (4x1.5 square) to contacts L, 1, 2, 3.
Max. wire length 100m.
L   Key contact (stop)
1   Open
2   Zero
3   Close

Safety lock (pos. 3)
Connect the wire (2x2.5 square) to contacts M3- and M3+.
Also, set the DIP-switch (pos. 7-1) to the "ON" position.

Options (pos. 2 and 6)
If options pos. 2, potential-free switch contact (contacts 11, 12, 13 and 21, 22, 23) and pos. 6, level control or 1-button control (contacts 4 and 5) are used, use a 1.5 square wire.
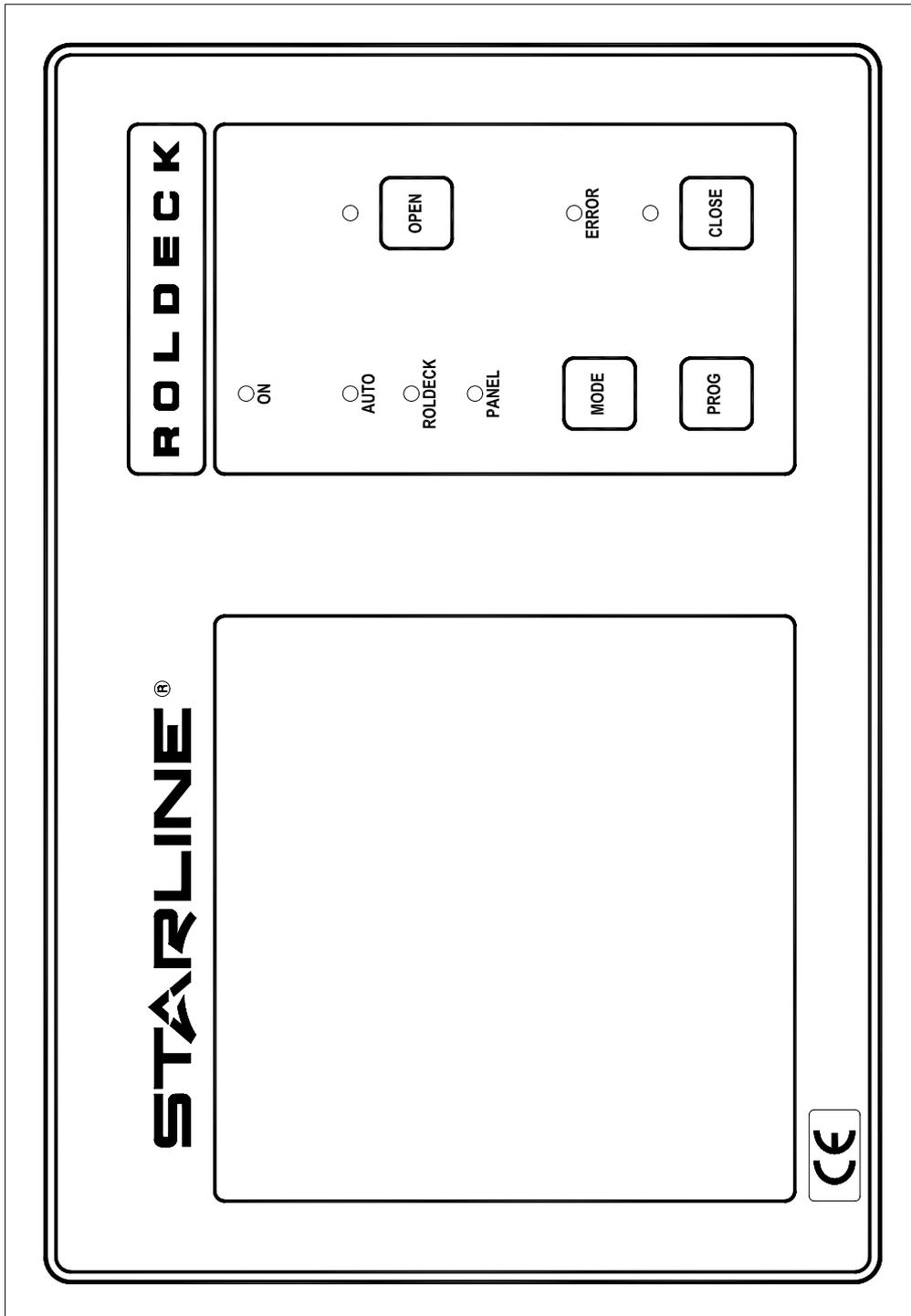
Mains current (pos. 1) 230V 50-60 Hz.
Connect a supply cable to contacts N and L1.

Wiring (distance vs diameter)

Distance	Product		
	Motor 24V	**Sensor**	**Key switch**
< - 15mtr.	2½ mm²	1½ mm²	1½ mm²
16 – 25mtr.	4 mm²	1½ mm²	1½ mm²
26 – 45mtr.	6 mm²	1½ mm²	1½ mm²

5 Programming RD-2001.

Check the wiring has been connected according to the diagram.

Switch on the cabinet by means of main switch (pos. A)

5.1   Insert programming plug (pos. C) in the connector (pos. B).

1. Press the "**prog**" + "**mode**" keys **simultaneously** (approx. 5 seconds) until the yellow Roldeck LED starts blinking.

2. Press the "**open**" key and move the floor hatch to the correct opened position. The floorpanel motor will operate for as long as the key is pressed down.
    Attention: If the floorpanel motor operates in the wrong sense of rotation, the + and – (pos. 4) of the floorpanel motor must be changed over.

3. Press "**prog**" and simultaneously press the "**open**" key in order to store this position in the memory. (yellow "open" LED is lit). After this, the control automatically switches to programming Roldeck.

4. Press the "**close**" key and move the Roldeck to the correct closed position. The Roldeck motor will operate for as long as the key is pressed down. **Attention**: if the Roldeck motor operates in the wrong sense of rotation, the + and – (pos. 5) of the Roldeck motor must be changed over.

5. Press "**prog**" and simultaneously press the "**close**" key in order to store this position in the memory. (yellow "close" LED is lit)

6. Press the "**open**" key and move the Roldeck to the correct opened position. The Roldeck motor will operate for as long as the key is pressed down.

7. Press "**prog**" and simultaneously press the "**open**" key in order to store this position in the memory. (yellow "open" LED is lit). After this, the control automatically switches to programming floorpanel.

8. Press the "**close**" key and move the floor hatch to the correct closed position. The floor panel motor will operate for as long as the key is pressed down.

9. Press "**prog**" and simultaneously press the "**close**" key in order to store this position in the memory. (yellow "close" LED is lit)

After the last action (9) the cabinet automatically switches to the user position (green "auto" LED is lit).

5.2 Fine tuning:

1. Open the programming by pressing the "**prog**" + "**mode**" key and the "**open**" or "**close**" key **simultaneously**.

2. Move the Roldeck or floorpanel to the desired end position by pressing the "**open**" or "**close**" key (the motor will run for as long as the key is pressed).

3. Confirm this position by pressing the "**prog**" and the respective "**open**" or "**close**" key simultaneously.

After this action, the control automatically returns to the user position.
(green "auto" LED is lit).

Remove the programming plug after the control is programmed, in order to prevent undesired changes to the programming.

There are various ways to execute the setting procedure;
1. By means of the keys on the RD-2001 control.
2. By means of the keys on the separate programming unit.
3. By means of the keys of the key switch the Roldeck can only be moved to its correct position. Opening the programming and storing the end positions must, however, be done by means of the control or the programming unit!

6   Remote control. (till June 2004)

INSTALL TRANSMITTER AND PROGRAM HAND TRANSMITTER ON RD-2001
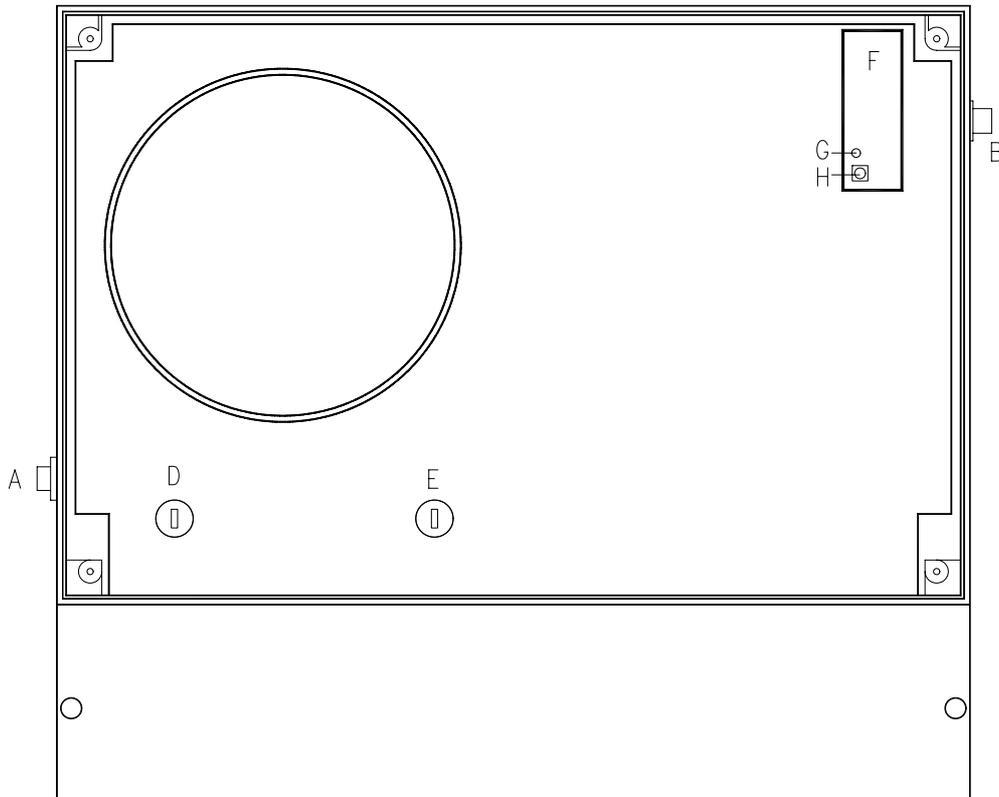CONTROL
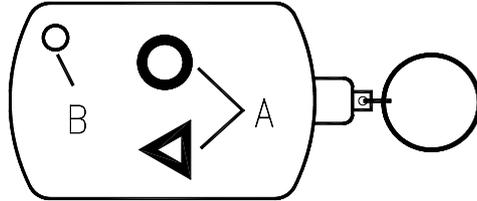
OPERATION

Fit the receiver in the RD-2001 control on the connector (F).
Fix the aerial wire to the plastic housing by means of tape.

The hand transmitter has two buttons (A) and an LED (B).
The two buttons are used to open and close the Roldeck. The LED indicates that the transmitter
is in operation.

TUNING THE HAND TRANSMITTER.

**In order to fine tune the transmitter to the RD-2001 control, it must be held close to the
RD-2001 control (max. distance 50cm).**
The transmitter supplied with the package has been factory tuned to the receiver. If the
transmitter is replaced or if extension of the system takes place, the following procedure must be
followed.

1 Press the brown button (H) inside the control, and <u>keep it pressed down</u>.

2 Press a key on the transmitter (A) 1x and wait for the LED (G) to light up continuously.

3 Press a button on the receiver (A) again; the light will extinguish.

4 Now release button (H) in the control.

5 The transmitter is now set and is ready to be tested.

If tuning has not succeeded, press the brown button (H) in the control 5 times. The LED will light up for about 5 seconds and the programming is deleted.
Start again by repeating points 1 to 5 of the procedure.

A maximum of 4 hand transmitters may be added on to the RD-2001.

Remote control (from June 2004)

OPERATION
Fit the receiver in the RD-2000 control on the connector (F).
Fix the aerial wire to the plastic housing by means of tape.

The hand transmitter has two buttons and a LED.
The two buttons are used to open and close the Roldeck. The LED indicates that the transmitter is in operation.

TUNING THE HAND TRANSMITTER
In order to fine tune the transmitter to the RD-2000 control, it must be held close to the RD-2000 control (max. distance 50cm).
The transmitter supplied with the package has been factory tuned to the receiver. If the transmitter is replaced or if extension of the system takes place, the following procedure must be followed.

PROGRAMMING THE TRANSMITTER AND RECEIVER
To program the transmitter and receiver, press the program button of the receiver for approx. 1 sec. The led of the receiver will flash at this moment. While the led is flashing (approx. 20 sec.), there is time to program the transmitter with the receiver. To program the transmitter press the yellow button until the led of the receiver goes out. The programming is now done.
2 or more transmitters to program
Press again for approx. 1 sec. de program button of de receiver. (Led will flash). Press the yellow button on the transmitter until the led of the receiver goes out. Now both transmitters are programmed.

There is a possibility to program one receiver with max. 250 transmitters. When this maximum is reached, the receiver led won't flash anymore after you have pressed the program button.
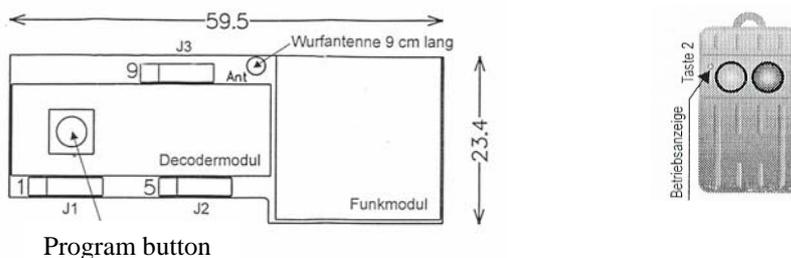
Program button

Remove all old adjustments
Push the program button of the receiver until the LED will lid. The LED will lid for approx. 10 sec., until the adjustments are removed.

Be careful:
It isn't possible to remove only one transmitter adjustment.
All the adjustments of the different transmitters will be removed out of the receiver.

Frequency: 868.300 Mhz

7 Remote control (Optional).   Information for engineers.

REMOTE CONTROL