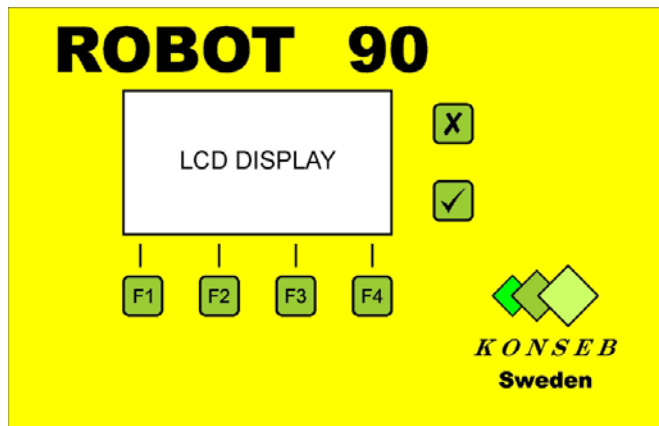


## CONTROL BOX

### Function description



The control box contains all the information needed for running and controlling one ROBOT 90. The control box is loaded with a program specially constructed for the particular basin where ROBOT 90 is installed. The program considers the shape of the basin, the size of the basin and variety of sludge sedimentation in different segments of the basin. All the other settings and work parameters are decided by the user.

On the front panel there are two buttons to the right of the display and four buttons under the display. Buttons are used for changing of settings, changing of working mode and for manual running of the equipment.

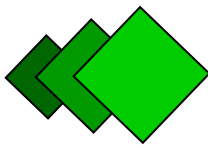
Under the box there are four sockets for connecting of cables and a power cable (length 1 m). (*see Sockets.*) The control box is run by 24 VDC.

The control box is fixed direct on a wall or via rails by four screws. There are four eyes on corners which can be placed different ways and the distance between screws can be e.g. 188x134 or 208x108.

### LCD Display

In the lower part of the display there is a row with symbols corresponding to buttons F1 – F4, which are used for operating the control box.

The default mode is the work mode, i.e. this mode comes on when the control box is switched on. In this mode and manual mode the LCD display is divided in two halves. On the right half the position of both arms is shown. On the left half information is shown: the status, time, temperature (not used for this application), deviation (in degrees) from the zero position for the inner arm and deviation (in degrees) from the zero position for the outer arm.



## Buttons

Upper button – RETURN – back to the work mode without acceptance of last changes

Lower button – ENTER – back to the work mode with acceptance of last changes

F1 – work mode – starts/stops ROBOT 90

When ROBOT 90 is on a little black dot is shown in the middle of the display indicates that pump signal is on.

F2 – Set-up menu – allows changing of parameters

In that mode buttons F1-F4 have function according to the row on the lower part of the display.

Mode – shows which program is prepared. Up to 9 programs can be loaded.

When AUTO – ROBOT starts according to schedule (see Scheduler)

Break – time between two cycles. Can be set from 1 to 255 minutes (the next cycle starts so many minutes after the previous cycle has stopped) or “----“ which means that ROBOT starts after pressing F1.

Pump – time when the pump is on before ROBOT starts. Can be set from 1 to 255 seconds.

Pause – time when the suction cone stops in certain points on the bottom. Can be set from 0 to 255 seconds.

Home – changes the home position shown on the screen. Can be set (similar as on geographic maps) to: North, West, South or East

Contrast – shows light contrast of the display. Can be set from 0 to 150.

Backlight – shows light power of the display. Can be set between 1 and 3.

Language – can be set to English or Polish (for time being)

Address – usually “1”; uses when more than one unit is connected to the control box

Time – actual date and time can be set

Scheduler – a week schedule for starts can be set. Program is preset too.

F3 – MANUAL mode – arms can be run manually.

The choice which arm can be operated is done with button F2.

When pressing button F3 the chosen arm turns to the left, i.e. anti-clockwise.

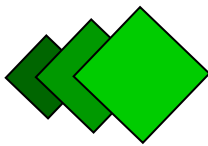
When pressing button F4 the chosen arm turns to the right i.e. clockwise.

When pressing simultaneously buttons F3 and F4 the chosen arm returns the home position.

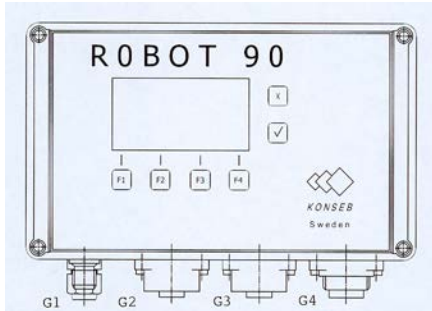
F4 - ERROR mode – up to nine last errors are displayed. After switch of control box the error memory is erased.

Following errors can be presented: overload, disconnection and error in connections.

When an error occurs ROBOT 90 is stopped and the reason to the error and the time is listed.



## Sockets



**Cables are connected to sockets under the Control Box as follows:**

Power: 24 VDC, brown (+)

G1 – RS232 socket for computer communication

G2 – inner driving unit

G3 – outer driving unit

G4 – multipurpose socket:

1-2 - Confirmation of pump function

3-4 - Pump signal – shutter signal for pump relay

5-6 – Remote start

## Loading of running programs

Connect your computer and the Control Box.  
(USB or serial port)

open - RobotCtrl.exe

File – *Open*

Choose a wished program – *OK*

Robot – Control panel

Open the connection by changing “Close” to “COM ...” (Check which port in your computer has been chosen)

Robot – *Remote Control* (activating of remote mode)

Robot – *Save – All* (the chosen program is loaded into the control box)

Robot – *Remote Control* (deactivating of remote control)

Note! After loading settings return to default values!

Check and change the settings if necessary.