Introduction

Dear user,

Thank you for purchasing the I-Control flush computer.

This manual contains complete information necessary to install and use the I-Control. Please read this manual carefully and consult the safety instructions before installing and using the I-Control. Keep this manual in a convenient place so it can be consulted at all times.

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Impex Barneveld BV has made the greatest effort to display the information in this manual as correctly, clearly and completely as possible. Should you nonetheless detect an error, Impex Barneveld BV would highly appreciate being informed of this.

For questions and support, please contact your Impex dealer or our service department:
Telephone: +31(0)342-416641
Safety instructions and warnings

Check all settings after installing the I-Control to insure that they are correctly set.

Keep the power supply of the I-Control on to prevent condensation by cooling. Do not turn the power off even when the poultry house is empty.

Do not use water to clean the I-Control. The I-Control is splash-proof; not water-proof.

A damaged or defective I-Control is dangerous and should be checked by your installer. It is extremely important that the installation be equipped with a reliable alarm system. For proper operation, it is recommended to test the alarm system minimally once daily.
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User’s manual

Description of the I-Control flush computer

The I-Control is specifically designed to flush drinking lines in poultry houses. Flushing is done by flushing water through the water pipes during a set time period. One flushing group at a time will be controlled.
Flushing can be started by various means:
- Manual activation of one flushing group during the set flush time
- Manual flushing of all groups consecutively during the set flush time
- Automatic flushing at set start times
- Automatic flushing when the temperature of the water in the drinking lines is too high
- Automatic flushing when the water in the drinking lines becomes too polluted

The I-Control can be temporarily blocked when medicines are added to the drinking water. In this case flushing is undesirable.

The I-Control is active only between an set start and stop time. This is important when the drinking water supply is shut off for a certain period of time by a climate computer, such as during the night. Flushing will therefore not occur.

The I-Control has a graphic display to read all settings. The main screen gives a summary of the I-Control status, such as which flushing group is active, flushing times, etc..

To change the settings, the I-Control has a keyboard. The numeric keys can also be used to directly to specific menus, called shortcuts.

Specifications of the I-Control flush computer
Max. 10 flushing groups
1 main control valve
1 alarm contact for activation of an external alarm
1 temperature sensor for determining the temperature of the drinking water
1 temperature sensor for determining the temperature of the water supply
Connection possibility for a dirty water sensor
Connection possibility for of a pressure sensor
Connection possibility for a water detection sensor
Connection possibility for a liter counter and transfer to a external climate computer
Calculation of amount of medication required

Function of the I-Control Screens

The various screens of the I-Control indicate the most important measurements in a clear and structured manner for a quick summary of the current situation. Depending on the configuration set in the installer’s program, the summaries can differ.

Note: Settings in a summary screen cannot be altered

Note: When a screen other than the main menu is visible, press the key several times to return to the main menu.

Note: When no keys are pressed for a while, the I-Control will return to the main menu.
Main screen
The main screen of the I-Control

The top line indicates the current time. When there is an alarm detection, a blinking alarm will appear in the upper right corner.

On the following lines the status of the I-Control, the number of flushes today, the amount of flushed liters today and the current day number are shown.

The status may display the following modes:

- **Man.off** (Manual off) The I-Control is manually turned off and there will be no flushing until the I-Control is manually switched on again.
- **Clk.off** (Clock off) The I-Control is automatically turned off by the start and stop time, such as during the night hours.
- **Tmp.off** (Temporarily off) The I-Control is blocked for a set time, such as when medicines have been added to the drinking water. Flushing is, therefore, undesirable for a certain period of time. After this time period, flushing will resume automatically.
- **Man.on** (Manual flushing) One valve is flushed manually.
- **Man.all** (Manual flushing all) All valves are flushed manually.
- **Time on** (Flushing time) The flushing starts automatically at a set start time.
- **Temp.on** (Flushing temperature) Flushing starts by the temperature control when the temperature of the water becomes too high.
- **Dirt.on** (Flushing dirt) The flushing starts by the pollution control when the drinking water becomes too polluted.
- **Waiting** (Waiting) The I-Control is in the waiting mode for a possible next flushing cycle.
- **Delay** (Delay) The I-Control is waiting in the delay time. After each flushing cycle, there is no flushing during an set delay time.
- **Init.** (Initialization) The I-Control has just started and is in the initialization phase. This phase is used for temperature and sensor readings before the control process begins and takes about one minute.
- **Filling** (One-time filling) All drinking lines are filled with a set amount of water.

Next to the status, under the head **No**, the number of flushings today is shown. **Ltr** indicates the amount of liters flushed today; **Day** indicates the day number used in the course of a curve.

The positions of the valves are indicated on the last line. Under each valve number a light flashes when the corresponding valve is active. With this done, the light will remain on without flashing.

Registration screens
By using the and key, the main screen can be reached from the registration screen. The registration screen appears as follows, for example.
The number of flushings each day is displayed in the registration. The number of flushings based on temperature (Flush temp), flushings based on pollution (Flush dirty) and flushings based on start times (Flush time) are displayed. The screen also indicates the amount of liters flushed on this particular day.

By pressing the key repeatedly, scroll down to the last line indicating the total liters of this round.

By using the or keys, the registrations of today and to 7 days previously can be read.

**Turning I-Control on/off**

The I-Control can be turned off when the house is empty. It is also possible to temporarily turn off the flushing process, such as during medicine dosage into the drinking water. Proceed as follows:

Press the shortcut '5/STOP. The following screen is displayed:

![Stop/flush options]

You can choose to stop the I-Control completely (house is empty) or stop temporarily.

I-Control complete stop:
- Press the 'ENTER' key and the I-Control will stop completely. No flushing will take place until the I-Control is turned on. A one-time time filling of the lines is still possible.

I-Control temporary stop:
- Press the 'DELETE' key.
- An input screen is displayed. The time (hours-minutes) for how long the flushing should be blocked can be set.
- Confirm with the 'ENTER' key.

If the I-Control is manually turned off, it can be restarted with the shortcut key:
- Press the '5/STOP' key.
- Confirm with the 'ENTER' key.

**Stop a running flushing process in case of an emergency:**

- Press the key in the main screen.
- The following screen is displayed:

![Stop flush options]

- Choose to the action or choose to stop the running flushing process.
Manual flushing of a group
If so desired, a group can be flushed manually. On the main screen press the '1/S-FLUSH' key. An input field appears and the desired group can be set. Confirm “select valve …” with the 'ENTER' key, and this group will be flushed during the set flush time.

Manual flushing of all groups
If so desired, all the groups can be flushed manually. On the main screen press the '3/T FLUSH' key. Confirm “total flush” with the 'ENTER' key to flush all groups consecutively.

Customizing settings
User settings can be changed by using the key. When pressing this key, a menu appears on the main screen. By using the and key, the items in this menu can be scrolled through. Press the key to select an item.

The cursor keys and are used to scroll through the functions of the selected menu. A setting can be adjusted by pressing the key. The setting is displayed in a new window, and a new value can be entered.

Press the key again, and the new value will be stored in the memory. Hereafter the I-Control functions with the new values.

**Note 1:** Functions showing a measurement, such as a measured temperature, can neither be selected nor adjusted.

**Note 2:** Dependent on the settings of the installer’s program, some menus and/or functions are not displayed.

Press to return to the previous menu or press to exit and immediately return to the main menu.

It is also possible to go directly from the main screen to specific menus by pressing a shortcut key. The text on these keys indicates the menu is linked to the shortcut.

**Note:** Dependent on the status of the I-Control and installer’s settings, some shortcuts may not function. For example, the shortcut 'S-FLUSH' flushing with one valve does not respond when the I-Control is manually switched off.

Alarm summary
Select this menu in the main menu by pressing the key. Select “Alarm view” and press the key. If there is no alarm, the screen will read “No alarm”. If there is an alarm, the alarm will be clearly indicated on the screen. An alarm is selected by using the or keys. Press the key for the option to turn off the alarm. If an alarm is turned off, the alarm relay will be restored (= no alarm). If the alarm is still present, the alarm will return after several minutes.

**Note:** On the main screen the alarm list can be chosen by pressing the “Alarm” key.
Alarm displays:

**Temp.sens.water**  Defective sensor in the drinking water system
**Temp.sens.supply**  Defective sensor in the drinking water supply line
**Max.temp.flushing** The maximum number of flushes based on temperature has been reached
**Max.dirt.flushing** The maximum number of flushes based on pollution has been reached
**No water**  The water detection sensor indicates no water present
**No water pressure**  The water pressure sensor indicates too low water pressure
**Max. water/minute** The water meter indicates the amount of water per minute is above the allowed maximum

**General menu**

Select the main screen and press the **MENU** key. Select “General” and press the **ENTER** key. The following settings/measurements are displayed:

**Mode** (time, temp, dirty, ti+tem, ti+dir, te+dir, t+t+di)
This setting determines the I-Control response with the following options:

- **Time**  (Time) The I-Control automatically starts flushing at the programmed time.
- **Temp.**  (Temperature) The I-Control automatically starts flushing when the temperature is too high.
- **Dirty**  (Dirt) The I-Control automatically starts flushing when drinking water pollution is detected.
- **Ti+Tem**  (Time + Temperature) The I-Control automatically starts flushing at the programmed time or when the temperature is too high.
- **Ti+Dir**  (Time + dirt) The I-Control automatically starts flushing at the programmed time or when drinking water pollution is detected.
- **Te+Dir**  (Temperature + dirt) The I-Control automatically starts flushing based on temperature or pollution detection.
- **T+T+Dir**  (Temperature + Time + dirt) The I-Control automatically starts flushing at the programmed time or temperature or pollution detection.

**Note:** Depending on the selected options in the installer’s program, not all the above options can be selected.

**Note:** With minimal configuration (only flushing on a time basis), this function will not be displayed.

**Tempor.off** (00:00 to 23:59 hours)
With this setting, the I-Control can be temporarily inactivated. Flushing automatically resumes at the end of the programmed time. For example, this function is used when adding medicines to the drinking water when flushing is temporarily undesirable.

**Note:** This setting is also accessible by the shortcut 5 (‘STOP’).

**Start time** (00:00 to 23:59 hours)
The I-Control is only active between a set start and stop time. This is important when the water supply in the house is controlled, for example by a climate computer. When the water supply is shut off during the night, it is not possible to flush. This function determines the time from which the I-Control is active.

**Note:** When the I-Control is to be active throughout the day, set the start time at 00:00 hours and stop time at 23:59 hours.

**Stop time** (00:00 to 23:59 hours)
The I-Control is active until the set time is reached. For further explanation, see previous function.
Flush time (00:10 to 15:00 minutes:seconds)
This is the activated flushing time of each group.

Note: The installer can adjust the flushing time for each flushing variable (time, temperature, pollution). For example, the flushing time for pollution can be longer than another flushing variable.

New round (off, on)
Switch this function ON when starting a new round in the house. The I-Control will reset all registrations and reset the day counter to 1. In this way the curves restart from day one. When this is done by the I-Control, this function will automatically go to OFF.

Wait time (00:00 to 23:59 hours)
The I-Control indicates the waiting time before it is possible to flush again. See next function for additional information.

Delay flush (00:01 to 23:59 hours)
When a flush has taken place, even if there are flushes programmed, during a set time there will be no flushing. This prevents unnecessary flushing, such as flushing on a basis of temperature followed by flushing on a time basis.

Time control

Select this menu by pressing the MENU key in the main screen. Select “Time control” and press the ENTER key. This menu displays the flush settings on a time basis. The I-Control will automatically start flushing at the set times.

Note: This menu can also be reached directly from the main screen by pressing the shortcut ‘9/TIME’.

Start time 1 (00:00 to 23:59 hours)
At a set time the I-Control starts flushing. If you do not wish to make use of a set start time, set the timer to 00:00 hours. The start time will then be ignored. Note: When the I-Control is still in the waiting time after the last flushing, a start time will be skipped over.

Rep. day st.1 (1 to 14 days)
If you do not wish the flushing cycle to be carried out at a set time every day, the number of days the flushing will be done is set here. With function 1, the flushing cycle will be carried out at a set time every day. With function 2, the start time is every 2 days, etc. The start settings 2 to 4 can be set the same way.

Temperature control

Select this menu by pressing the MENU key in the main screen. Select “Temperature control” and press the ENTER key. The functions in this menu concern temperature regulated flushing.

Note: If the temperature control has been switched off by the installer, this menu will not be displayed.

Note: This menu can also be reached directly from the main summary screen by pressing the shortcut ‘7/TEMP’.

Water temp. (-70 to +130°C)
This is the actual temperature measured by the sensor located in the drinking water circuit. If this temperature becomes too high, temperature controlled flushing will take place.

Supply temp. (-70 to +130°C)
The I-Control displays the current temperature of the supply circuit. If so desired, automatic temperature controlled flushing can start when the difference between the temperature in the drinking water circuit and the supply circuit is too high. Note: If no temperature sensor has been installed in the supply circuit, this function will not be displayed.

Max.water T. (0 to 50°C)
If the temperature in the drinking water circuit rises above the set temperature, flushing will start automatically.
Max.\(\Delta T\) (0 to 50°C)
If the temperature difference between the drinking water circuit and the supply circuit rises above the set delta temperature, flushing will start automatically. **Note:** When no temperature sensor has been installed in the supply circuit, this function will not be displayed and no automatic flushing will occur.

Max. flushing (1 to 100)
Flushing on a temperature basis will not exceed the set number of times per day. If more flushing is needed, there will be an alarm.

**Dirty water detection**
Select this menu by pressing the `MENU` key in the main screen. Select ‘Dirty water detect’ and press the `ENTER` key. The functions in this menu concern automatic flushing when the water becomes polluted.

**Note:** If automatic flushing based on pollution is not switched on, this menu will not be displayed.

**Note:** This menu can be reached directly from the main screen by pressing the shortcut ‘0/DSENS’.

**Dirt detect** (0-100%)
The I-Control indicates the degree of pollution. When exceeding a preset value, the flushing will start automatically. **Note:** This function is only displayed when set in the installer’s menu.

**Dirt detect** (on - off)
This function is almost identical to the abovementioned; however, the installer has chosen for a an on-off pollution sensor. When this sensor indicates that the water is polluted (‘on’), flushing will take place. **Note:** This function is only displayed when an on-off pollution sensor is set in the installer’s menu.

**Start flushing** (1 to 100%)
If pollution exceeds a preset value, flushing will start automatically. **Note:** Dependent on the settings set by the installer, this function may not be displayed.

**Max. flushing** (1 to 100)
When the maximal number of flushings based on pollution on the present day has been reached, flushing will stop and an alarm will appear on the screen.

**Curve**
Select this menu by pressing the `MENU` key in the main summary screen. Select “Curve” and press the `ENTER` key to give access to the curve settings. By using this curve, it is possible to adjust the starting times and the automatic flushing times according to the age of the birds. The day counter determines the progression of the curve.

**Note:** This function is only displayed when set in the installer’s menu.

**Note:** This menu can be reached directly from the main screen by pressing the shortcut ‘-/CURVE’.

The curve contains 6 “breakpoints” to select different start times. This enables you to decide on which day a specific breakpoint has to be carried out. When the day counter has reached the given breakpoint, the starting times are carried out at the breakpoint settings. **Note:** Breakpoint 0 always starts on day 1, which is the beginning of a new round. For the remaining breakpoints (1-5), you can determine the day numbers at your discretion.

This menu concerns the starting times at breakpoint 0 (see text in the screen heading). By pressing the `display` or `Menu` key, you can browse through the 6 breakpoints. This explanation describes only one break point. The remaining breakpoints can be set in the same manner.

**Curve mode** (off – on)
Using this setting, the operation of the curve is turned on or off.
OFF = The curve control is turned off and the start times are manually set in the menu “Time control”.
ON = The curve control is turned on and the start times in the menu “time-based control” are set automatically by the curve. Manually setting of the start times are no longer possible.

*Note:* This function is only in the breakpoint 0 menu.

**Day number** (0 to 1000)
This is the day number on which the breakpoint is to start. From this day number the start times will be set as they are selected in the corresponding menu. *Note:* This function is only displayed in the breakpoint 1-5 menu. This feature is not in the menu of breakpoint 0 as breakpoint 0 is always on day 1, the initial curve.

**Start time 1** (00:00 to 23:59 hours)
At a set time a flush will start. If you do not wish to use this set start time, set at 00:00.

**Repeat day 1** (1 to 14)
Flushing can be set on a daily basis or on a given number of days. There are 4 start times. When set at 1, the start time is every day; 2 = every 2 days; 3 = every 3 days, etc. The start settings 2 to 4 can be set the same way.

**Time/Date**
Select this menu by pressing the **MENU** key in the main menu. Select “Time/Date” and press the **ENTER** key. The functions in this menu are the time and date settings.

**Time** (00:00 to 23:59 hours)
This is the current time. The I-Control offers a real time clock with backup; the clock functions during power failure. With power failure longer than 3-5 days, the backup becomes empty; the clock is to be manually set at the correct time when the power is restored.

**Date** (01-01 to 31-12)
This is the current date. This function has no additional use in the flushing process.

**Year** (2000 to 3000)
This is the current year. This function has no additional use in the flushing process.

**Day counter** (1 to 1000)
This is the day number when the curve will be carried out. There is a daily update at 00:00 hours. *Note:* At the start of a new round this day counter is automatically set at 1.

**Medicine calculation**
Select this menu by pressing the **MENU** key in the main menu. Select “Medicine calculation” and press the **ENTER** key. Using this menu, the required amount of medicine is calculated. To do this, a various parameters must be entered, and the I-Control immediately calculates the amount of medication is to be added to the drinking water.

**Nbr animals** (0 to 999,999)
Enter the number of birds present in the house.

**Body weight** (0 to 99,999 gr)
Enter the average bird weight. The I-Control calculates the total weight of the birds in the house.

**Posology/kg** (0 to 999.999 ml or gr)
This is the required amount of medicine per kg bird weight. This is dependent on the type of medicine.

**Concentr. med** (0 to 100%)
Enter the concentration of the medicine. This value is indicated by the manufacturer.
**Water volume** (0 to 999,999 l)
This function must be set at the number of liters of water to be supplied to the house to administer the medicine.

**Setting the medicine pump** (0 to 100%)
Enter the percentage of liquid to be added to the drinking water by the medicine pump. For example: setting at 5%. The medicine pump will add 50 ml of water + medication to each liter of drinking water. This value is indicated on the medicine pump used.

**Total weight** (0 to 9,999.999 kg)
This function indicates the total weight of the birds. This value is calculated from the set values (see previous functions). **Note:** The total weight is displayed in kg. If the value exceeds the kg limit, the display will automatically switch from kilograms to tons.

**Total medicine** (0 to 9,999.999 ml)
This function indicates the required amount of medicine. This amount is calculated by the I-Control. **Note:** if the value exceeds the ml limit, the display will automatically switch from milliliters to liters.

**Water+medicine** (0 to 999,999 l)
This is the amount of water in which the specified amount of medicine is to be dissolved. This will be added to the drinking water by the medicine pump.

**Filling water pipes**
Select this menu by pressing the **MENU** key in the main menu. Select “Filling water pipes” and press the **ENTER** key. This menu allows the lines to be filled once with water and an optional medicine. The amount of water can be adjusted per line. After the start signal, all the lines will be filled with a preset amount of water.

**Mode filling** (off – on)
With this function, a single filling of the lines can be started. Set to ON and all lines fill with the set number of liters. If the filling is to be stopped, set to OFF. **Note:** If the I-Control is set at a given start and stop time, it is not possible to fill the lines.

**Liters, lines 1 to 10** (0 to 10,000 l)
With this function, the amount of water needed to fill the corresponding line can be specified. **Note:** When the I-Control is set to fewer than 10 valves, the unused valves will not be displayed.

**Time after delay** (0:01 to 23:59, hours:minutes)
After the completion of filling all the lines, there will be a waiting period during which there will be no flushing. This function can be used when the lines are filled with water and medication. After filling, the solution remains a given time in the lines and will not be rinsed away.

**Max.fill time** (1:00 to 60:00, minutes:seconds)
This function determines the maximum time allowed to fill a given line during the one-time filling. This can be important, for example, if the water meter or valve is faulty. After the set maximum time, the next valve will function.

**Installer’s manual**
The installer’s program is used to adjust the I-Control to the specific requirements of the user. Several tasks can be set so that only the functions relevant to the user are displayed. Unused functions will not be displayed.
Booting the installer’s program

Push the key in the main menu. The I-Control requires the PIN-number. Enter the correct PIN-number and press the key. The installer’s menu will be displayed.

PIN-number: 2826

By using the and key, the items can be scrolled through in this menu. Press the key to select an item.

The cursor keys and are used to scroll through all the functions of the selected menu. A setting is adjusted by pressing the key. This setting will be displayed in a new window, and a new value can be entered. By pressing the again, the new value is stored in the memory.

General

Select this menu by pressing “General” in the installer’s program and press the key. This menu displays the general installer’s settings.

Language (English, Dutch)
This function determines the language used. The options are English and Dutch with additional languages to be added in the future.

No. of valves (1 to 10 valves)
This function specifies how many flush groups will be are used. The main screen for the user will be adapted accordingly. Some functions will be limited to the maximum number of flushing groups.

Temperature (off, on)
This function indicates whether or not the temperature control is used to start flushing. By turning this setting to OFF, the temperature control is not used, and the temperature menu will not be displayed. It is therefore unnecessary to connect temperature sensors.

D-sensor (off, on)
By turning this setting to ON, automatic flushing starts when the water becomes polluted. It is therefore necessary to install a dirty water detection sensor. By turning this setting to OFF, the dirt detection menu is not be displayed.

Curves (off, on)
When curves are to be used, press ON. When set to OFF, the curves are neither in operation nor displayed.

Default curve (0 to 5)
The curve can be set with specific default values. There are five standard curves, which can be optionally modified by the installer. If this setting is set to a standard curve (1 to 5), this standard curve is copied to the curve of the user by I-Control, and this setting returns to 0.

Adjst.time (-50% - +50%)
This function adjusts the flushing time on a time basis. The set flushing time is adapted by the percentage selected when flushing on a time basis. Similar adjustments can also be done with flushing on a basis of temperature and/or pollution. This function makes it possible, for example, to flush longer on a pollution basis rather than on a time basis.
Main v- rel. (N.o. or N.c.)
This setting determines whether the relay for the main valve control is “Normally Open” or “Normally Closed”.
N.O. = The relay contacts are open when the main valve is switched off and closed when the main valve is switched on. (Normally Open = inactive, the contacts are open)
N.C. = The relay contacts are closed when the main valve is switched off and open when the main valve is switched on. (Normally Closed = inactive, the contacts are closed)

Main valve (I-Ctrl or Extern)
This function determines whether the main valve is controlled entirely by the I-Control or also controlled by an external climate computer. When controlled by the I-Control, the main valve will be continuously switched on between the set start and stop time. When, however, the main valve is controlled by an external climate computer, the I-Control will activate the main valve relay only when flushing is to be done.

Note the following when an external computer controls the main valve:
Important! Installation is only to be done by a qualified electrician.

In the I-Control is a potential free relay which can transmit or interrupt the current from the main computer. Determine whether a NO or NC relay is used. The main solenoid valve voltage must be originate from the main computer; 0 remains connected. Note: the same transformer or phase is necessary.

When using an NC solenoid valve, the relay used in the I-Control is NO.
The power from the NC main solenoid valve of the I-Control must originate in the primary computer before the power is switched to the valve. The power must be connected parallel to the main solenoid valve through the relay of the I-Control.

When using an NO solenoid valve, the relay used in the I-Control is NC.
The power from the NO main solenoid valve of the I-Control must originate in the primary computer after the power is switched to the valve. The power must be connected in series to the main solenoid valve through the relay of the I-Control and can be interrupted by the main computer and/or I-Control.

If the above installation does not work or is not possible, it is important that the main solenoid valve is activated by the main computer during the flushing times.

Pre run main (00:00 to 60:00 minutes:seconds)
With this function, a pre run time of the main valve is set before the actual flushing begins.

Delay valve (00:00 tot 60:00 minuten:seconden)
When switching from one valve to the next valve, a delay time can be set.

Extra valv. 1 (00:00 tot 60:00 minuten:seconden)
Valve 1 can be set for extra flushing time, which will be added to the set flushing time. In addition to the extra flushing of valve 1, the water supply is also flushed.

Temperature

Select this menu by pressing “Temperature” in the installer’s menu and press the key. This menu displays the installer’s settings for temperature.

Fahrenheit (on, off)
Press ON for Fahrenheit; press OFF for Celsius.

Adjst. temp. (-50% to +50%)
This function adjusts the flushing time on a temperature basis. When flushing on a temperature basis, the flushing time set by the user will be adapted by the percentage selected.
Supply sens. (off, on)
This indicates whether a temperature sensor in the supply circuit is used. OFF = no temperature sensor in the supply circuit; ON = a temperature sensor in the supply circuit. In the latter case, a temperature sensor should be connected, and the corresponding functions will be displayed.

Dirty water sensor

Select this menu by pressing “Dirty water sensor” in the installers menu and press the key. This menu displays the installer’s settings for pollution control.

Anal.D-sens (off, on)
This function indicates if an analog pollution sensor is used. This sensor transmits a 0 to 10V signal to the I-Control, which indicates the degree of pollution. If no analog pollution sensor is used, the I-Control works as if an on-off switch is used. Note: This function is only displayed when set in the installer’s menu.

Adjst.D-sens (-50% to +50%)
This function adjusts the flushing time on a pollution basis. When flushing on a pollution basis, the flushing time set by the user will be adapted by the percentage selected.

Water registration

Select this menu by pressing “Water registration” in the installer’s menu and press the key. This menu indicates the installer’s settings for water registration.

Water detect (off, on)
It is possible to use a water detection sensor. An alarm is displayed when no water is detected. The water detection sensor connects the digital input of the I-Control to GND when no water is detected.

Delay detect (00:05 to 60:00 minutes:seconds)
This is the delay time for the water detection sensor. By setting the proper delay, unnecessary alarm signals will be prevented by momentary messages.

Water press (off, on)
The I-Control has a connection for an optional pressure switch. An alarm is displayed when the pressure switch detects that the water pressure is too low. The pressure switch connects the digital input of the I-Control to GND when the pressure drops too low.

Delay press (00:05 to 60:00 minutes:seconds)
This is the delay time of the water pressure alarm. By setting a delay time, the alarm is delayed so there is no immediate response by a momentary pressure drop, such as by the opening of a valve.

Puls/liter (1 to 10,000 pulses/l)
This function allows the water registration of the I-control to be adapted to the water meter. Set this to the value indicated on the water meter. Note: The I-Control can transmit the registered pulses to an external climate computer. When there is no flushing, all registered pulses of the water meter will be transmitted to the external climate computer (1:1). Once flushing starts, however, the pulses will no longer be transmitted to the computer but will be used for counting the water consumption of the flushing in liters.

Max. Ltr/min. (1 to 100,000 l/minute)
Once the water meter registers more than a given number of liters per minute, alarm is displayed. Note: This alarm also functions when no flushing takes place.
**Alarm/warning**

Select this menu by pressing “Alarm/Warning” in the installer’s menu and press the ENTER key. This menu indicates the installer’s settings of the alarm information. An alarm is always displayed on the screen. The main screen displays a present alarm situation as a flashing alarm bell in the upper right corner. Each alarm is clearly defined in the alarm list. If the alarm is set as ‘ALARM’, the alarm is displayed and, after a set period of time, an external alarm device will be activated. If the alarm is set as ‘WARNING’, only a warning is displayed on the screen.

- **Water sensor** (alarm, warn.)
  This feature concerns an alarm when the temperature sensor in the drinking water system is defective.

  - **ALARM** = This alarm activates an external alarm device when water sensor failure occurs.
  - **WARN.** = This alarm is displayed only as information.

- **Supply sens.** (alarm, warn.)
  With this function, a defective temperature sensor in the water supply system can be transmitted through the alarm relay. See previous function.

- **Flush temp.** (alarm, warn.)
  When the number of flushings based on temperature exceeds the set maximum, the alarm is displayed. With this feature, the alarm function can be set as a warning or as an alarm.

- **Flush D-sens** (alarm, warn.)
  When the number of flushings based on pollution exceeds the set maximum, the alarm is displayed. With this feature, the alarm function can be set as a warning or as an alarm.

- **Water detect** (alarm, warn.)
  When using a water detection sensor, an alarm is displayed when no water is detected. With this feature, the alarm function can be set as a warning or as an alarm.

- **Water press** (alarm, warn.)
  When using a pressure switch, an alarm is displayed when the water pressure is too low. With this feature, the alarm function can be set as a warning or as an alarm.

- **Max.liters** (alarm, warn.)
  If the maximum number of liters per minute is exceeded, the alarm is displayed. With this feature, the alarm function can be set as a warning or as an alarm.

**Test in-/output menu**

Select this menu by pressing “Test in-/outputs” in the installer’s menu and press the ENTER key. With this menu all the input and output of the I-Control can be tested.

- **Water sensor** (-70.0 to +130.0°C)
  This measurement continuously displays the temperature measured by the water sensor, which is the temperature in the water circuit.
  **Tip:** If there is a temperature extreme, the sensor and the sensor cable should be checked for intermittence or short circuit. If the temperature is ±70°C, the sensor/sensor cable function may be intermittent. If the temperature measured is ±130°C, the temperature input is most likely closed briefly.

- **Supply sens.** (-70.0 to +130.0°C)
  This measurement continuously displays the temperature measured by the temperature sensor in the water supply circuit. See previous function.

- **D-sensor** (0.0 to 10.0V)
  This function continuously displays the measurement signal transmitted from a 0-10V pollution sensor.
D-sensor (off, on)
This is the status of digital input used for the on-off pollution sensor.
OFF = The digital input is not connected to GND; therefore, the water is not polluted.
ON = The digital input is connected to GND; therefore, the water is polluted.

Water meter (off, on)
This is the status of the water counter input.
OFF = The digital input is not connected to GND.
ON = The digital input is connected to GND.

Water detect (off, on)
This is the status of the digital input used by the water detection sensor.
OFF = The digital input is not connected to GND; therefore, water is detected.
ON = The digital input is connected to GND; therefore, no is water detected.

Water press. (off, on)
This is the status of the digital input for water pressure detection by a pressure switch.
OFF = The digital input is not connected to GND; therefore, there is sufficient water pressure.
ON = The digital input is connected to GND; therefore, there is insufficient water pressure.

Valve (0 to 10)
This function allows the flush groups to be manually switched on and off. Set the number of the desired valve, and the corresponding valve will be switched on. Choose 0 to switch all the valves off. Note: One valve at a time will be switched on.

Main valve (off, on)
This feature controls the functioning of the main valve.
OFF = The main valve is inactive.
ON = The main valve is active.

Liter pulse (off, on)
The I-Control has an output which transmits an impulse to a climate computer for counting liters. With this function, this output can be tested.
OFF = The relay for external liter impulse is inactive.
ON = The relay for external liter impulse is active and will transmit 2 impulses per second.

Alarm relay (off, on)
This function tests the operation of the alarm relay as well as the optional external alarm device.
OFF = The alarm relay is inactive; an alarm is transmitted. If connected, an external alarm device starts working now. Note: The alarm relay has a delay of 10-20 seconds.
ON = The alarm relay is active; a connected external alarm device will not give an alarm.
Default curve 1-5 menu

Select one of the default curve menus with the "Default curve x" option in the installer’s menu and press the key. With this menu, the default curve of the I-Control can be set. The I-Control has 5 standard curves, which can be changed. In the installer’s menu select “General” and choose one standard curves, which will be copied to the user curve. The menu displayed indicates the standard curve for breakpoint 0. The other breakpoints are reached by using the buttons ◀ or ▶. In this manner, breakpoints 1 to 5 can be set.

Starting time 1 (00:00 to 23:59 hours)
This is start time 1 for the respective breakpoint. 4 Start times are possible.  
Note: Unused start times are set to 00:00.

Repeat day 1 (1 to 14)
This function determines the interval of days that start time 1 will be repeated. Start times 2-4 can be set in the same manner.

The following standard curves are pre-set (the default setting is 2 minutes):
- Standard curve 1 = LAYING HENS
- Standard curve 2 = REARING
- Standard curve 3 = BROILERS

LAYING HENS: Every morning at 4:30 hours 2 minutes of flushing with no further breakpoints, etc.

REARING (to ± 18 weeks):
- Day 1 to 4: 3 flushings per day at the following times: 5.00 hours / 13.00 hours and 21.00 hours
- Day 5 to 10: 2 flushings per day at the following times: 5.00 hours and 17.00 hours
- Day 11 to 20: 1 flushing per day at the following time: 5.00 hours
- Day 21 to end of cycle: 1 flushing per 2 days at the following time: 5.00 hours

BROILERS (to 6-10 weeks):
- Day 1 to 4: 3 flushings per day at the following times: 5.00 hours / 13.00 hours and 21.00 hours
- Day 5 to 10: 2 flushings per day at the following times: 5.00 hours and 17.00 hours
- Day 11 to 20: 1 flushing per day at the following time: 5.00 hours
- Day 21 to end off cycle: 1 flushing per 2 days at the following time: 5.00 hours

Ending installer program

When the key is pressed, the installer’s program will end. When no keys are pressed, the installer’s program will automatically end after 15 minutes.
Connection diagrams

Electrical connection diagram

65 = Phase supply voltage
66 = Zero supply voltage

**Note:** It is possible to use 115VAC as well as 230VAC voltage. Set the switch to the desired voltage.

**Caution:** If the incorrect voltage is selected, the I-Control can be irreparably damaged.

**Note:** Connect the ground connection of the power supply to the ground block in the housing.
Flush valve connection diagram - 24V internal power supply

39 + 40 = Flush valve 1
41 + 42 = Flush valve 2
43 + 44 = Flush valve 3
45 + 46 = Flush valve 4
47 + 48 = Flush valve 5
49 + 50 = Flush valve 6
51 + 52 = Flush valve 7
53 + 54 = Flush valve 8
55 + 56 = Flush valve 9
57 + 58 = Flush valve 10

Note: The flush valves must be 24VAC with a maximal 6VA electric load.

Important: The 4 jumpers with the text '24VAC' must all be in 'INT' position. See diagram.

Note: The terminals 40, 42, 44, 46, 48, 50, 52, 54, 56 and 58 are galvanically connected. With a multi-cable, only one terminal needs to be used.
Flush valve connection diagram - External power supply

Important: The 4 jumpers with the text '24VAC' must all be in 'EXT' position. See diagram.

Note: An external power supply may be needed if the internal power supply has insufficient power or if another valve voltage other than 24VAC is desired.

Note: The maximum relay load for the valves is 24VAC/2Amp.

Note: The external power supply is not to exceed 24VAC.

Note: The voltage of the external power supply will also be present at terminals 22/23 and 36/37 and can optionally provide power to a main valve.

Note: The terminals 40, 42, 44, 46, 48, 50, 52, 54, 56 en 58 are galvanically connected. With a multi-cable, only one terminal needs to be used.
63 + 64 = Main valve relay
Potential free max. 230VAC/2 Amp.

Note: The relay is potential free. A 230V connection has to be made. See diagram.

Note: The maximum relay load is 230VAC 2 Amp.
63 + 64 = **Main valve relay**
Potential free, maximum 230VAC/2 Amp.

23 + 37 = **24VAC Main valve power supply**
24VAC maximum 18VA.

**Note:** The relay is potential free. A 230V connection has to be made. See diagram.

**Note:** The maximum relay load is 230VAC 2 Amp.

**Note:** The maximum load of the 24VAC power supply for the main valve must not exceed 18VA.
63 + 64 = Main valve relay
Potential free, maximum 230VAC/2Amp.

*Note:* The relay is potential free and must be connected parallel to the relay of the external computer.
*Note:* The maximum relay load is 230VAC 2 Amp.
Main valve connection diagram - N.c. relay + external computer

63 + 64 = Main valve relay
Potential free, maximum 230VAC/2Amp.

Note: The relay is potential free and must be series connected with the relay of the external computer.

Note: The maximum relay load is 230VAC 2 Amp.
Temperature sensor connection diagram

19 + 33  =  Drinking water circuit temperature sensor
           33 = GND

20 + 34  =  Water supply temperature sensor
           34 = GND

Important: The corresponding jumpers must be in “TEMP” position. See diagram.

Note: Always use shielded cable with a minimum diameter of 0,8 mm² and connect the shield to the GND terminal.
Liter counter connection diagram

14 + 28 = Liter counter input
14 = Input
28 = GND

61 + 62 = Liter counter impulse to external climate computer
Potential free, maximum 24VAC/DC 100 mA.

Note: Always use shielded cable with a minimum diameter of 0.8 mm² for the liter counter and connect the shield to the GND terminal.

Note: The relay contact for the connection of an external climate computer is potential free with a maximum load of 24VAC/DC 100 mA.
**Digital dirty water sensor connection diagram**

15 + 29 = **Dirty water sensor input**
- 15 = digital input
- 29 = GND

11 + 25 = **24V DC power supply**
- Maximum 50 mA.

12 + 26 = **12V DC power supply**
- Maximum 50 mA.

13 + 27 = **GND power supply**

*Note:* Always use shielded cable with a minimum diameter of 0.8 mm² for the dirty water sensor and connect the shield to the GND terminal.

*Note:* The 12V or 24V power supply with a maximum of 50 mA can also be used to power a pollution sensor.

*Note:* The GND connection of the power supply is galvanically connected to all other GND connections, such as the sensor inputs.
Analog dirty water sensor connection diagram

21 + 35 = 0-10V Input for dirty water sensor
21 = 0-10V input
35 = GND

11 + 25 = 24V DC power supply
Maximum 50 mA.

12 + 26 = 12V DC power supply
Maximum 50 mA.

13 + 27 = GND power supply

Important: The jumper of the 0-10V input must be in ‘VOLT’ position. See diagram.

Note: Always use shielded cable with a minimum diameter of 0.8 mm² for the dirty water sensor and connect the shield to the GND terminal.

Note: The 12V or 24V power supply with a maximum of 50 mA can also be used to power a pollution sensor.

Note: The GND connection of the power supply is galvanically connected to all other GND connections, such as the sensor inputs.
Pressure switch sensor connection diagram

16 + 30 = Pressure switch input
16 = digital input
30 = GND

11 + 25 = 24V DC power supply
Maximum 50 mA.

12 + 26 = 12V DC power supply
Maximum 50 mA.

13 + 27 = GND power supply

Note: Always use shielded cable with a minimum diameter of 0.8 mm² for the pressure switch sensor and connect the shield to the GND terminal.

Note: The 12V or 24V power supply with a maximum of 50 mA can also be used to power a pressure switch.

Note: The GND connection of the power supply is galvanically connected to all other GND connections such as the sensor inputs.
Digital water detection sensor connection diagram

**17 + 31 = Water detection sensor Input**
17 = digital input
31 = GND

**11 + 25 = 24V DC power supply**
Max. 50 mA.

**12 + 26 = 12V DC power supply**
Max. 50 mA.

**13 + 27 = GND power supply**

*Note:* Always use shielded cable with a minimum diameter of 0.8 mm² for the water detection sensor and connect the shield to the GND terminal.

*Note:* The 12V or 24V power supply with a maximum of 50 mA can also be used to power a water detection sensor.

*Note:* The GND connection of the power supply is galvanically connected to all other GND connections such as the sensor inputs.
**Alarm relay connection diagram**

59 + 60 = **Alarm relay**

59 = P-contact  
60 = NO-contact  
Potential free, maximum 24VAC/DC 2 Amp.

*Note:* Contacts 59 + 60 are closed when there is no alarm (relay is active). When there is an alarm, contacts 59 + 60 will be disconnected (relay is inactive).

*Note:* The alarm has a 'watchdog'; the relay will also be shut down when the I-Control functions improperly and in the case of power failure.
Installation drawing

1 13.00.60000  I-Control flush computer
2 12.00.01000  I-Flow pressure regulator with
12.01.20000  I-Flow flushing actuator
3 12.00.01500  I-Flow end air outlet set
25.02.04030  Power grip 22 x 30 mm
6 60.01.01217  Primabel tubing ¾” (5 mtr)
7 60.01.01217  Drain pipe minimal 50 mm Ø
8 60.01.01217  Connection Primabel tubing ¾” and drain pipe

- The installation of the drain pipe and the connection of the Primabel tubing ¾” to the drain pipe has to be done locally by the installer because the installation of the drainpipe depends on type of housing.

- Dimension of the drainpipe should be minimal 50 mm Ø.

- The outlet of the tubing in the drainpipe must be minimal 1,5 mtr higher than the drinking line.
I-Control software update

The I-Control software can easily be updated if necessary. To update, a micro Sd memory card is required. The Sd card must be FAT16 or FAT32 formatted. The capacity of the Sd card can be up to 32GB.

Updating the I-Control is as follows:

1. Using your PC, copy the update file to the micro Sd card. The file should be placed in the root directory and not in a folder on the Sd card.
2. Make sure there is no backup file from any previous backup on the Sd card. Delete any previous backup files, which are those with .BCK and .USED extensions.
3. Insert the Sd card into the connector. See upper picture.
4. Press the SW1 button located on the bottom printboard of the I-Control. See lower picture.
5. The I-control writes all the set functions on the Sd card, which is indicated by the flashing ADDR-led.
6. Thereafter, the I-control starts the boot program and the update is performed. The display will show this process.
7. Once the update is completed, the user program automatically starts.
8. Thereafter, the functions saved on the Sd card are replaced in the relevant functions. Any "new" features in the new software will be set to the default.
9. The I-control is updated and ready for use.

Restoring factory settings

To reset the settings to the factory settings, proceed as follows:

1. Turn off the power.
2. Press the SW1 button on the bottom printboard and keep it pressed while the power is turned on.
3. Keep this button pressed for at least 30 seconds until the run-indicator blinks at one second intervals.
4. The factory settings are now restored.
Technical specifications

Measurements (external): 120x230x205mm (depth x width x height)
Housing: Plastic IP54
Connections: Via connectors
Ambient temperature: 0 - 45°C, no direct sunlight or near a heat source

Power supply: 115 or 230V
Frequency: 50/60Hz
Power consumption: Max. 30 VA
Primary fuse: T2A
Power supply for sensors:
- 24V DC max. 50 mA.
- 12V DC max. 50 mA.
Temperature inputs: 2
Measuring range temperature inputs: -70.0°C to 130.0°C

Alarm relay (with ‘watchdog’): Max. 24VAC/DC 2 Amp. potential free
Main valve relay: Max. 230VAC 2 Amp. potential free
Liter counter relay external climate computer: Max. 24VAC/DC 100 mA potential free
Flush valve: 24VAC max. 6VA with internal power supply
                      : Max. 24VAC 2 Amp. with external power supply