



Installation and operating manual

COS 2 – Automatic time – controlled flushing system for urinals and trough

BASIC TECHNICAL DATA

Supply voltage:	230 V, 50 Hz
Output voltage:	12 V, 50 Hz
Maximum output load:	8 VA
Adjustable delay (pause) time 1 and 2:	1÷999 min independently
Adjustable flushing time:	1 ÷ 20 s
Operating time per one day:	0.5–24 hours by 0.5 hour
Weblink:	COS 2

Function of the flushing system

- COS 2 is a time-controlled flushing device for one urinal or urinal trough. The user can set the operating time on the switch clock within the range of 0.5–24 hours. The output is cyclically switched at the preset time – the delay as well as switch time is adjustable. The operator can set two independent time delays to be switched over in a simple way.

Installation of the flushing system

Requirements for setting up the construction

1. Implement water supply to the individual urinals or troughs.
2. Implement water supply to the 1" electromagnetic valve included in the delivery. If the electromagnetic valve is integrated in the urinal trough, the water supply must be implemented to this valve. The distribution lines should be dimensioned to provide for the flow of 15 l/min per 1 nozzle.
3. Implement the electric connection between the control box and the electromagnetic valve (or the trough valve) – any two-core cable for 12 V.
4. Implement the 230 V power supply to the control box.

Assembly

1. Connect the electromagnetic valve to the water supply for the urinals. During the installation, heed the water flow direction – marked with the arrow on the valve body. The valve should be connected by means of union nuts and a gasket. Perform the assembly so that the valve is not stressed laterally. It is recommendable to provide the individual troughs (according to their type) with upstream flow control valves.
2. Fasten the control box to the wall at appropriate points by means of screws and dowels.
3. Connect the supply and outlet cable to the terminal board. Intentionally, the box is not provided with inserted bushings – they can be mounted at any point of the box. If the box is mounted at the cable outlet on the wall directly, it is suitable to bore a hole in the box bottom and pull the cable through without a bushing.
4. On the switch clock, set the operating time of the flushing device and the current time. The control knob can only be rotated in the arrow direction. On the control electronics, set the water flow time and at least one pause time – see the appendix.
5. As long as the "manual flushing" button is pushed, the output is switched regardless of the clock and timing relay setting.



6. If it is necessary to activate cyclical flushing irrespective of the clock setting, the switch on this clock has to be turned to the "ON" position.
7. When setting the switch clock and timing relay, you must follow the instructions of the manufacturers of these devices. The instructions are attached in the switchboard.
8. If "BLOC" appears on the display, the electronic is disabled by the switch clock. In operation, the display shows the time until flushing and one or two horizontal dashes before a number, indicating whether pause 1 or pause 2 has been selected.

Valve cleaning diaphragm replacement

- **is no need to dismantle the valve from the box.**
- Shut off the water supply, loosen the union nut and turn the valve flange towards yourself. Dismount the six screws fixing the flange. Take off the flange (take care not to lose the spring). Take out the diaphragm, clean the space under it. Check whether both holes in the diaphragm are clear. Check the diaphragm integrity; the diaphragm can only burst close by its perimeter. Assemble the valve in the reverse order.
- To dismantle the coil, it is necessary to remove the locking pin in its lower part, turn the coil to the stop and take it out. Now you can clean the core seating face.

Note

- The clock operation is not backed up; therefore, the device must always remain energized.
- Installation of the device and time settings can only be done by a properly qualified person.



Description

The COS2 is an automatic device that is used for cyclic switching at set intervals. It is possible to set a closed time (flushing) and two off-times (pauses) between flushes. So the countdown of the time of a pause will only start after a flush has been completed. Switching over between two pause times is done by putting the setting magnet near, or by activating input 3. Individual pause times selected are signalled on the display in the form of short horizontal lines in the left section of the display.

One line belongs to pause time 1, and two horizontal lines belong to pause time 2. Changing a pause time by putting the setting magnet near can only be done after 20 minutes following the activation of the electronic unit. It is possible to change a pause time by activating input 3 immediately after switching on the electronic unit. Closing (flushing) for a set time can also be done manually by activating input 1. Manual closing does not affect pause times (times of the opened state). The display always shows the time remaining until a change. In the period of the closed state, the time remaining to opening is displayed. And, on the contrary, the time remaining until closing is displayed in the period of the opened state. The electronic unit may be blocked by activating input 2. If the electronic unit is blocked, it does not switch the output.

However, it is possible to switch between pause times and manual flushing controlled by input 1 works. In the case of the activation of input 1, the electronic unit will close the output for the set flushing time despite the blocked state.

Description of the algorithm:

After the device has been switched on, (1) will be displayed and dots will flash for several seconds from the right to the left. This is followed by closing (flushing) for the set time, and the time in seconds until the end of the closed state (or until the start of the opened state) – e.g. (2) will appear on the display. Once the closed time has passed, opening (pause) for a set time will follow. The time in minutes until the end of the opened state (start of the closed state) – e.g. (3) will again appear on the display. The data is accompanied by the flashing of the dot located furthest on the right. After 20 minutes have passed since the device has been switched on, it is possible to switch between two pause times in the electronic unit using the magnet. Pause time 1 is indicated by a short horizontal line in the left section of the display. Pause time 2 is indicated by two short lines in the left section of the display. By closing input 1 it is possible to start the closed state (flushing) manually. Activity at input 1 is indicated by the dot located furthest on the right going on. The electronic unit can be put into the blocked state. By activating input 2, (8) will appear on the display – the electronic unit will not close the output for the period of the activated input of blocking. Manual activation of flushing is the only exception – this works even in the event that the electronic unit is blocked.

The logic of the scanning of the inputs can be changed by three wire jumpers. Following assembling, all the inputs are natively set for activation of an input by closing. If it is necessary to change the logic of input scanning, you just need to interrupt the appropriate jumper.

Example: the jumper in position 1 belongs to input 1, the jumper in position 3 belongs to input 3.

Setting the closed (flushing) time:

- 1) Switch off the electronic unit and switch it on again after 5 seconds.
- 2) Put the setting magnet (hereinafter called SM) near the display.
- 3) The presence of the SM is indicated by flashing (4).
- 4) Put the SM away before (4) flashes five times. You can also put the SM near the display quickly and immediately put it away.
- 5) You are now in the setting of a closed (flushing) time. The setting is indicated by a small letter 'u' located on the left. And the current set value – e.g. (5) will appear on the display.
- 6) This data can be changed at a 0.1-second jump by putting the SM gradually nearer and nearer. If you hold the SM for a while, the value will automatically increase or decrease. An increase/decrease in the value always changes when you hold the SM for a longer time.
- 7) After setting the desired closed (flushing) time, do not perform any action. After 5 seconds the electronic unit will exit the setting mode by itself and it will write (6) on the display to indicate the saving of the new values.
- 8) The sign (6) will go off and the electronic unit will switch over to cycling.

Setting a pause time:

- * Setting pause time 1 and pause time 2 is identical; only the switchover to individual setting modes is different.
 - * If you want to switch over to the pause setting mode 1 hold the SM until (9) starts flashing on the display.
 - * If you want to switch over to the pause setting mode 2 hold the SM until (10) starts flashing on the display.
- 1) Switch off the electronic unit and switch it on again after 5 seconds.
 - 2) Put the setting magnet (hereinafter called the SM) near the display.
 - 3) The presence of the SM is indicated first by flashing (4), after 5 seconds it changes to flashing (9) and after another 5 seconds it changes to flashing (10).
 - 4) Put the SM away (depending on what is flashing on the display) at the moment in which setting mode you want to do the setting.
 - 5) You are now in the setting of an off-time (flushing). The setting is indicated by a one or two short lines located on the left. Simultaneously, the last set value in minutes, e.g. (7), appears on the display.
 - 6) The data can be changed at a 1-minute jump by putting the SM gradually nearer. If you hold the SM for a while, the value will automatically increase or decrease. An increase/decrease in the value always changes when you hold the SM for a longer time.

- 7) After setting the desired off-time (pause), do not perform any action. After 5 seconds the electronic unit will exit the setting mode by itself and it will write (6) on the display to indicate the saving of the new values.
- 8) The sign (6) will go off and the electronic unit will switch over to cycling.

Manual activation of flushing:

You can trigger flushing manually by activating input 1. Depending on the set configuration, you close (jumper uninterrupted) and open the input (jumper interrupted) using the brown jumper No. 1 (jumper uninterrupted).

*** INCORRECT CONFIGURATION OF INPUT 1**
You can recognise when input 1 is incorrectly configured by jumper No. 1 if the dot furthest on the right starts to shine with momentary glimmering of the time value for the closed state after the device has been switched on. The output will be closed permanently.

*** CORRECT CONFIGURATION OF INPUT 1:**
After switching on, there will be normal closing (flushing) with a countdown of the closed time on the display, and the electronic unit will then change over to the pause countdown mode. The dot located furthest on the right only indicates elapsing time in seconds in the pause mode.

Switching between pause times:

* In order to switch times using the setting magnet, the electronic unit must be switched on for more than 20 minutes.
* You can switch pause times through input 3 in the following situations:
- immediately after switching on the device.
- during the time when the electronic unit is blocked.
- in the course of flushing.

1) Switching pause times using the setting magnet:
Put the setting magnet near the magnet sensor which is located in the close vicinity of the display. The display will start flashing a value that will be assigned as the pause time after you put the magnet away; 1 or 2 short lines on the left will appear simultaneously with the value.

Blocking the electronic unit:

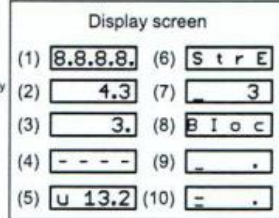
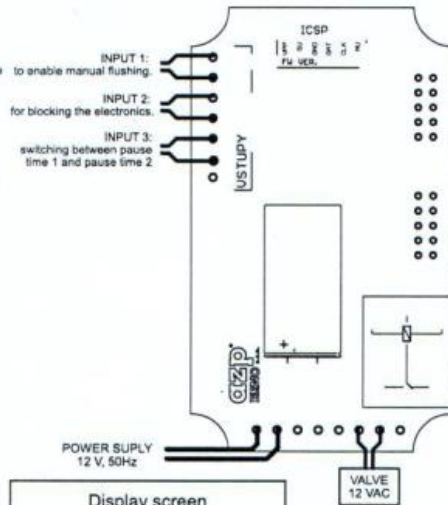
You can block the electronic unit by activating input 2. In connection with the configuration by wire jumper No. 2 and by activating input 2, the electronic unit will change over to the blocked state. (8) is shining on the display, and the electronic unit will not perform closing (flushing) for the entire period of the activated input. The electronic unit will resume cycling only after deactivation. The following actions can be performed with the electronic unit in the blocked state:
- Manually trigger flushing for a set flushing time.

- Switch between pause times 1 and 2.

- Perform setting.

Parameters of the COS2

Setting range of closed (flushing) time: 1 s – 20 s [0.1 sec. step].
Setting range of opened (pause) time: 1 – 999 [1 min. step].
Setting possibility: <20 minutes after switching the device on.
Possibility of switchover of pause 1 / pause 2 countdown using the magnet: >20 minutes after switching the device on.



Setting default values:

- 1) Disconnect the electronic unit from power supply.
 - 2) Put the SM near the sensor.
 - 3) Along with the applied SM connect the electronic unit to power supply.
 - 4) Let the SM applied for so long until [Set] appears on the display.
 - 5) Now you can put the SM away – in this way, the electronic unit has been set to default values.
- Default values:
* Closed (flushing) time: 1 s.
* Pause time 1: 1 minute.
* Pause time 2: 3 minutes.
* Pause No.: 1.

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