ITC

DOSING PUMPS

WTRTEC

GREY

ENGLISH

CONTENTS

⚠ **SAFETY INSTRUCTIONS**

To avoid personal injury risks and damage to the environment, and to ensure proper equipment operation, personnel responsible for installing, commissioning and maintaining the equipment must follow the instructions in this manual, with special attention to the detailed recommendations and warnings. The specific instructions for the use of the chemicals to be dosed must also be followed.

1. GENERAL DESCRIPTION

WTRTEC Grey is a highly accurate, easy to install and operate free chlorine, pH and electrical conductivity (EC) controller. Specially designed for the treatment and control of water in cooling towers.

The controller allows the chlorine (or other biocide) and pH levels to be controlled through two analogue (4-20 mA) and digital (relay) control outputs, for the biocide and acid dosing pumps. It also has a digital (relay) output to activate a purge of the circuit when a specified conductivity level (EC) is reached. For biocides other than chlorine, the equipment allows the dosing rate to be adjusted based on the required proportion of biocide in ppm.

A flowmeter input is also enabled to monitor the entry of clean water into the circuit. The PIQ internal adjustment system allows automatic correction of the biocide dosing, taking into account the amount of untreated water entering the tank. The biocide dosing rate is increased in proportion to the flow rate of the circuit's fill water.

For cleaning treatments based for example on shock chlorination at 5 or 20 ppm, the controller has a special function whereby the desired ppm value and the time the circuit must remain under these conditions are configure, as well as whether to automate a subsequent purge. When activating this function, the equipment initiates a routine that includes the dosing of the required biocide based on the volume of the tower, followed by the duration of the treatment during which no product is dosed, and to finish purging the circuit in the event that this has been activated.

Sequence of cleaning function operations:

Valor sobrecloración: 20.00 ppm	▶	Dosificación biocida hasta alcanzar los 20 ppm	▶	Tiempo de tratamiento 04:00:00	▶	Activación purga del circuito

WTRTEC Grey enables monitoring, remote management and historical register by means of a mobile phone/web application. For this, a Communications Gate (Ref. 01-006) is needed, which can be connected to the Internet via Ethernet or 3G/4G.

INSTALLATION DIAGRAM

WTRTEC Grey

Communications gate (01-006)

| Cooling tower | Sensors | Dosing pump 1 | Dosing pump 2 |
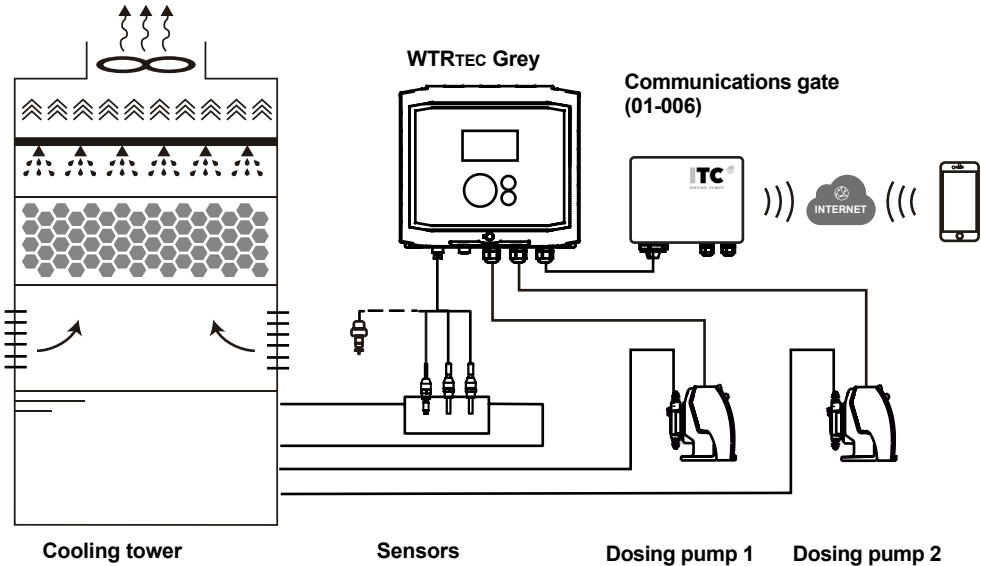
2. TRANSPORT AND HANDLING

The original packaging is designed to allow the equipment to be transported and stored without damage, provided this takes place in dry, ventilated spaces away from heat sources.

Included in the packaging are:
- **WTRTEC**
- Instruction manual

3. TECHNICAL SPECIFICATIONS

Power supply: 100-240 V 50-60 Hz 10.8-14.4 VDC

Power: 6 W

IP65 protection

Housing material: ABS

Working temperature: 0-45 °C/32-113 °F

Maximum relative humidity: 0.95% with no condensation

Inputs

Flow meter	0.00-9999 m3/h / gph	NPN isolated
Flow meter (power supply)		12 Vdc (100 mA)
Chlorine	0.00 - 3.00	Isolated
pH sensor	0.00 - 14.00	Isolated
EC sensor	0.00 - 10.00 mS	Isolated
pH/EC temperature sensor	0.0-100 °C/32.0-212 °F	PT100
Remote input	ON/OFF	12-24 V AC/DC
Flow detector	ON/OFF	NPN isolated

Outputs

Relay 1	Sensor holder valve	N.A. 230 Vac 1 A
Relay 2	Alarm	N.A. 230 Vac 1 A
Relay 3	Alarm	N.A. 230 Vac 1 A
Relay 4	Control	N.A. 230 Vac 1 A
Relay 5	Control	N.A. 230 Vac 1 A
4-20 mA 1	Control or register	max. 520 Ohms
4-20 mA 2	Control or log	max. 520 Ohms

Communications

RS485 port	ModBus

Dimensions

	mm	inch
A	229	9.02
B	225	8.86
C	119	4.69
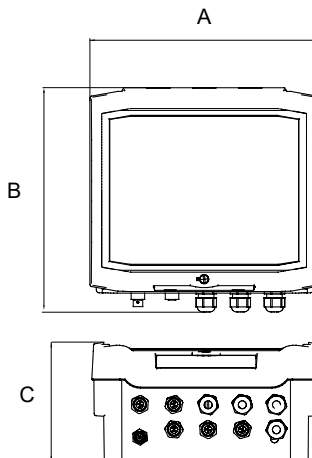
4. OPERATION

4.1 Main screen and navigation

Control parameter 1 chlorine (ppm)

Control parameter 2 pH

Regulation output

EC (mS)

Flow rate reading (m3/h)

PPM 0.7   PH 7.6
0 1   0 1
mS 2.45   m3h 10.5

ENT — Confirm

ESC — Exit without confirming

▲ ▼ — Increase/decrease value, and move up/down

◀ ▶ — Move left/right

Warnings on the main screen:

PPM 0.7   PH 7.6
0 1   0 1
mV 500   m3h 10.5

Flashing reading: parameter alarm
Flashing regulation output: no device detected on the 4-20 mA output
Flashing regulation outputs (both): remote control deactivated, or no device connected to the 4-20 mA outputs

Cursor

Chlorine setpoint

pH adjustment output

ppm   0.15   SP   0.40
                        032%
pH   7.60   SP   7.00
                        021%
mS   2.45   m3h   10.5
CONFIG   21.3ºC

Move the cursor to select the following menu: ppm, pH, mS, m3h or CONFIG, and select ENTER

Access to the Configuration menu

ppm   0.15   SP   0.40
                        032%
pH   7.60   SP   7.00
                        021%
mV   500   m3h   10.5
CONFIG   21.3ºC

ENT

pH   SP   07.00
      CAL
      CONTROL
      ALARM
      REGISTER

Press ENTER to edit the setpoint or move the cursor to enter the following menu:
CAL: Calibration
CONTROL: control output
ALARM: alarms
REGISTER: output for register

Calibration menu

PH CAL.
Point 1   07.00
Point 2   04.00
Reading   07.23

Control menu

PH CONTROL
CONTROL
PI CONTROL

Alarm menu

PH ALARM
pH +   1.00   025 s
pH -   0.50   060 s
Reset: Yes; No
Stop: pH; All; None

Register menu

PH REGISTER
Out: 4-20 mA 2
 4 mA: 00.00
20 mA: 14.00

4.2 Setpoint configuration

Configuration of the desired values of free chlorine (ppm) and pH of the two control channels through values or set points, as well as the EC reference value (mS) for activating the purge and alarm.

To enter the setpoint:

ppm	0.15	SP	0.40
			032%
pH	7.60	SP	7.00
			021%
mS	2.45	m3h	10.5
CONFIG			21.3ºC

(ENT)

ppm	SP	00.40
	CAL	
	CONTROL	
	ALARM	
	REGISTER	

(ENT) change the value with the up/down arrows and confirm with ENT

ppm	0.15	SP	0.40
			032%
pH	7.60	SP	7.00
			021%
mS	2.45	m3h	10.5
CONFIG			21.3ºC

(ENT)

pH	SP	07.00
	CAL	
	CONTROL	
	ALARM	
	REGISTER	

(ENT) change the value with the up/down arrows and confirm with ENT

ppm	0.15	SP	0.40
			032%
pH	7.60	SP	7.00
			021%
mS	2.45	m3h	10.5
CONFIG			21.3ºC

(ENT)

mS	SP	02.00
	CAL	
	CONTROL	
	ALARM	
	REGISTER	

(ENT) change the value with the up/down arrows and confirm with ENTER

4.3 Calibration

Calibration of the sensors used for chlorine, pH, EC and flow rate. The calibration menu is in each parameter menu.   .

4.3.1 Calibrating and cleaning the chlorine sensor

ppm	SP	00.40
	CAL	
	CONTROL	
	ALARM	
	REGISTER	

(ENT)

CL CAL.	
1 POINT	
2 POINTS	
CLEANING	

(ENT)

| CL CAL. 1 POINT	
Point 1	01.53 ppm
Reading	00.50 ppm

In most cases, one-point calibration is the most suitable. Only in the case of extremely low chlorine setpoints will it be more appropriate to use two-point calibration, which allows the 0.00 ppm point to be calibrated.

For one-point calibration, take a sample of water that is circulating past the sensor and measure the level of free chlorine by means of a DPD test. Correct the ppm value on the screen with the up/down arrows to adjust to the DPD value and confirm with ENTER.

Periodically the controller activates an electrochemical cleaning process of the ITC chlorine sensor electrodes.
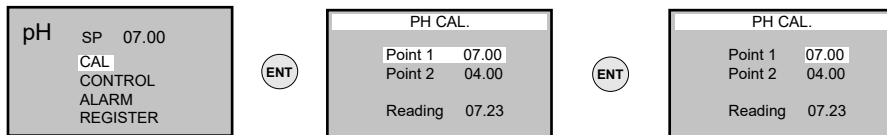
The default parameters are the most suitable ones for most installations. In the cleaning menu, apart from activating/deactivating cleaning, it is possible to configure both the frequency and the duration of cleaning.

Should the default values not be satisfactory, please contact the ITC technical team to assess changing the configuration.

```
          CL CLEANING

Run:                    ON
Frequency:             8 h
Time:                 60 s
```
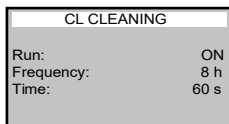
⚠️ Do not make any parameter changes without first consulting ITC Technical Service. The default parameters are the most suitable ones for most installations.
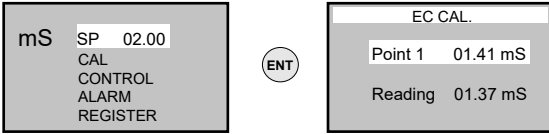
4.3.2 pH calibration

```
pH    SP   07.00
      CAL
      CONTROL
      ALARM
      REGISTER
```

(ENT)

```
          PH CAL.

      Point 1    07.00
      Point 2    04.00

      Reading    07.23
```

(ENT)

```
          PH CAL.

      Point 1    07.00
      Point 2    04.00

      Reading    07.23
```

If necessary for pH calibration point 1, modify the buffer value using the up/down arrows. Insert the sensor into the point 1 buffer, wait until the sensor reading is stable and confirm with ENTER.

Repeat the operation with the point 2 buffer. Before putting the sensor in the point 2 buffer, clean the sensor with distilled water and dry it well (with tissue paper) to avoid contamination of the buffer. If at any time during the calibration process you are not sure of the calibration, you can exit without confirming by pressing ESCAPE.
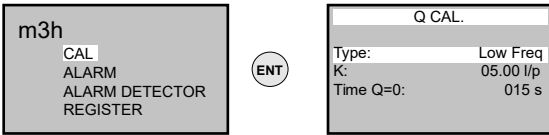
4.3.3 EC calibration (mS)

```
mS   SP    02.00          EC CAL.
     CAL            ENT   Point 1    01.41 mS
     CONTROL
     ALARM                Reading   01.37 mS
     REGISTER
```

If necessary, modify the buffer value to calibrate EC Point 1 using the up/down arrows. Insert the sensor into the point 1 buffer, wait until the sensor reading is stable and confirm with ENTER.

If at any time during the calibration process you are not sure of the calibration, you can exit without confirming by pressing ESCAPE.

4.3.4 Flow rate calibration

```
m3h                        Q CAL.
    CAL             ENT    Type:        Low Freq
    ALARM                  K:           05.00 l/p
    ALARM DETECTOR         Time Q=0:       015 s
    REGISTER
```

Select the type of flow meter:

- Low Freq:
low frequency flow meter. Flow meters with pulse frequencies of between a minimum of 1 pulse every 200 seconds and a maximum of 30 pulses per second (30 Hz).

- K (l/p):
This type of flow meter requires entry of the configuration value the manufacturer indicates in litres/pulse.

- Time Q=0:
In these flow meters, which calculate the flow rate from the time between two consecutive pulses, a wait time from which the flow rate is considered to be zero needs to be defined.

- High Freq:
high frequency flow meter for Hall effect or electromagnetic insertion flow meters with a maximum of 300 Hz (300 pulses per second).

- K-factor (p/l):
This type of flow meter requires entry of the K-factor (pulses/litre), corresponding to the diameter where it is installed. This value was supplied by the manufacturer.

- Limit out:

If a 4-20 mA output is used, this parameter allows you to limit the output value so as to limit the maximum dosing pump flow rate.
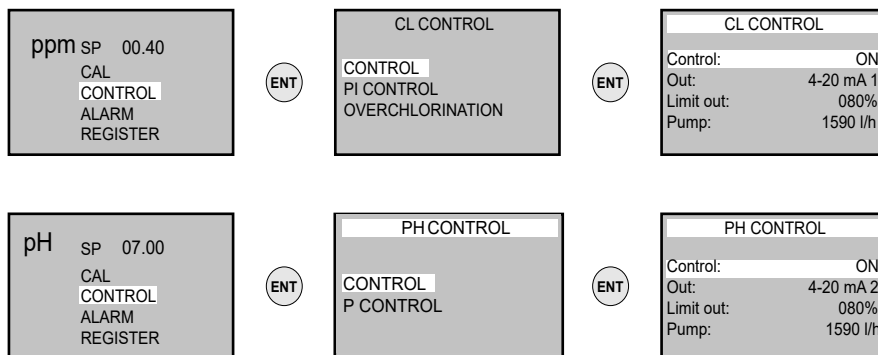
- Pump:
Enter the rated dosing pump flow rate to record the dosed flow rate in the data logger.

4.4 Control configuration

4.4.1 Activation of free chlorine and pH control

Activate the control in the two parameters to be set.

ppm SP 00.40 CAL CONTROL ALARM REGISTER	(ENT) →	CL CONTROL CONTROL PI CONTROL OVERCHLORINATION

(ENT) →

CL CONTROL
Control: ON
Out: 4-20 mA 1
Limit out: 080%
Pump: 1590 l/h

pH SP 07.00 CAL CONTROL ALARM REGISTER	(ENT) →	PH CONTROL CONTROL P CONTROL

(ENT) →

PH CONTROL
Control: ON
Out: 4-20 mA 2
Limit out: 080%
Pump: 1590 l/h

- Free chlorine control:
Dosing will be set automatically to adjust the free chlorine reading to the value entered as the setpoint in ppm.

- Control in pH:
The dosing rate will be set automatically to adjust the pH reading to the value entered as the pH setpoint.

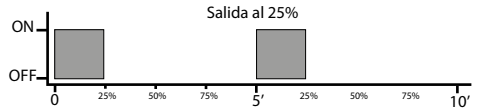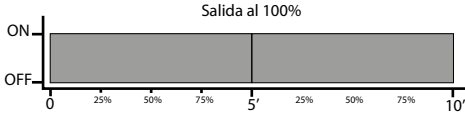The regulating output will need to be selected for each control channel:
- Out:
Choose between the two 4-20 mA channels for analogue regulation or between the relay outputs for ON/OFF adjustment.
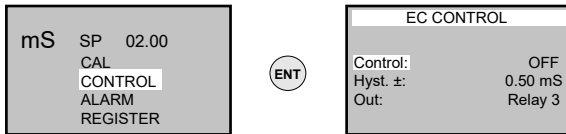
Out = 4-20 mA. For a more precisely set control. It is necessary to have a dosing pump with a 4-20 mA analogue input such as Dositec mA, Dostec AC or Dostec with variable frequency.

Out = Relay. The regulating output establishes 5-minute cycles in which the output will be ON for the

proportional part of the time corresponding to the regulating output. This output allows the start/stop of a Dositec MP/MD or Dostec tupe dosing pump to be controlled.


Salida al 100%

Salida al 25%

4.4.2 EC purge activation (mS)

mS	SP	02.00
	CAL	
	CONTROL	
	ALARM	
	REGISTER	

(ENT)

EC CONTROL	
Control:	OFF
Hyst. ±:	0.50 mS
Out:	Relay 3

- **ON/OFF switch:**

This parameter allows the automatic circuit purge to be activated when the conductivity (mS) reaches the specified setpoint. It will be necessary to define a hysteresis value and specify the relay output to be used for the purge manoeuvre.

When purge is activated, a flashing icon will appear on the screen next to the EC reading (mS).
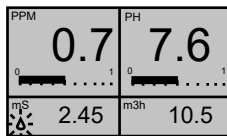
- **Hysteresis**:

The hysteresis value allows a margin of tolerance to be defined before a change of state. In this way, as the conductivity in the tower increases and reaches the value defined as the setpoint for activating a purge, this will not be activated immediately, but will wait until:

mS Reading = Setpoint value (S.P.) + Hysteresis

The circuit purge will remain activated until the conductivity reading reaches:
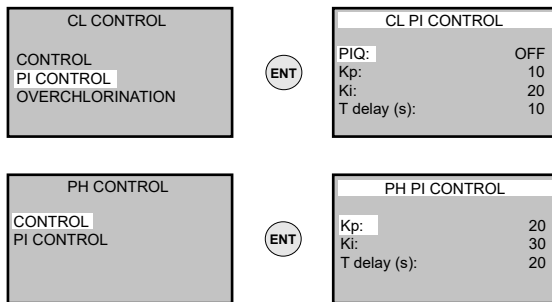
mS reading = Setpoint - Hysteresis

Example: If the setpoint is 3.00 mS and the hysteresis has been set to 0.5 mS, the purge will be activated at 3.50 mS and will stop at 2.50 mS

- Out:
Select the desired relay output for activating the circuit purge

4.4.3 Advanced control configuration

Adjustment of the free chlorine and pH control is performed using PI adjustment. The setup parameters of this control can be found in the PI Control menu

```
   CL CONTROL                      CL PI CONTROL
                                PIQ:              OFF
CONTROL            (ENT)        Kp:                10
PI CONTROL                      Ki:                20
OVERCHLORINATION                T delay (s):       10
```

```
   PH CONTROL                      PH PI CONTROL
CONTROL            (ENT)        Kp:                20
PI CONTROL                      Ki:                30
                                T delay (s):       20
```

-PIQ:
The PIQ control mode is available only for chlorine and makes it possible to automatically increase the addition of chlorine proportionally to the clean water inlet of the tower. For this, there must be a flow meter, and the concentration of the biocide being used must have been entered. From the flow reading of the incoming water and knowing the concentration of the product used, the controller will increase the dosing rate to add the biocide needed to treat the incoming water and bring it to the ppm entered as a setpoint. When there is no water intake, the hypochlorite dosing rate corresponds only to the PI setting.

Example: Assume that the chlorine setpoint (SP) = 2.00 ppm, that 15% sodium hypochlorite is used, and that the flow of water feeding the tower is 50,000 l/h. When the WTRTEC detects water flow, it will increase the chlorine dosing rate by the following amount:

$$50,000 \text{ l/h} \cdot (2/1,000,000) \text{ ppm} \cdot (100/15) = 0.67 \text{ l/h}$$

The hypochlorite dosing flow resulting from the PI adjustment will be increased by 0.67 l/h

- Kp:

Proportional constant for the control. This parameter enables adjustment of the amount of device response based on the difference between the reading and the setpoint (Error). A value that is too high may produce a reaction that is too abrupt for the system and exceed the setpoint in the tank, leading to a risk situation. A value that is too low will result in a slow approach to the setpoint.
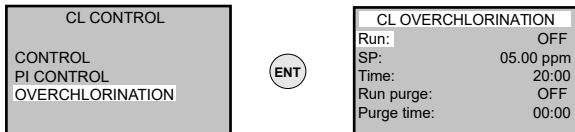
- Ki:
Integral PI adjustment. This parameter acts on the accumulated error and produces a stable reading once the setpoint has been reached. For cooling towers it is advisable to start with Ki = 0, for both chlorine and pH. When starting the system up, if it is observed that the chlorine reading drops rapidly once the set value is reached, this parameter would make it possible to maintain a residual dosing rate and keep the reading at the setpoint.

- T delay (seconds):
T delay is the time between two consecutive controller orders to position the regulating output. For closed circuit regulation, as in the case of cooling towers, it is advisable to set this value at the minimum.

4.4.4. Overchlorination for shock treatment

Activating this function performs a shock treatment. The volume of the tower and the discharge pump flow must be input in the Configuration menu.

```
CL CONTROL

CONTROL
PI CONTROL
OVERCHLORINATION
```
(ENT)
```
CL OVERCHLORINATION
Run:                    OFF
SP:              05.00 ppm
Time:                 20:00
Run purge:              OFF
Purge time:           00:00
```

- **Run:**
Activate the function to start shock treatment. A second message will appear to confirm the treatment. When validated, the treatment will begin.

The chlorine reading will disappear from the display and a triangle symbol will appear. The dosing pump will start to dose the required volume based on the setpoint (SP) for the treatment. The display will shows the percentage completion of dosing.

Once 100% is reached, a countdown will appear with the time scheduled for the treatment.

During the treatment, the control output of the sensor holder protection valve (not included) will be activated.
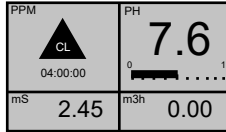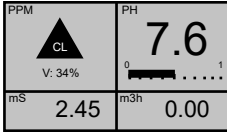
- Setpoint (SP):
Enter the desired ppm value for the treatment

- Treatment time:
Enter the desired duration of the treatment.

- Activate automatic purge:
This parameter makes it possible to automatically activate a purge of the circuit once the shock treatment has finished.

- Purge time:
Enter the desired duration of the purge

4.5 Alarms

4.5.1 Chlorine, pH and EC (mS) alarms

To configure the alarms, enter the upper and lower tolerance values with respect to the value entered as the setpoint and the time from which, with the reading outside tolerance range, the alarm must be activated.

The alarms will activate only if the Control is ON.

If the value = 0, the alarm is disabled.

ppm + 1.00: the alarm is activated when the reading is 1.00 ppm above the setpoint for 25 seconds.
ppm - 0.5: the alarm is activated when the reading is 0.50 ppm below the setpoint for 60 seconds.

pH + 1.00: the alarm is activated when the reading is 1.00 above the setpoint for 25 seconds.
pH - 0.5: the alarm is activated when the reading is 0.50 mS below the setpoint for 60 seconds.

```
mS   SP    02.00
     CAL
     CONTROL
     ALARM
     REGISTER
```

(ENT)

```
        EC ALARM
mS +      0.70        025 s
mS -      0.50        060 s

Reset: Yes; No
Stop: All; None
```

mS + 0.70: the alarm is activated when the reading is 0.70 mS higher than the setpoint for 25 seconds.
mS - 0.50: the alarm is activated when the reading is 0.50 mS below the setpoint for 60 seconds.

Reset: enables automatic alarm reset when the reading is back within the permissible values.

Stop: enables shutting down of the dosing control output for the alarmed control parameter, for all or none.

4.5.2 Flow detector alarm

When an external sensor holder is used through which a water sample is made to pass, and this has a flow detector, an alarm can be configured to warn in the event that no water sample reaches the external sensor holder.

If the value = 0, the alarm is disabled.

```
m3h
     CAL
     ALARM
     ALARM DETECTOR
     REGISTER
```

(ENT)

```
       Q ALARM DET
Q = 0                200 s


Reset: Yes
Stop: All
```

Reset: enables automatic alarm reset when the reading is back within the permissible values.

Stop: enables the dosing control outputs to be shut down.

4.6 Configuration of the register outputs

If any of the 4-20 mA analogue control outputs is unused, these can be used to be configured as outputs for logging any sensor readings.

To do this, the output to be used needs to be selected and the 4 mA value related to the minimum sensor reading, and the 20 mA value with the maximum reading.

```
ppm  SP    00.40
     CAL
     CONTROL
     ALARM
     REGISTER
```

(ENT)

```
       CL REGISTER
Out:             4-20 mA 1

 4 mA:           00.00 ppm
20 mA:           03.00 ppm
```

```
pH    SP   07.00
      CAL
      CONTROL
      ALARM
      REGISTER
```

```
         PH REGISTER
Out:            4-20 mA 2

 4 mA:            00.00
20 mA:            14.00
```

```
mS    SP   02.00
      CAL
      CONTROL
      ALARM
      REGISTER
```

(ENT)

```
         EC REGISTER
Out:            4-20 mA 2

 4 mA:          00.00 mS
20 mA:          10.00 mS
```

4.7 Configuration and monitor

```
ppm   0.15   SP   0.40
                     032%
pH    7.60   SP   7.00
                     021%
mS    2.45   m3h  10.5

CONFIG              21.3ºC
```

(ENT)

```
            CONFIG

SET UP
COMUNICATIONS
CHECK / MONITOR
```

4.7.1 Initial configuration (SET UP)

```
            CONFIG

SET UP
COMUNICATIONS
CHECK / MONITOR
```

(ENT)

```
         CONFIG. SET UP
UNITS
PH CONTROL
RED / OX CONTROL
PH READING
TEMP. READING
EC SENSOR
TOWER PARAMS
LCD AUTO
BIOCIDE
```

- Units:

To select working units for flow rate (litres or gallons) and temperature (Celsius or Fahrenheit)

- pH Control:

To select whether the pH control uses an acid or a base

- Red/Ox Control:

To select whether the free chlorine control uses an oxidant (such as sodium hypochlorite) or a reducer (e.g. sodium bisulphite)

- pH Reading:

To enable or disable the pH reading, or set the reading manually

- Temp. Reading:

To enable or disable the temperature reading, or fix a value manually.

- EC Sensor

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To select whether the ITC sensor or a sensor with cell constant K = 1 is being used.

-Cooling tower parameters
Enter the recirculation flow and tower volume for internal calculations during chlorination with shock treatment.
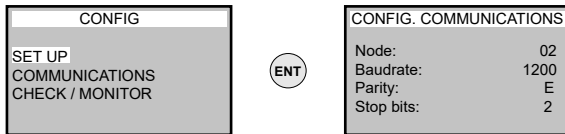
- LCD auto:
Energy saving option to allowing the screen to be switched off if no action has taken place via the menu in one minute.

- Biocide:
Enter the richness (%) of the biocide used for when the PIQ control is activated (to set the dosing flow with entry of untreated water into the tower).
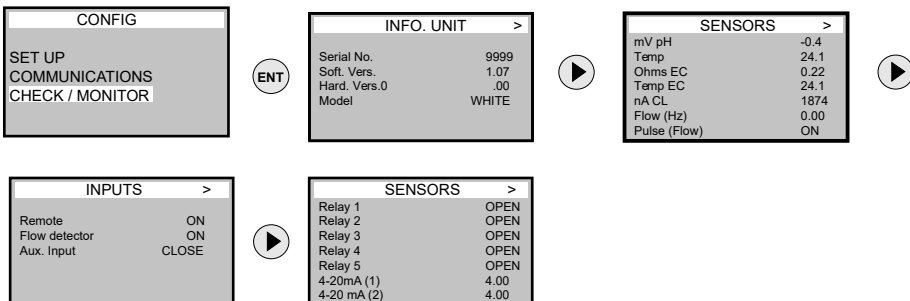
4.7.2 Communications settings

Setting the communications parameters via the RS485 port. Node, Baud Rate, Parity, and stop bit.

```
┌──────────────────────┐            ┌──────────────────────────┐
│        CONFIG        │            │ CONFIG. COMMUNICATIONS   │
│                      │            │                          │
│ SET UP               │   (ENT)    │ Node:              02    │
│ COMMUNICATIONS       │            │ Baudrate:        1200    │
│ CHECK / MONITOR      │            │ Parity:             E    │
│                      │            │ Stop bits:          2    │
└──────────────────────┘            └──────────────────────────┘
```

4.7.3 Information on the unit and monitor

This screen displays information on the equipment and the raw value sensor, input and output readings.

```
┌──────────────────────┐        ┌──────────────────────┐        ┌──────────────────────┐
│        CONFIG        │        │   INFO. UNIT     >   │        │    SENSORS       >   │
│                      │        │                      │        │ mV pH         -0.4   │
│ SET UP               │        │ Serial No.    9999   │        │ Temp          24.1   │
│ COMMUNICATIONS       │ (ENT)  │ Soft. Vers.   1.07   │  (▶)   │ Ohms EC       0.22   │ (▶)
│ CHECK / MONITOR      │        │ Hard. Vers.0   .00   │        │ Temp EC       24.1   │
│                      │        │ Model        WHITE   │        │ nA CL         1874   │
│                      │        │                      │        │ Flow (Hz)     0.00   │
│                      │        │                      │        │ Pulse (Flow)    ON   │
└──────────────────────┘        └──────────────────────┘        └──────────────────────┘

┌──────────────────────┐        ┌──────────────────────┐
│    INPUTS        >   │        │   SENSORS        >   │
│                      │        │ Relay 1       OPEN   │
│ Remote         ON    │        │ Relay 2       OPEN   │
│ Flow detector  ON    │  (▶)   │ Relay 3       OPEN   │
│ Aux. Input    CLOSE  │        │ Relay 4       OPEN   │
│                      │        │ Relay 5       OPEN   │
│                      │        │ 4-20mA (1)    4.00   │
│                      │        │ 4-20 mA (2)   4.00   │
└──────────────────────┘        └──────────────────────┘
```

5. INSTALLATION

A place protected from water, away from heat sources and direct sunlight must be chosen for installation.

5.1. Installation diagram

Cooling tower

Process

Flow meter

Q

Water inlet

Purge outlet

P

Q

P

Sensors

INTERNET

ITC
DOSING PUMPS

Dosing pump 1

Dosing pump 2

1

2
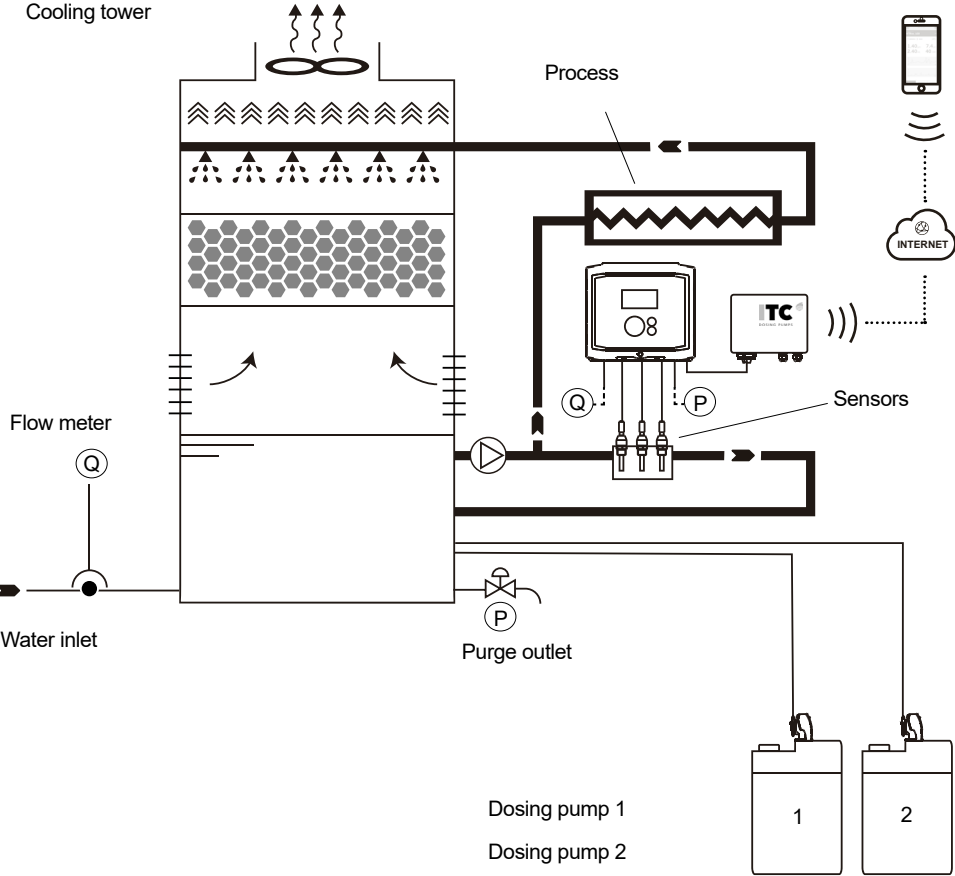
5.2. Wiring

① 110-240 V**AC** power supply
② 12 V**DC** power supply
③ Remote ON/OFF input (can be activated with 12-24 V**AC/**
④ **DC**)
⑤ pH and chlorine alarm output. Relay 2.
⑥ Sensor holder valve outlet. Relay 1.
⑦ EC alarm output. Relay 3.
⑧ Control relay output. Relay 4.
⑨ Control relay output. Relay 5.
⑩ 4-20 mA output. Output 1.

⑪ 4-20 mA output. Output 2.
⑫ PT100 temperature sensor input.
   NTC temperature sensor input
⑬ (ITC brand EC sensor).
⑭ Flow detector input.
⑮ Input for pH sensor (BNC connector)
⑯ Input for Cl free chlorine sensor
⑰ Entry for Q flow rate sensor
⑱ Input for EC sensor
   RS-485

General purpose cable gland
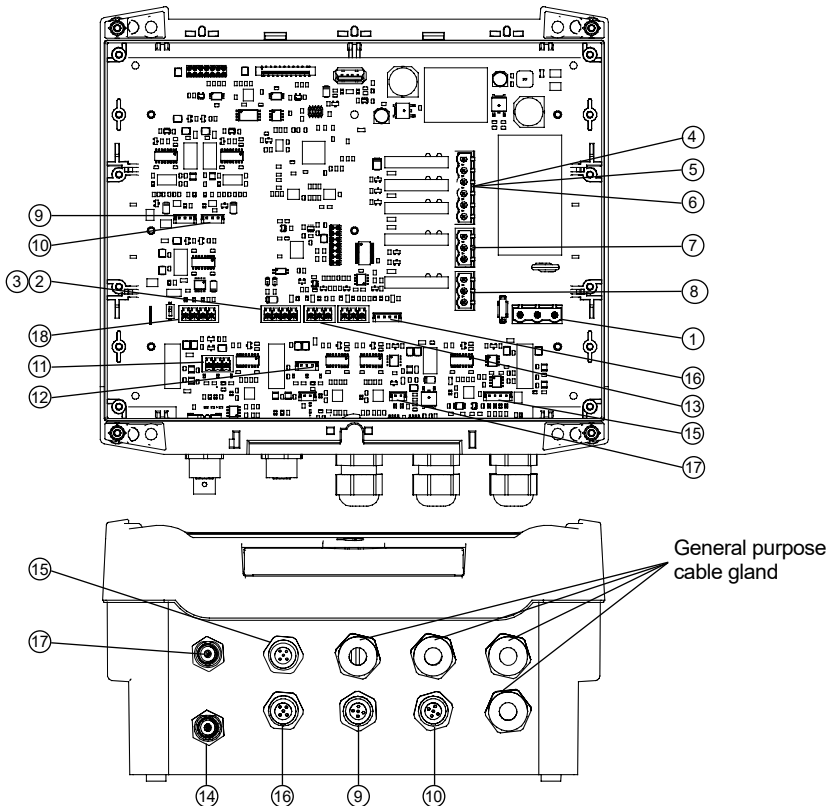
The probe cables must run through separate channelling.

Must be fitted with a power supply circuit-breaking device in accordance with EN-60204-1.
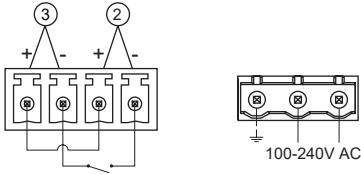
A device for disconnection in case of emergency must be installed.

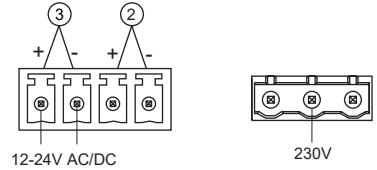The equipment must be protected to prevent false starts.

5.3. Remote start/stop activation

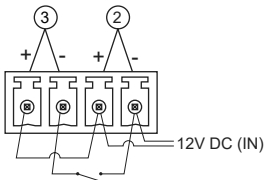**100-240 V**AC **power supply**
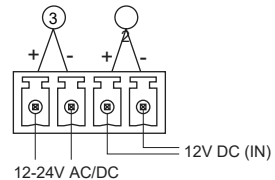
- External voltage-free signal

100-240V AC

- External 12-24 V **AC/DC** signal

12-24V AC/DC   230V

12-24 VDC **power supply**

- External voltage-free signal

12V DC (IN)

- External 12-24 V **AC/DC** signal

12-24V AC/DC   12V DC (IN)

6. START-UP AND SETTINGS

1. Installation:
Install the equipment and connect the pumps (see Installing and Wiring)

2. Equipment calibration and configuration:
Calibrate the sensors (pH, flow meter, etc.) (see Calibration)

Configure the equipment:
- Setpoint
- Type of control
- Installation and equipment configurations

3. Check readings
Start up the installation and check that the sensor reading are correct

4. Check operation of the dosing pumps:
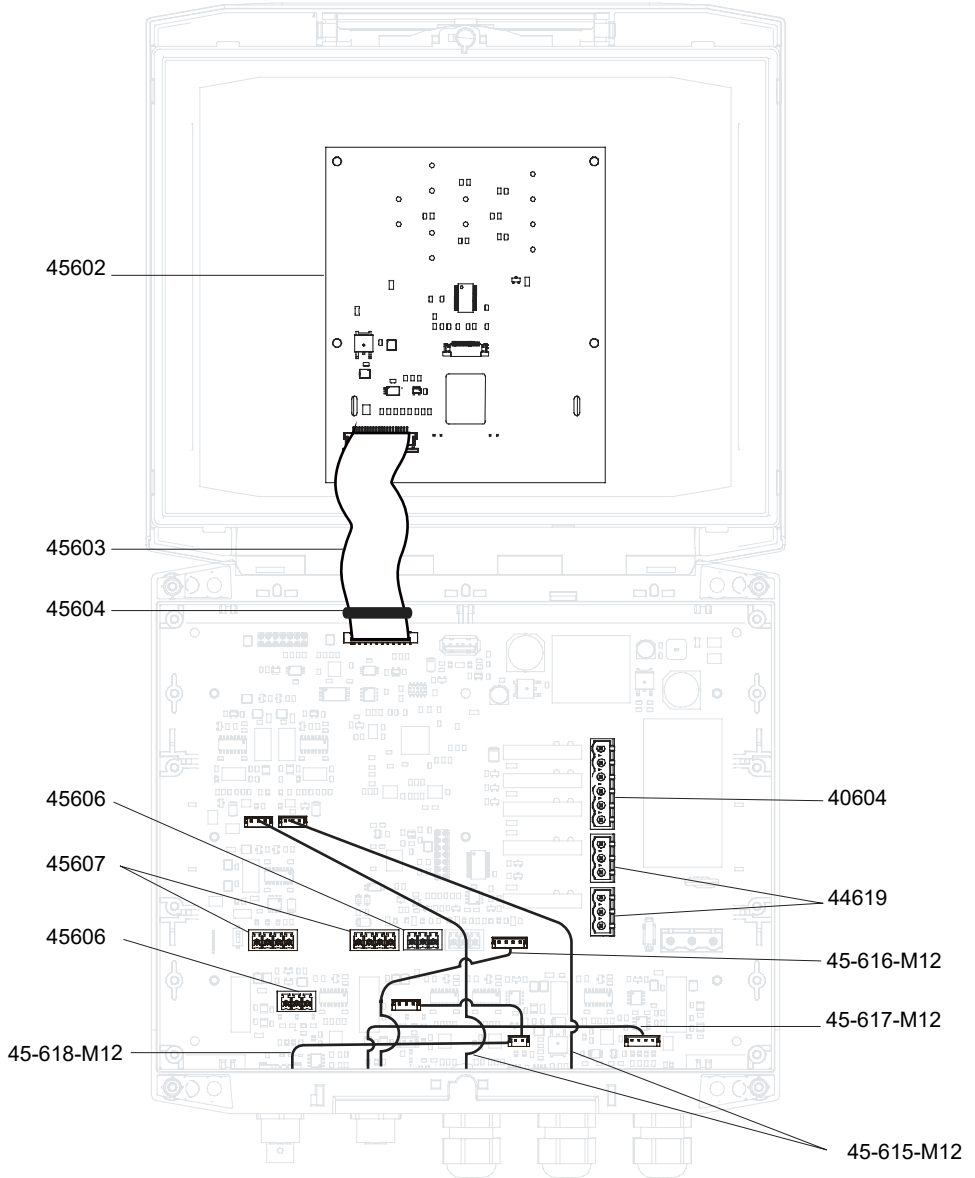Use "Manual" activation if available.

5. Set the values of Tdelay, Kp and Ki

6. Alarms:
Once proper operation of the installation has been confirmed, configure the alarms.
See section 4.5

7. MAINTENANCE

45602

45603

45604

45606

45607

45606

45-618-M12

40604

44619

45-616-M12

45-617-M12

45-615-M12

SPARE PARTS

CODE	DESCRIPTION		QUANTITY
40604	Female angled terminal strip, 6 pins RDC06x		1
44619	Female angled terminal strip, 3 pins RDC03x		2
45602	WTRTec display	1	
45603	Display cable	1	
45604	Ferrite	1	
45605	Female angled terminal strip, 3 pins, 7.5 pitch		1
45606	Female angled terminal strip, 3 pins, 3.81 pitch, black		3
45607	Female angled terminal strip, 4 pins, 3.81 pitch, black		2
45-615-M12	Hose cable, M12 female panel connector (mA)		2
45-616-M12	Hose cable, M12 female panel connector (flow rate)	1	
45-617-M12	Hose cable, M12 female panel connector (chlorine)	1	
45-618-M12	Hose cable, M12 female panel connector (EC)		1
45621	**WTRTEC** GREY electronic board		1

ASSEMBLY

45-601	**WTRTEC** display board and front panel		1

CE DECLARATION OF CONFORMITY

CE

I.T.C. S.L.
Vallès, 26
Polígono Industrial Can Bernades-Subirà
08130 Santa Perpètua de Mogoda

Declares that the **WTRTEC** products identified by serial number and year of manufacture meet the requirements of the Low Voltage Directive 2014/35/EU and the Electromagnetic Compatibility Directive 2014/30/EU, provided that installation, use and maintenance are carried out in accordance with current regulations and according to the instructions in the instruction manual.

Antón Planas
Manager

WARRANTY

ITC DOSING PUMPS

I.T.C. S.L. guarantees the product specified in this document, for a period of 1 year from the date of purchase, against all manufacturing or material defects, provided that installation, use and maintenance of the equipment are correct.

The equipment must be sent, free of charge, to our workshop or I.T.C. S.L.-accredited technical service and it will be returned cash on delivery.

The equipment must be accompanied by the warranty document, with the purchase date and stamp of the establishment where purchased, or a photocopy of the purchase invoice.

MODEL
—————————————

SERIAL No.
—————————————

Date of purchase and stamp of the establishment where purchased

DATE: —————————————