

# SCAM T.P.E. WATER TREATMENT SYSTEM

## SWT-AP – AUTOMATIC PURGE



# TABLE OF CONTENTS

- 1. PURPOSE OF SUPPLY ..... 3
- 2. SYSTEM FUNCTIONING ..... 3
- 3. SYSTEM COMPONENTS ..... 4
- 4. BATTERY LIMITATIONS ..... 6
- 5. DOCUMENTATION ..... 6
- 6. GUARANTEE ..... 6

## 1. PURPOSE OF SUPPLY

**SWT-AP – AUTOMATIC PURGE WATER TRATMENT SYSTEM** can be considered as a starting point of the water treatment, but not less effective than more complex treatments. It has been planned according to the installation needs of the cooling towers, by basing on our many years' experience and on the feedbacks received from our clients in their application fields. The system is composed essentially of a panel set up for the conductivity measurement and the purge automatic control (and optionally of the SWT1 products dosage part) consisting of :

- N°1 PE plate panel to be fixed to the wall;
- N°1 measurement system SCAM WATER CONTROL (SCAM/WCNT) equipped with conductivity analysis probe for the control of an automatic power-driven valve of purge on the tower water conductivity;
- N°1 set of hydraulic components (PVC pipe, manual spherical valves of interception, sample taking) pre-installed conductivity probe mount;
- N°1 supply switchboard with protection thermal magnet;
- N°1 spherical two-ways solenoid (of purge).

## 2. SYSTEM FUNCTIONING

**IN THE SWT-AP WATER TREATMENT SYSTEM** the water coming from the spillage on the tower circuit (pos.1) passes through the PVC manual valve of the panel on the left side. Immediately it reaches a probe holding well where there is the conductivity meter.

The conductivity probe, equipped with compensation temperature sensor, measures the conductivity value of the circulating water and compares this to the limit value set by the user (set-point).

If the measurement exceeds the said set-point, the panel proceeds with the opening of the solenoid on the tower purge drain (pos.2) in order to also drain the saturated water.

The water flowing out the probe well passes through a sample taking, before overcoming a PVC manual valve, and then introduced one again in the recycling circuit of the cooling tower (pos.3).

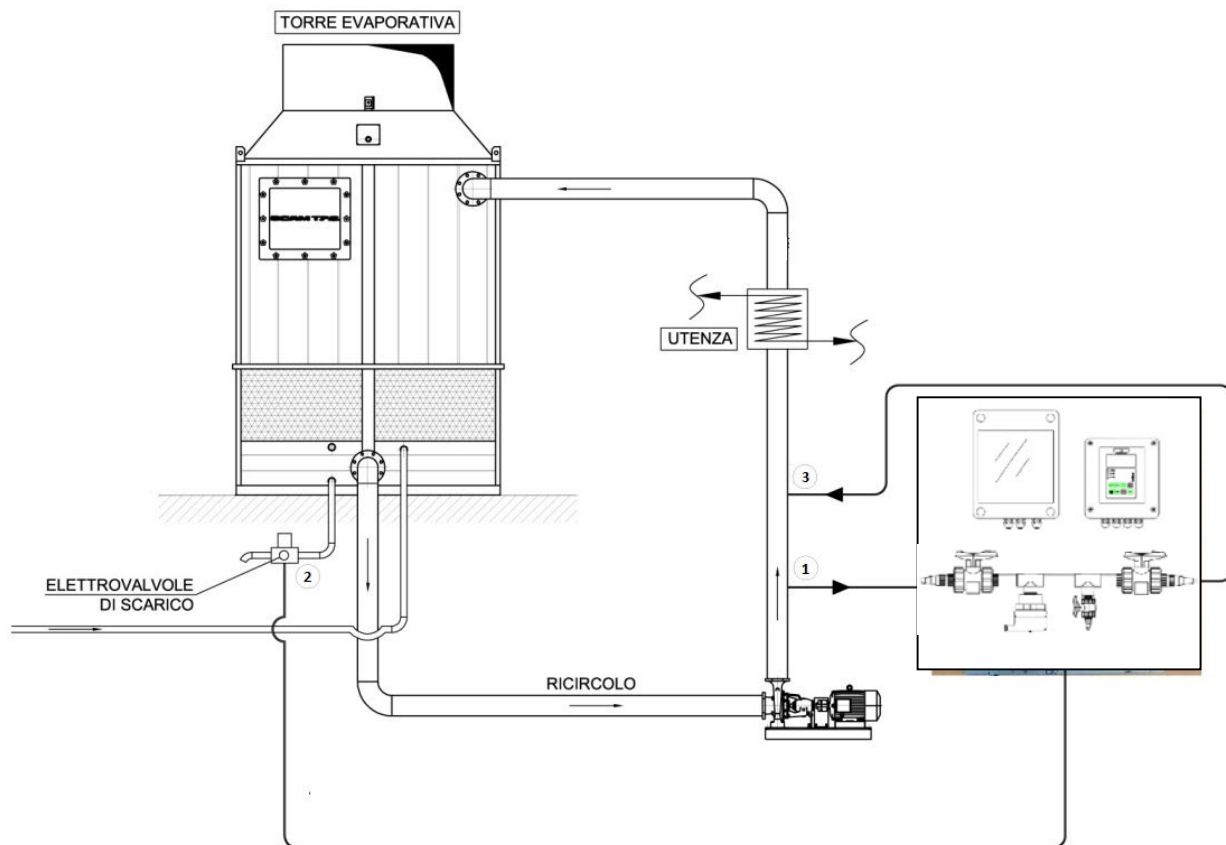


Figure 1 – Schematic representation of SWT-AP system.

### 3. SYSTEM COMPONENTS

In SWT-AP system, the measurement and control electronic instrument SCAM WATER CONTROL SCAM/WCNT, specifically designed to be applied on cooling towers, provides the conductivity measurement by means of a conductive probe through a 4÷20 mA signal, by which it automatically activates a purge solenoid. A back-illuminated matrix LCD indicator allows the visualization of the process signal value and the different parameters by means of three led indicating the system operating steps (on, off, error). The instrument operates through a conductivity electrode which integrates a temperature sensor (Pt100 sensor) for the temperature compensation. Among the main functions it is possible to set an alarm on the maximum opening time of the drain valve.



Table 1 - Technical characteristics of the SCAM WATER CONTROL device

**Conductivity entry**

Measuring range	0,0...500/2000/5000 $\mu\text{S}/\text{cm}$ 20 $\text{mS}/\text{cm}$
Cell constant	0,006...12 $\text{cm}^{-1}$
Accuracy	0,5% of the measuring range
Resolution	0,0625% of the measuring range

**Input / Output**

Current output	4,00...20,00 mA programmable and proportional to the cond.
Single relay output	contact 3A/250V for solenoid command

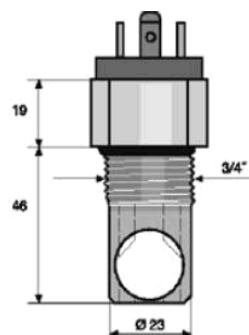
**Overall dimensions**

External dimensions	189x200x76H mm
Protection class	IP65 (for environments having an high humidity content)
Installation type	to a wall
Display type	Illuminated with key protected access
Power supply	230VAC / 50/60Hz

Table 2 - Technical characteristics of the conductivity probe

Measurement scale	0,1...20 $\text{mS}/\text{cm}$
Cell constant	1 $\text{cm}^{-1} \pm 5\%$
Temperature sensor	Pt100
Max. temperature	70°C
Max. pressure	16 bar (@ 50°C)
Electrodes / body materials	Steel 1.4571 / PP

For the plant proper functioning is provided a power-driven purge valve which has to be properly installed hydraulically on the plant by the client and electrically wired (already predisposed) to the electrical panel of SCAM/ SWT-AP system. The purge valve will be not equipped with electric connection cables, meanwhile the conductivity probe will be already pre-wired to our electric panel, that the client will have to electrically supply.



## 4. BATTERY LIMITS

The SCAM T.P.E. SRL supply limitations regarding SWT-AP @ AUTOMATIC PURGE system are the following:

- The flanges on the aspiration and supply pipe on the panel.
- The terminal glands on the control electrical cabinet.

## EXCLUSIONS FROM THE SUPPLY PURPOSE

- Structure of support to the panel and any civil work.
- Provision & installation of all the components on site.
- Wiring of electrical supply connections.
- Signal cables of the purge valve.

## 5. DOCUMENTATION

The documentation that will be furnished to the client, will include the use and maintenance manuals of the instruments and purge valve.

## 6. GUARANTEE

The contractual guarantee starts from the materials availability up to 24 months for all the electronic parts; up to 12 months for all hydraulic parts.

The guarantee doesn't cover damages due to force majeure, neither damages against third parties and/or suppliers.

The guarantee doesn't cover transport and onsite workforce costs.

*For a specific quote, please contact SCAM T.P.E. S.r.l. Commercial Department.*