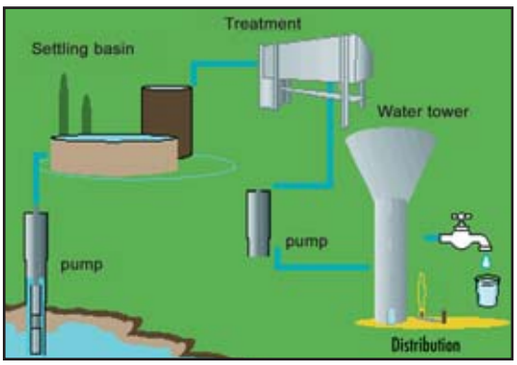
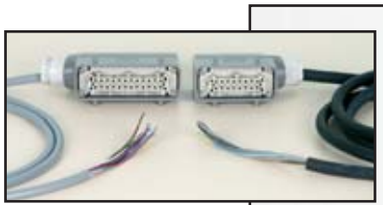
Drinking water distribution simulator

The water that comes out of our taps is drinkable and has travelled a long way. In some cases, it is pumped from rivers and then undergoes various treatment processes before it becomes fit for drinking. It flows into a settling basin, at the bottom of which the heaviest materials are deposited, then it is filtered through layers of sand and sterilised, in order to remove bacteria. This clean water is then transported by means of pipes and pumping before it is stored in a water tower. These provide consumers with a constant pressure. The CHATO system enables students to simulate this entire circuit, from the stage where water is pumped from rivers to the stage where it arrives in people's homes.



WITH SETTLING BASIN & WATER TOWER

ref. CHATO



Set of 2 3m-long cables supplied with CHATO and CHATO-ECO.

Rapid connection interface supplied with CHATO, to connect to the console

- 1 150-litre tank simulates a river.
- 1 motorised pump draws the water from the river and transports it to the settling basin
- 1 60-litre transparent tank simulates the settling basin.
- Fitted with 3 water-level sensors.
- 1 motorised pump draws the water from the settling basin and fills the water tower*
- 1 60-litre transparent tank simulates the water tower.
- Fitted with 3 water-level sensors.*
- 1 tap drains the water tower.*
- 1 valve drains the settling basin.*

WITH SETTLING BASIN ONLY

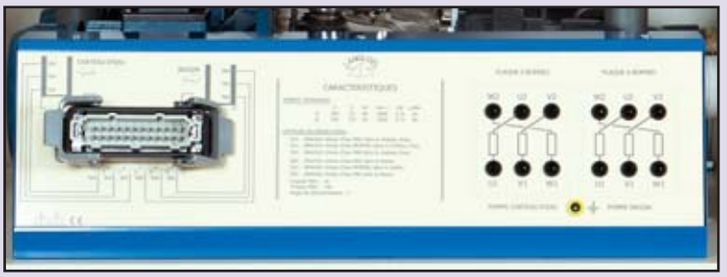
ref. CHATO-ECO

Rapid connection interface supplied with CHATO-ECO, to connect to the console

- 2 valves at the motorised pump output can be used to adjust the flowrate of the water.
- 2 emergency overflows (only 1 for the CHATO-ECO model)
- 1 mimic console for electrical connections
- 1 HARTING ® rapid connector (on the console) for sensor connections.
- 1 set of safety terminals (on the console) for connection to the motor(s) of the pump(s).
- This area can take a rapid connection interface if the user does not have any motor measurements to take.
- 1 set of 2 cables (3m), for rapid connection to your cabinet.
- A 750 x 1500mm base on wheels enables you to move the entire system

** ONLY WITH THE REFERENCE CHATO.*

TECHNICAL FEATURES OF THE CONSOLE & ITS INTERFACE

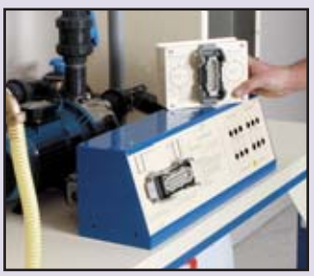


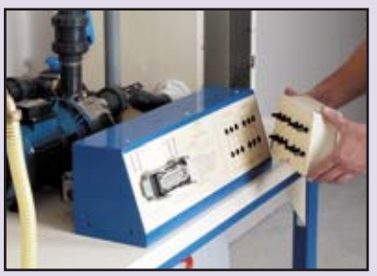
MIMIC CONSOLE SUPPLIED WITH CHATO & CHATO-ECO

- Very user-friendly console which offers rapid connections and a measuring function
- Left-hand section with rapid connections to water-level sensors
- Central section summarises the main features of the system
- Right-hand section with connection(s) to the motor(s).
- On safety terminals or through the rapid connection interface

RAPID CONNECTION INTERFACE SUPPLIED WITH CHATO & CHATO-ECO

This unit is plugged directly into the mimic console, transforming the safety terminals (diameter=4) into a HARTING ® industrial rapid connector





COMMON FEATURES OF ALL THE VERSIONS

PUMPS
- 230/400V three-phase motor
- Power: 750W
- Stainless-steel body and turbine

SINGLE-PHASE ON REQUEST

FLOW CONTROL VALVES
- 1 for settling tank pump
- 1 for water-tower pump

SENSORS
Dry-contact horizontal level sensors.
Max voltage 24V
Max current 1A

150L TANK
Simulates the river. PLastic tank with drain plug. Installed on a base so it can me moved with the system.

TAP
Simulates domestic water consumption. Connected by hoses to the tank that simulates the river

DRAIN VALVES
Used to drain the tank, e.g. to simulate reservoir maintenance.

Drinking water distribution simulator

WITH SETTLING BASIN & WATER TOWER ELECTRICAL CABINET & CONSOLE

- 1 150-litre tank simulates the river.
- 1 motorised pump draws the water from the river and transports it to the settling basin
- 1 60-litre transparent tank simulates the settling basin. Fitted with 3 water-level sensors.
- 1 motorised pump draws the water from the settling basin and fills the water tower.
- 1 60-litre transparent tank simulates the water tower. Fitted with 3 water-level sensors.
- 1 tap empties the water tower.
- 1 valve drains the settling basin.
- 2 valves at the motorised pump output can be used to adjust the flowrate of the water.
- 2 emergency overflows
- A 750 x 1500mm base on wheels enables you to move the entire system
- 1 test cabinet (see description opposite)
- 1 power console (see description opposite)
- HARTING ® rapid connectors on standby inside the cabinet for connecting the sensors, motors, the 400V, 24V and door.

ref. CHATO-4

WITH SETTLING BASIN ELECTRICAL CABINET & CONSOLE

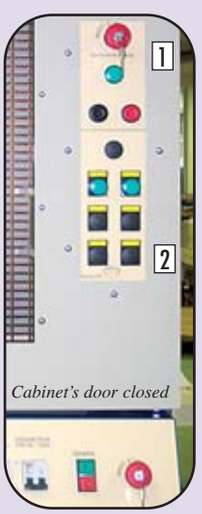
The same as the CHATO-4 model except that it only simulates the settling basin without water tower. Therefore, it is only fitted with one pump and one tank.

ref. CHATO-3

TECHNICAL FEATURES OF THE CABINET AND THE CONSOLE

FEATURES SHARED BY BOTH TEST CABINET MODELS
800 x 600 x 250mm steel cabinet

1. Plate on door with unwired control lamps and actuators.
2. Free spaces for the addition of DIAM 22 control accessories
3. Rapid connection and hanging of the grid (not exceeding 750 x 750mm).
4. Door safety contact
5. Fixed connectors on grid, to be wired by students
6. Rapid connection cabinet outlets



FEATURES SHARED BY BOTH SUPPLY CONSOLE MODELS
Console which makes testing safe, with control of the cabinet door's safety contact.

- A Circuit breaker, in front of the power source
- B General differential protection.
- C General emergency stop and Start/Stop
- D 2 circuit breakers for protecting the three-phase and 24V power supply

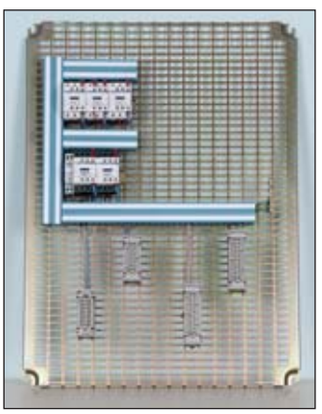
DOOR OVERRIDE OPTION
Key-operated door override switch. Allows the live cabinet to be used with the door open if the switch has been activated. Operates with a different key to the No.455.
Add GD to the end of the reference. Ex. CHATO-3-GD.

OPTION – GRID AND PLATE FOR PLCS

COMPATIBLE WITH CHATO & CHATO-4
Wired door plate and grill for system operation with a Twido PLC (Télémécanique ®). Supplied with programming and training software.

ref. CHATO-AUTO

OPTION – GRID AND PLATE FOR RELAY



COMPATIBLE WITH CHATO & CHATO-4
Wired door plate and grid for system operation with relay.

ref. CHATO-REL

OPTION – FAULT SIMULATOR UNIT

COMPATIBLE WITH CHATO & CHATO-4
Unit with concealed circuit breakers to simulate sensor faults. 6 circuit breakers linked to 6 sensors. Unit fixed onto the system's frame.

ref. CHATO-PAN

OPTION – FLOWMETER

The sensor (1) shows the flowrate of the water on the display unit when it leaves the pump (2). Students can observe a change in the flowrate, depending on the position that the valve has been set to.

ref. CHATO-DEBIT

OPTION – FLOW REGULATOR WITH FLAPPER VANE

Detects water flowing in the PVC pipe of the CHATO circuit.
An NO or NC contact at the sensor output sends information to a PLC.
Features
- Can be fitted in any position
- PVC connection Diam: 40mm to be stuck on
- Switchable, potential-free contact
- NO or NC 1A/230VAC/26VA
- Electrical connection via
- DIN connector

ref. CO-DEB

OPTION – FLOW INDICATOR WITH FLOAT

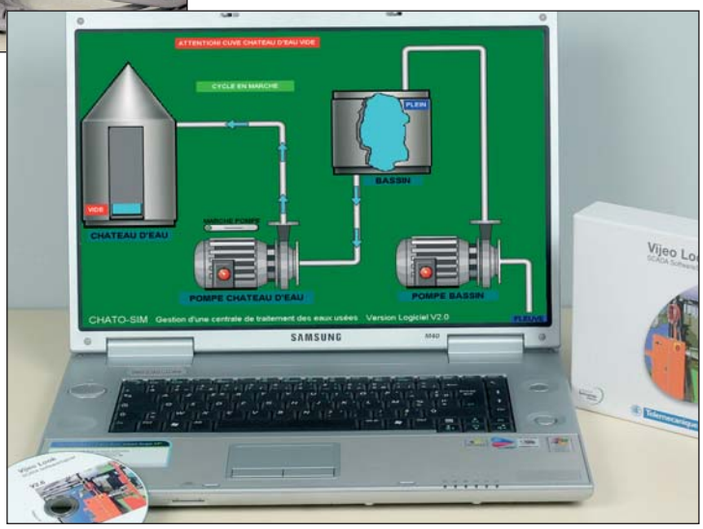
A moving float in a transparent tube indicates the pump's water flowrate in mcube/hour.
Features
- Upright fitting
- Measuring scale: 0.6 to 6 mcube/hour
- Ascending fluid
- Float and stop
- PVC connection Diam: 40mm to be stuck on

ref. FLO-DEB

TABLE COMPARING THE DIFFERENT MODELS

MAINS FEATURES	CHATO	CHATO-ECO	CHATO-3	CHATO-4
150l tank simulating the river	●	●	●	●
60l tank simulating the settling basin with water-level sensors	●	●	●	●
Motorised pump no. 1, drawing water from the river into the settling basin	●	●	●	●
Valve for adjusting the flowrate of the water at the output of pump no.1	●	●	●	●
60l tank simulating the water tower with water-level sensors	●			●
Motorised pump no. 2 drawing water from the settling basin into the water tower	●			●
Valve for adjusting the flowrate of the water at the output of pump no°2	●			●
Valve for draining the settling basin	●	●	●	●
Tap for draining the water tower	●			●
Emergency overflows	●	●	●	●
Mimic console for 1 motorised pump		●		
Mimic console for 2 motorised pumps	●			
Rapid connection interface for 1 motorised pump		●		
Rapid connection interface for 2 motorised pumps	●			
Set of 2 cables (3 metres) for rapid connection to your cabinet.	●	●		
Test cabinet with control lamps and actuators.			●	●
Power console (circuit breaker/differential protection/ARU/2 protection circuit breakers)			●	●

Pumping station



ref. CHATO-SIM
THESE DIFFERENT EQUIPMENTS CAN BE SOLD SEPARATELY

This model simulates a drinking water pumping station. Using a TCP/IP PLC and monitoring software, it is possible to control the model and view its operation on a computer.

OPERATING PART
- 3 push-buttons for On / Cycle Start / Cycle Stop
- 6 switches representing the water level sensors.
- 4 lamps representing the operation of the two pumps.

PLC
- with 7 relay outputs and 9 inputs, supplied with
- a TCP/IP interface for the Ethernet connection
- a 1.5m M/F DB25 cable for interconnection with the model.
- programming software in English/French in ladder language.
- Dimensions: 170 x 130 x 130 mm. 220-240V AC

MONITORING
- Multilingual software for controlling the lights using a PC
- Offers the basic features of a graphical tool
- acquisition and display of PLC variables
- monitoring and control of the station' operation (start-up and shutdown of the pumps and maintenance operations, etc.).)
- The software's graphics editor supports many applications.

The user can modify the preloaded demo program or create a new one

FEATURES OF THE ASSEMBLY
- Dimensions: 330 x 200 x 80mm
- The assembly is supplied already wired with a monitoring example and all mains leads necessary for proper operation