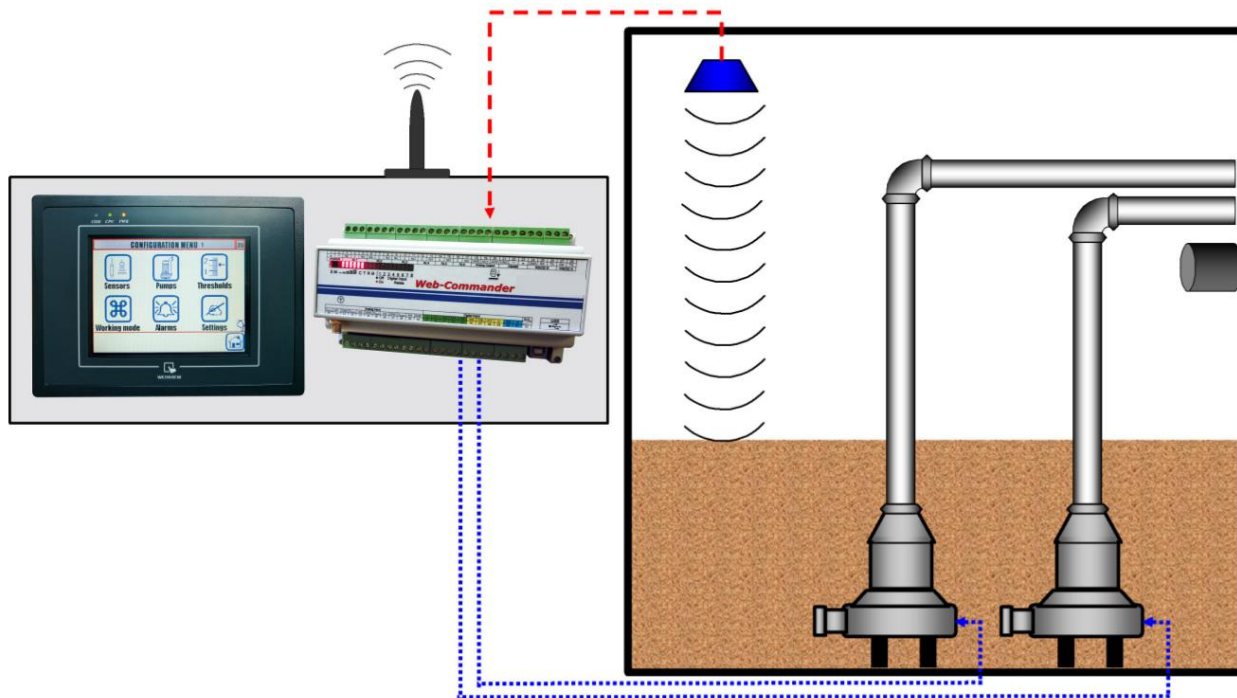# WebCommander

Web-Commander

Advanced pump station management

General description

Automatic command and monitoring system for pump water station, with GSM/GPRS transmission

- Integrated control system with all typical features of the water lifting stations
- Simple and intuitive user interface
- Advanced control for pump station up to 6 pumps
- Continuous level sensor and/or floating management
- Selectable automatic clever pumps rotation
- Faulty pump start management
- Use pumps information: n° start and daily and total hours of working, pumps consumption
- Special functions for the management of "full" event, periodic cleaning, well deposit
- Display on specific page the last 100 on/off/alarm pumps events with date – hour – level
- Datalogging: analog measurements and events up to 30.000 samples
- Optional datalogging in USB pen memory
- Expandable system up to 64 DI and 32 AI
- Compatible with ModBus protocol
- Remotely system monitorino via WEB portal, PlantManager software or SCADA

Fig.1- Start page

Operating system

WebCommander is designed to used from 3 different types of users:
ADMINISTRATOR: enabled to any feature
ADVANCED USER: enabled to manually drive the pumps and reset the work counters
BASE USER: can only see the system status

Thanks to its large display it is possible to see in the synopsis page, the operating status of the pumping station, particularly the pumps status, the level and thresholds. The easy and intuitive use make it an ideal instrument even for inexperienced employee.

Fig.2 – Main menù

WebCommander programming is possible on the field and is showed in very few pages on the display where the user can set the pumps number and their operation modes, the start/stop values of each pump, the start and stop delays and any level of alarm.

The programming of users, SMS/e-mail alarm messages, data-logging setting and everything related to remote control functions is made by using the included development toolkit. Programming can be done locally via serial connection or remotely using a modem.

The system includes a simulation function, so the operator can verify the correct operation of the station.

The manual function, allows the operator to drive manually each pumps. It is also possible to make a reverse rotation.
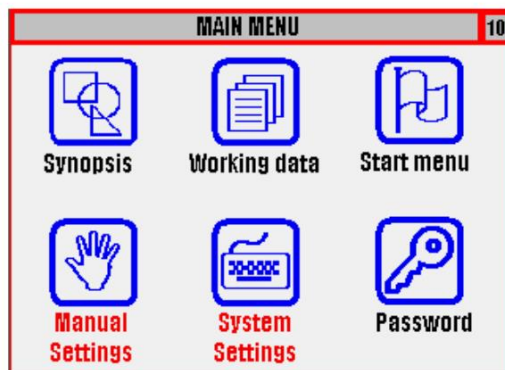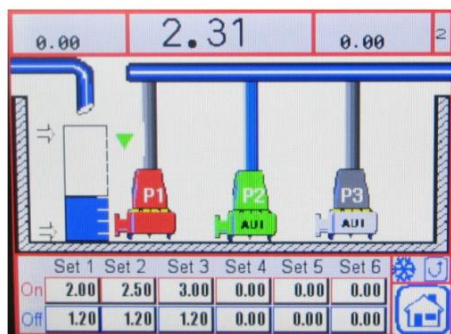

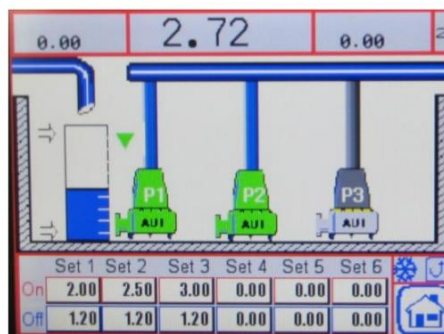*Fig.4 – Pumps synoptic with alarm pump*

Fig.3 – Synoptic pumps

Alarm management

The occurrence of an alarm, such as the thermal protection of the pump, is reported on the synoptic drawing the pump in red.
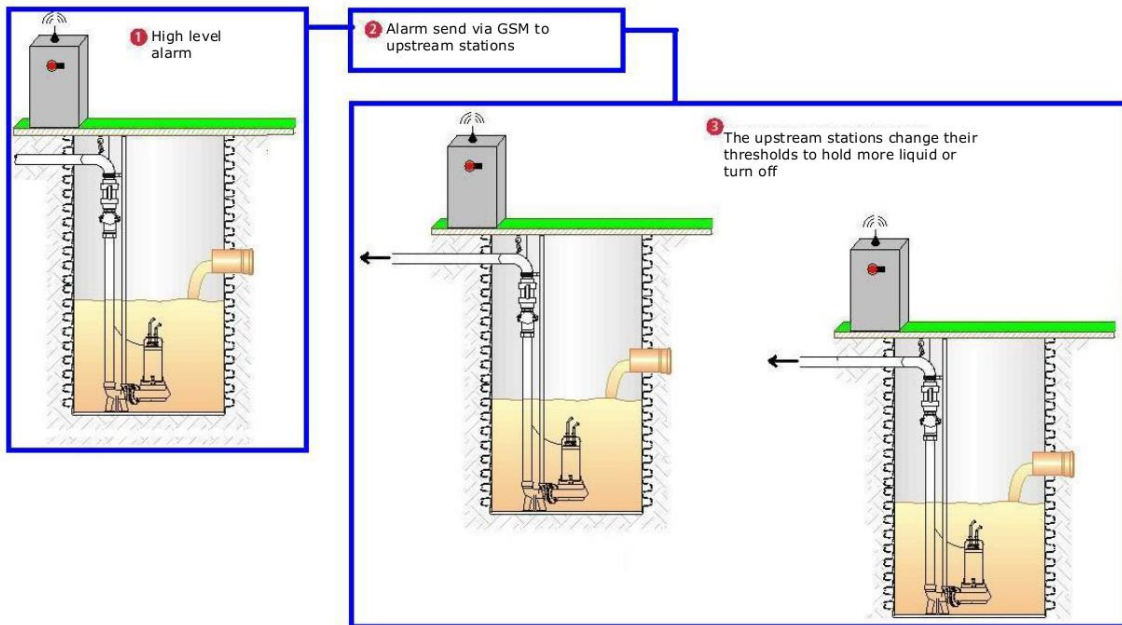WebCommander can also send event notification via SMS or e-mail up to 32 users.
The event is recorded in the internal datalogger and can be seen by the display page dedicated to recording the last 100 events.

Advanced functions

WebCommander includes a configurable number of advanced features to ensure a quick setup in any type of lifting station.
Some of these functions are:

- Sensor level redundant management for a security operation
- Clean well configurable by selecting the level or the work time or both parameters
- On/Off delay time to avoid electrical overload or water hammer
- Advanced functions for alternate starts based on operating hours or on number of start
- **Spill** function which can command upstream pumping stations and avoid brushing in sensitive areas
- Group pumps management
- Winter and summer setting for a change of operative mode depending on the seasonality
- Engines protection and calculation of pumps consumption and efficiency
- Inverter adjustment
- Flood event management

1 High level alarm

2 Alarm send via GSM to upstream stations

3 The upstream stations change their thresholds to hold more liquid or turn off

Fig.5 – Schematic example of a cascade lifting chain operated by tele-commands

Communication Protocol

WebCommander supports ModBus Protocol, allowing any SCADA software or other peripherals supporting this protocol to get working data
WebCommander comes with a remote monitoring software called PlantManager that lets you:

- Monitor and program the station
- Receive alarm messages
- Download historical data, events and show the trend

Specifications

CPU
- 16 bits CPU

- 4MBytes Flash ROM

- 512 KBytes RAM

- 128 kBytes EEPROM expandable to 256kBytes

- Internal buffered RTC
- N. 1 RS232 serial port (config./ModBus)
- N. 1 USB port
- N. 1 RS485 serial port (ModBus)

I/O
- I/O LEDs indicator

- 8 optoisolated digital inputs (0÷24V)
- 6 relè outputs
- 4 factory configurable analog inputs
  (0÷5V, 0÷10V, 4÷20mA HART, PTC/NTC)

- 2 analog outputs 0÷5V
- optional ethernet interface on board
  10/100Mbit

MECHANICAL
- Plastic IP21 case for DIN bar
- Dimensions: 157 x 86 x 58 mm

- SMA antenna connector

POWER AND CONSUMPTION
- Power 9-32VDC/12-24VAC
- Average consumption at 24V: 85mA, 140mA during transmission

DATALOGGER
- 14336 samples measure
- 30720 samples measure with memory expansion
- Interval sampling resolution from 1 minute to
  65535 minutes
- Possibility to select which analog signals must
  be stored
- Memory circular buffer to don't delete the
  already downloaded data
- Log of digital input only if changes the state
- Automatic data sending to WEB portal

- Remote data download by modem using
  PlantManager software

MODEM
- QuadBand GSM modem, 900/1800 and 850/1900
  Mhz

- SMS, CSD, HCSD e GPRS
- Compatible with AT standard 07.07 e 07.05
  commands
- Full Type Approved for phase 2+
- Voice, SMS, data and fax
- Internal SIM case

ENVIRONMENTAL
- Operating temperature: -15°C ÷ +55°C
- Relative humidity: from 0 to 80% without
  condensate
- Compatible with AT standard 07.07 commands

Accessories

- Digital and analog expansions connectible to
  RS485 bus
- High gain signal directional antennas

- USB interface for data storage in pen memory

- Power device

- Signal conditioner for probes and sensors
  (PT100, PT1000, NTC)