Scale Guard
The Complete Cooling Solution

Intelligent Pump Control Panels

Complete pump control

www.scaleguard.co.in controls@scaleguard.co.in +91 77380 92380

Features & Benefits

- Graphical LCD display for ease of understanding pump operating status & changing parameters
- Automatic pump operation based on Float sensor feedback / Manual operation
- A single control panel can control up to 2 pumps and alternate them in a 1 working / 1 standby setup
- All essential pump & motor protections are built into the control panel
- The control panel stores fault information which helps in preventive maintenance for repetitive faults
- RF Sensors for wireless float sensor operation (for High rise buildings)
- Pressure switch based operation
- RS485 RTU Modbus communication for interfacing control panel to PC in order to monitor or control pumps from a remote location
- GSM Modem for remote control of pump operation at inaccessible locations

Display & Monitoring

- Display of pump running status
- Continuous display of all three phases of voltage & current
- Display of water level in underground and overhead tank
- Pressure level status: High/low
- Display of last 20 faults
- Display of last pump run time display
- Display of cumulative pump run time
- Selection of Auto/Manual mode
- Display of power parameters: kVA/kVAH, kW/KWH, Hz / PF

Float switch

RF Sensor for Wireless Float switch installation

Sequence of operation

- A float switch is installed each in the Underground as well as the overhead tank of the plumbing system (Domestic / Flushing)
- When the water level in the overhead tank falls below a preset level, the Acuatron Intelligent Pump Controller (referred to here forth as the Controller) first checks the water level in the underground tank
- If there is adequate water in the underground tank, the Controller activates the first pump and when the overhead tank is full, the Controller stops the pump
- If the underground tank empties before the overhead tank is full, the Controller stops the pump and prevents it from running dry
- The Controller automatically alternates the main pump at the start of every duty cycle, thus ensuring proper operation of each pump over a prolonged period of time

Applications

Agriculture | Residential Buildings | Commercial Buildings | Industrial Plants | Irrigation

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PRODUCT COMPARISON

ACUATRON INTELLIGENT PUMP CONTROL PANELS

V/S ORDINARY PUMP CONTROL PANELS

CONSTRUCTION:		
STURDY, POWDER COATED STEEL ENCLOSURE	YES	NO
START/STOP SWITCH	SOFT TOUCH	PUSH BUTTON
COMPUTER CONNECTIVITY	YES	NO
OPERATION:		
AUTO/MANUAL OPERATION	YES	NO
PUMP OPERATION BASED ON TIME/LEVEL/PRESSURE	YES	NO
DISPLAY OF INFORMATION:		
LCD DISPLAY—WHITE	YES	NO
3 PHASE VOLTMETER	YES	NO
3 PHASE AMMETER	YES	NO
POWER METER	YES	NO
LAST RUN TIME DISPLAY	YES	NO
CUMMULATIVE RUN TIME DISPLAY	YES	NO
FAULT/ALARM MESSAGES IN WORDS	YES	NO
FAULT HISTORY—LAST 20 FAULTS	YES	NO
GRAPHICAL DISPLAY OF WATER LEVEL IN UGT & OHT	YES	NO
GRAPHICAL REPRESENTATION OF PUMP OPERATION	YES	NO
MOTOR PROTECTIONS:		
OVER/UNDER VOLTAGE PROTECTION	YES	NO
OVER/UNDER CURRENT PROTECTION (OVERLOAD PROTECTION)	ELECTRONIC	BIMETALLIC
DRYRUN PROTECTION	SENSORLESS	WITH SENSOR
PUMP STALLED PROTECTION	YES	NO
EARTH FAULT PROTECTION	YES	NO
LOW POWER FACTOR PROTECTION	YES	NO

TECHNICAL SPECIFICATIONS

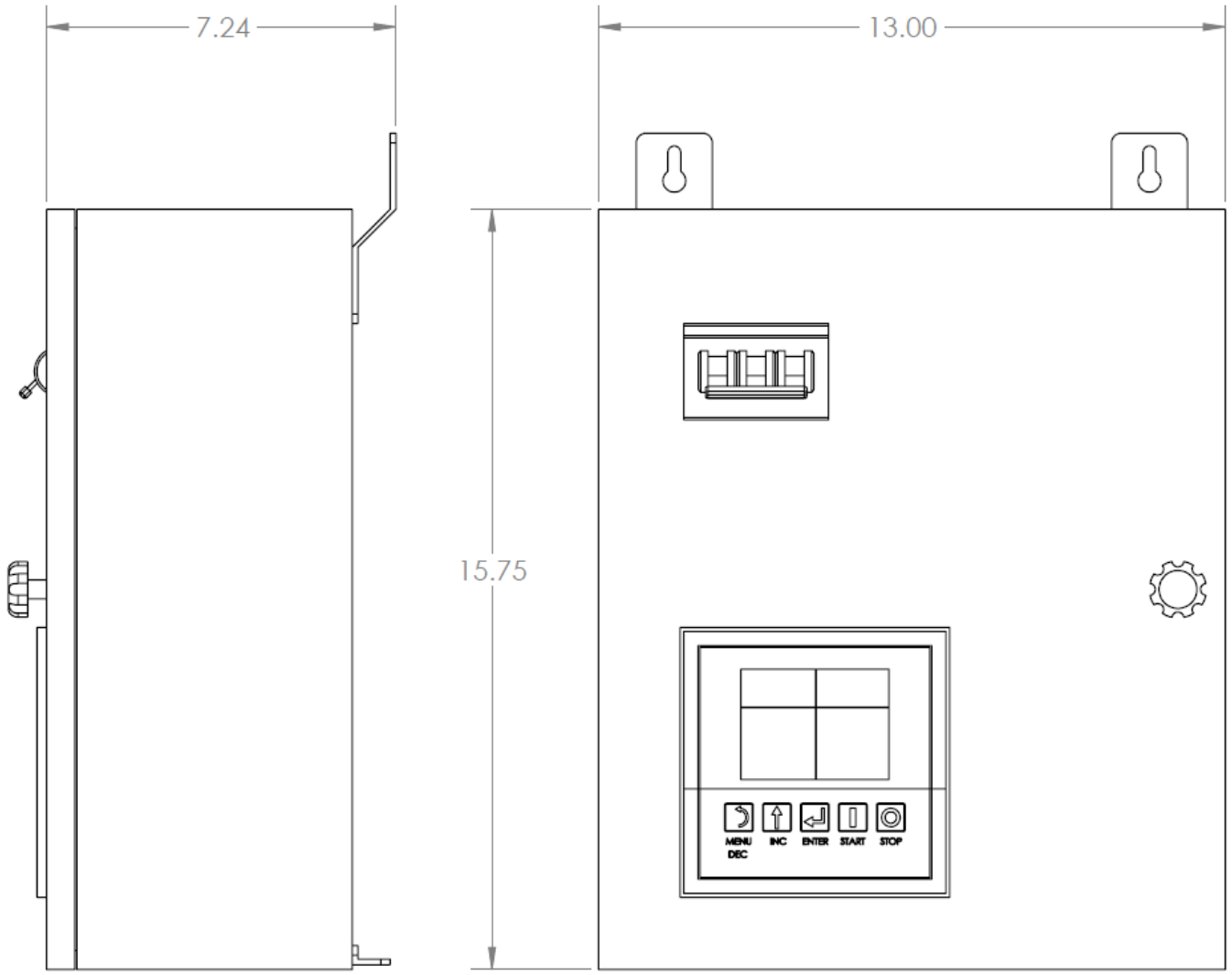
Intelligent Pump Controller:

- Acuatron intelligent pump controller shall operate in conjunction with a Direct Online or Star Delta motor starter to control the operation of pump(s) using a water level controller and float switches
- Acuatron intelligent pump controller shall provide all essential motor protections needed to protect the pump and motor against harmful hydraulic & electrical conditions
- Acuatron intelligent pump controller shall be capable of operating in Automatic and Manual mode
- Acuatron intelligent pump controller shall support the MODBUS communications protocol to monitor / control system operation from a remote location
- Acuatron intelligent pump controller shall be pre-programmed at the factory to facilitate easy installation and commissioning
- Acuatron intelligent pump controller shall alternate the main and standby pump to ensure even wear & tear
- Acuatron intelligent pump controller shall incorporate a graphical LCD display to show:
  - Operating state of each pump
  - Water level indication of the underground as well as the overhead tank
  - Real time display of all three phase voltages and currents
  - Power parameters: KVA / KVAH, KW / KWH, Hz / PF
  - Last 20 electrical or pump faults
  - Pressure level status (High / Low) (In case of operation using pressure switch)
  - Total pump run time
  - Pump run time for last duty cycle
  - Selection of Auto / Manual mode

Pump & Motor Protection Features:

- Acuatron intelligent pump controller shall provide dry run protection to the pump without the use of a probe or sensor
- Acuatron intelligent pump controller shall retain and display the last 20 faults that caused it to trip
- Acuatron intelligent pump controller shall provide Over-current (Overload) protection
- Acuatron intelligent pump controller shall provide Over/Under voltage protection
- Acuatron intelligent pump controller shall provide phase reversal, phase loss and phase unbalance protection
- Acuatron intelligent pump controller shall provide protection against pump stalling and short circuit
- Acuatron intelligent pump controller shall provide protection against earth fault
- Acuatron intelligent pump controller shall protect the pump and motor in an environment with excess moisture
- Acuatron intelligent pump controller shall protect the motor by tripping on overheat
- Acuatron intelligent pump controller shall protect the motor in case of Low PF

DIMENSIONS



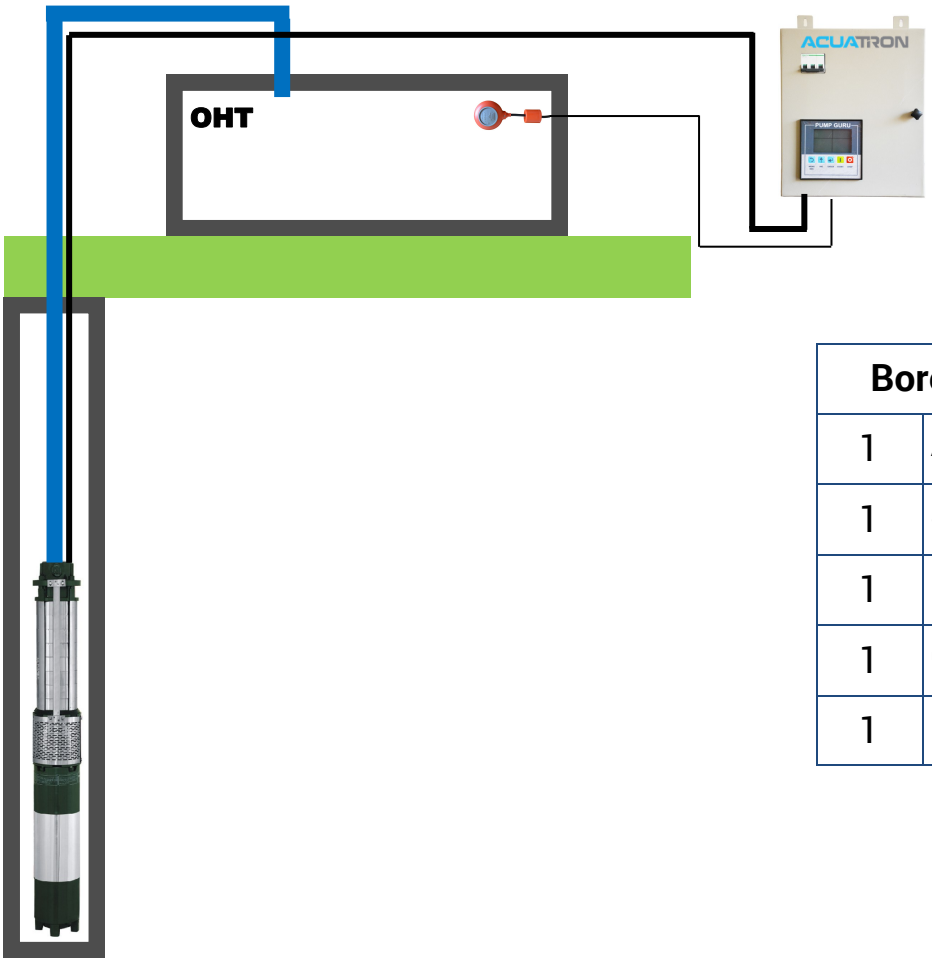
Note: *Dimensions above are only for Single Pump Control Panel configuration.*

Dimensions for 1 Working + 1 Standby and all other Pump Control Panel configuration shall be different.

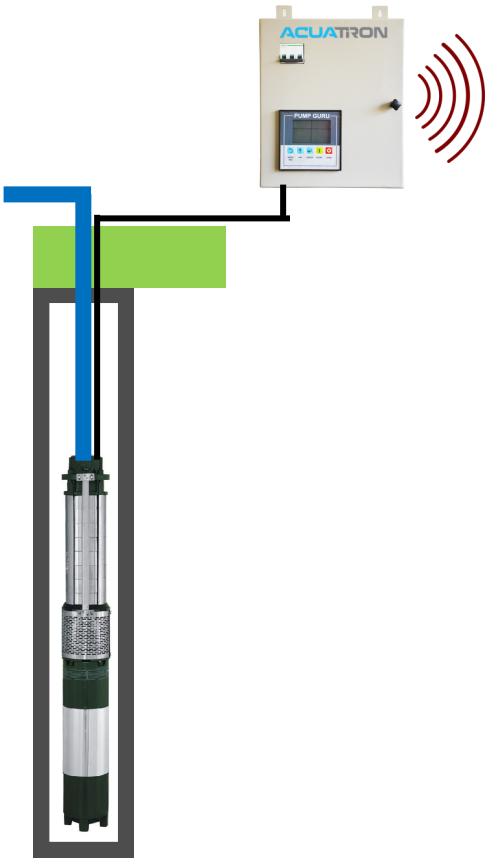
ACUATRON			**Project:**
	NAME	DATE	DIMENSIONS FOR METAL ENCLOSURE
DRAWN	VBR	7/2/15	
CHECKED			
SIZE A	DWG. NO. 7215A		REV.
SCALE:1:5			SHEET 1 OF 1

DIMENSIONS ARE SUBJECT TO CHANGE
DO NOT USE FOR CONSTRUCTION
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

CONFIGURATIONS

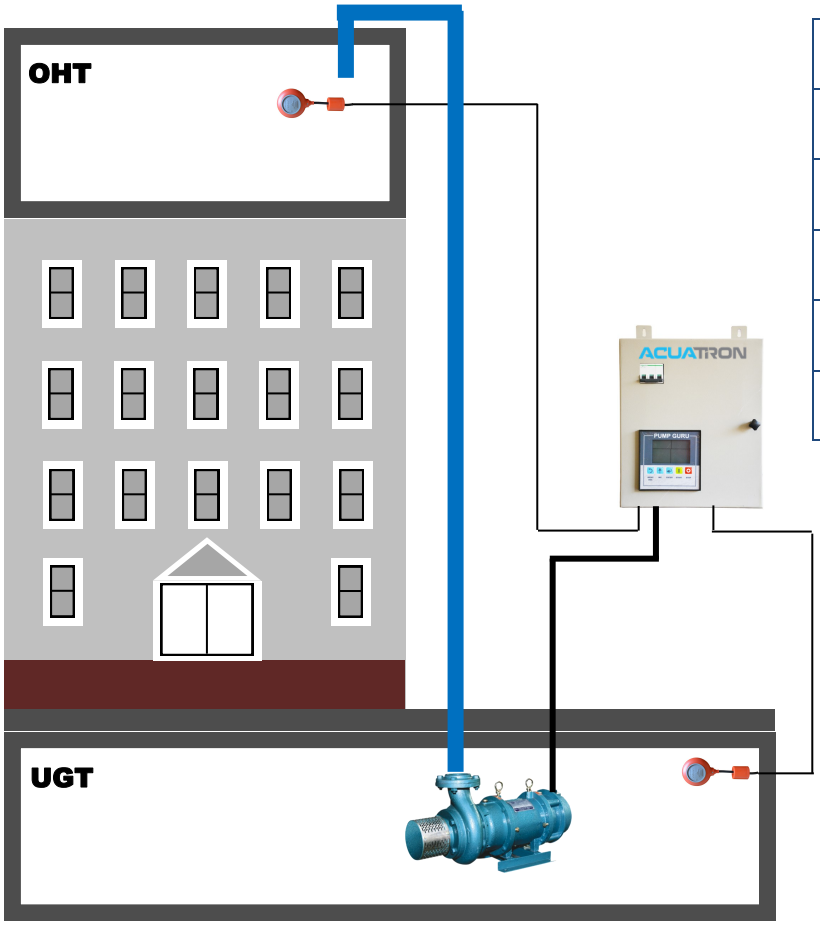


Borewell Pump—Single OHT	
1	Acuatron Pump Control Panel
1	Submersible Borewell Pump
1	Bore well
1	Overhead Tanks (OHT)
1	Float Switch

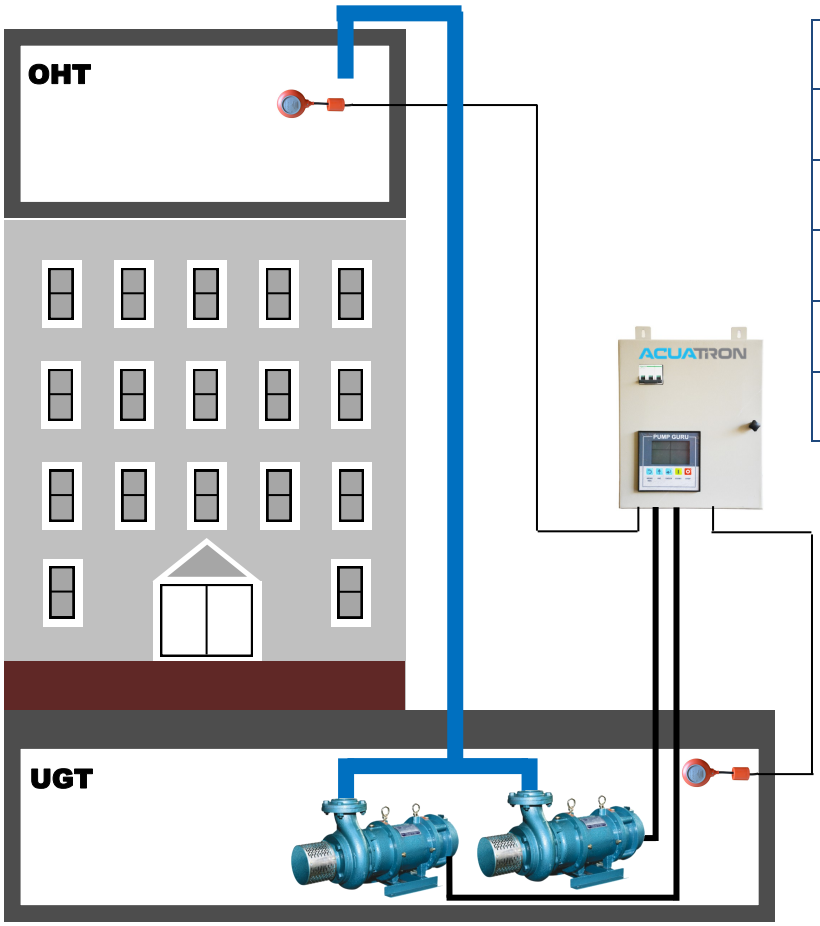


Borewell Pump—Remote Control	
1	Acuatron Pump Control Panel with built in GSM Modem for remotely controlling pump
1	Submersible Borewell Pump
1	Bore well
1	GSM Phone

CONFIGURATIONS

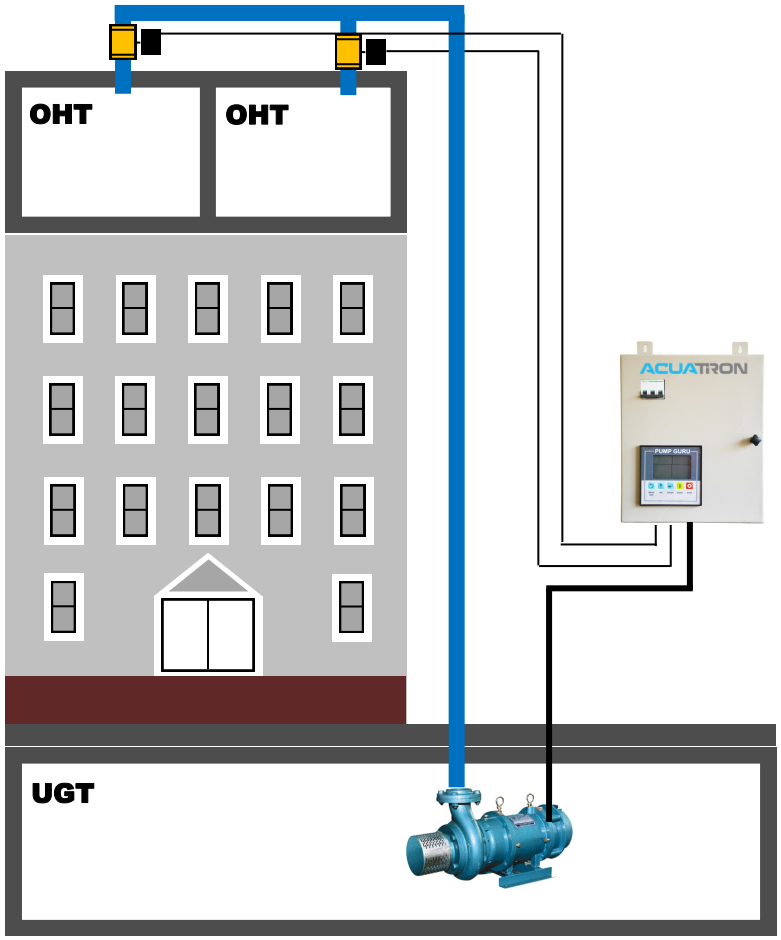


Single Pump—Single OHT	
1	Acuatron Pump Control Panel
1	Pump
1	Underground Tank (UGT)
1	Overhead Tank (OHT)
2	Float Switches

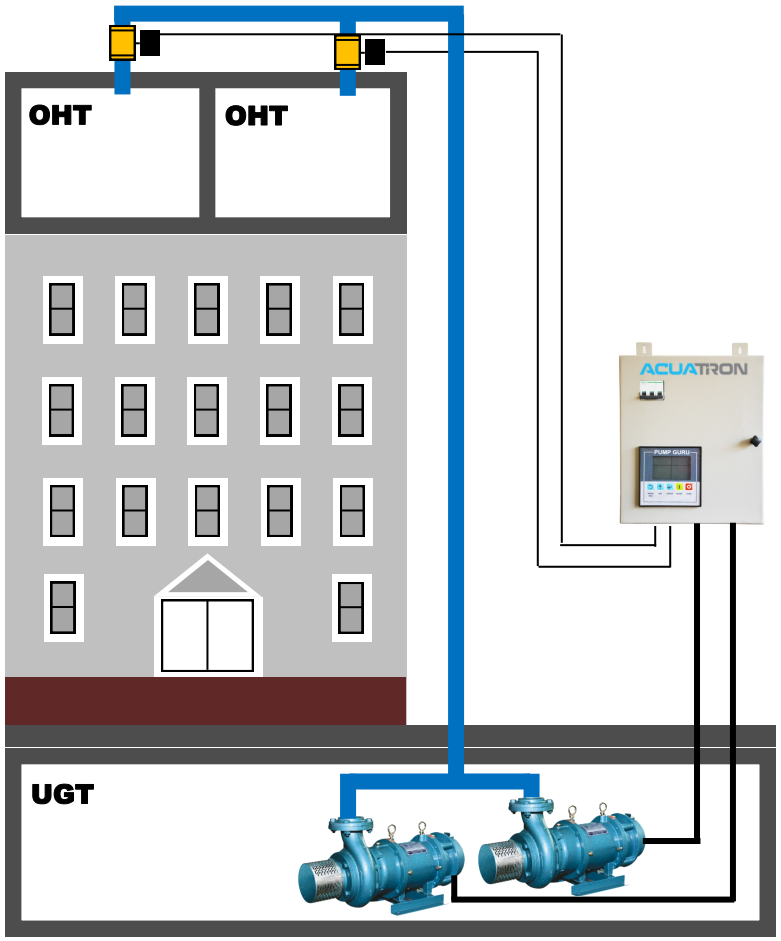


Two Pumps—Single OHT	
1	Acuatron Pump Control Panel
2	Pumps
1	Underground Tank (UGT)
1	Overhead Tank (OHT)
2	Float Switches

CONFIGURATIONS



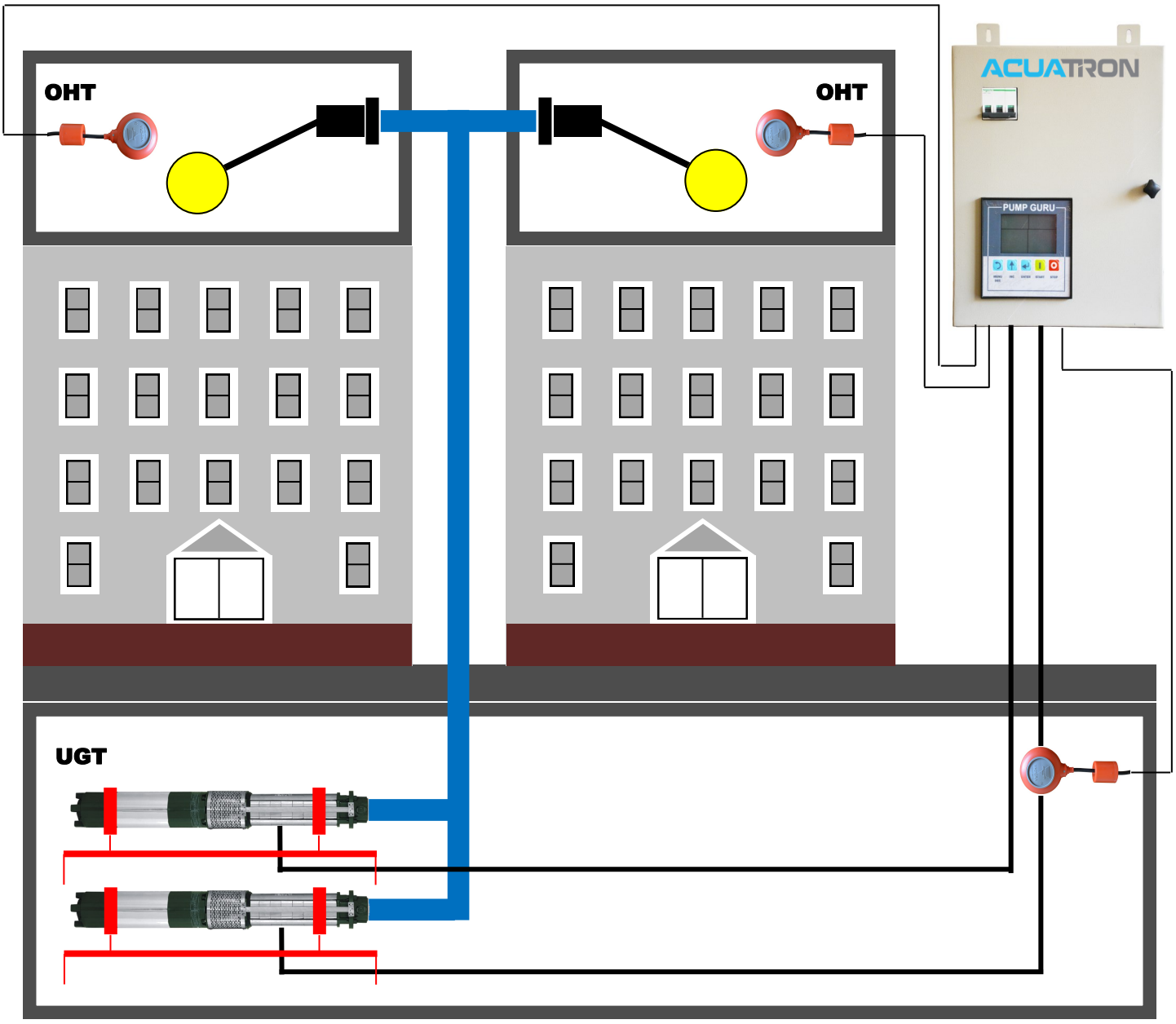
Single Pump—Two OHTs	
1	Acuatron Pump Control Panel
1	Pump
1	Underground Tank (UGT)
2	Overhead Tanks (OHT)
2	Solenoid Valves



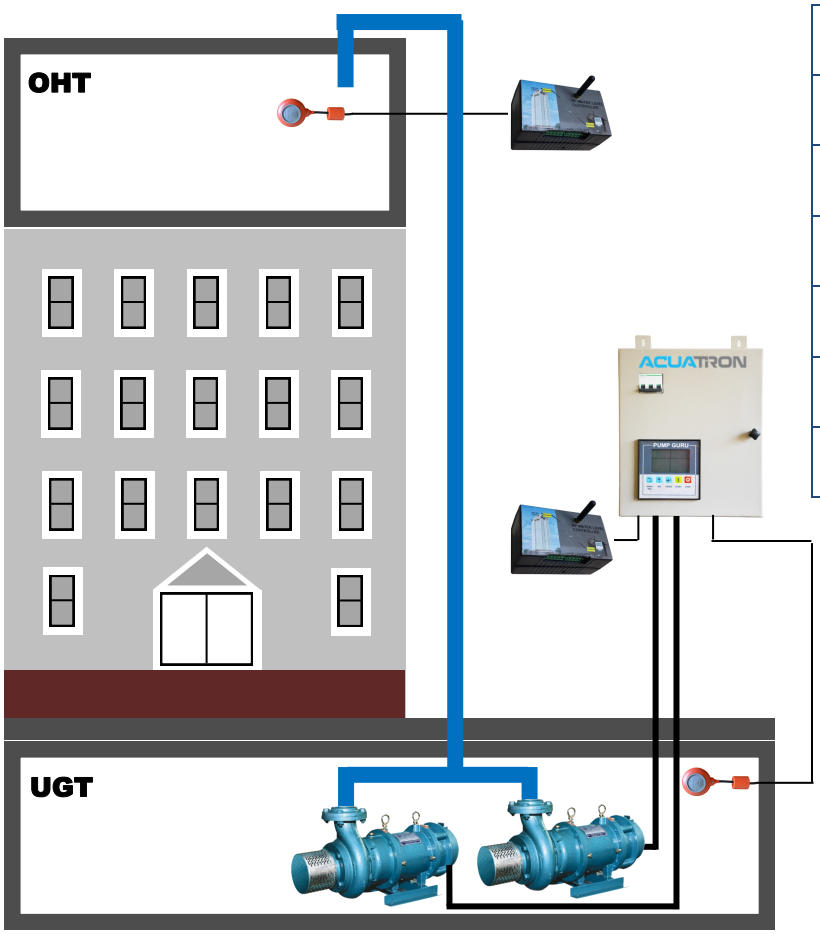
Two Pumps—Two OHTs	
1	Acuatron Pump Control Panel
2	Pumps
1	Underground Tank (UGT)
2	Overhead Tanks (OHT)
2	Solenoid Valves

CONFIGURATIONS

Two Pumps—Two OHTs—Two Float Valves	
1	Acuatron Pump Control Panel
2	Pumps
1	Underground Tank (UGT)
2	Overhead Tanks (OHT)
2	Float Switches
2	Float valves



CONFIGURATIONS



Two Pumps—Single OHT—RF	
1	Acuatron Pump Control Panel
2	Pumps
1	Underground Tank (UGT)
1	Overhead Tank (OHT)
2	Float Switches
2	RF Sensors

Acuatron RF sensors are designed to wirelessly communicate water level data from top of a high rise building to the bottom. When using Float switches for water level pump control, the cable for the Float switch in the Overhead tank in a high rise building is often very long. A RF sensor is installed on the ground floor near the Acuatron Pump Control Panel and another is wired to the Float switch in the overhead tank. *Opuf ; SG t f ot pspo upq pgcvjnajoh sfr vjsf t joef qf oef ouqpx f st pvsdf up pqf sbuf /*

Features & Benefits:

- Eliminate the need for cabling from underground tank to overhead tank
- Long range of operation: Up to 300 Meters (Line of Sight)
- Rigorously tested design
- Wireless water level indication
- Ease to install & commission the system

Note: RF sensor on top of building requires independent power source to operate.

CONFIGURATIONS