**COLD WATER BOOSTER SET (DUTYPOINT SYSTEMS)**

Supply and install in the position shown on the drawings [1]No WRAS approved ‘VR’ booster set[s] by

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[Quote ref. number: ]

Water shall be boosted to provide a minimum of XXX litres per second at XXX bar pressure [at the top floor outlets]. The booster set is to be configured on a [Duty/Assist…../Standy] basis.

The unit will incorporate the following:

WRAS Approved variable speed pump(s) controlled via intelligent variable speed drive control per pump.

Pressure sensing transducers per inverter/pump

Integral HIRISE control

Duty pump changeover timer

Hours run recorder

Pressure set point adjustment

Volt free contact alarm signal for BMS connection

Duty and standby Stainless steel diaphragm accumulator vessel having taint-free butyl diaphragm, pressurized air charge, Schrader valve, isolating valve, drain valve and connection onto system discharge manifold, to allow for the system to go to sleep on no demand.

Stacked stainless steel suction and discharge manifolds

Individual isolators for each pump – both mechanical and electrical

Anti-vibration mounts

Pumps to be vertical multistage free standing centrifugal pumps having cast iron/stainless steel case sections, stainless steel impellers, stainless steel shaft, water lubricated rubber bearings, neck rings and tungsten carbide faced mechanical seal. Inverter HIRISE soft start control, starting frequency limited by inverters.

Integral pre-wired single section multi-motor control panel in a sheet steel dust and damp protecting enclosure, with front access, necessary labels and numbered terminals.

The inverters are to be designed to control the pumps on a duty/standby basis, monitoring the system pressure via transducers (one per pump/inverter) mounted on the pipeline. The inverters have inbuilt PID control allowing a set point pressure to be maintained by speeding the pumps up when the pressure falls below the set point and slowing them down when the pressure rises above the set point. During periods of inactivity, the inverter senses the stagnant pressure and reduces the speed of the pump and after a time delay puts the pumps into sleep mode, waking up when the demand picks up and returning to PID control.

Controls to provide duty pump rotation, pump activation (spin up) every 24 hrs, Local hand/off operation facility. Duty and standby pressure transducers with auto switch over, soft pressure start, and fault/alarm data storage.

Incorporated in the control panel are the following:

Door interlocked isolator

Single/Three Phase MCBs for the Pump supplies

Single Pole MCB for the controls supply

System Common Fail Indication via volt free contacts and fascia-mounted lamp

Pump Isolator switches

Assembly to include stainless steel manifolds on both suction and discharge, handed as required. Provide flexible couplings and all connections to and from pump set. Complete with anti-vibration mountings. Pressure rated to suit elevated pressures. Each pump has separate isolation and non-return valves. A further isolation valve to be installed on the manifold inlet and outlet with pressure gauge to be installed on the discharge manifold. Comobined isolation/drain valves to be fitted to each pressure vessel to allow removal/replacement and draining without shutting down the pump set.

The pumps, valves and manifolds together with the control panel and pressure vessel(s) will be fully assembled on a common base frame with all interconnecting wiring between electrical components carried out by the manufacturer.

The unit shall be commissioned by the manufacturer and covered by the Dutypoint Titanium Warranty and breakdown cover. The commissioning report is to be included in the maintenance manual.