

D6000 Series **Pump Controller**

Combines sophisticated level and pump control with full telemetry and pump status monitoring to provide all the data needed to reduce pump and process downtime. Dial-out to radio pager (or host) allows efficient alarm reporting and rapid maintenance response.



BENEFITS

- 3-in-1 combination of pump/level control with full telemetry and pump monitoring minimises installation costs.
- Designed to help manage planned maintenance and prolong asset life.
- Can prevent costly pump failure and critical and expensive process downtime.
- Automatic run-down to reduce sludging.
- Automatic start level variation to reduce "fat ring" build up.
- Simple to program via user-friendly menus or remote Programming Terminal.
- Small footprint minimises kiosk or panel space requirement.

dynamic logic 

16 character x 2 line backlit LCD

Text displayed and dialled-out is configurable so that alarm messages are meaningful and user-friendly.

LCD ON/OFF turns backlight on during mains failure. Auto-off conserves battery power.

The **DISPLAY** key returns the unit to scroll mode-showing all configured sensors and parameters. Any parameter may be held on the display to aid calibration and commissioning.

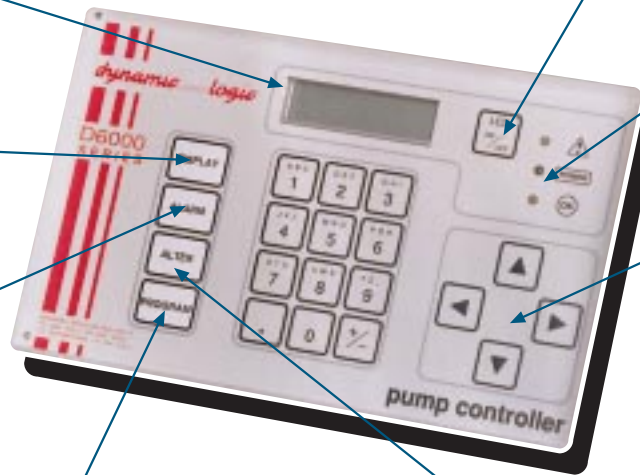
LEDs indicate: presence of alarms; Status of mains and battery power; Unit health (watchdog).

Programming is made simple by user-friendly menus. Cursor keys allow rapid stepping to required data. Options are entered by yes/no or "highlighted bar" choices. There is no need to remember complex codes.

ALARM key displays only those sensors in alarm and also accesses an historical alarm log.

PROGRAM key gives password-protected access to configuration data.

ALTER key allows rapid access to modify site parameters such as levels.



User friendly and easy to configure



Local alarm reporting via display

Customer configured text simplifies alarm message analysis. For example "12:47 Bracknell P/S Pump 1 failed"



Historical log of last 20 alarms to speed fault finding

Modem dial-out to rota of up to 5 numbers



Host

Local or remote connection to Programming Terminal for configuration, interrogation and retrieval of logged data



Sensor-directed dialling allows alarms to be sent to specific telephone numbers to maximise engineer call-out efficiency

Alarm flexibility makes the unit suitable for :

- a stand-alone pump controller and monitor.
- a system using radio pagers to alert engineers to alarms without the need for a host.
- integration into a host-based telemetry system.

D6000 Series Pump Controller

Level Control

The basic function of the pump controller is to control the liquid level within a vessel by operating one or more pumps according to pre-defined start and stop levels.

- Individual start levels for each pump.
- Current level can be displayed.

Level Sensor

The Pump Controller can be supplied with an ultrasonic sensor or hydrostatic pressure sensor for level measurement, or be fed from an existing sensor (4-20mA, 1-5V).

Ultrasonic level sensor.

- Non-contact, maintenance free monitoring.
- 4-20mA output from mains or dc supply.
- Accuracy 0.25% f.s.
- Range up to 20m
- Echo loss output for alarming.
- CENELEC/BASEEFA approval available.

Pressure level sensor. Sensor specification:

- 4-20mA or 1-5V output from dc supply.
- Accuracy 0.25%f.s.
- BASEEFA/IS approval available.

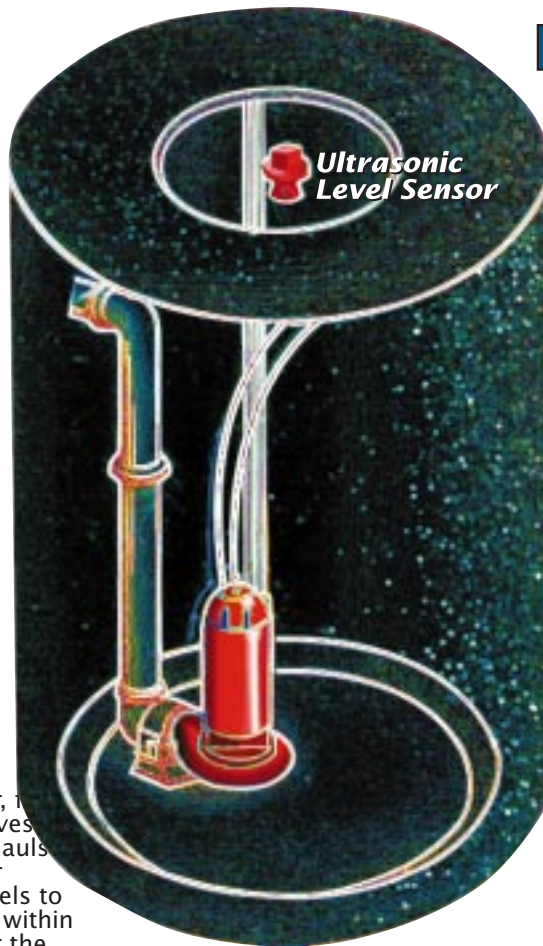
Automatic "fat ring" reduction

With repetitive cycling of water, ring build-up at the top of the vessel can cause expensive site overhauls. The Pump Controller allows for automatic variation of start levels to help reduce build-up. Software within the Controller compensates for the variation. This feature can be disabled if not required.

Automatic de-sludging

The Pump Controller offers a programmable daily pump-down of water residue to help eliminate sludge accumulation and, therefore, expensive pump damage, blockage or cleaning.

PUMP CONTROL FACILITIES



Pump rotation and control

- The user may select either pump rotation or fixed duty.
- Pump rotation evens the wear on pumps by cycling the duty pump. Pumps may be reserved for a special purpose by exclusion from the rota.
 - Fixed duty pumping allocates one pump as the main pump until altered by the user. Provision is made for a pump being unavailable.

Pump Data

Number of starts and hours run are available for each pump. Pump condition and status monitoring is possible where sensors, installation and operating parameters allow. Logging data over time (for trending) is also available. All totalisers are duplicated with one permanent and the other resettable.

Volume, flow and overflow data

Inflow is calculated on each filling of the vessel and may be displayed, logged or used to generate alarms of high flow (storm/flood warning).

Outflow and volume pumped are updated on each emptying of the vessel and give an indication of the workload on a given site.

Overflow indication can be provided by high level alarm or a separate digital signal, either of which can generate alarms and be logged (even during mains failure, when it is most likely to occur).

Additional Features

I/O Specification	Standard D6000 I/O	Extra	Specification
Digital In	8	+8	Active on signals > 1 second
Analogue In	4	+4	0-20mA, 0-5V or pot ranges.
Digital Out	4	+4	(1A @ 24V ac/dc max, resistive)
Derived Digital	50	-	Configurable as per Digital Inputs. Accessed via Sequence Language Programs.
Derived Analogue	25	-	Configurable as per Analogue Inputs. Accessed via Sequence Language Programs.

POWER SUPPLIES

- 85 to 264V ac mains input or 12/24V dc option.
- Consumption is less than 25W.
- Separate memory back-up battery.
- 8-hour integral, rechargeable battery back-up of all telemetry functions.
- 12V, 500mA supply for interposing relays.
- 24V (isol.), 40mA supply for sensors.
- 12V (isol.), 80mA supply for digital inputs.

SEQUENCE LANGUAGE PROGRAMS

- Powerful, user-defined control and calculation programs, written in pseudo English can be downloaded to the pump controller. These sequence language programs can be used to cater for site specific calculation or control requirements.
- Up to 16 separate sequence programs can run concurrently and independently.
- Derived points can be calculated using arithmetic functions on other measured values.
- Control of plant can be programmed to occur on any time, event or alarm combination conditions.

- **Installation** :Operates from -10 to +55°C. Modern, polycarbonate, IP65 enclosure. Six IP65 glands provide access to 2-part screw terminals in a separate marshalling area. 250x215x135mm (l x w x h) suitable for wall or panel mounting. A hinged lid (with optional lock) protects the front panel.

- **Warranty**: 12 months from delivery. Full on-site maintenance support available.

- **Services** :As with all our products, full training, installation, commissioning and applications support is available.

- **Ordering information**:D6000 Pump Controller + (Mains or dc power) + (Modem) + (Extra I/O) + (extra logging RAM).

PROGRAMMING TERMINAL (OPT)

The OPT is a powerful, user-friendly package running on an IBM compatible lap top PC providing :

- Local or remote connections to the pump controller for configuration and interrogation.
- Plant status check before costly site visit.
- Retrieval of logged data for reports such as maintenance schedules and pump status via industry standard packages.

LOGGING

Integral data logging to battery-backed RAM provides an average of 2500 stored records. Increased RAM capacity for intensive logging applications is available as an option.

Three types of logging are available:
 time logging: 1 min. to 45 hour samples.
 event logging: choice of conditions.
 sequence: variable rate or significant change logging.