

Installation and Operating Guidelines

SENTRYSUMPSYSTEM™
& High Level Alarm (Mains & Battery)



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1.0 Product Summary

The Sentry Sump System™ is specially designed for the removal of groundwater from basement cavity drainage membrane systems. The system comprises of a polyethylene tank, locking access cover and powerful submersible pump. The tank has a number of pre-moulded inlet points for easy installation of the Oldroyd Aquadrain drainage channel.

The system comes complete with a High Level Alarm (Mains & Battery), which acts as a warning system to alert the end user if the water rises above the normal operating level within the tank. The alarm is designed to activate via a separate float switch inside the tank that is set to activate higher than the activation point of the pump. The panel contains a battery that is trickle charged that will keep the alarm operational in situations of mains power failure.

2.0 Installation Guidelines

It is important to note that these instructions are for guidance only and it is the contractor's responsibility to satisfy themselves that the installation procedure is in accordance with the site conditions and good building practice, to eliminate any potential damage to the system either during or after installation. The installer should also satisfy themselves that the system can be installed in conjunction with these guidelines, prior to work commencing.

The tank is manufactured from polyethylene and as such is extremely robust. However, as with any preformed tank they are susceptible to floatation and hydrostatic pressures exerted in high water table conditions.

Please read these instructions in full prior to commencement of the installation. If you are unsure on any point then please ask for advice before proceeding. Our technical helpdesk is available on 01442 211554 from 8:30 – 5:30 pm, Monday to Friday.

2.1 Sentry Sump System

1. Select a suitable location for the pumping station. It is extremely important to site the system with permanent access in mind for routine maintenance of the system.
2. In all instances the tank MUST be positioned on a flat, level, concrete base of dimensions sufficient to fully support the base of the tank. Simply lay clean hardcore to the base of the excavation ensuring that it is consolidated to a thickness of 100mm, then lay a mass concrete to a thickness adequate for the ground conditions and of minimum 150mm thickness, on top of the hardcore.

Carefully position the tank onto the WET concrete base ensuring that no loose debris is inadvertently knocked onto the base, under the tank during this procedure. Push the tank into the wet concrete by 50mm ensuring that the concrete is fully imbedded into the bottom of the tank. Position it such that the inlet and outlet pipework is correctly aligned.

3. Once the tank is positioned connect the incoming drainage channel. To do this you must select the appropriate recessed channel entry point and open it up by sawing off as little as possible to allow maximum support for the incoming drainage channel. It is essential to de-burr the edges of the channel entry point for safety reasons.

IMPORTANT – The incoming drainage channel must only be pushed approximately 30mm into the tank so as to not impede with the removal of the pump for maintenance purposes.

4. We recommend that the discharge pipework is 1¼" solvent welded Class E PVC pressure pipe. To connect the discharge pipework to the discharge spigot on the tank you must firstly screw on a 1¼" Plain/Threaded PVC Socket (supplied within fittings bag) onto the spigot which will then leave you with a plain socket to solvent weld your discharge pipework into.
5. It is recommended that an external 1¼" gate valve (see section 6.0, Accessories) be installed on the discharge line should the vertical lift exceed 3 metres and/or the discharge line be connected to a foul water outlet.
6. The electrical cables should now be drawn through a cable duct back to the electrical source via the 50mm rubber fitting supplied in the fittings bag. When installing the rubber seal simply select your preferred location within the neck of the tank and drill a hole using a 76mm hole cutter before pushing the rubber seal into place. Once in position run a 50mm pipe from the rubber seal to the electrical source.
7. In all applications the tank must be backfilled with a mass concrete mix of a minimum 100mm thickness and used in accordance with the ground conditions ensuring that it is as dry as practical to prevent additional floatation pressures being exerted on the tank.

The tank **MUST** be ballasted with water at the same rate as backfilling such that the level difference between the water and the backfill does not exceed 150mm at any time.

Please ensure that when pouring the concrete backfill, suitable steps are taken to prevent the concrete from entering the tank and Aquadrain channel.

8. Where groundwater is present in the excavation, local de-watering of the ground must be undertaken throughout the installation procedure until the backfill has fully cured. Please note that the ballast water inside the tank should not be removed until the backfill has fully cured.
9. It is extremely important that once the tank has been installed and all the inlet connections made, before the pump is installed, the system is flushed through and all sand, silt, rubble and general debris removed from the tank. **FAILURE TO DO THIS WILL INVALIDATE THE WARRANTY ON THE PUMP.**
10. Once the tank is in position and the discharge pipework is in place, you must connect the pump to the discharge line. Please ensure that the pump is located on the step, therefore reducing the chance of solids from entering the pump. You will need to solvent weld the elbow to the vertical discharge pipe located on the pump. The 1¼" threaded coupling from the pump must be screwed onto the exposed thread of the socket union, ensuring that the pump is seated properly with the rubber washer in place. Please ensure that you remove the tape from the tank connector that holds the rubber washer in place. Lastly the nut located in the pump switch needs to be removed to connect the float switch in place, once connected the nut needs to be screwed back into place.

2.1.1 Electrical Connections

A qualified person in accordance with the Institute of Electrical Engineers Regulations should connect the unit to the mains supply taking into account all the electrical information provided.

1. The pump should be connected to a 230V 5A fused spur by a suitably qualified person in accordance with the institute of Electrical Engineers Regulations.
2. Please ensure that there is suitable slack on the cable to allow for the pump to be removed for maintenance.

2.2 High Level Alarm

1. The float switch needs to be fixed to the top hole on the metal bracket using the fittings provided (plastic washer and nut).
2. To do this you must position the float switch in the top hole of the metal bracket located within the tank. Place the float switch into position ensuring that the activation arm is down and fixed into position using the plastic washer and nut.
3. Select a suitable location for the High Level Alarm Panel, taking into account that the panel must be located within 5m of the pump, ensuring it is located in a dry area and the audio alarm is audible to the end user.
4. Mount the panel to a wall or backboard using the mounting points at the back of the High Level Alarm panel and appropriate screws and wall plugs (not supplied).

2.2.1 Electrical Connections

A qualified person in accordance with the Institute of Electrical Engineers Regulations should connect the unit to the mains supply taking into account all the electrical information provided.

1. The panel should be connected to a 230V 13A fused spur by a suitably qualified person in accordance with the institute of Electrical Engineers Regulations.
2. For connection to the mains supply it is imperative that the High Level Alarm is connected to a separate fused spur to that of the pump. This is because should a fault occur with the pump and blow its fuse, then the High Level Alarm can still operate.
3. For connection of the float switch there is a 5m 2-core cable with a brown and a blue wire coming from it, this must be connected to the panel as follows;

Core Colour	Terminal No.
Brown	1
Blue	2

2.2.2 High Level Alarm Panel Operation

A. High Level Indicator (When lit this signifies a high level situation within the tank).

B. Alarm Mute Button (This button will silence the audio alarm should there be a high level situation).

*Internal configuration*

3.0 Technical Specifications

3.1 Sentry Sump System

Model	Sentry Sump System
Power Supply	230V AC
Rated Current	3.6A
Motor Rating	800W
Frequency	50Hz
Revolutions Per Min.	2900rpm
Max Vertical Output	12m
Max Horizontal Output	80m
Max Flow Rate	240l/m
Max Liquid Temp.	<50°C
Discharge Size	1¼"
Cable Length	5m
Weight	12Kg
Tank Colour	Blue

3.2 High Level Alarm

Electrical Input to Alarm	230V
Electrical Output from Alarm	24V

4.0 Dimensions

4.1 Sentry Sump System

Tank Diameter	600mm
Tank Height	600mm

4.2 High Level Alarm Panel

Height	200mm
Width	250mm
Depth	90mm

5.0 Parts List

5.1 Sentry Sump System

Qty	Product Name
1	Tank
1	Access Cover, Locking, Solid Top
1	Float Bracket
1	Ama-Drainer 303 SE
1	PVC Pipe + Fittings
1	Non-Return Valve
1	50mm Rubber Seal (Cable Duct)

5.2 High Level Alarm

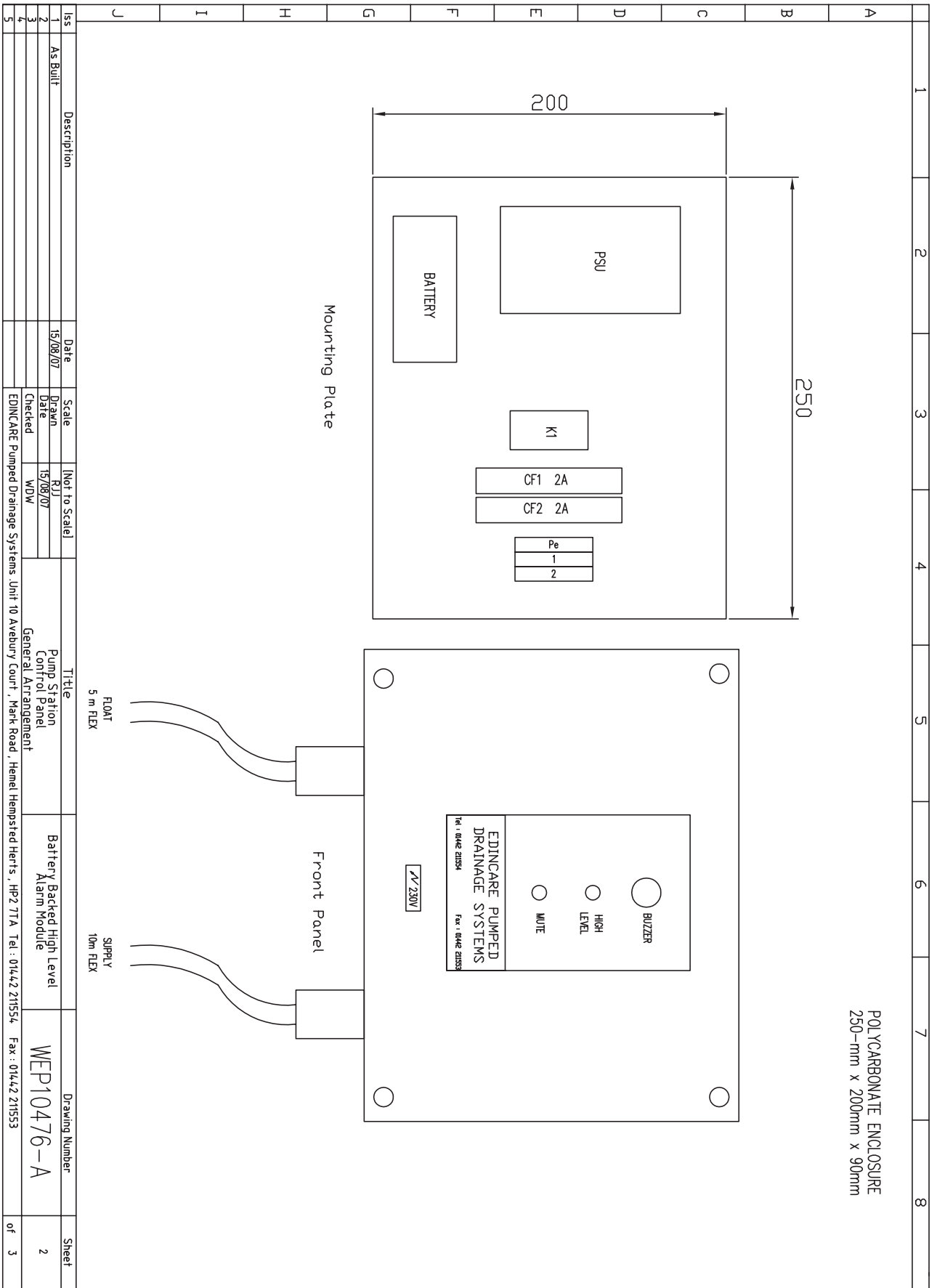
Qty	Product Name
1	Mini Float Switch
1	High Level Alarm Panel

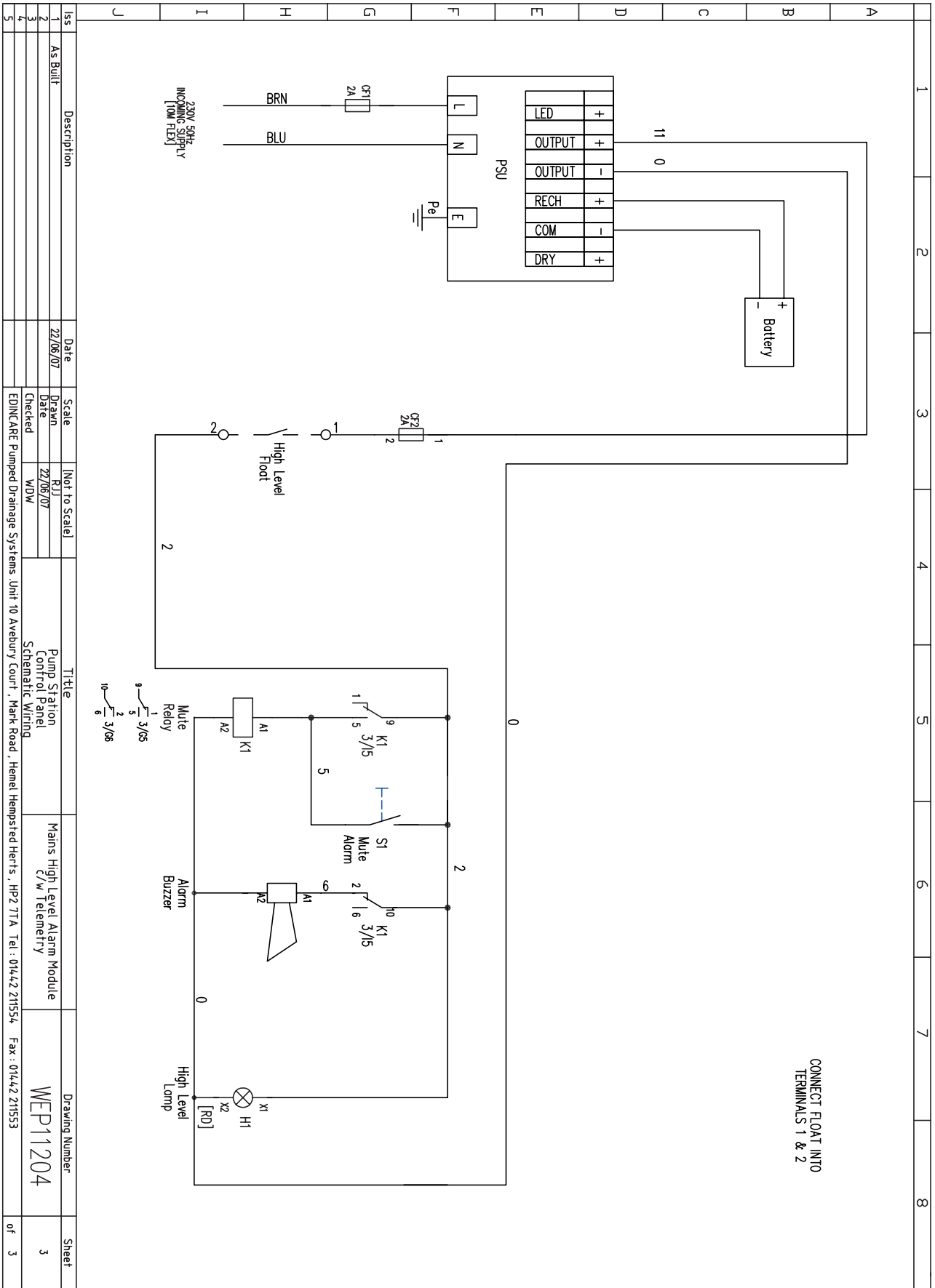
6.0 Accessories

Product Name
110mm Rubber Seal (Drainage Inlet)
50mm Rubber Seal (Inlet/Cable Duct)
1¼" Brass Gate Valve
12V, 7Ah Battery
Battery Back-Up Pump System
Access Cover, Recessed 450 x 450mm

7.0 Wiring Diagrams

1	2	3	4	5	6	7	8
Issue	Revision	Sheet	By	Date			
0	As Built	1-3	RJJ	15/08/07			
				<p style="text-align: center;"><u>Drawing Control Notes</u></p> <p>Arrangement Drawing 2</p> <p>Wiring Schematic 3</p>			
				<p style="text-align: center;"><u>Cable Colours</u></p> <p>415VAC L1 Brown</p> <p>415VAC L2 Black</p> <p>415VAC L3 Grey</p> <p>415VAC N Blue</p> <p>240VAC L Brown</p> <p>240VAC N Blue</p> <p>110VAC L -</p> <p>110VAC N -</p> <p>24VAC L White</p> <p>24VAC N Orange</p> <p>24VDC + Dark Blue</p> <p>24VDC - Dark Blue</p>			
				<p style="text-align: center;"><u>Miscellaneous</u></p> <p>Ammeters Violet</p> <p>4-20mA Violet</p>			
				<p style="text-align: center;"><u>Title</u></p> <p>Pump Station Control Panel</p> <p>Battery Backed High Level Alarm Module</p>			
				<p style="text-align: center;"><u>Project Control Sheet</u></p> <p>EDIN/ARE Pumped Drainage Systems Unit 10 Avebury Court, Mark Road, Hemel Hempstead Herts, HP2 7TA Tel: 01442 21554 Fax: 01442 21553</p>			
				<p style="text-align: center;"><u>Drawing Number</u></p> <p>MEP10476-A</p>			
				<p style="text-align: center;"><u>Sheet</u></p> <p>2 of 3</p>			
				<p style="text-align: center;"><u>Description</u></p> <p>As Built</p>			
				<p style="text-align: center;"><u>Date</u></p> <p>15/08/07</p>			
				<p style="text-align: center;"><u>Scale</u></p> <p>Not to scale</p>			
				<p style="text-align: center;"><u>Drawn</u></p> <p>RJJ</p>			
				<p style="text-align: center;"><u>Date</u></p> <p>15/08/07</p>			
				<p style="text-align: center;"><u>Checked</u></p> <p>WDW</p>			
				<p style="text-align: center;"><u>EDIN/ARE Pumped Drainage Systems Unit 10 Avebury Court, Mark Road, Hemel Hempstead Herts, HP2 7TA Tel: 01442 21554 Fax: 01442 21553</u></p>			





Iss	Description	Date	Scale	Title	Drawing Number	Sheet
1	As Built	22/06/07	(Not to Scale)	Pump Station Control Panel Schematic Wiring	WE P11204	3
2						
3						
4						
5						

8.0 Transport

The pump is shipped disconnected from the pipework to avoid damage in transit. Carefully unpack the Sentry Sump System from its packing and inspect for any signs of damage. Should there be any damage present it must be reported immediately (no claim will be considered after 48 hours from time of delivery).

9.0 Maintenance

The Sentry Sump System requires minimal maintenance, however it is strongly recommended that the unit is serviced quarterly during the first year. It is essential that the unit is serviced at least annually thereafter.

To clean out the unit you must first turn off the power supply and ensure that it cannot be inadvertently turned back on (i.e. remove the fuse). Now remove the access cover to gain access to the pump. Next you must remove the pump from the tank by disconnecting the pipework and lifting the pump out. It is advisable to check the underside of the pump to ensure there is no build up of debris around the pump and the float switch as this can often lead to poor pump performance or damage to the pump itself. You must also clean out the tank ensuring that there is no debris in the bottom of the tank. Now that the tank is clean you must reconnect the pump to the pipework and check the function of the pump prior to replacing the access cover.

Please note that we recommend that the battery be replaced every 2 years.

In addition we strongly recommend that a service agreement be taken out, please refer to section 12 for further information.

10.0 Health and Safety

Please pay attention to the following regulations when installing the pump system or ask your qualified electrician/distributor.

Safety Precautions

In order to minimise the risk of accidents in connection with the service and installation work, the following rules should be followed.

- Do not ignore health hazards. Observe strict cleanliness.
- Bear in mind the risk of electrical accidents.
- Use a safety helmet, safety goggles and protective shoes.
- All personnel who work with sewage systems must be vaccinated against diseases to which they may be exposed.
- A first aid kit must be close to hand.
- Note that special rules apply to installations in an explosive atmosphere.

Electrical Connections

- The following works should only be done by qualified and authorised electricians.
- Edincare and Safeguard Europe disclaim all responsibility for work done by untrained and/or unauthorised personnel.
- Heed operating voltage (see name plate and additional labels).
- Take out the main fuses to isolate the mains supply from the control unit before repairs or any other works and ensure it cannot be energized again.
- As the pump is equipped with an automatic level control, there is a risk of sudden restart.
- Before starting check the efficiency of the protective arrangements of the pump and the monitoring equipment. Failure to heed this warning may cause a lethal accident.
- Do not put the lead ends into water! Irruption of water may cause malfunctions.
- If persons are likely to come into physical contact with the pump or pumped media, the earthed (grounded) socket must have an additional connection to an earth (ground) fault protection device (GFI).
- Use the pump only in accordance to the data stated on the pump's plate.
- Connection only to a mains supply installed in accordance to the local regulations. For fusing of D.O.L. starting pumps use only appropriate slow fuses or automatic circuit breakers with D characteristics. This is because the motor's nominal voltage is measured at the terminal board of the pump; please consider the voltage drop of long supply cables.
- Replace the cable if the cable jacket is damaged. Do not pinch the cable or pull it around sharp bends.
- Always install the control unit in a dry and well ventilated room. Never install the control unit within the tank.

Earthing

For safety reasons, the earth conductor should be approximately 50mm (2") longer than the phase conductors. If the motor cable is jerked loose by mistake, the earth conductor should be the last conductor to come loose from the first terminal. This applies to both ends of the cable. Ensure the correct earthing of the pump and control unit.

11.0 Guarantee

12 month component Guarantee

If within the guarantee period of a product any defect is discovered in respect of workmanship, construction or material, we will make good the defect or replace the defective part at our expense inside normal working hours at the company's premises providing, written notice is given immediately the defect is discovered and that, if required by us, the part or complete unit is returned to the company's premises carriage paid. Spares or repaired parts are delivered ex works exclusive of fitting. The guarantee does not apply to defects caused by incorrect installation, abnormal conditions of working, accidents, misuse or neglect. Our responsibility is in all cases limited to the cost of making good the defect or replacing the defective part at the company's premises inside normal working hours. We exclude all liability for any consequential or other damage or losses which may occur. We will not be liable if the pumping system fails due to it having been incorrectly specified (e.g. where the pump is inundated due to an inadequate waterproofing design or where the pump is used to discharge inappropriate media).

12.0 Service Agreement

All systems are manufactured to the highest standard and we have every confidence the product will serve you well. However as with most appliances of this nature, regular maintenance is essential in ensuring your system operates at its optimum level and fulfils the expected life span.

Our Service Agreement scheme is available at competitive prices, and we will undertake to service equipment at regular intervals. We will supply you with a full report on the work done and the condition of the pump/s and all related equipment each time our engineers attend site.

You can see significant benefits through:

- Reduced running costs including energy and maintenance
- Greater life expectancy for equipment
- Reduced risk of breakdown with its resultant problems and inconvenience
- Better plant utilisation
- Improved environmental conditions

Our Service Agreements consist of the following:

- Scheduled service visits per year
- Reduced hourly charges for un-scheduled call outs
- Fully trained service engineers

Please find attached the service documentation, comprising of a Service Agreement, Equipment Schedule and Work Schedule. Simply complete the enclosed documentation and return to:

Edincare Pumped Drainage Systems
Unit 8, Heron Business Park,
Eastman Way,
Hemel Hempstead,
Hertfordshire
HP2 7FW

Safeguard Europe Limited

Redkirk Close

Horsham

West Sussex RH13 5QL

United Kingdom

Tel: 01403 210204

Fax: 01403 217529

Email: info@safeguardeurope.com

Web: www.safeguardeurope.com



Supplied in conjunction with



(14) Transfer of Contract

The Client shall not transfer this Agreement, or any part of it, to any third party without the Company's written authorization which, subject to administration fees, shall not be unreasonably withheld. Notwithstanding the transfer of this Agreement, the Client will remain liable under this Agreement but this liability shall cease within six months of the transfer provided that the Client is not in breach of the terms of this Agreement and that at the expiration of the said six months there are no outstanding breaches of the Clients obligations under the terms of this Agreement and the Company is satisfied that the party to whom this Agreement is to be transferred has agreed in writing with the Company (to the Company's satisfaction) to be bound by the terms of this Agreement and is likely to comply with such terms.

(15) Contract Modification

The terms and conditions of this Agreement supersede any terms or conditions proposed by the Client and may not be varied except with the written consent of a Director of the Company. In the case of a written consent by a Director of the Company to a variation or deviation from one or more of the terms and conditions of this Agreement, the other terms and conditions shall remain fully operative.

(16) Overseas Purchases

This Agreement is not available where the product is sold or installed outside of mainland UK.

On Behalf of The Client:

Customer name (Print):

Customer Signature:

Position:

Date:

On Behalf of The Company:

Company name:

EDINCARE PUMPED DRAINAGE SYSTEMS

Directors Signature:

Date:

I, the above, acknowledge receipt of this Service agreement. I have read and understood its contents and agree to abide by the terms and conditions therein.

Contract Ref. (Office Use Only):

Site address (if different from above):

Name:
 Address:

 Post Code:

Site contact:

Telephone (Home):

Telephone (Work):

Mobile:

Fax:

Email:

Location of installation:

(Back Garden near shed. Please provide details of installation e.g. internal or external, brief description of where on the above property the unit is installed.)

Preferred service month(s):

Jan Feb Mar Apr May Jun
 Jul Aug Sep Oct Nov Dec

EMERGENCY CALL OUT

'All emergency callout visits will be charged at our 'Emergency Call Out - Service Agreement' tariff. For hourly rates and full terms & conditions please refer to our 'Service Request Form'.

SCHEDULE OF WORK TO BE PERFORMED AT EACH VISIT
Condition on Arrival
Pump/s Running
High Level Alarm
Pump Tripped / Overload
Condition of Pump (Visual Inspection)
Clear & Free
Blocked
Condition of Pump (Mechanical Inspection)
Impeller
Bottom Plate
Cutters
Condition of Oil
Manual Impeller turn
Bearing Side movement
Control Panel
Overload Setting
Operation of Float Switches
Bulbs / Fuses
Alarm Mute Function
Running Current
General
Pedestal / Guide Rail
Debris
Float Switches / Level Controls
Valves / Pipes
Access Cover
Chamber/Tank
Lifting Chains

EQUIPMENT SCHEDULE	
Product Name:	
Pump Type	
Quantity	
Power Supply	
Serial No:	
Notes:	
Product Name:	
Pump Type	
Quantity	
Power Supply	
Serial No:	
Notes:	
Product Name:	
Pump Type	
Quantity	
Power Supply	
Serial No:	
Notes:	
Product Name:	
Pump Type	
Quantity	
Power Supply	
Serial No:	
Notes:	