

INSTRUCTIONS FOR

AUXILIARY LEVEL SENSORS

MODELS: LWP3, MSF-100, MSL-202



ISSUE: 11 18/07/2017

Head Office: AGM House, London Rd, Copford, Colchester, Essex CO6 1GT UK
Tel: 01206 215121 Email: aftersales@agm-plc.co.uk

Manchester Office : Unit 10, Wheel Forge Way, Ashburton Road West, Manchester. M17 1EH
Tel: 0161 226 4727 Email: aftersales@agm-plc.co.uk

1. INSTALLATION INSTRUCTIONS

1.1 GENERAL

These instructions are intended for the installer of the above level sensors. Please read them all the way through before you begin and follow them carefully.

Failure to install the equipment as recommended below could invalidate the warranty of this or any connected AquaTech-Pressmain equipment.

- These instructions are intended for the installer/operator/user/maintenance of this equipment and must be kept with the equipment, for the life of the equipment and made available to all persons. Please read all GENERAL SAFETY INFORMATION, WARNINGS and CAUTIONS supplied with this and any other equipment before doing anything else, and then follow them carefully.
- The unit must only be installed/operated/used/maintained by a competent person; *A competent person is someone who is technically competent and familiar with safety practices and the hazards involved.*

1.2 CAUTIONS

- 1.2.1 **Store in a dry place.**
- 1.2.2 **Protect against dirt & damage.**
- 1.2.3 **When accessing the control enclosures to make electrical connections adopt anti-static procedures** e.g. wear anti-static earthed wristband, to avoid risk of damaging the controller.
- 1.2.4 **The ambient temperature should be between 2 and 50 degrees Centigrade.**
- 1.2.5 **To ensure correct operation the maximum allowed cable length is 15metres.**
- 1.2.6 **These switches should only be installed by somebody who is both technically competent and understands all of the hazards involved.**

1.3 PROCEDURE – LWP3 TANK MOUNTED CONDUCTIVITY PROBE

1.3.1 LOCATION

The LWP3 sensor is a tank mounted conductivity probe. It should be mounted in a quiet corner of the break-tank away from the incoming main or output pipe. The cable gland should remain accessible at all times and the probe should be visible from an inspection hatch so that its condition can easily be seen. Fitting the probe in a location where it experiences turbulence could cause damage to the unit.

Should any of these location conditions not be satisfied AquaTech-Pressmain reserve the right to charge labour on any warranty work required on the pumpset.

1.3.2 FIXING

The LWP3 probe unit should be installed as in figure 1, with the cable gland attached to the tank lid, and be adjusted so that it hangs at the correct level. The probe can be used to detect either low or high water conditions.

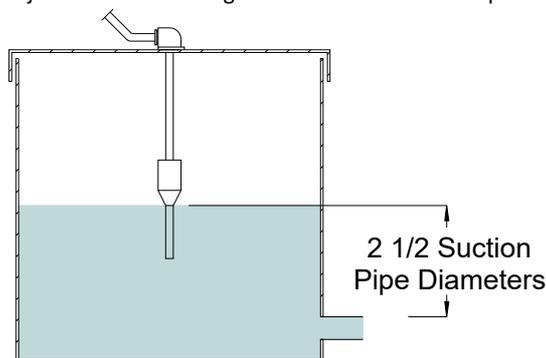


Figure 1.
Installation example for Low Level Cut-out

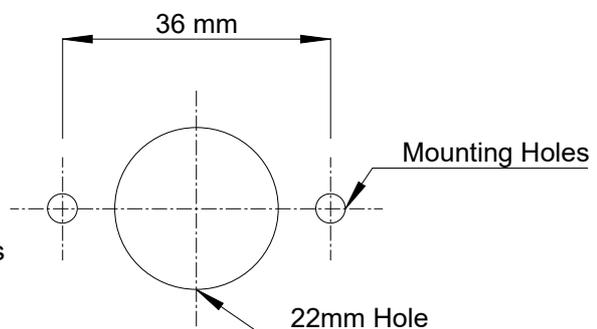


Figure 2.
Drilling Template for LWP3 low water probe

Figure 2 shows the drilling template for fixing the cable gland to the tank. The 22mm hole should pass all the way through into the tank. The two outer holes are for the fixing screws and these will have to be drilled according to your chosen screw type. Be sure to catch any debris that may enter the tank during drilling.

Before installing the probe, ensure that the centre hole is free from burrs or any sharp edges that may damage the cable.

When used in low water applications the probe should be set such that when the probe becomes dry, there is still sufficient water in the tank to cover the suction pipe by $2\frac{1}{2}$ times its diameter. This will prevent a vortex being formed before the low level switch activates.

For Electrical details and maintenance instructions see sections 2 and 3 respectively.

1.4 PROCEDURE – MSF-100 COUNTER WEIGHT FLOAT SWITCH

1.4.1 LOCATION

The MSF-100 is a counterweight style float switch usually mounted from the tank lid. It should be mounted in a quiet corner of the break tank away from the incoming main; output pipe or anything it could become caught on e.g. the float valve arm or internal tank bracing/ladder. The cable gland should remain accessible at all times and the probe should be visible from an inspection hatch so that its condition can easily be seen. Fitting the probe in a location where it experiences turbulence could cause damage to the unit.

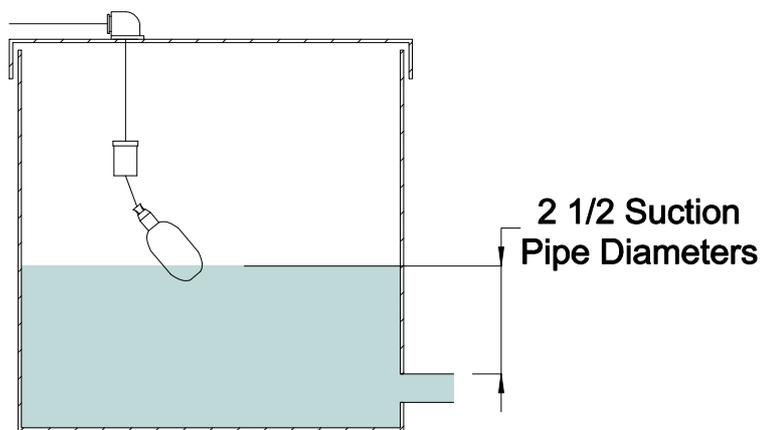


Figure 3 Low level Cut out or Alarm on position

When used in low water applications the float should be set such that when the switch is activated there is still sufficient water in the tank to cover the suction pipe by $2\frac{1}{2}$ times its diameter. This will prevent a vortex being formed before the low level switch activates.

1.4.2 FIXING

The MSF-100 unit should be installed as in figure 3, with the cable gland attached to the tank lid and be adjusted so that it hangs at the correct level. The probe can be used to detect either low or high water conditions.

Figure 2 shows the drilling template for fixing the cable gland to the tank. The 22mm hole should pass all the way through into the tank. The two outer holes are for the fixing screws and these will have to be drilled according to your chosen screw type.

Be sure to catch any debris that may enter the tank during drilling.

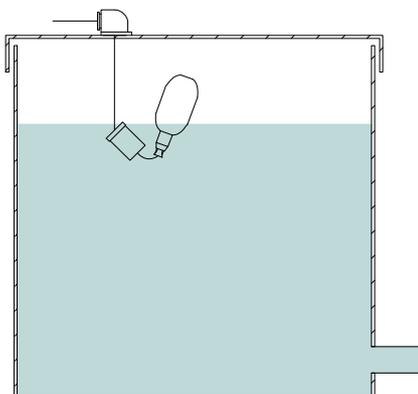


Figure 4 Low Level Alarm Reset position

Figure 4 shows the float switch in the “switch on” position. Here, the tank has refilled and if wired for low water, the unit will be allowed to start again.

The differential can be adjusted by altering the distance between the counterweight and the float. If the distance is small then the differential will be small. If the distance is increased the differential will be increased.

The MSF-100 can be used for a high level alarm by connecting to the other side of the changeover switch. Details of this are included with the switch.

For Electrical details and maintenance instructions see sections 2 and 3 respectively.

1.5 PROCEDURE – SIDE ENTRY LEVEL SWITCH MSL-202

1.5.1 LOCATION

The MSL-202 is a side mounted plastic level switch and should be mounted in a quiet area of the break tank away from the incoming main or output pipe. The cable gland should remain accessible at all times and the switch should be visible from an inspection hatch so that its condition can easily be seen. Fitting the switch in a location where it experiences turbulence could cause damage to the unit.

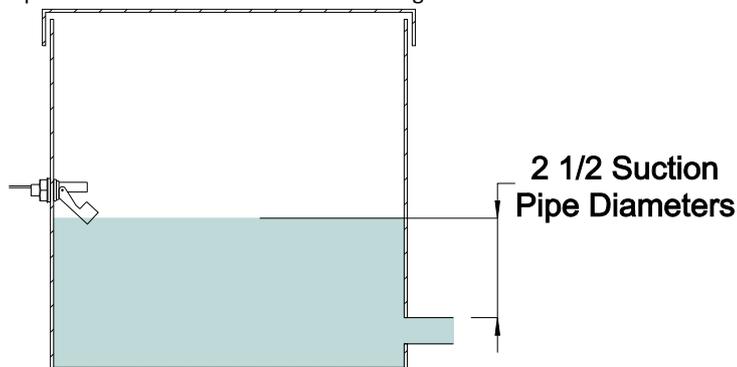


Figure 5 Typical installation for low level cut out

For Low Water applications the level switch should be mounted at a height such that when the switch has dropped to its maximum extent there is sufficient water remaining in the tank to cover the suction pipe by 2½ times its diameter. This will prevent a vortex being formed before the low level switch activates.

1.5.2 FIXING

The MSL-202 float level switch should be installed as in figure 5. The switch can be used to detect either low or high water conditions. If the switch is being used in an insulated tank, an area of insulation will have to be removed to form a “Pad”. This should only be undertaken by a competent person who understands all of the hazards involved. The method for making a pad in an AquaTank AQT series tank is given below in section 1.6. If the level switch is to be fitted in any other make of tank advice should be sought from the tank supplier.

To install the MSL-202 a 23mm diameter hole is required in the side of the tank. Be sure to retrieve any debris that may enter the tank during drilling and ensure the hole does not have any burrs or sharp edges that may damage the seal. Insert the level switch through the hole from the outside taking note of the correct orientation as shown in figures 6 and 7.

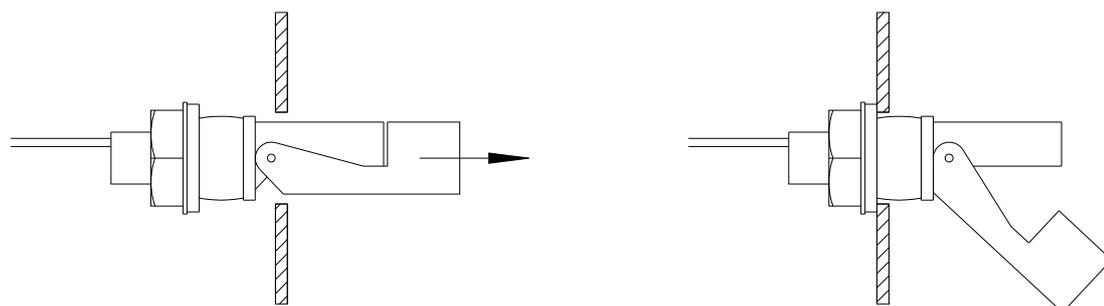


Figure 6 Installation orientation for Low Level “Break to alarm” or High Level “Make to alarm”

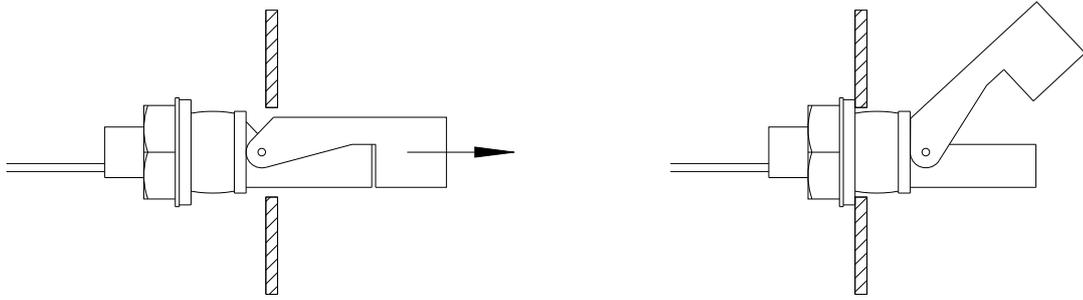


Figure 7 Installation orientation for Low Level “Make to Alarm” or High Level “Break to alarm”

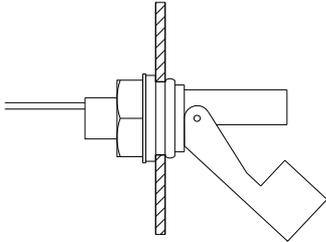


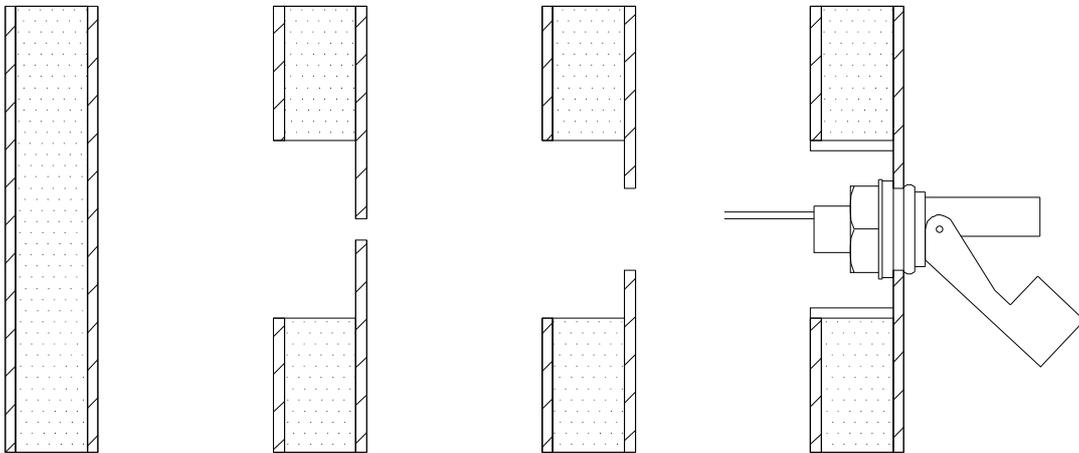
Figure 8 The MSL-202 after the back nut has been tightened

Once the level switch has been inserted into the hole the securing nut can be tightened (figure 8). To ensure the level switch does not twist it must be held still with a spanner on the flattened end near the trailing leads while nut is tightened. As the nut is tightened the seal will be pulled up against the inside of the tank creating a seal.

For Electrical details and maintenance instructions see sections 2 and 3 respectively.

1.6 Making a non insulated area “Pad” in an AquaTank AQT Series Break-tank

This should only be undertaken by a competent person who understands all of the hazards and relevant safety procedures involved. The method given below applies to the AquaTank AQT series. If the level switch is to be fitted in any other make of tank, advice should be sought from the tank supplier.



First select the location for the level switch using section 1.5.1 for guidance. The pad should be cut using an adequate size hole-saw, 100mm is the recommended size. When cutting with the hole-saw care must be taken not to go too deep and damage the inner skin of the tank.

After the insulation has been removed and the inner hole made, any traces of adhesive left on the inner skin must be removed. This is to ensure a good seal is made between the switch and the tank.

The Level switch can now be fitted as per section 1.5.2. It is recommended that the exposed insulation is closed off with silicone sealant or similar.

2. ELECTRICAL

- 2.1 All wiring must comply with the latest edition of local wiring regulations.
- 2.2 Ensure maximum voltage and frequency of probe/float is suitable for the application you are using it for.
- 2.3 **Wear anti-static wrist strap at all times** when accessing control panels to avoid static discharge causing problems with the built in electronic programs.
- 2.4 The cable and sensor must not be subject to any electrical interference as this could affect the operation of the attached equipment.
- 2.5 When used with cold water booster sets connect the wires into the terminals previously used by the suction mounted LWP1 probe (where fitted) (see appropriate wiring diagram supplied with the cold water booster set); the LWP3 probe should be used INSTEAD of the LWP1 probe in the suction manifold. Never use them both together.
- 2.6 When used with LSM units, connect the wires onto the probe terminals as described in the LSM instruction manual.
- 2.7 To ensure correct operation, the cable length must not exceed 15 metres.

2. MAINTENANCE

- 3.1 To ensure correct operation, probes and switches should be kept clean. Avoid over chlorination as damage may occur. Normal level of chlorination should not exceed 2 Parts per Million (PPM) but shock dosing of 25-50 PPM is acceptable as long as all chlorine is removed once the process is complete.
- 3.2 Periodically ensure that height adjustable sensors are still at the correct height and haven't moved.