AQUAMONIX
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# CABLING CONSIDERATIONS FOR EMFLUX FLOW METERS

## APPLICATION

Applies to all Aquamonix electromagnetic flow meters.

## BACKGROUND

The Aquamonix *Emflux* range of magnetic flow meters comprise a flow tube (head), a flow transmitter (electronics) and two or three interconnecting cables which run between the head and the transmitter. The cables are generally factory fitted and potted into the flow tube to ensure a watertight (IP68 rated) connection. The other end of the cable is a flying lead which is terminated by the installer into a water proof (IP65 rated) transmitter enclosure.

## RECOMMENDATIONS

The following recommendations are provided to assist with cabling of the meters.

- Flow meters must never be lifted, moved or secured using the cables or junction box.
- Cables should be carefully inspected after delivery to check for cuts, abrasions or damage.
- Glands and junction box at the flow tube should be checked for tightness.
- Whilst the Aquamonix supplied cables are water proof (IP68 rated) and are suitable for immersion or direct burial, we strongly recommend that all cables be laid in a protective conduit (PVC, poly, braided hose etc.) to protect from environmental damage and to allow removal or replacement of the cables or meter at a future time.
- The cables are UV stabilised and suitable for direct exposure to sun – however a protective conduit on all exposed cables will improve the cable lifespan and improve servicing.
- Care should be taken to ensure cables are not subject to stresses during fitting or backfilling.
- Where cables are to be buried in a trench or run in conduit – sufficient extra cable should be incorporated to allow for small movements of the pipework or compaction/movement of the soil.
- For cable runs greater than 10 metres the orange coil cable should be run in a separate conduit from the black signal cables. The two conduits should be separated by a minimum of 150mm.
- Cables should enter the pole where fitted and be terminated using the cable glands supplied with the transmitter housing. Ensure these are tightened to provide a watertight seal.
- Where vandalism may be an issue, all exposed cabling should be protected via heavy duty conduit or armored cable. Conduits can be cable tied or clamped over the metal glands at the flow tube.

### Cable Joins

Joining of mag meter cables is not recommended, but if no other options exist a join can be made using an approved method as follows:

- High quality IP68 rated electrical junction box – (fitted with cable glands, and fully potted with a suitable potting compound). The junction box should be securely surface or pole mounted to avoid submergence or direct rain.
- High quality approved in line submarine style electrical cable joining kit (gel filled or epoxy potted type). **Note**: The black signal and PNF (pipe not full) cables can be joined in the same submarine kit but the orange coil cable must be separated. The woven screen of the signal cables must be joined and insulated from the other wires.

### Electrical Continuity Check

A continuity check of the wiring should be performed following any cable joining and prior to backfilling trenches. A series of electrical checks can be performed using a multi meter to confirm the various power and signal circuits are fully operational.

**These cabling guidelines should be used in conjunction with any other relevant electrical or instrumentation standards or specific site wiring requirements.**