FLOMEC® QSE
EARTH GROUND INSTRUCTIONS

IMPORTANT:
Be sure to follow all Electrical Safety guidelines. Note that these instructions should **NOT** be considered the authority for electrical grounding or bonding safety (Please see item 1 below).

NOTE:
The instructions below are for an application with combined metal and PVC (plastic) piping. Applications that only use PVC (plastic) piping should refer to the "Earth Ground" section in the QSE owner's manual.

GENERAL GROUNDING/BONDING PROCEDURE NOTES

The following notes are provided as a guide for proper grounding of the QSE Mag Meter and electrical bonding of all conductive metal parts in the flow loop.

1. Applications for electrical systems vary - always verify that electrical safety procedures are followed. This grounding example document is to illustrate how to electrically ground/bond a FLOMEC® QSE Electromagnetic flowmeter in a flow loop, and should NOT be considered as authority for electrical grounding/bonding safety – seek professional electrical help per the application's requirement.
   Professional electrical help may include (but is not limited to) **NFPA 70/NEC CODE** (Latest Edition) and a qualified, certified Electrician. Read the QSE and QSI (or QSB) Owner's Manuals before installation.

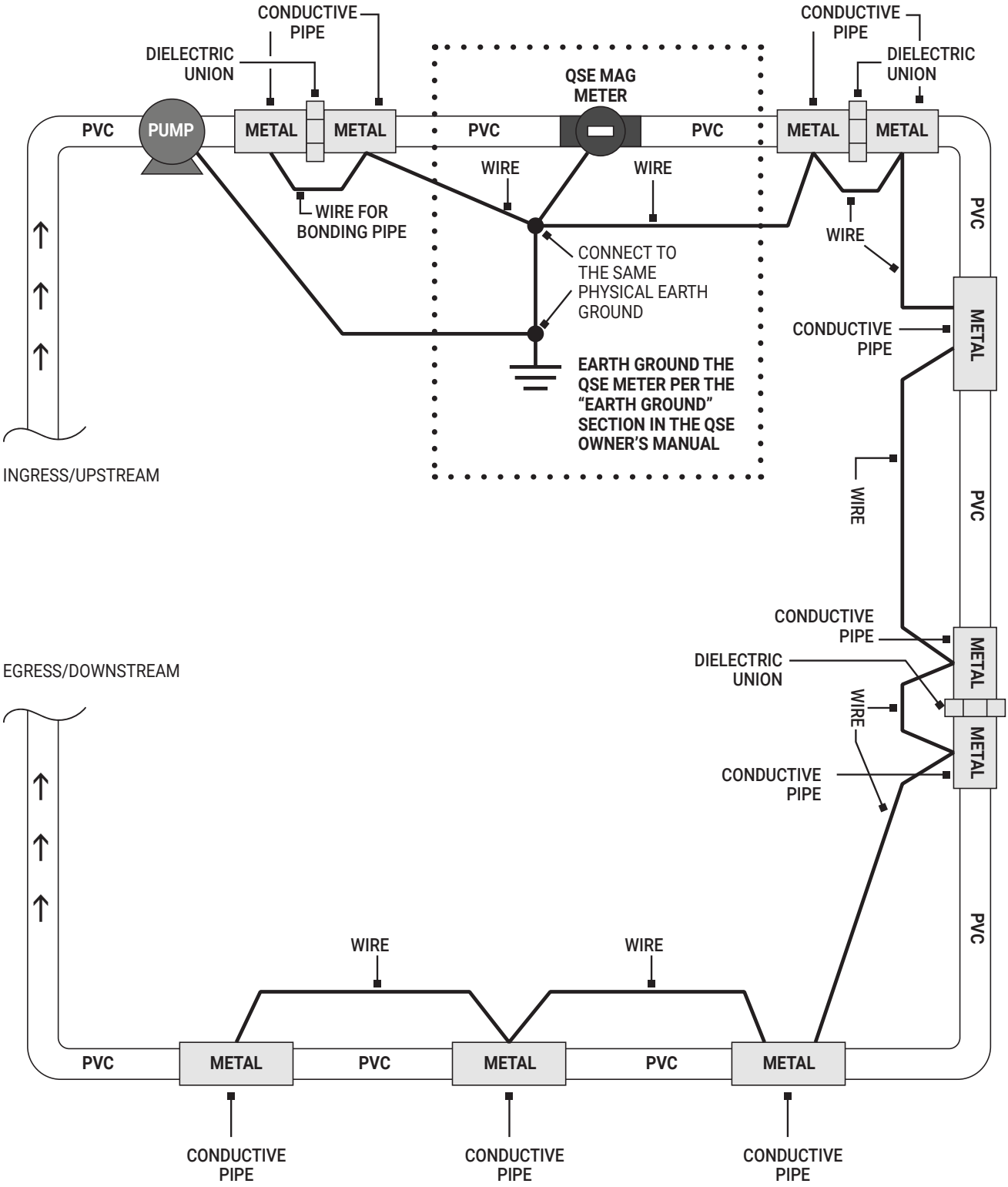
2. Electrically Bond all conductive metal parts (metal piping and fittings) in the flow loop to the same physical Earth Ground (see Figure 1 example drawing). Note that the metal piping/fittings earth ground may be the deciding factor for ground - this is fine as long as the QSE meter is connected to the same physical earth ground as the metal piping/fittings.

3. Earth Ground the QSE meter per the "***Earth Ground***" section in the QSE Owner's Manual. ***Important Note for Mag Meter Power Supply (Applies to both QSI and QSB Electronics/Communications): The QSE meter has an internal connection to the conductive fluid through one of the electrodes. The fluid and or plumbing in most applications should be earth grounded (same physical Earth Ground) to prevent any static buildup and provide a proper grounding for the system.*** Therefore, the power supply connection to the QSI (or QSB) should have an earth ground isolated output to prevent ground loop currents. Failure to use an isolated power supply could result in ground faults and could cause accuracy issues caused by stray voltages due to the ground loop currents. Proper grounding is a requirement. The power supply polarity is not a requirement for the DC supply type as long as the supply is properly earth ground isolated.

4. **Device Grounding:** When grounding a device (example: pump), use wire gauge size as recommended by the manufacturer (example: pump manufacturer), and electrically connect to the ***SAME PHYSICAL Earth Ground***. Follow manufacturer's (example: pump) instruction for grounding. The objective is to put the conductive metal that is in contact with the pipe's fluid (example: the metal body of a pump) on the same ground potential as the Earth Ground. Please see Figure 1 grounding/bonding example drawing for more information.

5. **Metal Pipe Grounding/Bonding:** Use wire thickness for grounding/bonding piping as recommended by applicable codes and standards (including but not limited to **NFPA 70/NEC CODE** Latest Edition).

GENERAL GROUNDING / BONDING PROCEDURE - FIGURE 1



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