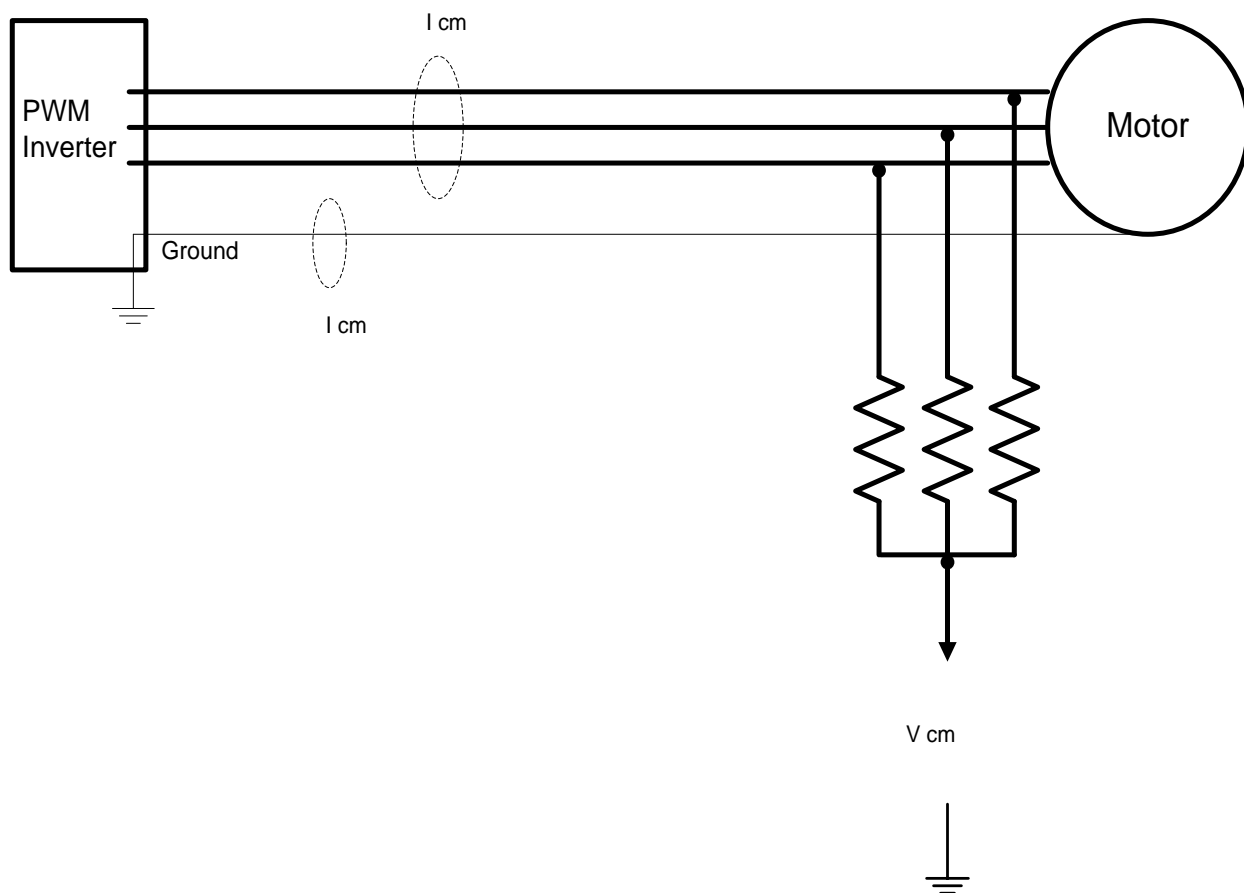


Common Mode Measurements

It is common knowledge that common mode current can flow through motor bearings when motors are controlled by variable frequency drives (VFDs). Here are some practical techniques for measuring both common mode current and voltage. Measurements must be taken using instruments and transducers capable of reading high frequency. From experience, 200MHz oscilloscopes have proven to be suitable for this purpose.



Common Mode Current:

- 1) clamp around motor ground conductor
- 2) clamp around all three motor cables (not including ground conductor)

Common Mode voltage:

Construct a CM Voltage measurement network as shown (wye connection of three resistors. For 480 volt systems, resistor value can be 1M ohm, ½ watt. Measure the voltage between the common point of the resistor network and motor ground.