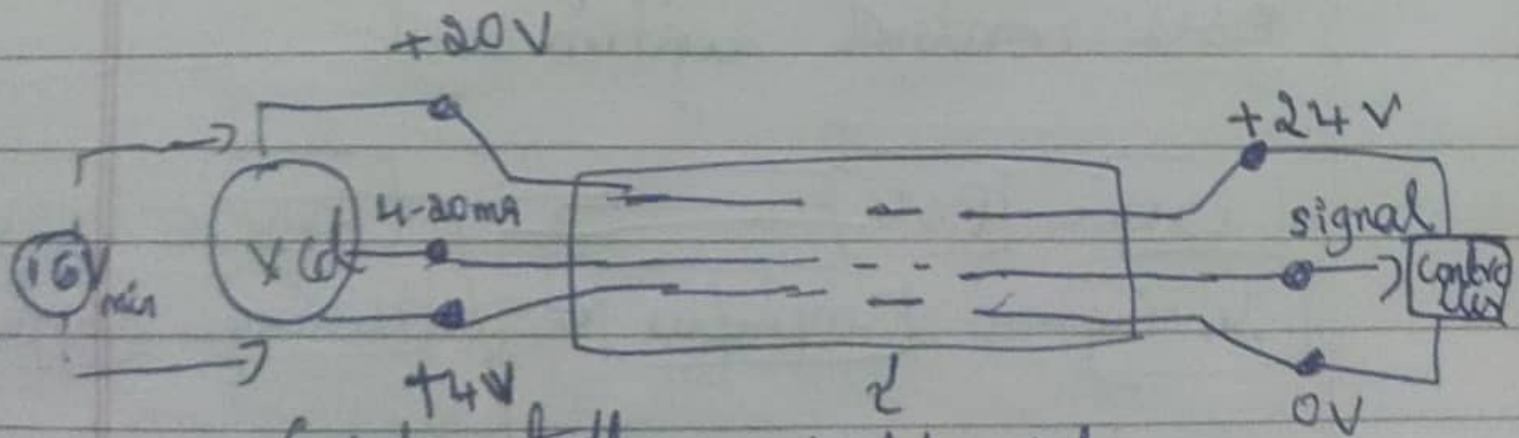
Power.

The Honeywell ~~sensepoint~~ XCD transmitter (ATEX/IECEx/AP versions) requires a power supply from the controller or between 16V dc and 32V dc. Ensure that a minimum supply of 16V dc is measured at the sensor taking the amount the voltage drop due to cable resistance

The maximum loop resistance in the field cable is calculated as $R_{loop} = \frac{(V_{controller} - V_{detector\,min})}{I_{detector}}$.

Let say the controller is supplying a nominal 24 V dc ($V_{controller}$) the detector minimum allowable voltage is 16 V dc ($V_{detector\ min}$) Therefore the maximum allowable voltage drop between the controller and detector is 8 V dc. This means a voltage drop of 4V in each core (+ve core and -ve core).



Power consumption

Power consumption of the detector is 5.0W. The current required to drive the detector at the

minimum voltage is $(I = P/V) \; 5/16$

$\approx 312.5\,mA$ (I detector).

So the maximum field cable loop resistance (R loop) $= 8/0.31 \approx 26$ ohms or 13 ohms per core.