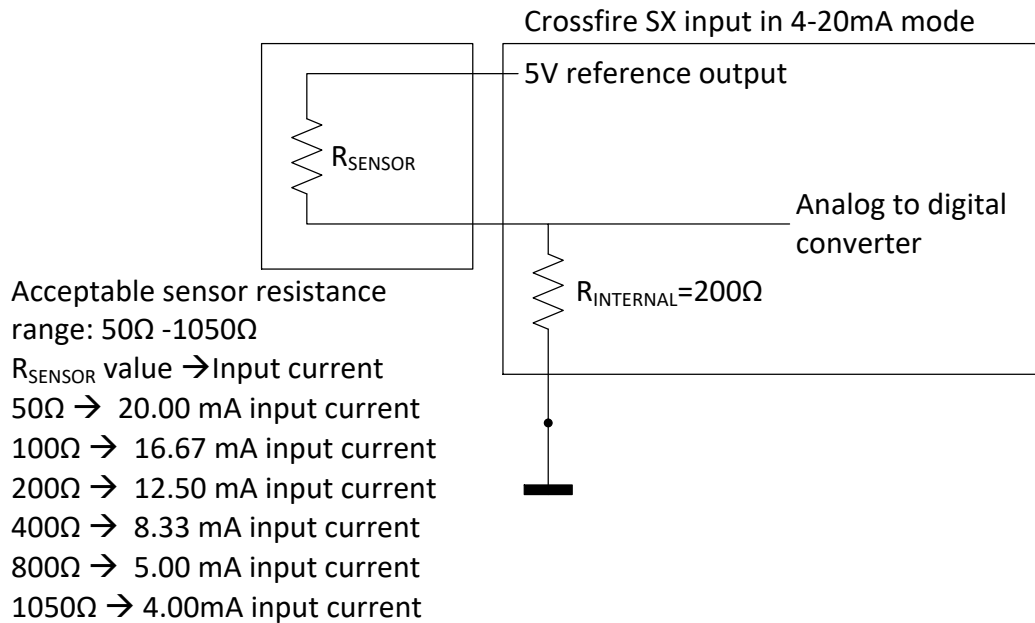# Crossfire SX with resistive sensors

Crossfire SX does not have a native resistive input, but resistive sensors can be supported by using the 5.00V sensor reference supply on Crossfire SX together with the configurable inputs in the 4-20 mA range. With this setup it is possible to cover resistive sensors within the range 50Ω to 1050Ω.

Crossfire SX input in 4-20mA mode

5V reference output

R_{SENSOR}

Analog to digital converter

$R_{INTERNAL}=200Ω$

Acceptable sensor resistance range: 50Ω -1050Ω
R_{SENSOR} value →Input current
50Ω → 20.00 mA input current
100Ω → 16.67 mA input current
200Ω → 12.50 mA input current
400Ω → 8.33 mA input current
800Ω → 5.00 mA input current
1050Ω → 4.00mA input current

As shown in the figure there is an internal 200 resistor connected to ground in Crossfire SX when the input is configured for 4-20mA current input. The sensor resistance can be calculated from the current reading according to:

$$R_{SENSOR} = \frac{5V}{Current\ reading} - R_{INTERNAL}$$