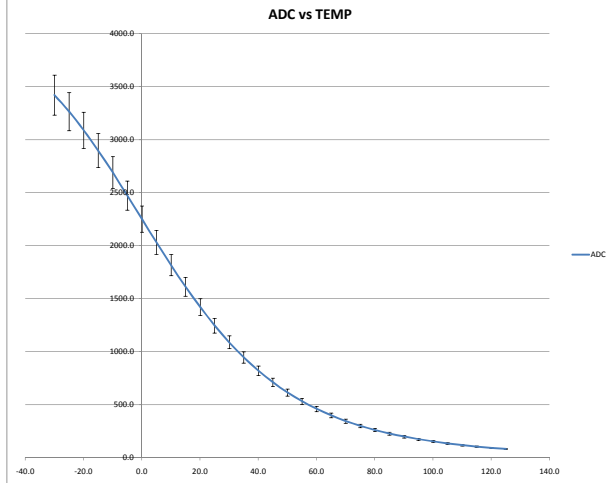


Water Temperature Sensor Error Analysis
 Boundary Engineering Engineer: Travis Rosenbarger

4096 step ADC convertor
 4095*(Q-4700)

OHM	ADC	TEMP	Ohm/ADC	Error ADC System	OHM Error sensor	OHM Error Read	OHM CULM Error	ADC Error	ADC/DEG	Degrees Cerror	MAX High	Max Low	Scale percent error (TEMP)
23813.3	3420.0	-30.0	7.0	3.5	1190.7	119.1	1313.2	148.6	31.0	6.1	-23.9	-36.1	3.93%
18488.6	3265.0	-25.0	5.7	2.8	924.4	92.4	1019.7	180.1	35.0	5.1	-19.9	-30.1	3.12%
14450.7	3090.0	-20.0	4.7	2.3	722.5	72.3	797.1	170.5	38.6	4.4	-15.6	-24.4	2.85%
11365.5	2897.0	-15.0	3.9	2.0	568.3	56.8	627.1	159.8	41.4	3.9	-11.1	-18.9	2.49%
8998.6	2690.0	-10.0	3.3	1.7	449.9	45.0	496.6	148.5	43.4	3.4	-6.6	-13.4	2.21%
7185.9	2475.0	-5.0	2.9	1.4	358.3	35.8	395.6	136.5	44.2	3.1	-1.6	-8.1	1.99%
5743.0	2252.0	0.0	2.6	1.3	287.2	28.7	317.1	124.4	44.0	2.8	2.8	-2.8	1.82%
4629.4	2032.0	5.0	2.3	1.1	231.5	23.1	255.8	112.3	43.0	2.6	7.6	2.4	1.68%
3748.9	1817.0	10.0	2.1	1.0	187.4	18.7	207.2	100.4	40.8	2.5	12.5	7.5	1.59%
3054.0	1613.0	15.0	1.9	0.9	152.7	15.3	168.9	89.2	38.2	2.3	17.3	12.7	1.51%
2500.3	1422.0	20.0	1.8	0.9	125.0	12.5	138.4	78.7	35.0	2.2	22.2	17.8	1.45%
2057.9	1247.0	25.0	1.7	0.8	102.9	10.3	114.0	69.1	31.8	2.2	27.2	22.8	1.40%
1700.6	1088.0	30.0	1.6	0.8	85.0	8.5	94.3	60.3	28.4	2.1	32.1	27.9	1.37%
1411.9	946.0	35.0	1.5	0.7	70.6	7.1	78.4	52.5	25.0	2.1	37.1	32.9	1.36%
1178.6	821.0	40.0	1.4	0.7	58.9	5.9	65.5	45.7	22.0	2.1	42.1	37.9	1.34%
987.5	711.0	45.0	1.4	0.7	49.4	4.9	55.0	39.6	19.2	2.1	47.1	42.9	1.33%
830.6	615.0	50.0	1.4	0.7	41.5	4.2	46.4	34.3	16.6	2.1	52.1	47.9	1.33%
701.8	532.0	55.0	1.3	0.7	35.1	3.5	39.3	29.8	14.4	2.1	57.1	52.9	1.33%
594.8	460.0	60.0	1.3	0.6	29.7	3.0	33.4	25.8	12.2	2.1	62.1	57.9	1.36%
507.4	399.0	65.0	1.3	0.6	25.4	2.5	28.5	22.4	10.8	2.1	67.1	62.9	1.34%
432.4	345.0	70.0	1.3	0.6	21.6	2.2	24.4	19.5	9.0	2.2	72.2	67.8	1.40%
371.5	300.0	75.0	1.2	0.6	18.6	1.9	21.1	17.0	7.8	2.2	77.2	72.8	1.41%
320.0	261.0	80.0	1.2	0.6	16.0	1.6	18.2	14.9	6.8	2.2	82.2	77.8	1.41%
275.8	227.0	85.0	1.2	0.6	13.8	1.4	15.8	13.0	5.6	2.3	87.3	82.7	1.50%
240.1	199.0	90.0	1.2	0.6	12.0	1.2	13.8	11.4	5.0	2.3	92.3	87.7	1.48%
208.6	174.0	95.0	1.2	0.6	10.4	1.0	12.1	10.1	4.2	2.4	97.4	92.6	1.55%
182.4	153.0	100.0	1.2	0.6	9.1	0.9	10.6	8.9	3.8	2.3	102.3	97.7	1.51%
159.0	134.0	105.0	1.2	0.6	8.0	0.8	9.3	7.9	3.2	2.5	107.5	102.5	1.59%
139.5	118.0	110.0	1.2	0.6	7.0	0.7	8.3	7.0	2.8	2.5	112.5	107.5	1.61%
122.5	104.0	115.0	1.2	0.6	6.1	0.6	7.3	6.2	2.4	2.6	117.6	112.4	1.67%
108.0	92.0	120.0	1.2	0.6	5.4	0.5	6.5	5.6	2.0	2.8	122.8	117.2	1.79%
96.0	82.0	125.0	1.2	0.6	4.8	0.5	5.9	5.0					



$$\frac{4095}{x - 4700} = y$$

$$x = \frac{4700}{y} - 4095$$

