Stryker Resource Usage

I have approach this task using the Workbench resource manager; reading the resources components values before and after a controller was added into the station.

I have found that the Stryker controller uses 15% more resource than XL10 VAV controller. Thus, in order to compare the existing XL10 controllers per Web Controller table. The maximum amount of XL10 controllers per Web controller should be multiple for .85. i.e. 100 controller per Web Controller = 85 Stryker controllers.

Stryker Resource Table

Resource	VAV Stryker No Proxy Pnts Resource Usage	XL10 VAV No Proxy Points Resource Usage	Spyder VAV PVL4022AS No App / No Proxy Points Resource Usage	Units
Category Componente	10.817	3.141	3.326	kUR
Category Device	5.000	5.000	5.000	kUR
Category ProxyExt	0.000	0.000	0.000	kUR
Category History	0.000	0.000	0.000	kUR
Category Network	0.000	0.000	0.000	kUR
Category Program	0.000	0.000	0.000	kUR
Category Alarm	0.000	0.000	0.000	kUR
Total	15.817	8.142	8.326	kUR

Resource	VAV Stryker with Proxy Pnts Resource Usage	XL10 VAV with Proxy Points Resource Usage	Spyder VAV PVL4022AS Mod. Venom App and Proxy Points Resource Usage	Units
Category Componente	18.482	10.712	13.385	kUR
Category Device	5.000	5.000	5.000	kUR
Category ProxyExt	15.000	14.750	10.750	kUR
Category History	0.000	0.000	0.000	kUR
Category Network	0.000	0.000	0.000	kUR
Category Program	0.000	3.000	0.000	kUR
Category Alarm	0.000	0.000	0.000	kUR
Total	38.482	33.462	29.135	kUR
Disk Space Usage	0	0	46	KB

Stryker 10K Ohm Type 2 Temp Sensor

There are two possible methods in order to use 10K ohm type 2 sensors with the Stryker.

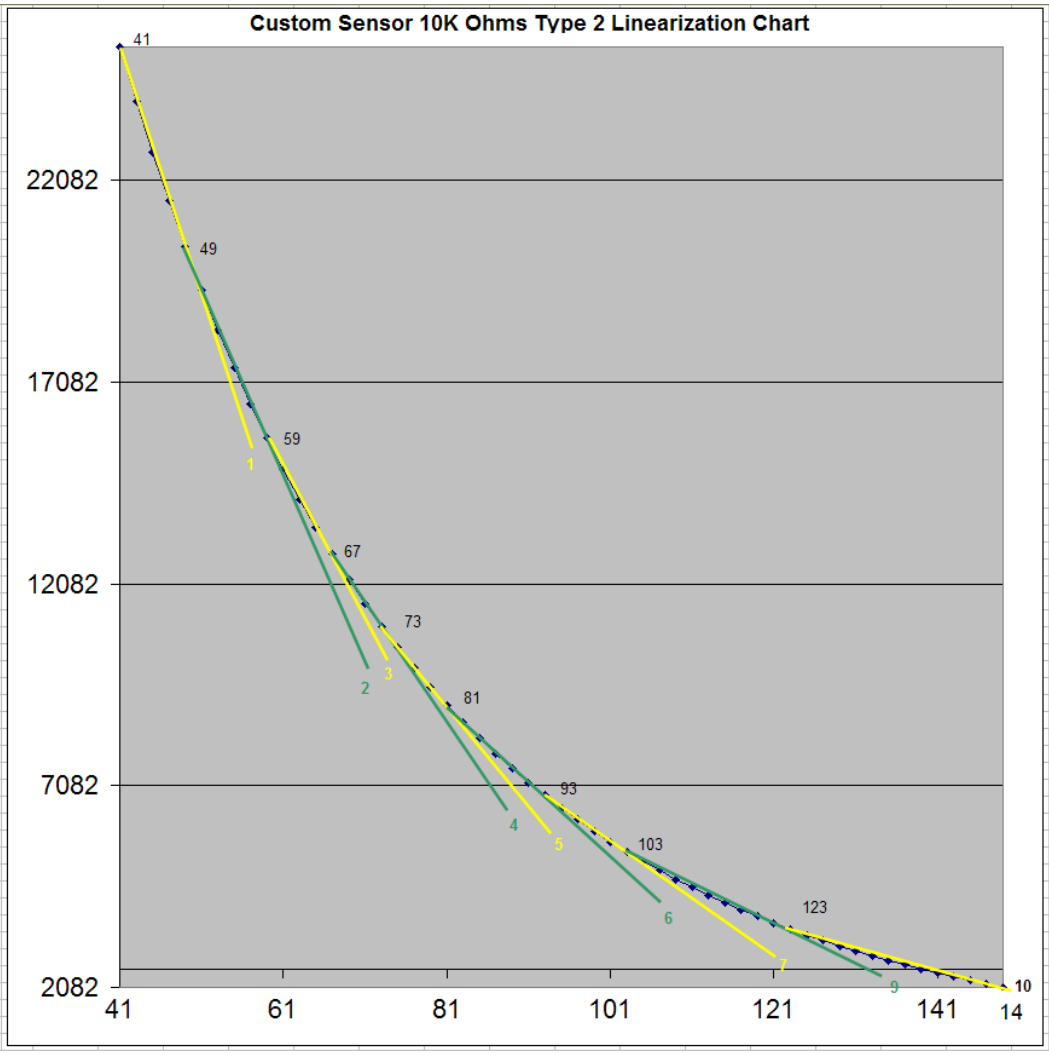
1. - Configuring the input as 20K Ohm sensor type and adding temp offset -27.5 Deg.
Pros. The sensor reading is very accurate between 67 to 79 Deg ranges.
Cons. Temp tends to drift at the high and Lo end of temp ranges (41-140 Deg). Also it's more difficult to calibrate the sensor because there is a pre default value of -27.5 where the calibration offset needs to be added or subtracted to this value.

Max Error: 1.4 Deg, Min Error: -.8 Deg. Avg Error out of 14 samples is .25 Deg.

2. - Configuring the input as Custom sensor entering 10 points temp vs. resistance as shown in the section Configuration Wizard –Inputs / Custom Sensors.
Pros. Temp readings are more accurate all across the entire temp range.
Cons. If the temp value goes below or above the temp scale the sensor would value nan.
Max Error: .4 Deg, Min Error: -.3 Deg. Avg Error out of 14 samples is -.06 Deg.

Here is the linearization chart of 10k Ohm sensor; the left side shows the 10 point values picked for linearization the 10K Ohms type 2 sensor curve. The right side shows the 14 points tested with the decade box, resistance vs. temp is compared gains the 10k type 2 thermistor output curve. Temp error is displayed at each point.

Point E	Temp	Ohms
1	41	25395
	43	24042
	45	22770
	47	21573
2	49	20446
	51	19376
	53	18378
	55	17437
	57	16550
3	59	15714
	61	14925
	63	14180
	65	13478
4	67	12814
	69	12182
	71	11590
5	73	11030
	75	10501
	77	10000
	79	9526
6	81	9078
	83	8653
	85	8251
	87	7866
	89	7505
	91	7163
7	93	6838
	95	6530
	97	6238
	99	5960
	101	5697
8	103	5447
	105	5207
	107	4981
	109	4766
	111	4561
	113	4367
	115	4182
	117	4006
	119	3838
	121	3679
9	123	3525
	125	3380
	127	3242
	129	3111
	131	2985
	133	2865
	135	2751
	137	2642
	139	2538
	141	2438
	143	2343
	145	2252
	147	2165
10	149	2082



Stryker 20k Ohms Sensor -27.5 Deg.	
Temp Deg	Error Deg
41	-0.8
67	-0.3
69	-0.3
71	-0.3
73	-0.2
75	-0.1
77	0
79	0.2
113	0.5
135	0.1
141	0.9
145	1.2
147	1.4
149	1.2
Avg Erorr	**0.25**
Max. Error	**1.4**
Min. Error	**-0.8**

Stryker Custom Sensor.	
Temp Deg	Error Deg
42	-0.3
67	-0.2
69	-0.1
71	-0.3
73	-0.2
75	-0.3
77	-0.3
79	-0.2
113	0
135	0.4
141	0.4
145	0.2
147	0.1
149	-0.1
Avg. Error	**-0.064285714**
Max. Error	**0.4**
Min. Error	**-0.3**