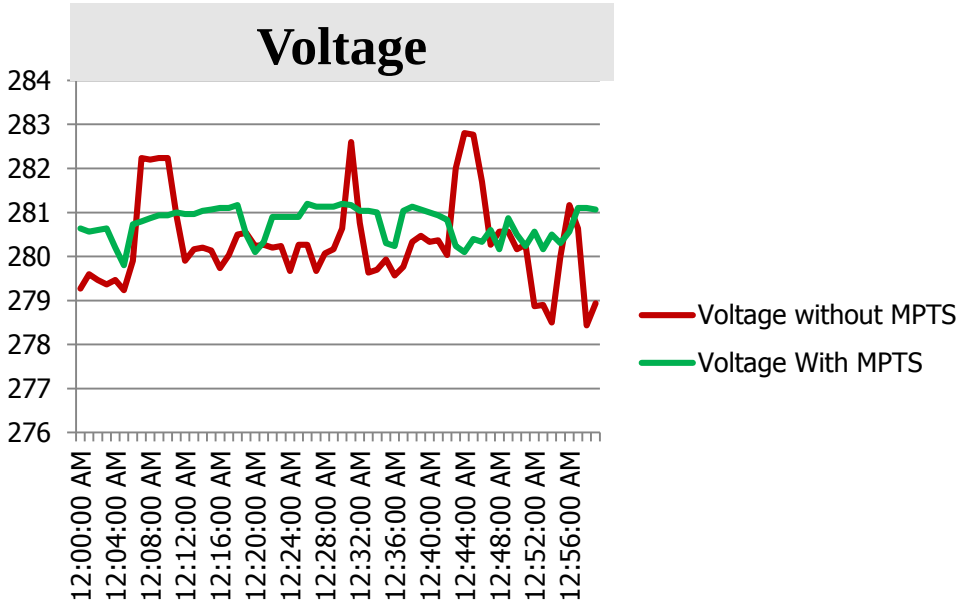
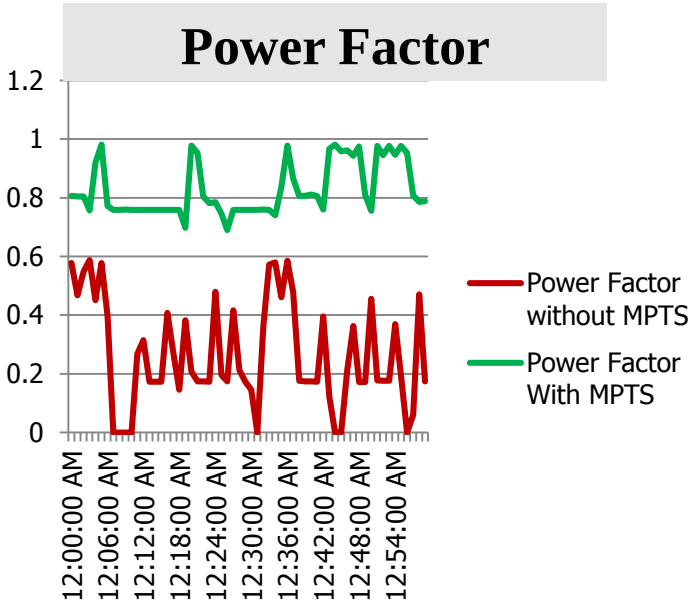
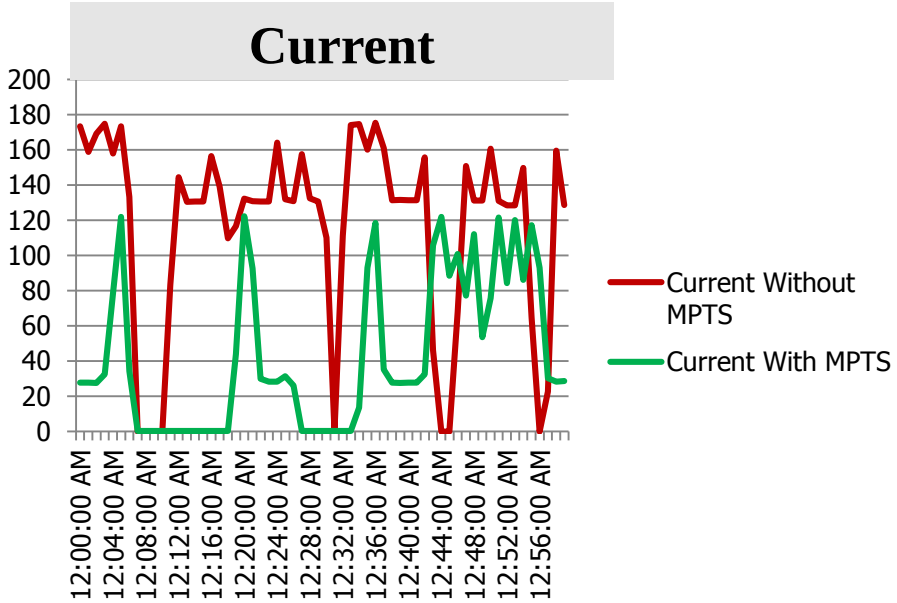
MPTS - INSTALLATIONS

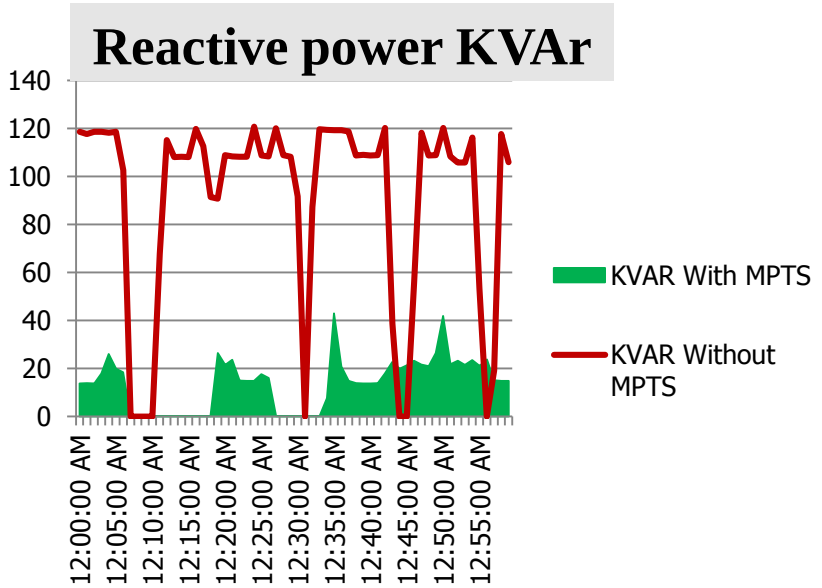
– REFRIGERATION RACK, CHILLER & COMPRESSOR APPLICATIONS





Power Analyzer Data





Freezer – Refrigeration Compressor Rack Application

This case study is from February 2011. The 480 Volts, 3 Phase, 100 Amp, MPTS-100 is installed on a 24-hour application. The load is a compressor bank connected to the freezers. The client also has power factor correction units/power conditioning units. As you can see in the data provided below, the savings in Amps is 88.8 minus 73.9 amps. The power factor improved from 0.86 to 0.98.





Readings **BEFORE** MPTS is switched ON

Amperes

Power Factor

Voltage

Frequency

Improvements despite installed PF improvement equipment



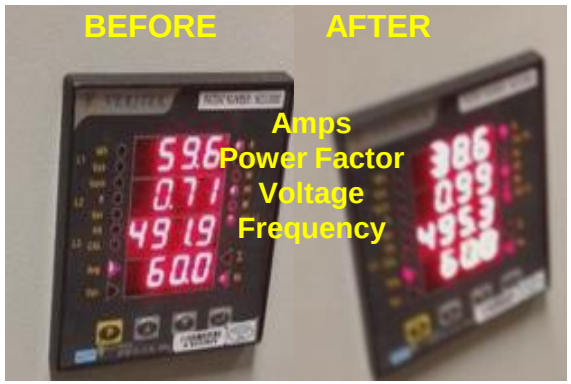
Readings **AFTER** MPTS is switched ON

The client had made a financial investment in power conditioning equipment to take the PF to 0.86. MPTS took the PF to 0.98 and also decreased losses/amps that reduces the KW and KWH.

MPTS 100	Without MPTS	With MPTS	Savings/Improvement
AMPS	88.8	73.9	14.9
Power Factor	0.86	0.98	12%
KVA	72 Kilowatts	63 Kilowatts	9 Kilowatts
KVAH (KW=KVA, PF=1)	316,519	277,762	38,757

GROCERY STORES

This case study is from June 2012. The 480 Volts, 3 Phase, 100 Amp, MPTS-100 (three units) are installed on a 24-hour application. The loads are compressor banks connected to the freezers. Totally, 14 compressors are connected through the three (3) MPTS units. As you can see in the data provided below, the savings in Amps is 59.6 minus 38.6 per unit per MPTS. The power factor improved from 0.71 to 0.99.







Performance Metrics for each MPTS

MPTS 100	Without MPTS	With MPTS	Savings / Improvement
AMPS	59.6	38.6	21
Power Factor	0.71	0.99	39%
KVA	49 Kilowatts	35 Kilowatts	14 Kilowatts
KVAH (KW=KVA, PF=1)	424,877	307,819	117,058

Note: See Amps - The MPTS is not fully utilized

MPTS 225 / 480 V/ 3 phase – feeding chillers on a commercial building
Real time data on August 20th 2016
Decrease in demand by 25 to 35 Kilowatts



MPTS performance results at CMAFS

Power monitoring Base line without MPTS
Power analyzer model C.A. 394, Serial number 200671 1:1
Trend monitoring for Air Compressor CO1
Monitoring Start and End:
Date: 11/26/2014, 10:42:00 AM to 01/12/2014, 10:42:00AM

Power monitoring with MPTS
Power analyzer model C.A. 394, Serial number 200671 1:1
Trend monitoring for Air Compressor CO1
Monitoring Start and End: Date:
3/31/2015, 08:26:00AM to 4/4/2015, 08:26:00AM

Voltage 480V	Phase Volts
Without MPTS	278
with MPTS	279

Electrical Demand	KVA Electrical Demand
Without MPTS	104
with MPTS	31
Peak KW decrease	73

Current	Amps
Without MPTS	124.3
with MPTS	36.5
Decrease in Current	87.7

Load Kilowatts	Load Kilowatts
Without MPTS	35
with MPTS	25
Load KW decrease	10

Power Factor	Power Factor
Without MPTS	0.298
With MPTS	0.811

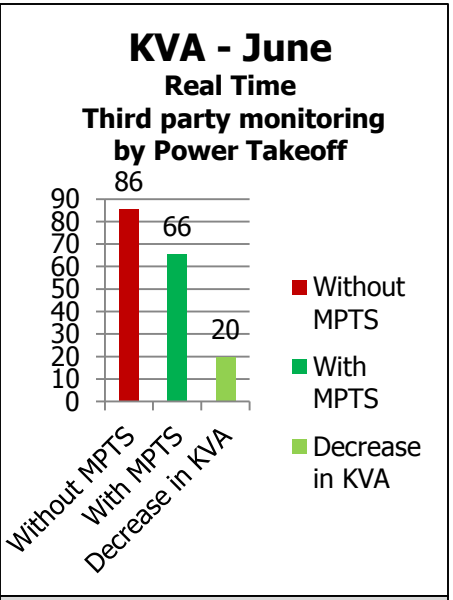
KVAR	Reactive Power KVAr
Without MPTS	95
with MPTS	13
KVAr decrease	83

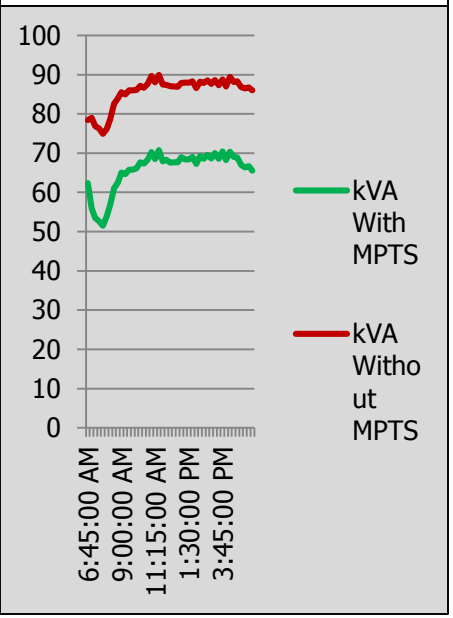
Carbon Emissions	CO2 - lbs
Without MPTS	97,240
With MPTS	28,985
Decrease in CO2	68,255

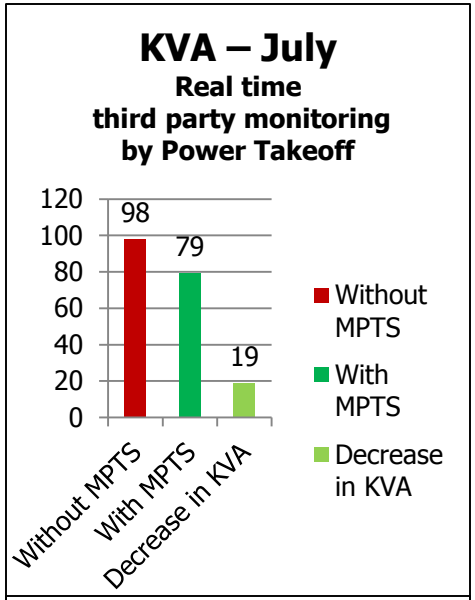
Carbon Emissions	Carbon % (CO2)
Without MPTS	100%
With MPTS	30%
Decrease in CO2	70%

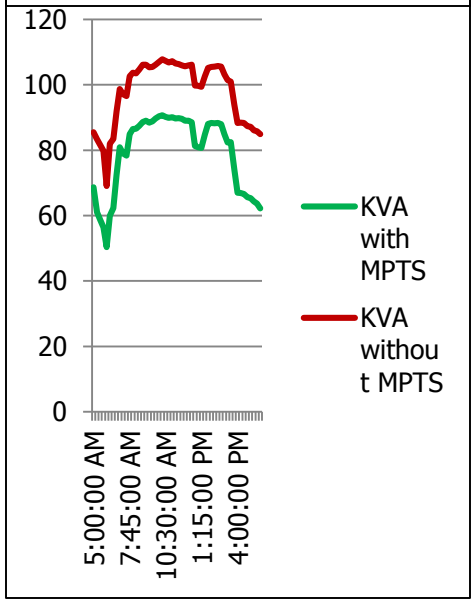
Power quality improvement and energy efficiency at
NORAD - Cheyenne Mountain Air Force Station, USA

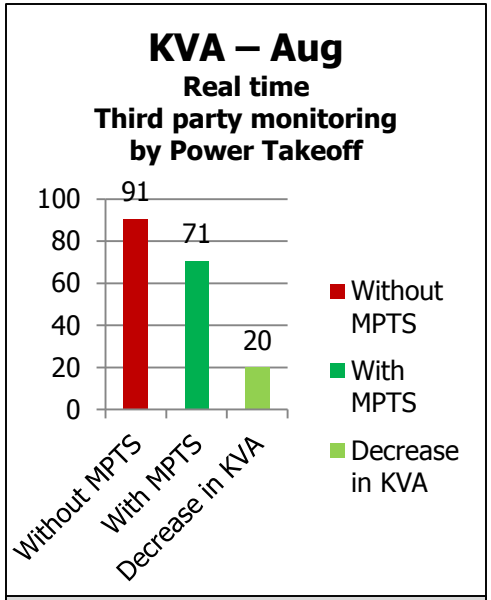
Power quality improvement and energy efficiency at East Building, 10400 E. Alameda, Denver Colorado 80247-5104

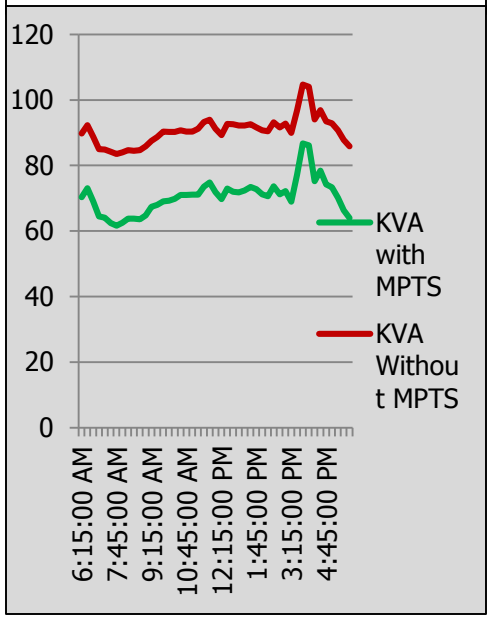


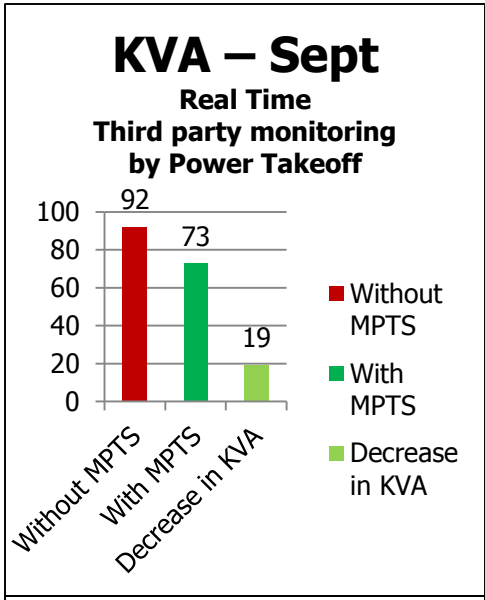


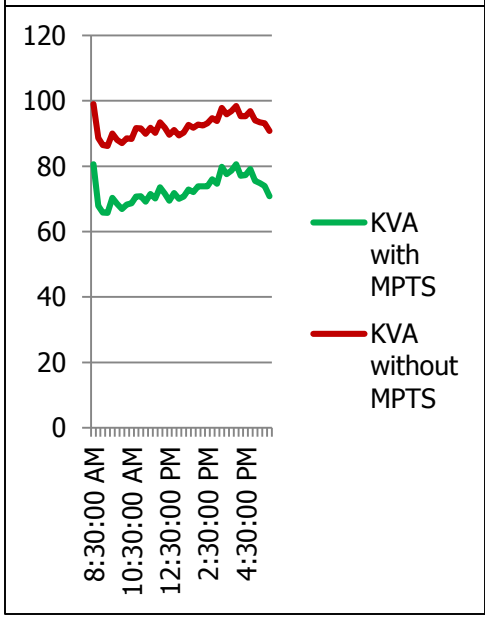












MPTS Unit Installed by Accentz on the HVAC – Chiller - M&V for June to September, 2014

Lindy's Flowers – Grow Facility

Exporting roses worldwide



One MPTS 100 is installed the main electrical panel - 2014

Utility Meter Data

Meter Data

Meter: 200510680 - Lindys Flowers Avail. Dates: 20080212 - 20160211

Interval: 60min

Date (yyyyMMdd): 20160211 V

Time Of Use Window: All Intervals / Ontario 7-7 (Network) / Ontario RPP Mid-Peak / Ontario RPP Off-Peak / Ontario RPP On-Peak

Report Format: Table

Power Factor

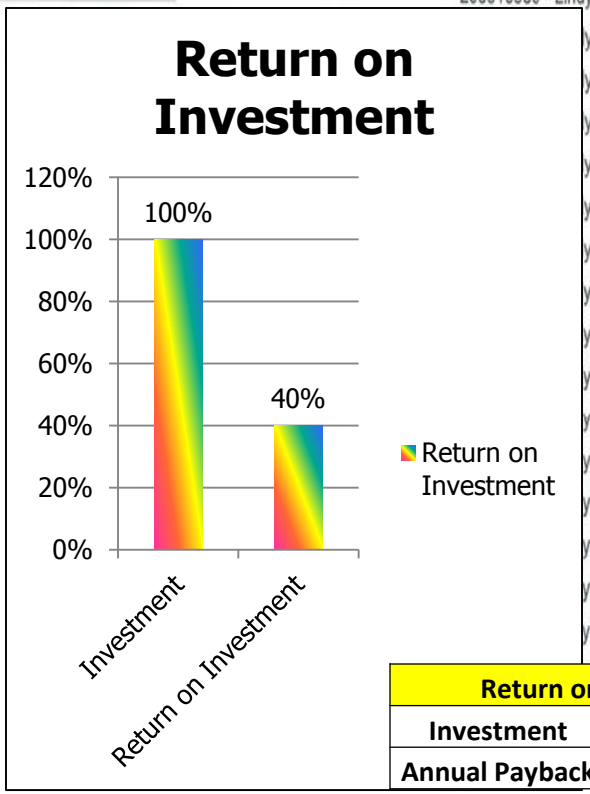
Meter	Interval Ending	KWH	KVarH	KVAH	LA KWH	90%KVAH	PF
200510680 - Lindys Flowers	2016/02/11 01:00	310.01	0	310.01	330.31	279.[illegible]	100
200510680 - Lindys Flowers	2016/02/11 02:00	310.54	0	310.54	330.88	279.[illegible]	100
200510680 - Lindys Flowers	2016/02/11 03:00	212.04	5.28	212.11	225.93	190.[illegible]	99.97
200510680 - Lindys Flowers	2016/02/11 04:00	202.85	7.32	202.98	216.13	182.[illegible]	99.93
200510680 - Lindys Flowers	2016/02/11 05:00	210.86	6.82	210.97	224.68	189.[illegible]	99.95
200510680 - Lindys Flowers	2016/02/11 06:00	207.94	6.89	208.05	221.56	187.[illegible]	99.95
200510680 - Lindys Flowers	2016/02/11 07:00	184.22	5.95	184.32	196.29	165.[illegible]	99.95
[illegible]ys Flowers	2016/02/11 08:00	38.33	4.9	38.64	40.84	34.[illegible]	99.19
[illegible]ys Flowers	2016/02/11 09:00	41.38	4.2	41.59	44.09	37.[illegible]	99.49
[illegible]ys Flowers	2016/02/11 10:00	42.07	6.1	42.51	44.83	38.[illegible]	98.97
[illegible]ys Flowers	2016/02/11 11:00	43.82	6.24	44.27	46.69	39.[illegible]	99
[illegible]ys Flowers	2016/02/11 12:00	40.87	5.23	41.21	43.55	37.[illegible]	99.19
[illegible]ys Flowers	2016/02/11 13:00	39.7	5.09	40.02	42.3	36.[illegible]	99.19
[illegible]ys Flowers	2016/02/11 14:00	32.4	5.38	32.84	34.52	29.[illegible]	98.65
[illegible]ys Flowers	2016/02/11 15:00	31.63	3.96	31.88	33.7	28.[illegible]	99.23
[illegible]ys Flowers	2016/02/11 16:00	34.7	5.54	35.14	36.98	31.[illegible]	98.75
[illegible]ys Flowers	2016/02/11 17:00	36.89	4.87	37.21	39.3	33.[illegible]	99.14
[illegible]ys Flowers	2016/02/11 18:00	41.42	5.66	41.81	44.14	37.[illegible]	99.08
[illegible]ys Flowers	2016/02/11 19:00	37.06	4.63	37.34	39.48	33.[illegible]	99.23
[illegible]ys Flowers	2016/02/11 20:00	37.92	5.16	38.27	40.4	34.[illegible]	99.09
[illegible]ys Flowers	2016/02/11 21:00	31.66	4.97	32.04	33.73	28.[illegible]	98.79
[illegible]ys Flowers	2016/02/11 22:00	31.15	5.28	31.6	33.19	28.[illegible]	98.59
[illegible]	[illegible]	[illegible].34	5.62	33.81	35.52	30.[illegible]	98.61
[illegible]	[illegible]	[illegible].96	5.5	31.44	32.99	28.[illegible]	98.46
[illegible]	[illegible]	[illegible].76	120.59	2270.6	2412.03	2043.[illegible]	99.2666666666667

Total Amperes	Amps
Without MPTS	56
with MPTS	46
Decrease in Amps	10

Demand Kilowatts	KVA
Without MPTS	58
with MPTS	48
Decrease in KVA	10

PF Improvement	Power Factor
Without MPTS	0.81
With MPTS	0.98

Total KVAR	KVAR
Without MPTS	34
with MPTS	10
Decrease in KVAR	25



Return on Investment	
Investment	$ 30,000.00
Annual Payback	$ 12,133.00