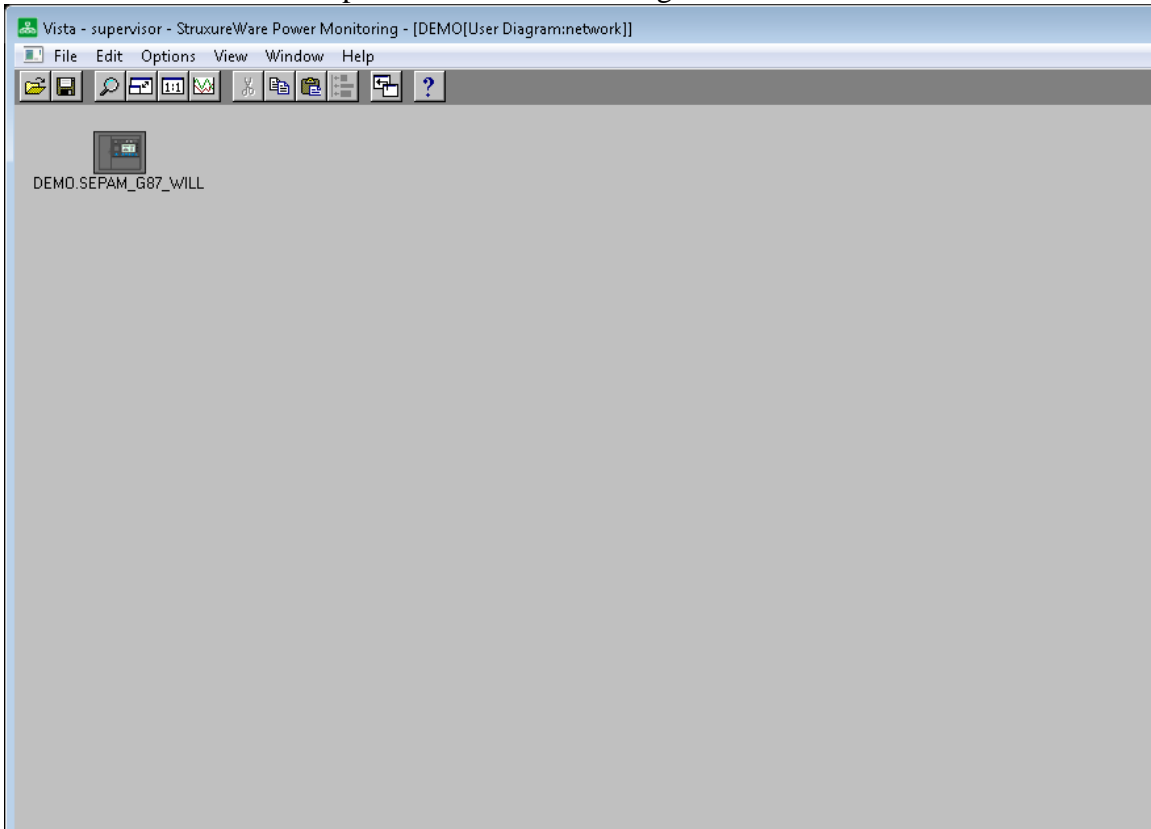
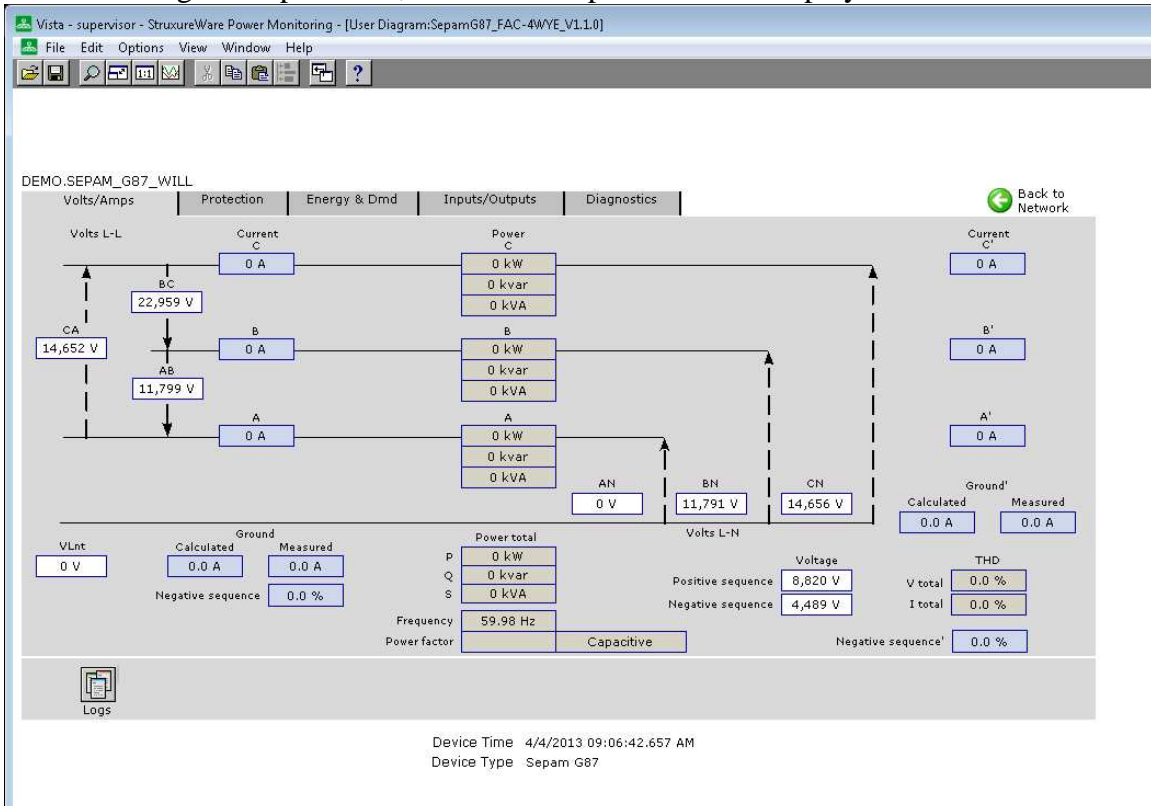


The screenshots below highlight some of the capabilities within SPM for integrating with a Sepam 80 protection relay.

The visible icon for the Sepam 80 within Vista Diagrams:



After selecting the Sepam icon, the Volts/Amps tab will be displayed.



The next tab is the Protection tab.

Vista - supervisor - StruxureWare Power Monitoring - [User Diagram:SepamG87_FAC-4WYE_V1.1.0-protection]

File Edit Options View Window Help

DEMO.SEPAM_G87_WILL

Volts/Amps | **Protection** | Energy & Dmd | Inputs/Outputs | Diagnostics

Breaker

I101 Status*
Open

Protection Status
Tripped

Racked out: No
Ground switch: Open

Thermal capacity used (%): 0
Time before trip (min):
Waiting time after trip (min):

Sepam reset: No

Real-time Current

I A: 0 A
I B: 0 A
I C: 0 A
I Ground meas.: 0.0 A
I Ground calc.: 0.0 A

Thermal overload alarm: Inactive

Trip Self-Diagnostics

Trip circuit fault	Yes
Control fault	Yes
Major Sepam fault	No
Partial Sepam fault	No
Thermal protection blocked	No
Min V auxiliary alarm	No
Max V auxiliary alarm	No

SF6 alarm: No
VT/CT fault: No
Battery low: No

Machine Alarms

Temperature: Inactive
Thermistor: Inactive

Back to Network

Event Log
Trip Status Details
Fault Recording
Alarm Log

* "I101 Status" will indicate the breaker open/close status if correctly configured on the Sepam device.

Device Time 4/4/2013 09:09:40.626 AM
Device Type Sepam G87

When Fault Recording is selected on the Protection tab, the following screen will be displayed:

Vista - supervisor - StruxureWare Power Monitoring - [User Diagram:SepamG87_FAC-4WYE_V1.1.0-tripLogs]

File Edit Options View Window Help

DEMO.SEPAM_G87_WILL

Back to Protection

Waveforms

Disturbance waveform
Recording is: Enabled
Manual Waveform Trigger

Last Tripping Current

I A: 0 A
I B: 0 A
I C: 0 A
I Ground: 0.0 A

Context Logs

Tripping context
--Sync Module Not Installed.--
Out of sync context (No data)

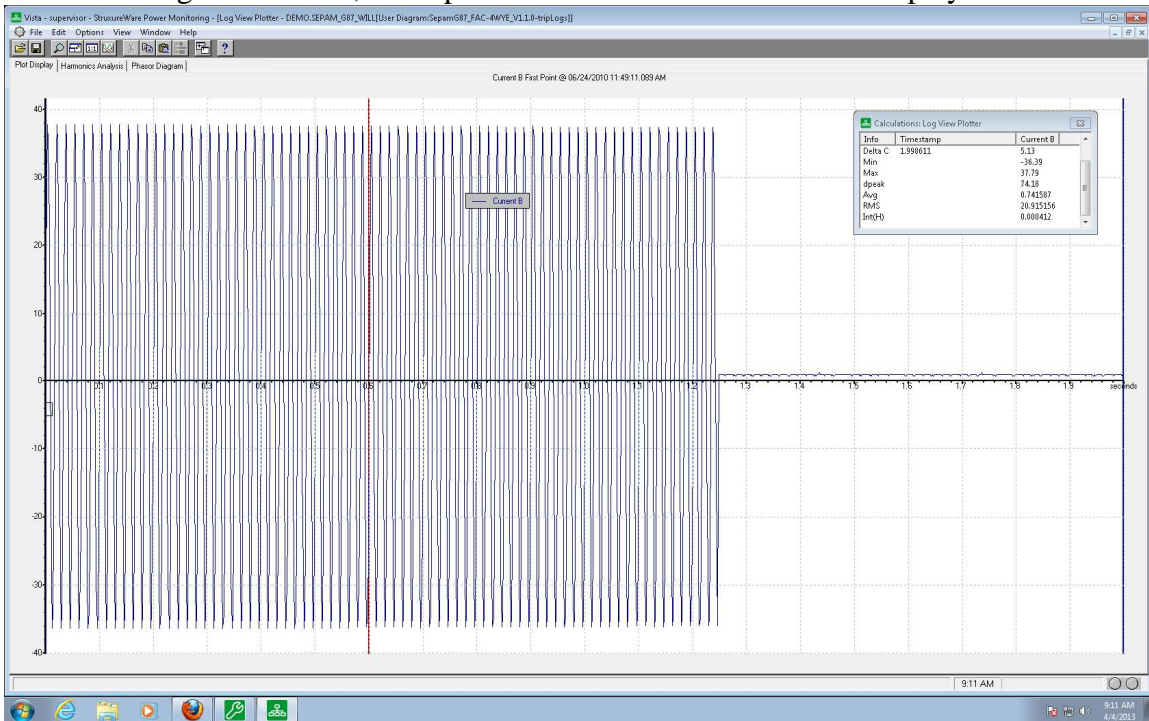
Device Time 4/4/2013 09:10:10.039 AM
Device Type Sepam G87

From the Fault Recording screen, the user can select the Disturbance Waveform button and view the list of captured waveforms within the Sepam relay.

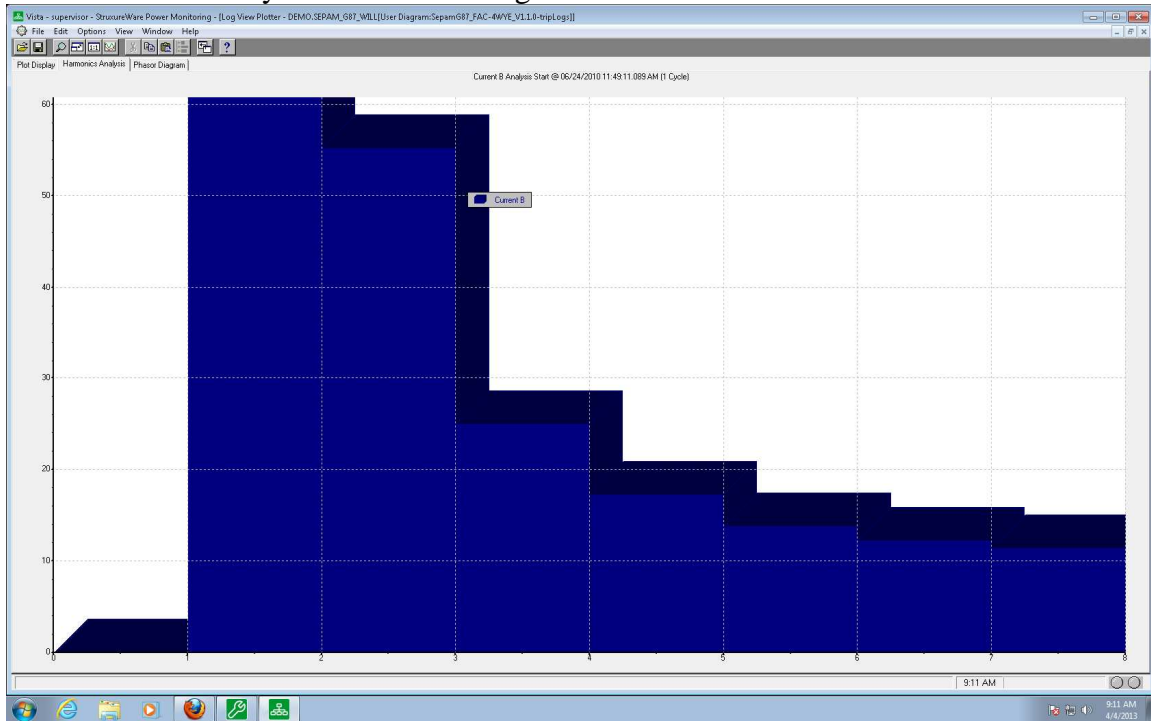
The screenshot shows a software window titled "Vista - supervisor - StruxureWare Power Monitoring - [DEMO:SEPAM_87_WLL\User Diagram:Sepam87_FAC-4WYE_V1.1.0-tripLog]". The main area contains a table with the following columns: Timestamp, Cause, Cause Value, Effect Value, Current A, Current A', Current B, Current B', Current C, Current C', Current E, Voltage A-B, Voltage A-N, Voltage B-C, Voltage B-N, Voltage C-N, Neutral Point Voltage, D1101, D1102, D01, D02, and D03. The table lists several events, including "Sepam Not Reset After Fault Status Trip" and "ANSI 59 Limit 1 Status Trip".

	Timestamp	Cause	Cause Value	Effect Value	Current A	Current A'	Current B	Current B'	Current C	Current C'	Current E	Voltage A-B	Voltage A-N	Voltage B-C	Voltage B-N	Voltage C-N	Neutral Point Voltage	D1101	D1102	D01	D02	D03	
1	04/03/2013 05:02:51.764 PM	Sepam Not Reset After Fault Status Trip		Active																			
2	04/03/2013 05:02:51.563 PM	ANSI 59 Limit 1 Status Trip		Active																			
3	04/03/2013 05:02:51.563 PM	Protection Trip Status	Trip	Active																			
4	01/04/2013 09:51:40.979 AM				^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^
5	01/04/2013 09:46:40.843 AM				^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^
6	01/04/2013 06:29:46.937 AM				^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^
7	10/15/2012 06:13:05.375 PM				^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^
8	06/24/2010 11:49:11.869 AM				^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^
9	06/24/2010 11:49:55.166 AM				^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^	^^
10	End of Database																						

After selecting a waveform, the captured data is shown on the Plot Display tab.



The Harmonic Analysis and Phasor Diagram tabs are also selectable.



Other than Volts/Amps and Protection, the user can also find beneficial information under the Energy & Demand, Inputs/Outputs, and Diagnostics tabs. The remaining three tabs are shown below:

DEMO.SEPAM_G87_WILL

Volts/Amps | Protection | **Energy & Dmd** | Inputs/Outputs | Diagnostics

Back to Network

Demand

Current Demand

	Interval	Peak
I A	0 A	1,188 A
I B	0 A	1,248 A
I C	0 A	1,205 A

Reset current peak demand

Energy

	Ep	Eq
In	27,400 kWh	300 kvarh
Out	400 kWh	8,300 kvarh

Energy log

Peak Power Demand

P total	-66,394 kW
Q total	64,738 kvar

Reset power peak demand

Device Time 4/4/2013 09:07:21.451 AM
Device Type Sepam G87

Vista - supervisor - StruxureWare Power Monitoring - [User Diagram:SepamG87_FAC-4WYE_V1.1.0-ia]

File Edit Options View Window Help

DEMO.SEPAM_G87_WILL

Volts/Amps | Protection | Energy & Dmd | **Inputs/Outputs** | Diagnostics

Back to Network

Inputs

Module 1		Module 2 MES120 Not Installed		Module 3 MES120 Not Installed	
Name	Status	Name	Status	Name	Status
I101	Inactive	I201	Inactive	I301	Inactive
I102	Inactive	I202	Inactive	I302	Inactive
I103	Inactive	I203	Inactive	I303	Inactive
I104	Inactive	I204	Inactive	I304	Inactive
I105	Inactive	I205	Inactive	I305	Inactive
I106	Inactive	I206	Inactive	I306	Inactive
I107	Inactive	I207	Inactive	I307	Inactive
I108	Inactive	I208	Inactive	I308	Inactive
I109	Inactive	I209	Inactive	I309	Inactive
I110	Inactive	I210	Inactive	I310	Inactive
I111	Inactive	I211	Inactive	I311	Inactive
I112	Inactive	I212	Inactive	I312	Inactive
I113	Inactive	I213	Inactive	I313	Inactive
I114	Inactive	I214	Inactive	I314	Inactive

Outputs

Input/Output Log

Device Time 4/4/2013 09:07:47.549 AM
Device Type Sepam G87

Vista - supervisor - StruxureWare Power Monitoring - [User Diagram:SepamG87_FAC-4WYE_V1.1.0-diag]

File Edit Options View Window Help

DEMO.SEPAM_G87_WILL

Volts/Amps | Protection | Energy & Dmd | Inputs/Outputs | **Diagnostics**

Back to Network

Sepam Diagnostics

Major fault	No	Setting group A active	Yes
Partial fault	No	Setting group B active	No
MET 1482 #1 sensor fault	No	Test mode active	Yes
MET 1482 #2 sensor fault	No	Time out of sync.	Yes
Event data loss zone 1	No	Time not correct	No
Event data loss zone 2	No	Remote control enabled	No

Machine Diagnostics

General Configuration

Switchgear/Network Diagnostics

Cumulative Breaking Current	Phase Angles	Counters	
Setpoint exceeded	a	Operations	11
Initial (A)	b	Rackouts	3
0<I<2In (kA²)	c	Phase fault trips from 50/51,50V/51V, 67	3
2<I<5In (kA²)	Ground	Earth/Gnd fault trips from 50N/51N, 67N	0
5<I<10In (kA²)	Ground'	Other	
10<I<40In (kA²)	Ground calc.	Last charging time (sec)	0
I>40In (kA²)		Last operating time (sec)	0.000
Total (kA²)		V aux (V)	23.8

Device Time 4/4/2013 09:08:02.088 AM
Device Type Sepam G87