

office

REPORTE- NO EDITABLE- EN EL SOFTWARE PAS DE SATEC, DE CALIDAD DE LA ENERGIA REALIZADO EN 7 DIAS, INTERVALOS DE 10 MINUTOS- DE ACUERDO A LIMITES DE ARESEP, EN DONDE SE COMPRUEBA SI SE CUMPLIO CON EL 95% DE LOS INTERVALOS DENTRO DE LA NORMATIVA. REPORTE AUTOMATICO AL CUAL SOLO SE LE ASIGNAN LIMITES PARA OBTENERLO.

Friday, June 07, 2013

Modelos PM175 y EM920 inscritos en Aresep

**Power Frequency**

From	To	In-service time, %	Compliance +/-1%, % of time	Compliance +4/-6%, % of time	Min Frequency Hz	Max Frequency Hz	Standard compliance
		99.61	100.00	100.00	59.49	60.08	Ok
		72.82	100.00	100.00	59.69	60.17	Ok
		100.00	100.00	100.00	59.65	60.18	Ok
		100.00	100.00	100.00	59.55	60.17	Ok
		100.00	100.00	100.00	59.54	60.20	Ok
		100.00	100.00	100.00	59.66	60.14	Ok
		100.00	100.00	100.00	59.71	60.13	Ok
		100.00	100.00	100.00	59.59	60.17	Ok
		99.36	100.00	100.00	59.69	60.12	Ok
		22.45	100.00	100.00	59.49	60.20	Ok

FECHAS DEL ESTUDIO  
% DE CUMPLIMIENTO  
EN LA TOTALIDAD DEL ESTUDIO.  
SI SE CUMPIO o NO CON EL 95% DE LOS INTERVALOS DE 10 MINUTOS EN 7 DIAS CONSECUTIVOS DE ACUERDO A ARESEP

**Voltage Variations**

From	To	In-service time, %	Compliance +/-10%, % of time	Compliance +10/-15%, % of time	V1 min	V1 max	V2 min	V2 max	V3 min	V3 max	Standard compliance
		99.70	100.00	100.00	20196	20656	20211	20682	20017	20447	Ok
		72.82	100.00	100.00	20197	20664	20198	20679	19971	20464	Ok
		100.00	100.00	100.00	20185	20708	20193	20707	19993	20527	Ok
		100.00	100.00	100.00	20192	20717	20206	20723	19984	20536	Ok
		100.00	100.00	100.00	20108	20723	20049	20736	19799	20550	Ok
		100.00	100.00	100.00	20236	20713	20127	20722	19837	20527	Ok
		100.00	100.00	100.00	20221	20691	20222	20701	20004	20547	Ok
		100.00	100.00	100.00	20176	21564	20177	21575	19963	21596	Ok
		99.31	100.00	100.00	20165	21651	20193	21661	19970	21693	Ok

**Rapid Voltage Changes**

Polyphase incidents	V1 incidents	Max V1 variation, %Un	V2 incidents	Max V2 variation, %Un	V3 incidents	Max V3 variation, %Un	Standard compliance
0	0	0.00	0	0.00	0	0.00	Ok
0	0	0.00	0	0.00	0	0.00	Ok
0	0	0.00	0	0.00	0	0.00	Ok
0	0	0.00	0	0.00	0	0.00	Ok
0	0	0.00	0	0.00	0	0.00	Ok
0	0	0.00	0	0.00	0	0.00	Ok
0	0	0.00	0	0.00	0	0.00	Ok
1	1	4.93	1	4.93	1	4.94	No
1	1	4.91	1	4.92	1	4.93	No

EN50160 Compliance Report  
05/23/10 - 08/08/10

SOBREPASO EL LIMITE DE 1.0 Y NO CUMPLIO CON EL 95% DE INTERVALOS

Flicker							
From	To	In-service time, %	Compliance, PIt <= 1, % of time	Max V1 PIt	Max V2 PIt	Max V3 PIt	Standard compliance
		98.81	100.00	0.84	0.87	0.45	Ok
		71.43	94.00	2.15	1.44	0.84	No
		100.00	94.06	0.99	1.20	2.01	No
		100.00	93.92	1.89	1.79	1.74	No
		100.00	94.70	1.35	1.92	1.97	No
		100.00	94.29	1.18	0.80	2.03	No
		100.00	93.25	1.67	3.20	2.01	No
		100.00	90.70	2.09	1.96	1.87	No
		96.43	96.23	1.06	1.33	0.97	Ok

Voltage Unbalance					
From	To	In-service time, %	Compliance, % of time	Max voltage unbalance, %	Standard compliance
		99.60	99.71	23.9	Ok
		72.82	99.55	25.6	Ok
		100.00	100.00	0.0	Ok
		100.00	99.50	34.5	Ok
		100.00	99.75	25.1	Ok
		100.00	99.41	37.0	Ok
		100.00	99.41	47.4	Ok
		100.00	99.71	25.8	Ok
		99.40	100.00	0.0	Ok

Harmonic Voltage										
From	To	In-service time, %	Harmonics compliance, % of time	Worst-case phase	Max magnitude, %Un	Harmonic order	THD compliance, % of time	Worst-case phase	Max THD, %	Standard compliance
		99.60	100.00	--	--	--	100.00	V3	2.0	Ok
		72.82	100.00	--	--	--	100.00	V3	2.7	Ok
		100.00	100.00	--	--	--	100.00	V1	2.6	Ok
		100.00	100.00	--	--	--	100.00	V3	2.7	Ok
		100.00	100.00	--	--	--	100.00	V3	2.3	Ok
		100.00	100.00	--	--	--	100.00	V3	2.8	Ok
		100.00	100.00	--	--	--	100.00	V3	2.3	Ok
		100.00	98.89	V3	3.25	5	100.00	V1	3.7	Ok
		99.40	91.96	V2	3.28	5	100.00	V1	3.7	No

FASES AFECTADAS                      VALOR DE ARMONICA REGISTRADA                      ARMONICA RESPECTIVA

**EN50160 Compliance Report**  
05/23/10 - 08/08/10

Residual voltage (u), %Un	Voltage Dips						
	Duration (t)						
	t < 100 ms	t < 500 ms	t < 1 s	t < 3 s	t < 20 s	t < 60 s	t < 180 s
95 < u < 90	23	1	0	0	0	0	0
70 < u <= 85	94	49	7	0	0	0	0
40 < u <= 70	18	29	2	0	0	0	0
u <= 40	8	17	6	3	4	3	0

Voltage Interruptions		
Duration (t)		
t < 1 s	t < 180 s	t >= 180 s
34	8	4

Overvoltage (u), %Un	Temporary Overvoltages		
	Duration (t)		
	t < 1 s	1 s <= t < 1 min	t >= 1 min
110 < u <= 120	0	0	0
120 < u <= 140	0	0	0
140 < u <= 160	0	0	0
160 < u <= 200	0	0	0
u > 200	0	0	0

LIMITES  
AJUSTABLES

Transient Overvoltages				
Peak voltage (u), %Un	Polyphase incidents	V1 incidents	V2 incidents	V3 incidents
u > 120	0	0	0	0
u > 150	0	0	0	0
u > 200	0	0	0	0
u > 250	0	0	0	0
u > 300	0	0	0	0

El reporte del PAS de SATEC, permite obtener el tiempo total de interrupción, si se cumplió con los límites de armónicas, desbalance, impulsos, variaciones de voltaje, flicker, voltajes armónicos, todo de acuerdo a los límites asignables determinados por Aresep

## LIMITES DE CONTROL DE CALIDAD ASIGNABLE FACILMENTE DE ACUERDO A ARESEP

The screenshot shows the '920eth - Log Setup' window with the following table configuration:

Event Category	PQ Log		Waveform Log			Data RMS Trend - Time Envelopes and Maximum Durations								
	Threshold%	Hysteresis%	Enabled	On Start	On End	Log No.	Enabled	1/2-cyc, cycles	0.2-s, seconds	3-s, minutes	10-min, hours	Before, cycles	After, cycles	Log No.
Power Frequency, dF/n	1.0	5.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	----	----	3	----	----	----	14
Voltage Variations, dV/Un	10.0	2.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	----	----	----	3	----	----	14
Rapid Voltage Changes, dV/Un	6.0	2.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	----	----	----	----	----	----	----
Flicker Severity, Pt	1.0	5.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	----	----	----	3	----	----	14
Voltage Dips, %Un	87.0	2.0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	30	3	3	0	2	2	14
Voltage Interruptions, %Un	1.0	5.0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	30	3	3	0	2	2	14
Temporary Overvoltages, %Un	110.0	5.0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	30	3	3	0	2	2	14
Transient Overvoltages, %Un	150.0	2.0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	<input type="checkbox"/>	----	----	----	----	----	----	----
Voltage Unbalance, %	2.0	5.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	----	----	----	3	----	----	14
Harmonic THD, %	8.0	5.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2	<input type="checkbox"/>	----	----	----	3	----	----	14
Harmonic Voltage, %Un	----	5.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2	<input type="checkbox"/>	----	----	----	3	----	----	14
Interharmonic THD, %	2.0	5.0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2	<input type="checkbox"/>	----	----	----	3	----	----	14
Interharmonic Voltage, %Un	----	5.0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2	<input type="checkbox"/>	----	----	----	3	----	----	14
Main Signaling Voltage, %Un	----	2.0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2	<input type="checkbox"/>	----	----	3	----	----	----	14

Buttons at the bottom: Recorder Enabled (checked), Open, Save as..., Default, Print, Send, Receive.

**VALORES PROGRAMABLES A VOLUNTAD DEL USUARIO**

Los límites de huecos, picos, distorsión armónica, desbalance, flicker, impulsos y más, son fácilmente asignables en la Programación PAS de SATEC, en los modelos de medidores PM175 y EM 920, ambos inscritos en Aresep como medidores Clase 0.2S.

No es requerido programar que se guarden en memoria los parámetros a registrar, ya que en forma automática el PAS realiza el estudio en períodos de 7 días consecutivos, intervalos de 10 minutos y se elige la fecha de inicio y final del estudio.

Al final de un período definido- por ejemplo un mes- se obtiene el Reporte del PAS indicando- tal y como lo solicita Aresep- indicando si se cumplió o no con lo definido en la Normativa.

## CANTIDAD, DURACION y MAGNITUD DE LOS EVENTOS

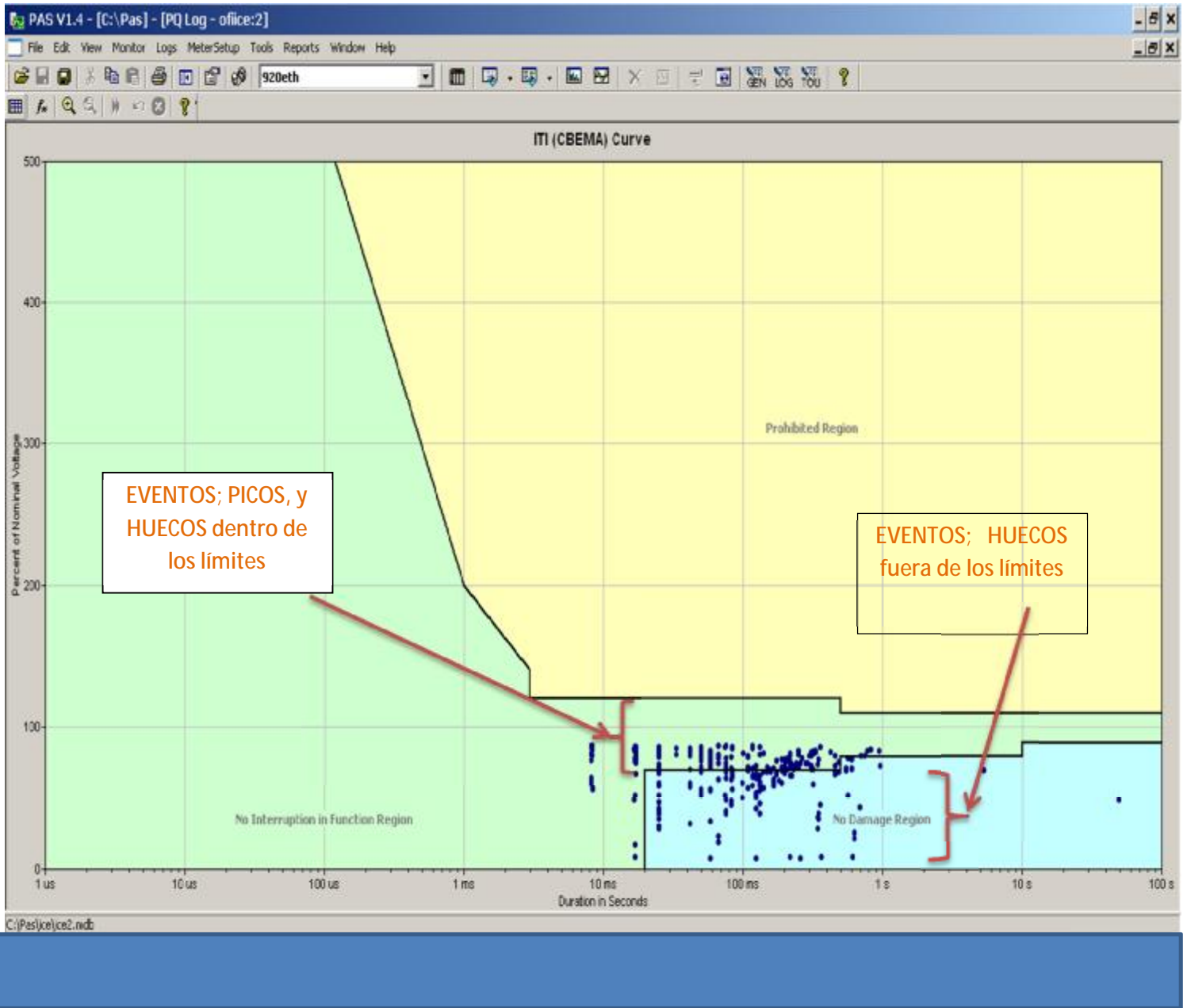
No.	Event	Fault Category	Phase	Fault Magnitude	PU	Duration
1	05/19/10 08:53:31.258 PQE6:750	Voltage interruption	V1,V2,V3	0	0.00	0:17:33.986000
2	05/19/10 09:13:05.261 PQE6:751	Voltage dip	V1	9727	0.48	0:00:49.394739
3	05/19/10 09:13:05.261 PQE6:751	Voltage dip	V2	0	0.00	0:00:49.394739
4	05/19/10 09:13:05.261 PQE6:751	Voltage dip	V3	0	0.00	0:00:49.394739
5	05/19/10 09:13:54.656 PQE6:752	Voltage interruption	V1,V2,V3	0	0.00	0:00:00.133391
6	05/19/10 09:13:54.806 PQE6:753	Voltage dip	V1	8699	0.43	0:00:00.691870
7						
8						
9						
10	05/19/10 09:13:55.614 PQE6:755	Voltage dip	V2	0	0.00	0:00:00.341609
11	05/19/10 09:13:55.614 PQE6:755	Voltage dip	V3	0	0.00	0:00:00.341609
12	05/19/10 09:13:55.956 PQE6:756	Voltage interruption	V1,V2,V3	0	0.00	0:00:01.508391
13	05/19/10 09:13:57.481 PQE6:757	Voltage dip	V2	0	0.00	0:00:00.641609
14	05/19/10 09:13:57.481 PQE6:757	Voltage dip	V3	0	0.00	0:00:00.641609
15	05/19/10 09:13:58.123 PQE6:758	Voltage interruption	V1,V2,V3	0	0.00	0:00:00.325130
16	05/19/10 09:13:58.473 PQE6:759	Voltage dip	V1	14677	0.73	0:00:00.458261
17	05/19/10 09:13:58.473 PQE6:759	Voltage dip	V2	0	0.00	0:00:00.458261
18	05/19/10 09:13:58.473 PQE6:759	Voltage dip	V3	0	0.00	0:00:00.458261
19	05/19/10 09:13:58.931 PQE6:760	Voltage interruption	V1,V2,V3	0	0.00	0:00:00.650739
20	05/19/10 09:13:59.598 PQE6:761	Voltage dip	V2	0	0.00	0:00:00.733609
21	05/19/10 09:13:59.598 PQE6:761	Voltage dip	V3	0	0.00	0:00:00.733609
22	05/19/10 09:14:00.332 PQE6:762	Voltage interruption	V1,V2,V3	0	0.00	0:00:00.266739
23	05/19/10 09:14:00.615 PQE6:763	Voltage dip	V1	14619	0.73	0:00:38.153479
24	05/19/10 09:14:00.615 PQE6:763	Voltage dip	V2	0	0.00	0:00:38.153479
25	05/19/10 09:14:00.615 PQE6:763	Voltage dip	V3	0	0.00	0:00:38.153479
26	05/19/10 09:22:38.769 PQE6:764	Voltage interruption	V1,V2,V3	0	0.00	0:00:00.441521
27	05/19/10 09:22:39.227 PQE6:765	Voltage dip	V2	0	0.00	0:00:00.408130
28	05/19/10 09:22:39.227 PQE6:765	Voltage dip	V3	0	0.00	0:00:00.408130
29	05/19/10 09:22:39.635 PQE6:766	Voltage interruption	V1,V2,V3	0	0.00	0:00:00.191740
30	05/19/10 09:22:39.844 PQE6:767	Voltage dip	V2	0	0.00	0:00:00.358218
31	05/19/10 09:22:39.844 PQE6:767	Voltage dip	V3	0	0.00	0:00:00.358218
32	05/19/10 09:22:40.202 PQE6:768	Voltage interruption	V1,V2,V3	0	0.00	0:00:00.033391
33	05/19/10 09:22:40.252 PQE6:769	Voltage dip	V2	0	0.00	0:00:00.091652
34	05/19/10 09:22:40.252 PQE6:769	Voltage dip	V3	0	0.00	0:00:00.091652
35	05/19/10 09:22:40.343 PQE6:770	Voltage interruption	V1,V2,V3	0	0.00	0:00:00.050130
36	05/19/10 09:22:40.410 PQE6:771	Voltage dip	V2	0	0.00	0:00:00.333391
37	05/19/10 09:22:40.410 PQE6:771	Voltage dip	V3	0	0.00	0:00:00.333391
38	05/19/10 09:22:40.744 PQE6:772	Voltage interruption	V1,V2,V3	0	0.00	0:00:00.216739
39	05/19/10 09:22:40.977 PQE6:773	Voltage dip	V2	0	0.00	0:31:42.534390

Fecha de ocurrencia    tipo de evento, descripción    fases afectadas    magnitud, duración del evento.

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# CURVA ITI- CBEMA ACTUALIZADA DE ACUERDO A LOS EVENTOS DEL LISTADO ANTERIOR



## FACILIDAD DE REGISTRO DE ARMONICAS PARA VOLTAJES y AMPERAJES EN INTERVALOS PROGRAMABLES

PAS V1.4 - [C:\Pas] - [Data Log 11 - office]

File Edit View Monitor Logs MeterSetup Tools Reports Window Help

920eth

office Data Log 11 06/07/13 16:58:39

No.	Date/Time	Event	V1 THD	V2 THD	V3 THD	I1 THD	I2 THD	I3 THD
1	07/29/10 23:45:00.507	SP1	1.4	1.3	1.4	5.5	4.7	5.1
2	07/29/10 00:00:00.096	SP2	1.5	1.3	1.4	5.7	5	5.3
3	07/29/10 00:00:00.507	SP1	1.5	1.3	1.4	5.8	5.1	5.4
4	07/29/10 00:10:00.090	SP2	1.4	1.3	1.4	8	6.8	7.4
5	07/29/10 00:15:00.506	SP1	1.4	1.3	1.4	5.8	5	5.7
6	07/29/10 00:20:00.097	SP2	1.4	1.3	1.3	4.4	3.7	4.2
7	07/29/10 00:30:00.095	SP2	1.4	1.2	1.4	5.8	4.9	5.6
8	07/29/10 00:30:00.512	SP1	1.4	1.2	1.4	5.8	4.9	5.6
9	07/29/10 00:45:00.501	SP1	1.5	1.3	1.4	5.5	4.6	5.2
10	07/29/10 01:00:00.095	SP2	1.5	1.3	1.4	5.7	4.7	5.5
11	07/29/10 01:00:00.505	SP1	1.5	1.3	1.4	5.7	4.7	5.6
12	07/29/10 01:10:00.093	SP2	1.4	1.3	1.4	5.6	4.8	5.4
13	07/29/10 01:15:00.505	SP1	1.5	1.3	1.4	5.5	4.7	5.3
14	07/29/10 01:20:00.099	SP2	1.4	1.3	1.4	4.3	3.6	4.1
15	07/29/10 01:30:00.092	SP2	1.5	1.3	1.4	7.3	6.3	6.8
16	07/29/10 01:30:00.502	SP1	1.5	1.3	1.4	7.3	6.3	6.8
17	07/29/10 01:45:00.502	SP1	1.4	1.3	1.4	5.5	4.7	5.4
18	07/29/10 02:00:00.090	SP2	1.5	1.3	1.4	5.5	4.6	5.4
19	07/29/10 02:00:00.500	SP1	1.5	1.3	1.4	5.4	4.7	5.4
20	07/29/10 02:10:00.097	SP2	1.5	1.3	1.4	5.5	4.6	5.1
21	07/29/10 02:15:00.500	SP1	1.5	1.4	1.4	7	6	6.5
22	07/29/10 02:20:00.096	SP2	1.5	1.3	1.4	4.3	3.7	4.1
23	07/29/10 02:30:00.090	SP2	1.5	1.3	1.3	5.6	4.7	5.2
24	07/29/10 02:30:00.500	SP1	1.5	1.3	1.3	5.7	4.7	5.3
25	07/29/10 02:45:00.515	SP1	1.5	1.4	1.4	7.1	6.1	6.6
26	07/29/10 03:00:00.091	SP2	1.6	1.3	1.4	5.7	4.8	5.5
27	07/29/10 03:00:00.508	SP1	1.6	1.3	1.4	5.7	4.8	5.5
28	07/29/10 03:10:00.096	SP2	1.5	1.3	1.4	6	5.3	5.8
29	07/29/10 03:15:00.503	SP1	1.5	1.3	1.4	5.5	4.7	5.3
30	07/29/10 03:20:00.095	SP2	1.5	1.3	1.4	5.3	4.6	5
31	07/29/10 03:30:00.090	SP2	1.5	1.3	1.5	7	5.9	6.6
32	07/29/10 03:30:00.500	SP1	1.5	1.3	1.5	7.6	6.5	7.1
33	07/29/10 03:45:00.510	SP1	1.6	1.4	1.5	7.6	6.5	7.1
34	07/29/10 04:00:00.094	SP2	1.4	1.2	1.4	6.2	5.2	5.9
35	07/29/10 04:00:00.511	SP1	1.4	1.2	1.4	6.1	5.2	5.9
36	07/29/10 04:10:00.096	SP2	1.5	1.3	1.4	6.4	5.4	6
37	07/29/10 04:15:00.507	SP1	1.5	1.3	1.4	5.8	5	5.5
38	07/29/10 04:20:00.098	SP2	1.5	1.2	1.3	4.9	4.1	4.6
39	07/29/10 04:30:00.092	SP2	1.5	1.3	1.4	5.7	4.8	5.2
40	07/29/10 04:30:00.502	SP1	1.5	1.3	1.4	5.8	4.8	5.2

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## FACILIDAD DE PROGRAMACION PARA TDD EN INTERVALOS, MAXIMOS Y MINIMOS

920eth - Log Setup

Data Recorder

LogNo: 4 Name: CALCULO TDD. TOTAL DISTOR DE DEMANDA DE AMP

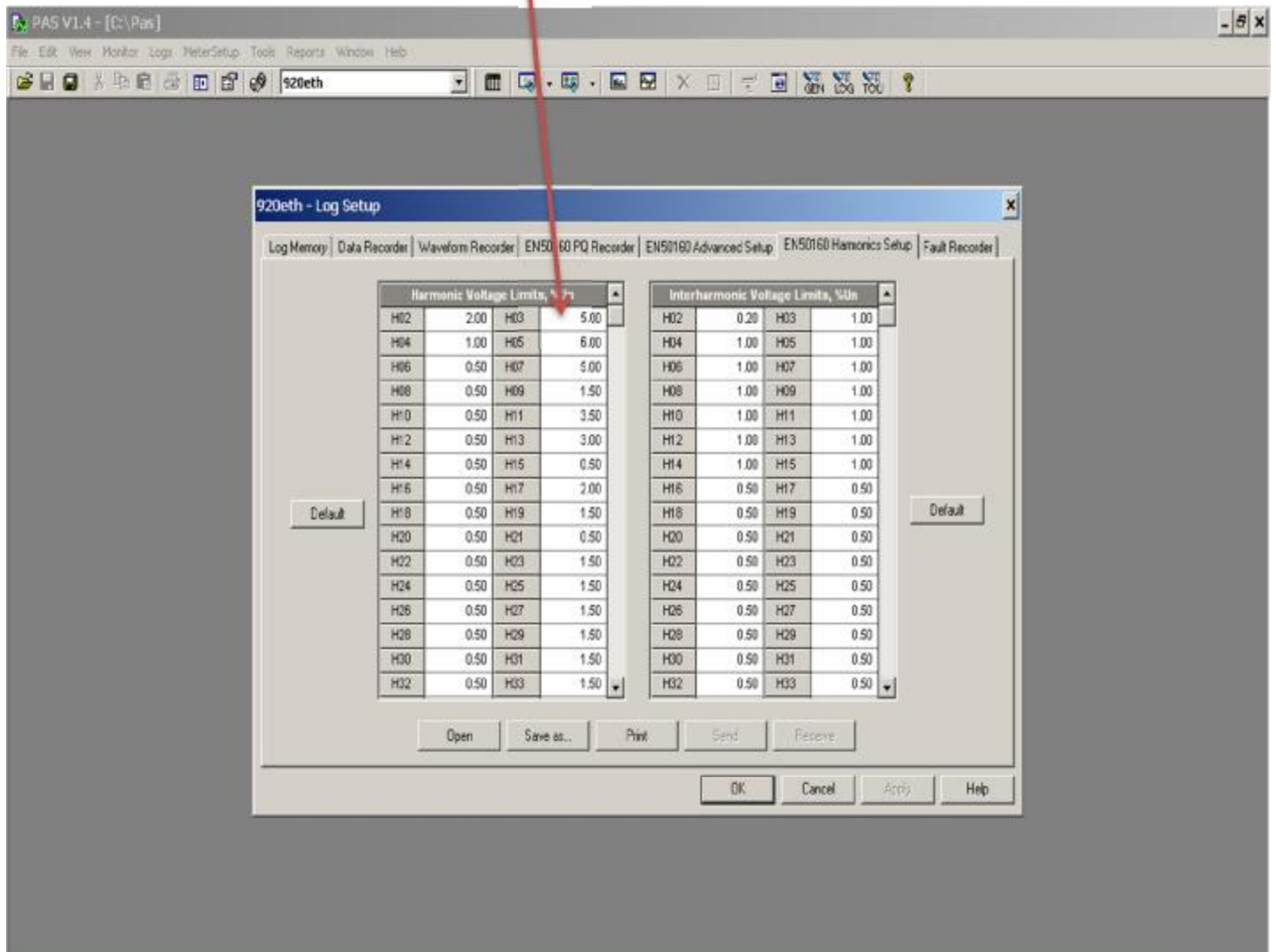
No.	Group	Parameter	No.	Group	Parameter
1	AVR PHASE	I1 TDD	9	----	NONE
2	AVR PHASE	I2 TDD	10	----	NONE
3	AVR PHASE	I3 TDD	11	----	NONE
4	MAX PHASE	I1 TDD MAX	12	----	NONE
5	MAX PHASE	I2 TDD MAX	13	----	NONE
6	MAX PHASE	I3 TDD MAX	14	----	NONE
7	----	NONE	15	----	NONE
8	----	NONE	16	----	NONE

Open Save as... Clear Clear All Print Send Receive

OK Cancel Apply Help



# FACILIDAD DE ASIGNACION DE LIMITES DE VOLTAJES ARMONICOS PARA CADA ARMONICA EN CASO DE VARIACIONES A LA NORMATIVA o ESTUDIOS



PM175



expertmeter<sup>™</sup>  
POWER QUALITY AND REVENUE METER  
EM920