

Commercial Presentation

PQSIM 200™

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Robert graduated from Assumption University of Thailand with a Bachelor Degree in Electrical and Electronics Engineering. Robert's current projects at Power Quality Thailand include assembling and testing PQSim 200, as well as demonstrating, promoting and training in Power Quality products.

"We keep moving forward, opening new doors, and doing new things, because we're curious and curiosity keeps leading us down new paths." – Walt Disney

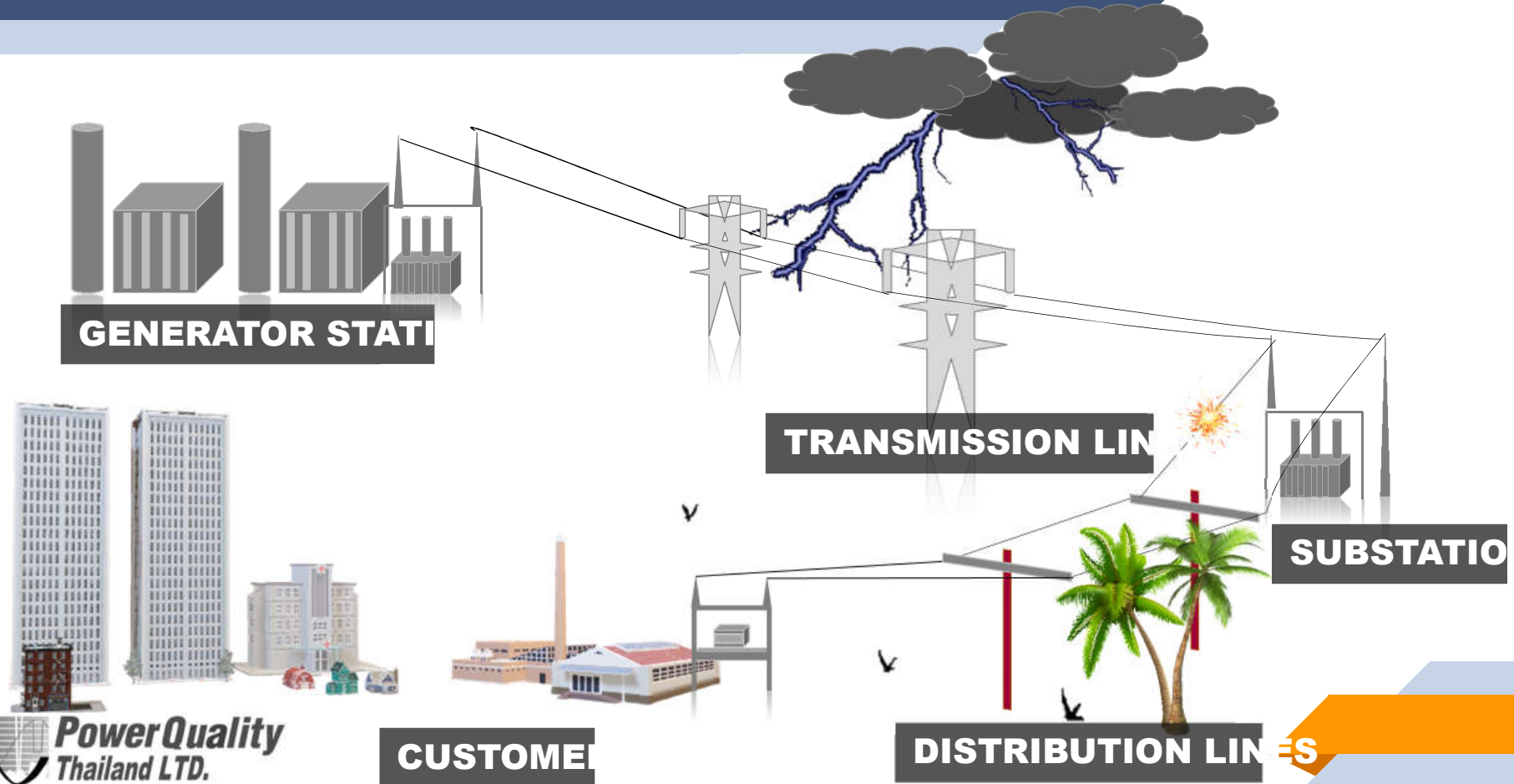
PQSIM 200™

**A Power Quality Practitioner Training
Tool**

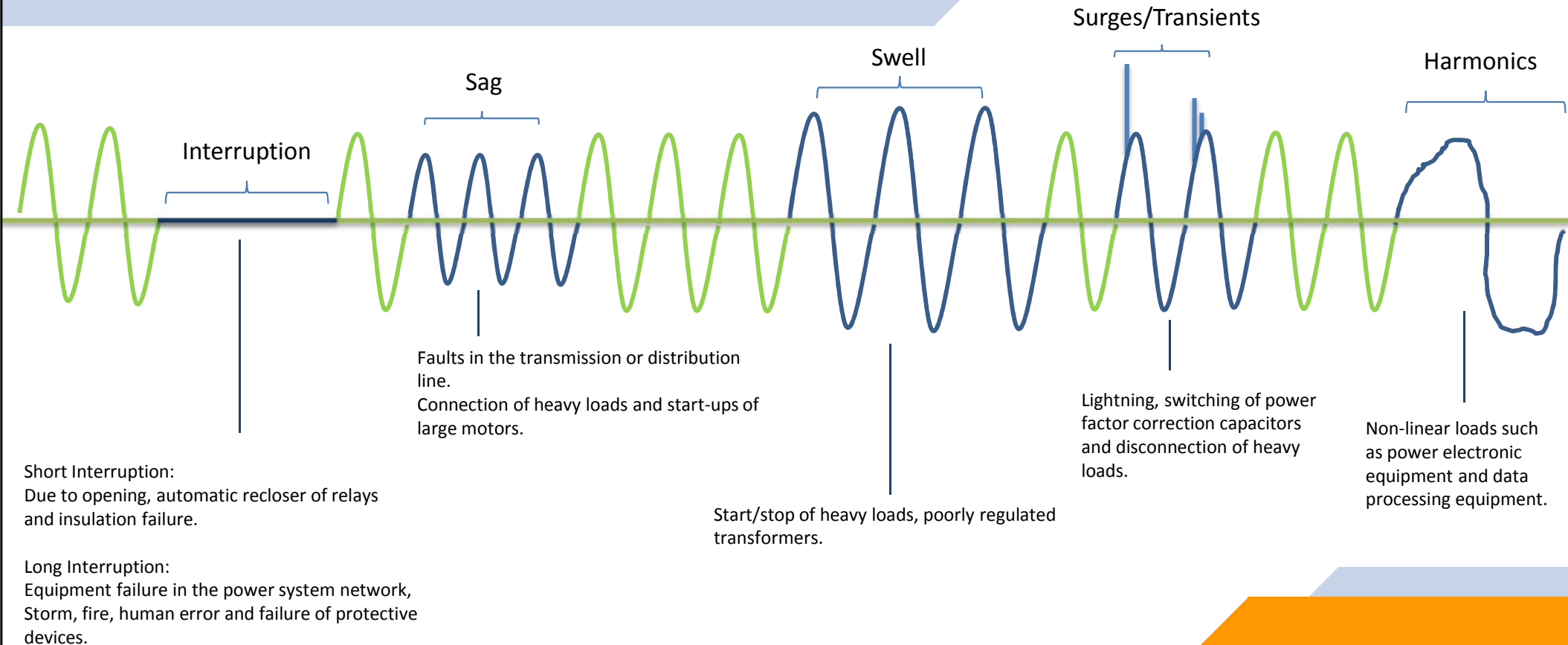
PQSIM 200™

- DESIGNED BY POWER QUALITY EXPERTS WITH 30 YEARS' EXPERIENCE IN TROUBLESHOOTING, TESTING AND DOCUMENTING POWER QUALITY ISSUES.
- A PURPOSE BUILT FUNCTION GENERATOR THAT PRODUCES VOLTAGE AND CURRENT WAVEFORMS OF THE MOST COMMON POWER QUALITY DISTURBANCES.

POWER DISTURBANCES



POWER QUALITY DISTURBANCES



AUTO – SEQUENCE TEST

- 9 DIFFERENT POWER QUALITY EVENTS
- EACH EVENT SPACED AT 30 SECONDS INTERVAL.
(FOR EASY DATA DISPLAY IN THE INSTRUMENT SOFTWARE)

PQ EVENTS SELECTIONS

- USER CAN SELECT INDIVIDUAL POWER QUALITY DISTURBANCE WAVEFORMS.



PHASE TO NEUTRAL

SAG (USER SELECT MAGNITUDES AND DURATIONS)

SWELL (USER SELECT DURATIONS)

SWELL (USER SELECT DURATIONS)

UNIPOLAR TRANSIENTS

BIPOLAR TRANSIENTS

PF CAP (DECAYING) RINGWAVE

ODD HARMONICS

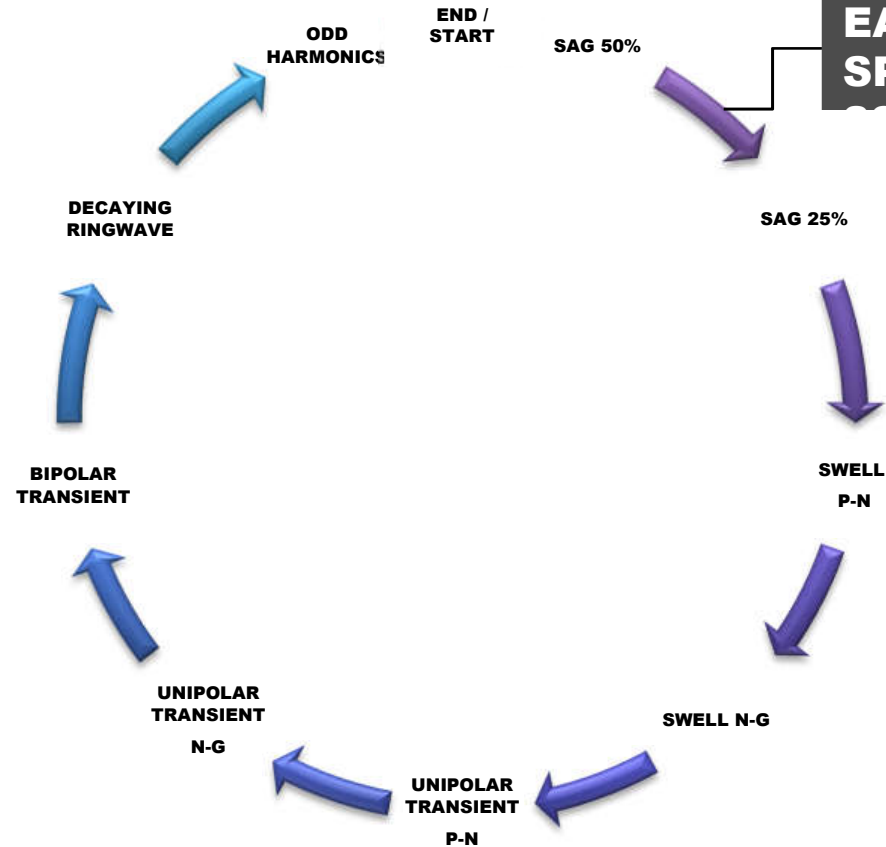
NEUTRAL TO GROUND

SWELL (USER SELECT MAGNITUDES AND DURATIONS)

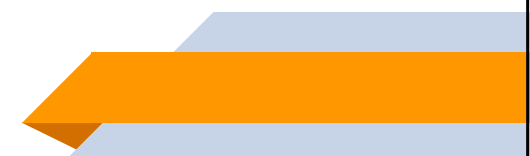
TRANSIENTS



AUTO - SEQUENCE



EACH EVENT SPACED AT

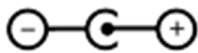




OUTPUT PHASE VOLTAGE 120 ~ 240 VAC, 50-60Hz

INPUT POWER 12 VDC

VOLTAGE 0 TO 1.5 VAC FOR CURRENT SIGNAL TO PQ METER



PQSIM 200™

PQSIM 200™ CONNECTION PORTS



Connect to
PQ meter 12VDC
power jack



DC Power extension cord with
switch and can generate power
quality disturbance -



APPLICATIONS

- PRODUCE A VARIETY OF KNOWN POWER QUALITY DISTURBANCES.
- PROVIDE THE CAPABILITY FOR USERS OF PQ INSTRUMENTS TO TEST THEIR SKILLS TO DISCRIMINATE BETWEEN IN AND OUT OF TOLERANCE DISTURBANCES.
- PROVIDE KNOWN HISTORICAL POWER DISTURBANCES TEST THE KNOWLEDGE AND CAPABILITIES OF PQ ENGINEERS TO USE PQ METERS.
- PROVIDE THE CAPABILITY TO DO A QUICK TEST OF PQ METER FUNCTIONALITY BEFORE GOING TO THE JOB SITE.

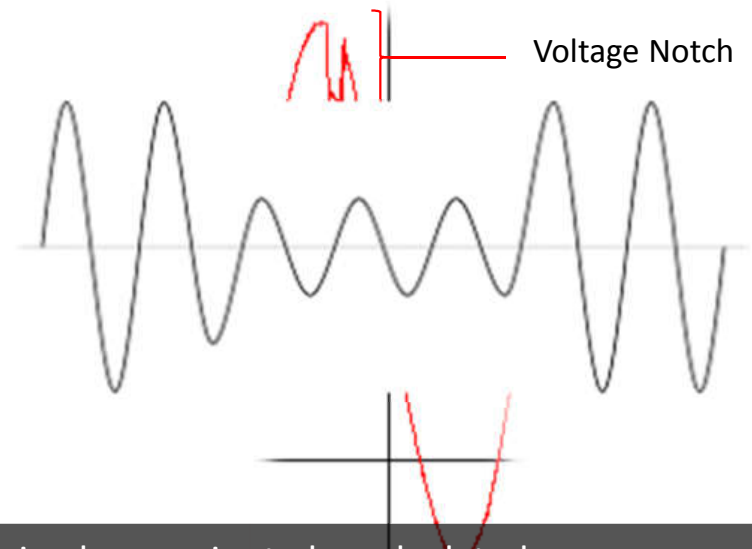




VOLTAGE SAG / DIP

MAGNITUDES: 10/25/50%
- Below Nominal Voltage
DURATIONS: 0.05/0.5/1/5/11 CYCLES

Typical Sag: 25%, up to 50%.
<1 CYCLE:
0.05 & 0.5 CYCLES; VOLTAGE NOTCHING. (Notches)
5 CYCLES: is the typical clearing time Transmission level faults
10 & greater. (Typical for distribution level faults)

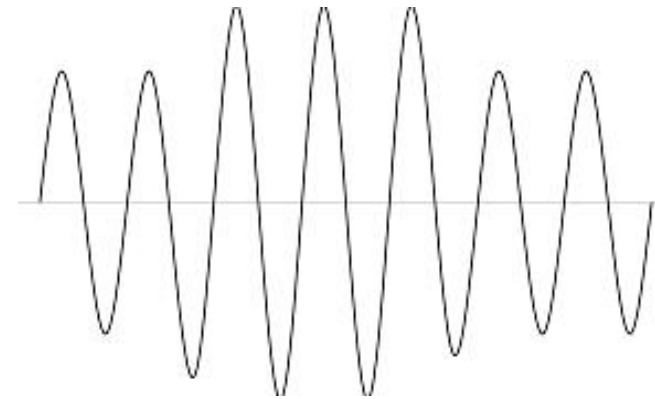


IEC Standards requires a length of 10 Cycles to be captured, allowing harmonics to be calculated.
For a Sag 11 Cycles, some PQ meter designs may have difficulty in correctly recording the 11 cycle event accurately.

VOLTAGE SWELL (P-N) & (N-G)

MAGNITUDES: + 10%
- Over Nominal Voltage

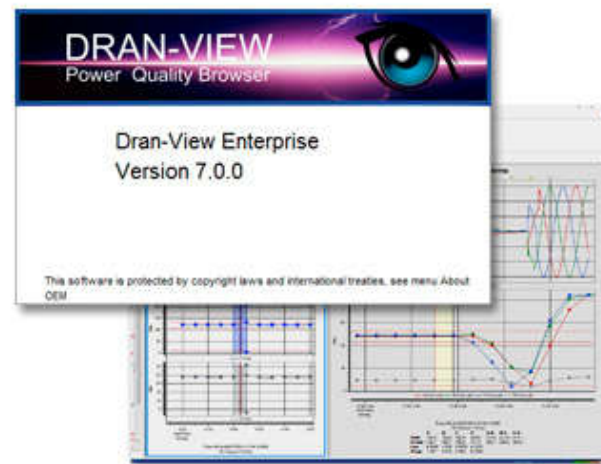
DURATIONS: 0.05/0.5/1/5/11 CYCLES



GENERATED BY PQSIM 200™



CAPTURED ON HDPQ XPLORER



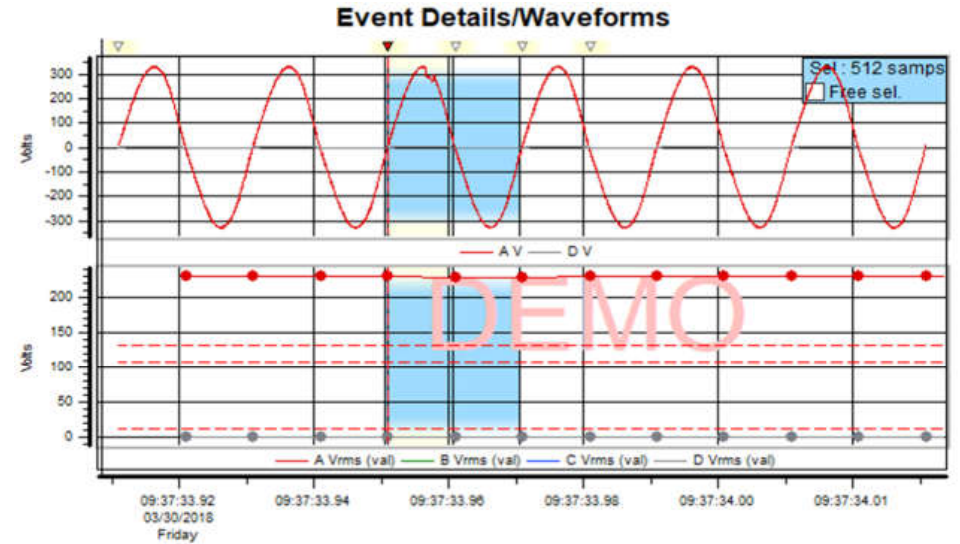
ANALYSIS & MONITORING DATA ON DRAN-VIEW 7

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CAPTURED ON HDPQ XPLORER

SAG/DIP 0.05 CYCLE AT 10%



Event #2 at 03/30/2018 09:37:33.950
AV Misc
CATEGORY: Transient
Phase -0.06004 Deg

	A	B	C	D	A-B	B-C	C-A
Vrms	229.8	0.09790	0.07077	0.6691	229.8	0.09794	230.5
VPeak	332.8	0.3688	0.2778	1.254			
Irms	2.761	0.01818	0.01768	0.01761			
IPeak	4.112	0.01931	0.01885	0.01865			

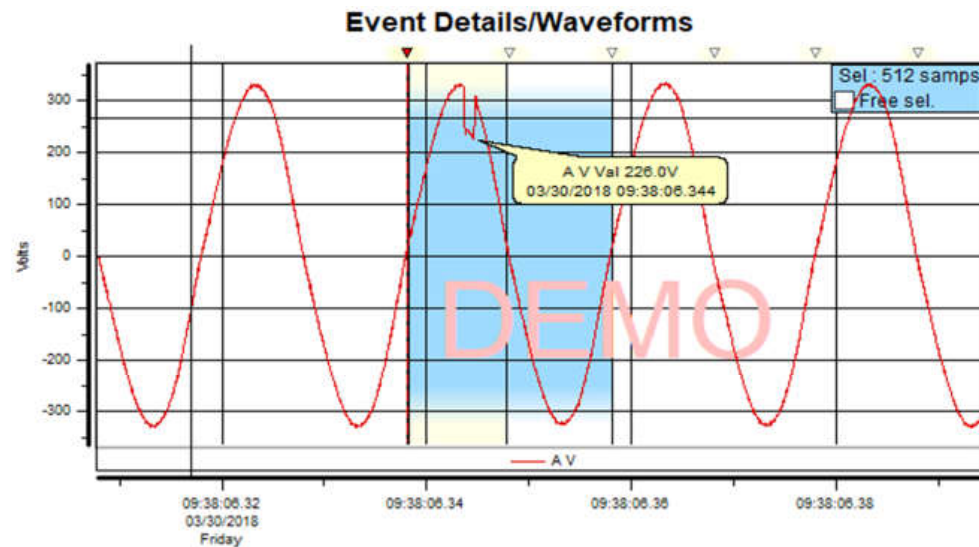
ANALYSIS & MONITORING DATA ON DRAN-VIEW 7

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CAPTURED ON HDPQ XPLORER

SAG/DIP 0.05 CYCLE AT 25%



Event #7 at 03/30/2018 09:38:06.338

AV Misc

CATEGORY: Transient

Phase -0.1163 Deg

	A	B	C	D	A-B	B-C	C-A
Vrms	229.9	0.09612	0.06907	0.6659	229.9	0.1002	230.5
VPeak	332.0	0.2766	0.2315	1.161			
Irms	2.774	0.01819	0.01768	0.01763			
IPeak	4.088	0.01931	0.01885	0.01881			

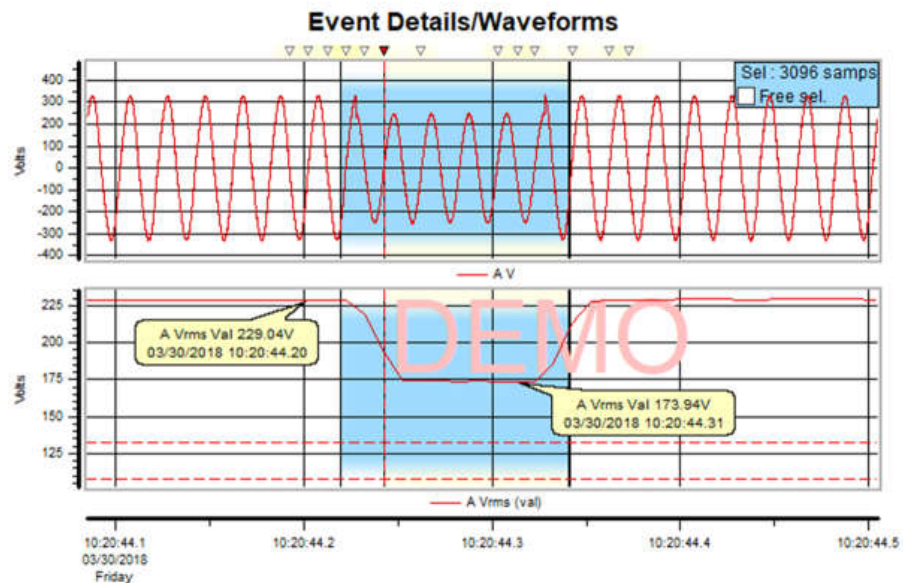
ANALYSIS & MONITORING DATA ON DRAN-VIEW 7

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SAG/DIP 5 CYCLES AT 25%



CAPTURED ON HDPQ XPLORER

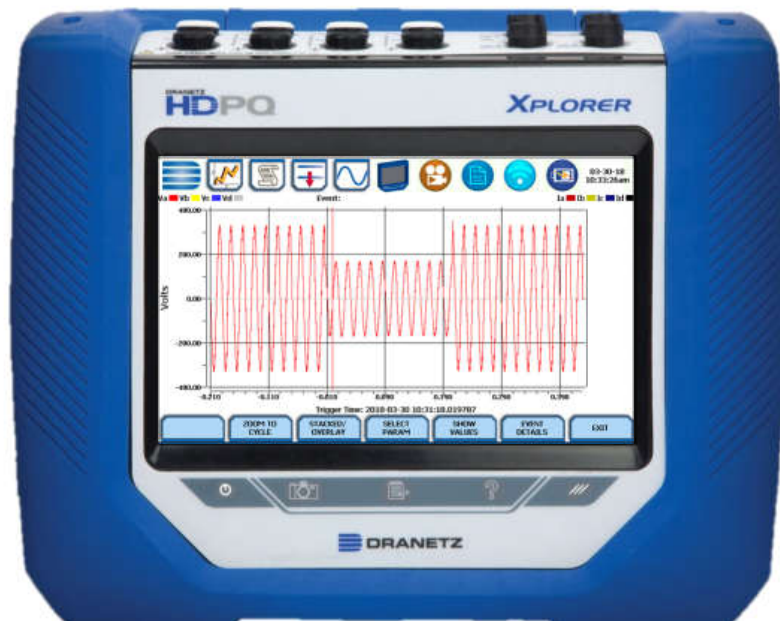


Event #29 at 03/30/2018 10:20:44.242
AVrms Instantaneous Sag

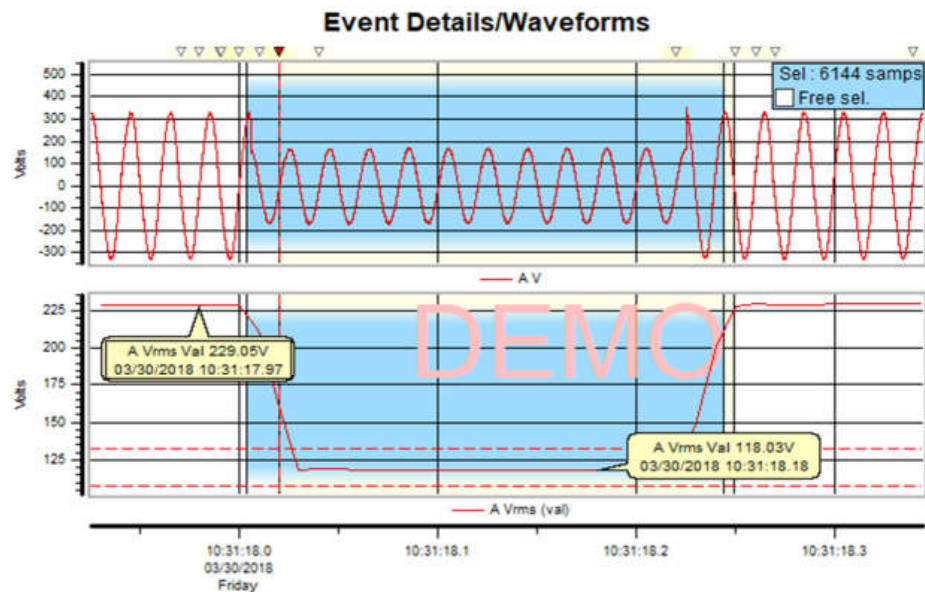
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SAG/DIP 11 CYCLES AT 50%



CAPTURED ON HDPQ XPLORER



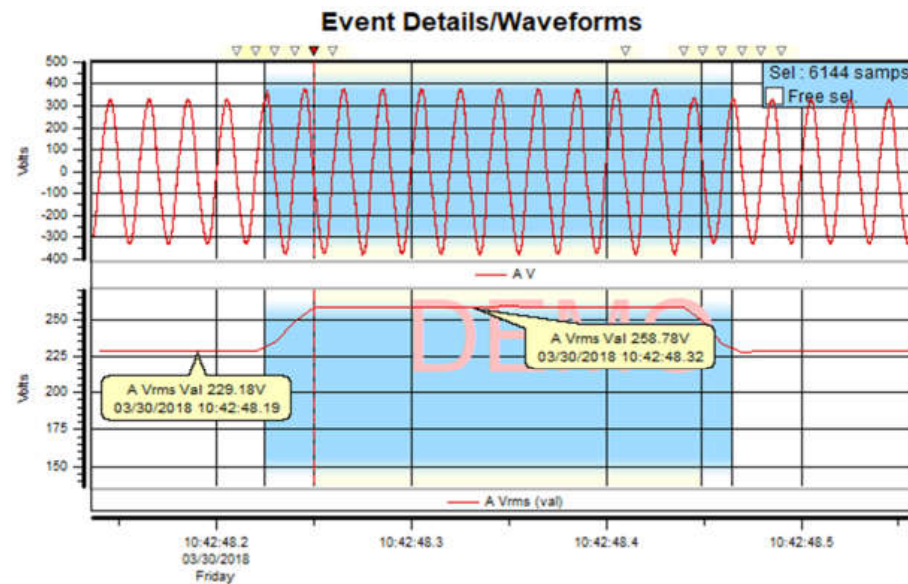
ANALYSIS & MONITORING DATA ON DRAN-VIEW 7

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SWELL P-N 11 CYCLES AT +10%



CAPTURED ON HDPQ XPLORER



Event #161 at 03/30/2018 10:42:48.250
AVrms Instantaneous Swell
CATEGORY: Short Duration Instantaneous Swell
Threshold crossed 132.0 V
Magnitude 258.9 V
MinRMS 258.3 V
Duration 0.199 Sec.

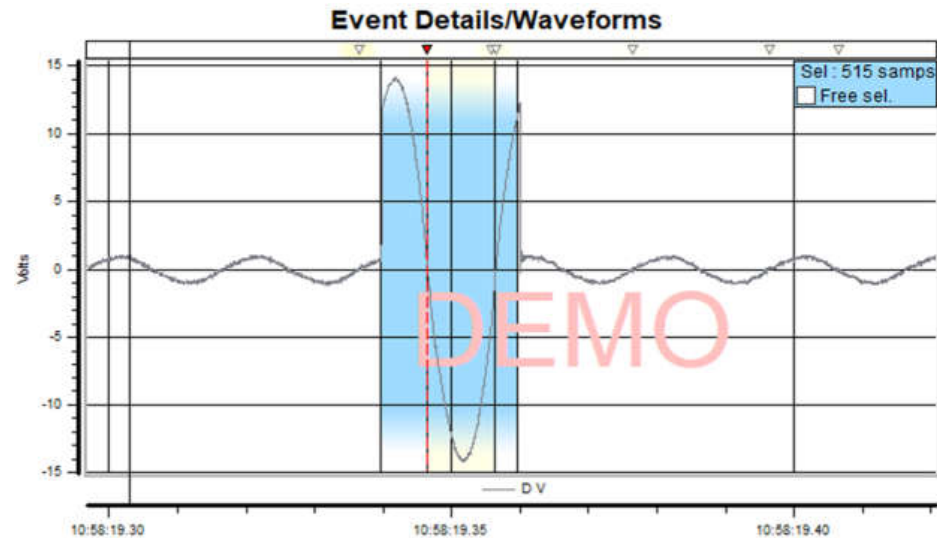
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CAPTURED ON HDPQ XPLORER

SWELL N-G 1 CYCLE AT +10%



Event #266 at 03/30/2018 10:58:19.346
AV Severe Peak Lim Cross 1/16 Cyc
Phase 309.5 Deg

	A	B	C	D	A-B	B-C	C-A
Vrms	217.3	0.1005	0.07133	6.495	217.3	0.1013	217.9
VPeak	330.3	0.8298	0.3704	14.16			
Irms	13.17	0.01812	0.01759	0.01751			
IPeak	24.70	0.01915	0.01869	0.01850			

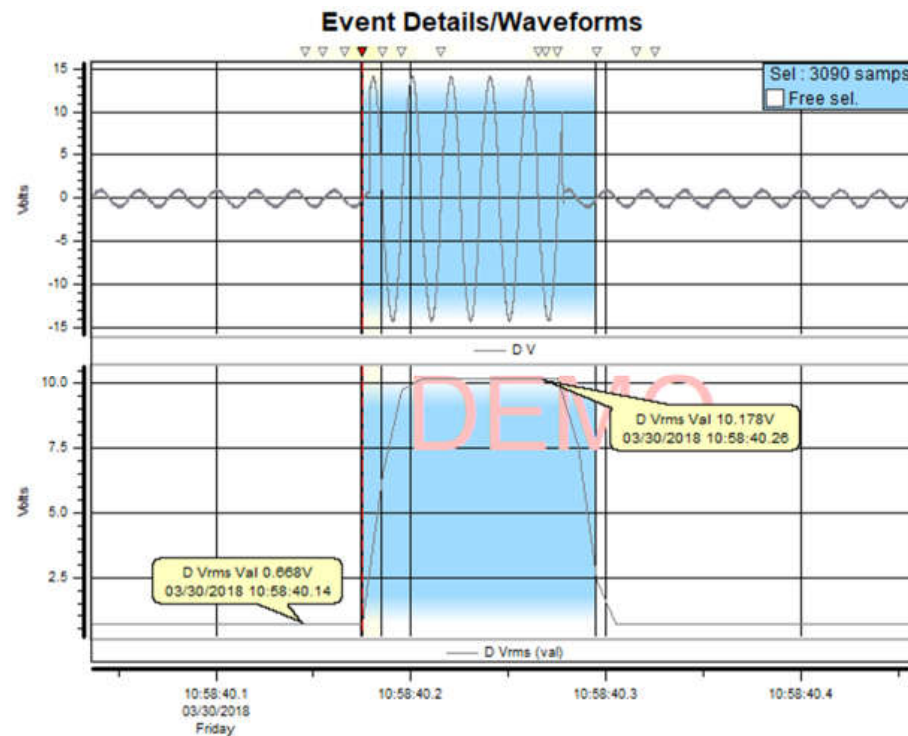
ANALYSIS & MONITORING DATA ON DRAN-VIEW 7

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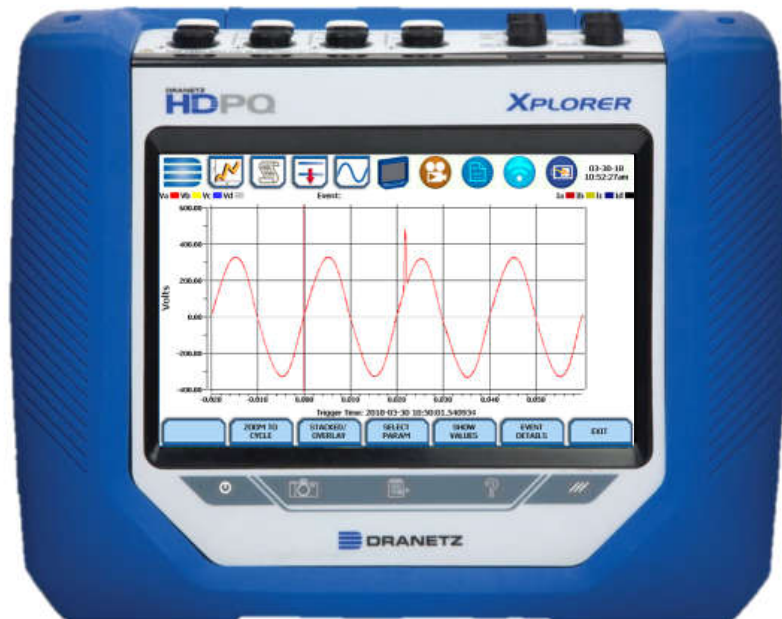
CAPTURED ON HDPQ XPLORER

SWELL N-G 5 CYCLES AT +10%



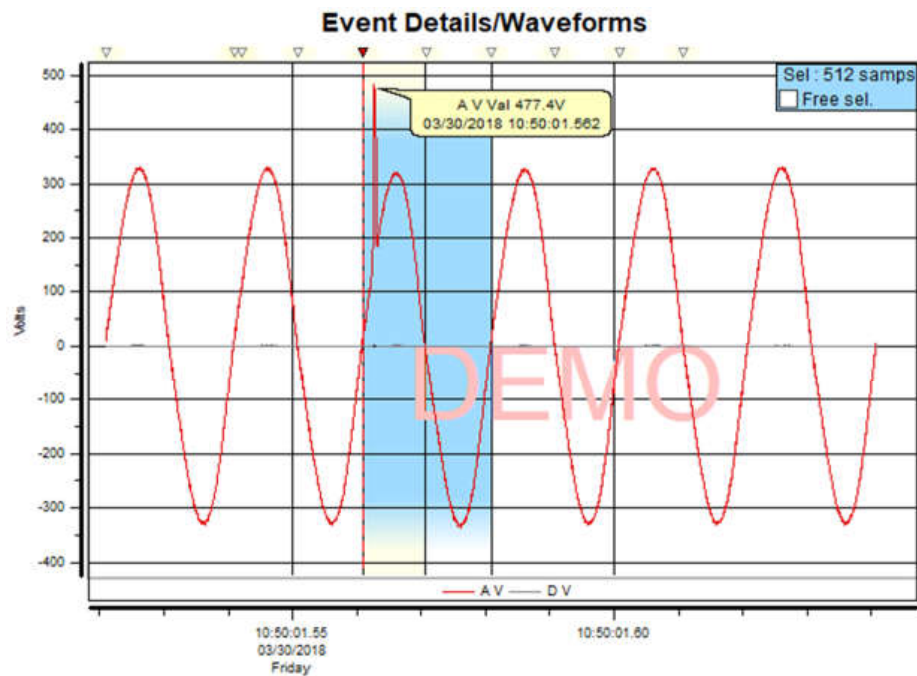
ANALYSIS & MONITORING DATA ON DRAN-VIEW 7

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CAPTURED ON HDPQ XPLORER

UNIPOLAR TRANSIENT P-N



Event #207 at 03/30/2018 10:50:01.560
AVRmsDev Normal To High
Threshold crossed 8.4

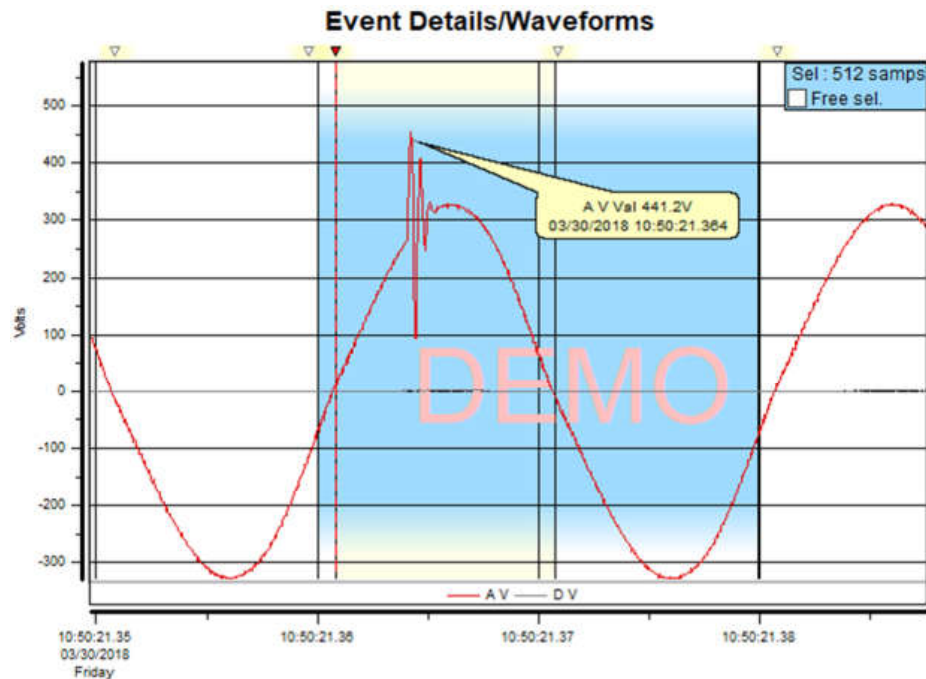
ANALYSIS & MONITORING DATA ON DRAN-VIEW 7

GENERATED BY PQSIM 200™

BIPOLAR TRANSIENT P-N



CAPTURED ON HDPQ XPLORER



Event #227 at 03/30/2018 10:50:21.360
AVRmsDev Normal To High
Threshold crossed 8.4

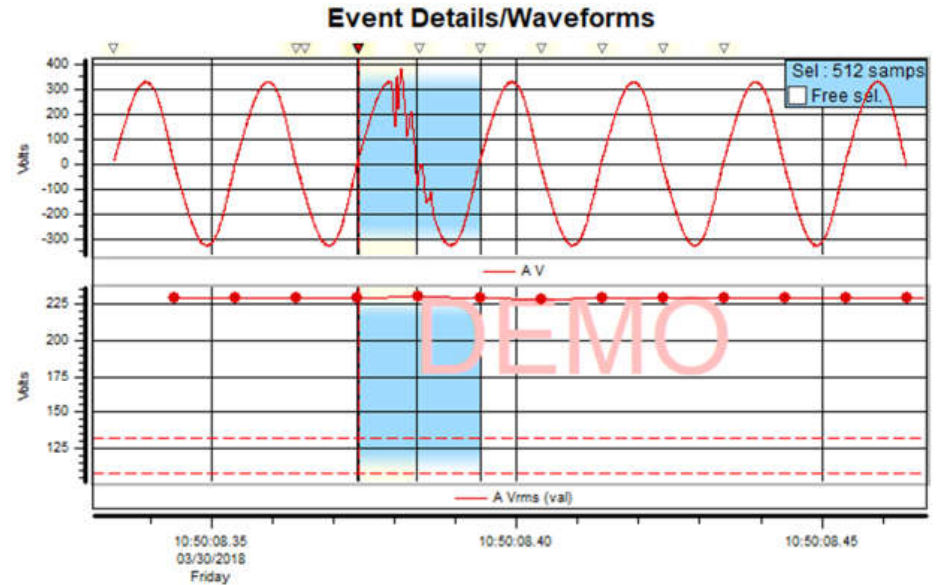
ANALYSIS & MONITORING DATA ON DRAN-VIEW 7

GENERATED BY PQSIM 20



CAPTURED ON HDPQ XPLORER

DECAYING RINGWAVE



Event #216 at 03/30/2018 10:50:08.374

AV Mild Arcing Full Cyc

Phase 360.0 Deg

	A	B	C	D	A-B	B-C	C-A
Vrms	229.0	0.09786	0.07119	0.6752	229.0	0.09638	229.6
VPeak	331.4	0.3226	0.2315	1.114			
Irms	2.760	0.01810	0.01760	0.01752			
IPeak	4.068	0.01900	0.01854	0.01850			

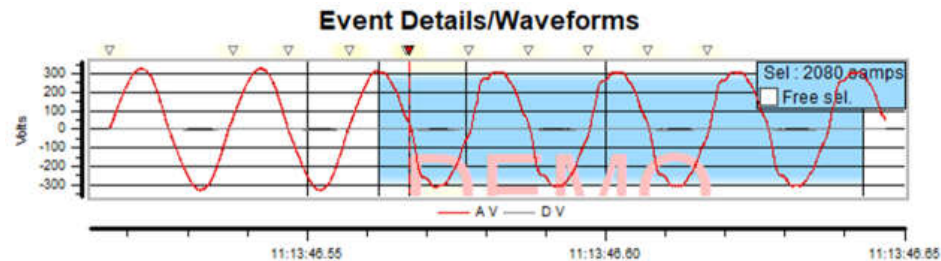
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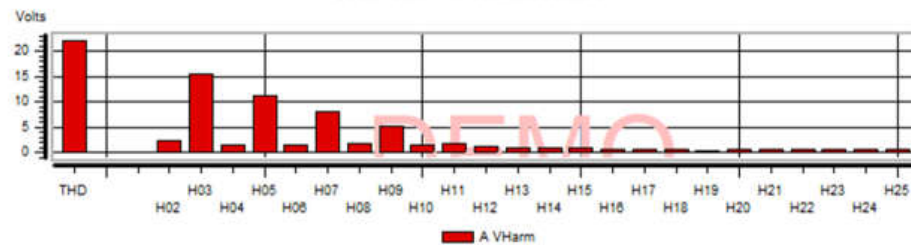
CAPTURED ON HDPQ XPLORER

ODD HARMONICS



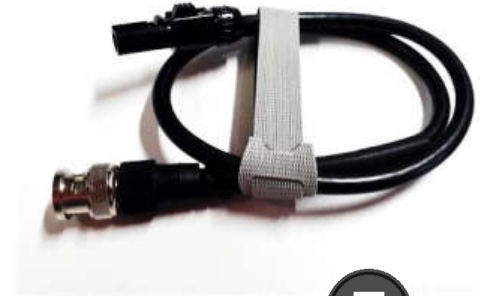
Event #324 at 03/30/2018 11:13:46.567
Intermediate waveform

Waveform harmonics



	AV	DV	AI	DI
RMS	184.63	0.53	2.23	0.01
FND	229.69	0.66	2.78	0.00
DC	0.90	-0.02	-0.00	0.02
THD	22.10	0.13	0.26	0.00

ANALYSIS & MONITORING DATA ON DRAN-VIEW 7



STANDARD SET

1. PQSim 200™
2. 12VDC Power Supply Adapter
3. 12VDC Splitter Cable
4. DC Power Extension Cord with Switch

5. 3 Voltage Leads
6. Jumper Cable
7. BNC Connector Cable

8



9



10



11



AVAILABLE OPTIONS

- 8. STORAGE CASE
- 9. 4 CHANNEL VOLTAGE LEADS
- 10. 4 CHANNEL BNC CONNECTOR CABLE
- 11. 12VDC POWER BANK

Octopus Cable to drive and test 4 voltages channel simultaneously of a PQ meter.

4 "TR" style connectors to test 4 current channels simultaneously of a PQ meter.



PQSim – Frequency 50 Hz

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PQSim – Frequency 60 Hz

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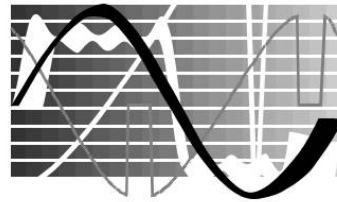
www.powerquality.org

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