

# AC and DC Power Systems iX and i Series Programmable AC and DC Power Source / Analyzer

- **Combination AC and DC Power Source and Power Analyzer**  
*Replaces several instruments with a single multifunction unit*
- **3000 VA to 30000 VA of Output Power**  
*Capable of handling a wide range of loads with 0 to 1 power factor*
- **Arbitrary Waveform Generation**  
*Test products for harmonics immunity*
- **Built-in Digital Power Analyzer**  
*Analyze frequency and time domain of both voltage and current on all phases*
- **Scope Capture Capability**  
*Built in voltage and current waveform acquisition capability.*
- **EN61000-3-2 and EN61000-3-3**  
*Meets source requirements for IEC Harmonics and Flicker testing*



## Integrated System

The iX Series represents a new type of AC and DC power source that addresses increasing demands on test equipment to perform more functions at a lower cost. By combining a flexible AC power source with a high end power analyzer, the iX Series systems are capable of handling applications that would traditionally have required multiple instruments.

The sleek integrated approach of the iX Series avoids the cable clutter that is commonly found in AC test setups. All connections are made internally and the need for external digital multimeters, power harmonics analyzer and current shunts or clamps is completely eliminated.

Using a state of the art digital signal processor in conjunction with precision high resolution A/D converters,

the iX Series provides more accuracy and resolution than can be found in some dedicated harmonic power analyzers. Since many components in the iX Series are shared between the AC source and the power analyzer, the total cost of the integrated system is less than the typical cost of a multiple unit system.

For less demanding applications, the i Series provides similar output and transient capabilities as the iX Series, as well as basic measurements.

## Easy To Use Controls

Both the iX Series and i Series are microprocessor controlled and can be operated from an easy to use front panel keypad. Functions are grouped logically and are directly accessible from the keypad. This eliminates the need to search through various levels of menus and/or soft keys.

A large analog control knob can be used to quickly slew output parameters. This knob is controlled by a dynamic rate change algorithm that combines the benefits of precise control over small parameter changes with quick sweeps through the entire range.

## Applications

With precise output regulation and accuracy, the iX Series AC and DC sources address many application areas for AC and DC power testing. They also provide high load current capability, multi or single phase output modes and built-in power analyzer measurements. Additional features like line distortion simulation (LDS), arbitrary waveform generation and programmable output impedance address requirements for product quality and regulatory compliance

## iX and i Series - Multi-Function and Multi-Use

### Product Evaluation and Test

Increasingly, manufacturers of electronic equipment and appliances are required to fully evaluate and test their products over a wide range of input line conditions. The built-in output transient generation and readback measurement capability offers the convenience of an easy to use and integrated test system.

### Avionics

With an output frequency range to 500 Hz (800 Hz with -160 test option), the iX Series is well suited for aerospace applications. Precise frequency control and accurate load regulation are key requirements in these applications. The standard IEEE-488 control interface and SCPI command language provide for easy integration into existing ATE systems. Since the iX Series can eliminate the need for several additional pieces of test equipment and only occupies 7 inches of rack space, saving both cost and space. Instrument drivers for popular programming environments such as National Instruments LabView™ are available to speed up system integration.

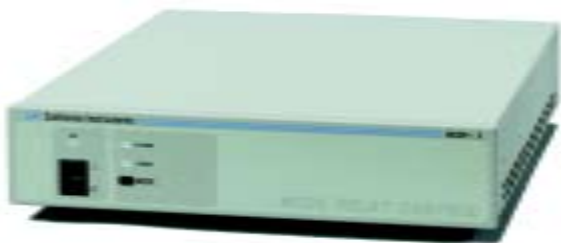
### Regulatory Testing

As governments are moving to enforce product quality standards, regulatory compliance testing is becoming a requirement for a growing number of manufacturers. The iX Series is designed to meet AC source requirements for use in Euronorm EN 61000 compliance testing. For flicker testing, the programmable output impedance capability of the 3001iX, 5001iX and 15003iX can be used to create the required IEC 725 reference impedance.

### Multi-Box Configurations

For high power applications, two or three 5001i/iX chassis can be combined to provide 10 to 15 kVA of single or three phase power.

A 9003iX, 15003iX or 15003i three phase configuration



can be ordered with the MODE-iX option. This option allows automatic switching between single or three phase output mode. In single phase mode, all current is available on phase A. The MODE-iX option switches the output from all three 5001i/iX amplifiers to a single output connector. Without the MODE-iX option, 15003i/iX systems are configured for three phase operation.

### High Crest Factor

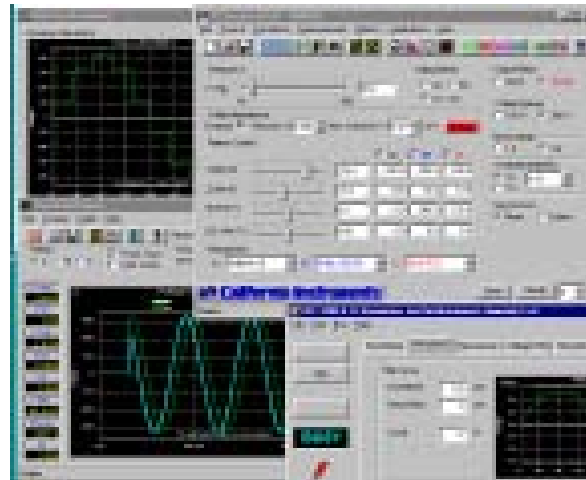
With a crest factor of up to 5:1, the i/iX Series AC source can drive difficult nonlinear loads with ease. Since many modern products use switching power supplies, they have a tendency to pull high repetitive peak currents. The 5001iX can deliver up to 110 Amps of repetitive peak current (low range) to handle such loads.

### Remote Control

Standard IEEE-488 and RS232C remote control interfaces allow programming of all instrument functions from an external computer. The popular SCPI command protocol is used for programming. Drivers for several popular instrumentation programming environments are available to facilitate systems integration of the i/iX Series.

### Application Software

Windows® application software is provided free of charge

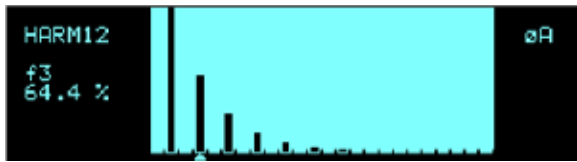


with the iX and i Series<sup>1</sup>. This software provides easy access to the power source's capabilities without the need to develop any custom code. The following functions are available through this GUI program:

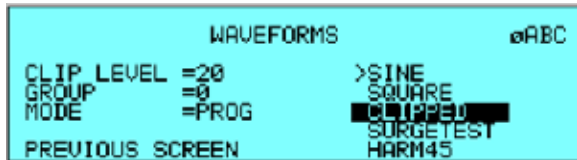
- Steady state output control (all parameters)
- Create, run, save, reload and print transient programs
- Generate and save harmonic waveforms [iX only]
- Generate and save arbitrary waveforms [iX only]
- Download data from a digital storage oscilloscope [iX only]
- Measure and log standard measurements
- Capture and display output voltage and current waveforms [iX only]
- Measure, display, print and log harmonic voltage and current measurements [iX only]
- Run **IEC61000-4-11**, **IEC61000-4-14** and **IEC61000-4-28** test programs
- Display IEEE-488 or RS232C bus traffic to and from the AC Source to help you develop your own test

<sup>1</sup> Requires PC running Windows Win98™ or Win 2000™. Recommended Pentium 400 MHz or better.

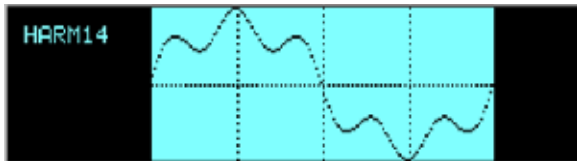
## iX Series - Waveform Generation



Harmonic waveform, Fund., 3<sup>rd</sup>, 5<sup>th</sup>, 7<sup>th</sup>, 9<sup>th</sup>, 11<sup>th</sup> and



Two hundred user defined waveforms.



Arb. Waveform display mode from the front panel.

### Harmonic Waveform Generation

Using the latest DSP technology, the iX Series controller is capable of generating harmonic waveforms to test for harmonics susceptibility of a unit under test. Included is a Graphical User Interface program that can be used to define harmonic waveforms by specifying amplitude and phase for up to 50 harmonics. The waveform data points are generated and downloaded by the GUI to the AC source through either the IEEE-488 or RS232C bus and remain in nonvolatile memory. Up to 200 waveforms can be stored and given a user defined name for easy recall.

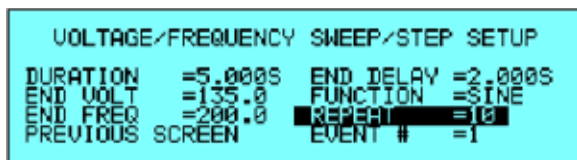
The three phase configuration iX Series offers independent waveform generation on each phase allowing three phase anomalies to be programmed. It also allows simulation of unbalanced harmonic line conditions.

### Arbitrary Waveform Generation

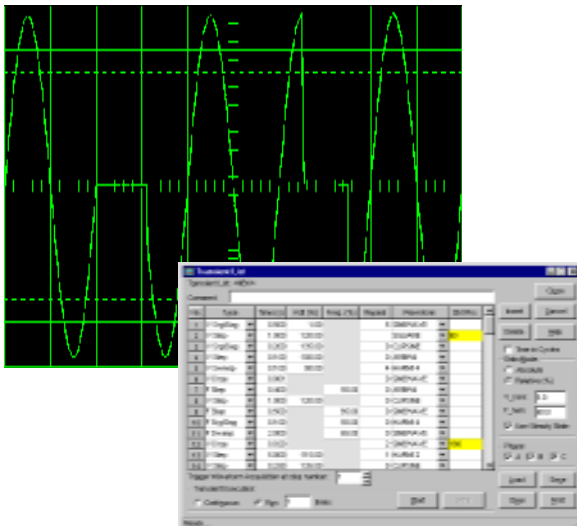
Using the provided GUI program or custom software, the user also has the ability to define arbitrary AC waveforms. The arbitrary waveform method of data entry provides an alternative method of specifying AC anomalies by providing specific waveform data points. The GUI program provides a catalog of custom waveforms and also allows real-world waveforms captured on a digital oscilloscope to be downloaded to one of the many AC source's waveform memories.

Arbitrary waveform capability is a flexible way of simulating the effect of real-world AC power line conditions on a unit under test in both engineering and production environments.

## iX and i Series - AC and DC Transient Generation



Transient List Data Entry from the front panel.



Transient List Data Entry in GUI program.

The iX and i Series controller has a powerful AC and DC transient generation system that allows complex sequences of voltage, frequency and waveshapes to be generated. This further enhances the i/iX's capability to simulate AC line conditions or DC disturbances. When combined with the multi phase arbitrary waveform capabilities, the AC and DC output possibilities are truly exceptional. In three phase i/iX system configurations, transient generation is controlled independently yet time synchronized on all three phases. Accurate phase angle control and synchronized transient list execution provide unparalleled accuracy in positioning AC output events.

Transient programming is easily accomplished from the front panel where clearly laid out menu's guide the user through the transient definition process.

The front panel provides a convenient listing of the programmed transient sequence and allows for transient execution Start, Stop, Abort and Resume operations. User defined transient sequences can be saved to nonvolatile memory for instant recall and execution at a later time. The included Graphical User Interface program supports transient definitions using a spreadsheet-like data entry grid. A library of frequently used transient programs can be created on disk using this GUI program.

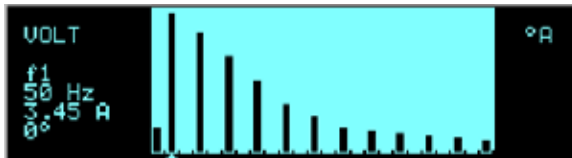
## iX and i Series - Measurement and Analysis

MEASUREMENTS 1			
VOLTAGE =	113.5VAC	FREQ =	60.0Hz
CURRENT =	36.9A	POWER =	4.11KW
PREVIOUS SCREEN		MORE	

Measurement data for a single phase.

MEASUREMENTS1					ABC	
					BC	
					AC	
FREQ =	60.0	Hz				
VOLT AC =	120.51	V	119.92	V	120.31	V
CURR =	9.342	A	8.453	A	9.129	A
POWER =	0.782	KW	0.763	KW	0.734	KW
PREVIOUS SCREEN		MORE				

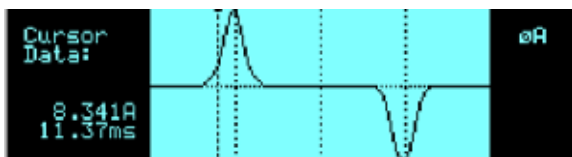
Measurement data for all three phases.



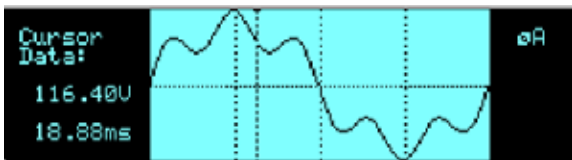
Absolute amplitude bar graph display of current harmonics with cursor positioned at the fundamental

VOLT HARMONIC MEASUREMENTS					
HR#	AMPL.	PHASE	HR#	AMPL.	PHASE
0	0.00	0.0	1	151.42	0.0
2	0.33	46.9	3	116.17	351.4
4	0.57	90.1	5	85.24	29.6
6	0.59	131.8	7	54.72	67.0
8	0.45	171.4	9	24.55	100.6

Voltage harmonic measurement table display in absolute values



Acquired Current waveform



Acquired Voltage waveform

The iX Series is much more than a programmable AC and DC power source. It also incorporates an advanced digital signal processor based data acquisition system that continuously monitors all AC source and load parameters. This data acquisition system forms the basis for all measurement and analysis functions. These functions are accessible from the front panel and the remote control interface.

### Conventional Measurements

Common AC and DC measurement parameters are automatically provided by the data acquisition system on both iX and i Series models. These values are displayed in numeric form on the front panel LCD display. The following measurements are available: Frequency,  $V_{rms}$ ,  $I_{rms}$ ,  $I_{pk}$ , Crest Factor, Real Power (Watts), Apparent Power (VA) and Power Factor.

### Harmonic Analysis [iX Series only]

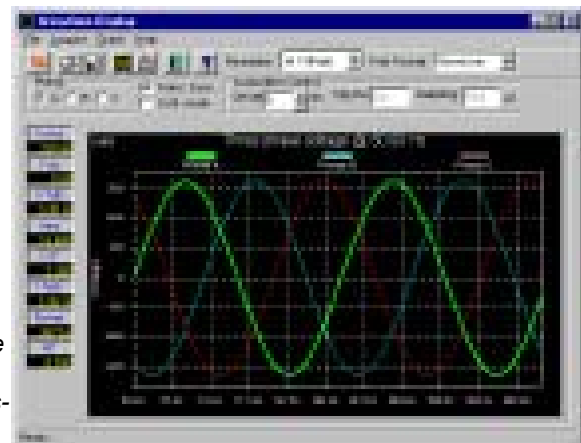
The iX Series provides detailed amplitude and phase information on up to 50 harmonics of the fundamental voltage and current for either one or three phases. Harmonic content can be displayed in both tabular and graphical formats on the front panel LCD for immediate feedback to the operator. Alternatively, the included GUI program can be used to display, print and save harmonic measurement data. Total harmonic distortion of both voltage and current is calculated from the harmonic data.

### Waveform Acquisition [iX Series only]

The measurement system is based on real-time digitization of the voltage and current waveforms using a 4K deep sample buffer. This time domain information provides detailed information on both voltage and current waveshapes. Waveform acquisitions can be triggered at a specific phase angle or from a transient program to allow precise positioning of the captured waveform with respect to the AC source output.

The front panel LCD displays captured waveforms with cursor readouts. The included GUI program also allows acquired waveform data to be displayed, printed and saved to disk.

Acquired three phase voltage waveforms display on PC.





## Specifications

### Operating Modes

iX Series: AC, DC or AC+DC

i Series: AC or DC

### AC Mode Output

#### Frequency

Range: 16 - 500/819 Hz<sup>2</sup>

Resolution: 0.01 Hz < 81.91 Hz  
0.1 Hz > 82.0 Hz

#### Power

Maximum AC power per phase at full scale voltage:

Model:	Power
3001i/iX	3000 VA
5001i/iX	5000 VA
9003iX	3000 VA 3 $\phi$
(with mode-iX)	9000 VA 1 $\phi$
10001i/iX	10000 VA
15001i/iX	15000 VA
15003i/iX	5000 VA/ $\phi$ 3 $\phi$
(with mode-iX)	15000 VA/ $\phi$ 1 $\phi$
30003i/iX	10000 VA/ $\phi$

#### Load Power Factor

0 to unity at full output VA

### AC Voltage

#### Voltage Range Pairs:

	Low	High
i/iX	0-135 V	0-270 V
i/iX	0-150 V	0-300 V

#### Load Regulation

< 0.5% DC to 100 Hz

< 0.6 % 100 Hz to 500 Hz in high voltage range

< 2.2 % 100 Hz to 500 Hz in low voltage range

#### Line Regulation

< 0.1% for 10 % line change

#### Output Noise (20 kHz to 1 MHz)

< 250 mV<sub>rms</sub> typ.

< 500 mV<sub>rms</sub> max.

#### Harmonic Distortion

Less than 1% from 16 - 66 Hz

Less than 2% at 400 Hz

(into linear load)

#### DC Offset

< 20 mV

#### External Amplitude Modulation

Depth: 0 - 10 %

Frequency: DC - 2 KHz

#### Isolation Voltage

300 V<sub>RMS</sub> output to chassis

## AC Current

### Peak Repetitive AC Current

Model	High rng	Low rng
3001i/iX	96.0	110.0
5001i/iX	96.0	110.0
9003iX 1 $\phi$	288.0	330.0
per phs 3 $\phi$	96.0	110.0
10001i/iX	192.0	220.0
15001i/iX	288.0	330.0
15003i/iX 1 $\phi$	288.0	330.0
per phs 3 $\phi$	96.0	110.0
30003i/iX 3 $\phi$	192.0	220.0

### Steady State AC Current

Model	270V rng	135V rng
3001i/iX	11.1	22.2
5001i/iX	18.5	37.0
9003i/iX 1 $\phi$	33.3	66.6
per phs 3 $\phi$	11.1	22.2
10001i/iX	37.0	74.0
15001i/iX	55.5	111.0
15003i/iX 1 $\phi$	55.5	111.0
per phs 3 $\phi$	18.5	37.0
30003i/iX 1 $\phi$	37.5	74.0

Model	300V rng	150V rng
3001i/iX	10.0	20.0
5001i/iX	16.7	33.3
9003iX 1 $\phi$	30.0	60.0
per phs 3 $\phi$	10.0	20.0
10001i/iX	33.3	66.7
15001i/iX	50.0	100.0
15003i/iX 1 $\phi$	50.0	100.0
per phs 3 $\phi$	16.7	33.3
30003iX 3 $\phi$	33.3	66.7

## Programming Accuracy

**Voltage (rms):**  $\pm 0.5$  % of range, 16 to 400 Hz

**Frequency:**  $\pm 0.01$  % of programmed value.

**Current Limit:** - 0 % to + 7 % of programmed value + 0.5 A.

**Phase:** < 1.5° with balanced load @ 50/60 Hz.

### Programming Resolution

**Voltage (rms):** 100 mV

**Frequency:**

0.01 Hz from 16 - 81.91 Hz  
0.1 Hz from 82.0 - 500.0 Hz

**Current Limit:**

0.1 A for single units

1.0 A for paralleled units.

**Phase:** 0.1°

### Output Relay

Push button controlled or bus controlled output relay

### Output impedance [iX only]

Programmable Z on 3001iX, 5001iX, 9003iX and 15003iX (3 $\phi$  mode only) for 50 Hz fundamental.

#### Resistive:

range 17 - 1000 mOhm  
resolution 4 mOhm  
accuracy 2 % FS

#### Inductive:

range 230 - 1000  $\mu$ H  
resolution 4  $\mu$ H  
accuracy 2 % FS

## Measurements - Standard

Parameter	Range	Accuracy* ( $\pm$ )		Resolution
<b>AC Measurements</b>				
Frequency	16-500 Hz	0.01% + 0.01 Hz		0.01 Hz
		< 100 Hz	100 - 500 Hz	
RMS Voltage	0 - 300 V	0.05 V + 0.02%	0.1 V + 0.02%	10 mV
RMS Current	0 - 40 A	0.05 A + 0.02%	0.1 A + 0.02%	1 mA
Peak Current	0 - 120 A	0.05 A + 0.02%	0.1 A + 0.02%	1 mA
Crest Factor	0.00 - 6.00	0.05	0.05	0.01
Real Power	0 - 6 kW	10 W + 0.1%	20 W + 0.1%	1 W
Apparent Power	0 - 6 kVA	10 VA + 0.1%	20 VA + 0.1%	1 VA
Power Factor	0.00 - 1.00	0.01	0.02	0.01
<b>DC Measurements</b>				
DC Voltage	0 - 300 V	150 mV		10 mV
DC Current	0 - 40 A	70 mA		1 mA
Power	0 - 6 kW	15 W		1 W

\* Measurement system bandwidth = DC to 19.5 kHz. Accuracy specifications are valid above 100 counts. Current and Power Accuracy specifications are times two for 10001i/iX /30003i/iX and times three for 15001i/iX and 9003iX and 15003i/iX with MODE-iX option when in single phase mode. For 10001i/iX, 15001i/iX and 30003i/iX, resolution decreases by factor of 10, ranges for current and power increases by factor of three. PF accuracy applies for PF > 0.5 and VA > 50 % of range.

Note 2: Standard Frequency is 16-500Hz. 16-819Hz available with options -ABD, -160, and -704.

Note 1: Specifications are warranted over an ambient temperature range of 25 $\pm$  5° C. Unless otherwise noted, specifications are per phase for a sinewave with a resistive load and apply after a 30 minute warm-up period. For three phase configurations, all specifications are for L-N. Phase angle specifications are valid under balanced load conditions only.

## DC Mode Output

Maximum DC power at full scale of DC voltage range:

Model:	Power
3001i/iX	2100 W
5001i/iX	3500 W
9003iX	2100 W/ø 3ø 6300 W/ø 1ø
10001i/iX	7000 W
15001i/iX	10500 W
15003i/iX	3500 W/ø 3ø 10500 W/ø 1ø
30003i/iX	21000 W/ø 3ø

## Voltage Ranges:

User selectable voltage range combinations:

Range:	High	Low
i/iX	0 - 270 V	0 - 135 V
i/iX	0 - 300 V	0 - 150 V

## Load Regulation:

see AC mode

## Line Regulation:

see AC mode

## Output Noise:

< 250 mV<sub>rms</sub> typ.  
< 500 mV<sub>rms</sub> max.  
(20 kHz to 1 MHz)

## Max. DC Current Capability:

Maximum DC current in lowest DC range pair:

Model	270 V	135 V
3001i/iX	7.8	15.6
5001i/iX	13	26
9003iX 1ø	23.4	46.8
3ø	7.8	15.6
10001i/iX	26	52
15001i/iX	39	78
15003i/iX 1ø	39	78
3ø	13	26
30001i/iX 3ø	26	52

## Measurements - Harmonics

Parameter	Range	Accuracy* (±)	Resolution
Frequency			
Fundamental	16.00-500.0 Hz	0.01% + 0.01 Hz	0.01 Hz
Harmonics	32.00 Hz - 19.5 kHz		0.01 Hz
Phase	0.0 - 360.0°	2° typ.	0.5°
Voltage	Fundamental	250 mV	10 mV
	Harmonics 2 - 50	0.1% + 250 mV+0.1% /1 kHz	10 mV
Current	Fundamental	50 mA	10 mA
	Harmonics 2 - 50	0.1% + 50 mA +0.1% /1 kHz	10 mA

\* Accuracy specifications are valid above 100 counts. Accuracy specifications are times three for three phase mode. Harmonics frequency range in three phase mode is 32 Hz - 6.67 kHz. Resolution decreases by factor of 10 for 9003iX and 15003iX with Mode-iX option in 1 phase mode and for 10001iX, 15001iX and 30003iX.

## Current Limit:

Programmable from 0 A to max. current for selected range.

## AC+DC Mode Output [iX only]

### Power:

Full AC power if DC component is less than 20 % of full scale voltage. Full DC power if DC component is above 20 %.

## System

### Non Volatile Memory storage:

8 instrument setups  
200 user defined waveforms

## Waveforms

### Waveform Types:

i Series: Sine  
iX Series: Sine, Square, Clipped sine, User defined

### User defined waveform storage:

Four groups of 50 user defined arbitrary waveforms of 1024 points for a total of 200. One group can be active at a time.

## Transient Programming

### Transient Types:

Voltage: drop, step, sag, surge, sweep  
Frequency: step, sag, surge, sweep  
Voltage and Frequency: step, sweep

### Transient List Parameters:

Voltage, Frequency, Time or Cycles, Slew rate, Waveform shape, Phase angle, Repeat

### Transient lists storage:

up to 32 transient steps per list

## Time resolution / range:

1 ms / 1 ms - 90000 s

## Maximum slew rate:

200 µs for 10% to 90% of full scale change into resistive load

## Waveform Acquisition [iX only]

### Channels:

Voltage and Current for each phase.

### Memory Depth:

4096 samples/channel.

### Maximum Sample Rate:

39.0625 ks/s.  
Programmable from 39 ks/s to 3.9 ks/s over the bus.

### Triggering:

Auto, Phase, Transient.

### Trigger Delay:

Pre-trigger 0 - 104 ms 1ø  
0 - 312 ms 3ø  
Post-trigger 0 - 1000 msec.  
(at max. sample rates)

### Display:

Front panel Graphics Display with cursors.

### Bus Interface:

Full bus access to waveform acquisition system.

## Remote Control

### IEEE-488 Interface:

IEEE-488 (GPIB) talker listener.  
Subset:  
AH1, C0, DC1, DT1, L3, PP0, RL2, SH1, SR1, T6  
IEEE-488.2 SCPI Syntax

### RS232C Interface:

9 pin D-shell connector  
Handshake: CTS, RTS  
Data bits: 7,8  
Stop bits: 1,2  
Baud rate: 9600, 19200, 38400  
IEEE-488.2 SCPI Syntax  
Supplied with RS232C cable

## System Interface

### Inputs:

Remote shutdown  
External Sync  
Clock/Lock (option)

### Outputs:

Function Strobe  
Clock/Lock (option)

## Specifications - Continued

### AC Input

#### Voltage:

##### **Models 3001 and 9003:**

208-240  $\pm$  10%  $V_{AC}$ , (L-N, 1 $\phi$ )

##### **All other models:**

Standard:

208-240  $\pm$  10%  $V_{AC}$  (L-L, 3 $\phi$ )

Option -400:

400-480  $\pm$  10%  $V_{AC}$  (L-L, 3 $\phi$ )

(Input range must be specified when ordering)

#### Current:

Input Line Current (per phase)

Model:	187-264V	360-528V
3001i/iX	25 A	N/A
5001i/iX	23 A	12 A
9003iX	75 A	N/A
10001i/iX	46 A	24 A
15001i/iX	69 A	36 A
15003i/iX	69 A	36 A
30003i/iX	138 A	72 A

#### Inrush Current per chassis:

< 100 Apk for 100  $\mu$ s  
at 208-240 V

< 50 Apk for 100  $\mu$ s  
at 400-480 V

**Frequency:** 50-60 Hz  $\pm$  10 %

**Efficiency:** 75 % typical

**Power Factor:** 0.6 typical

**Hold-up Time:** At least 10 ms

### Protection

#### Over Load:

Constant Current or Constant Voltage mode

#### Over Temperature:

Automatic shutdown

#### Regulatory:

IEC1010, EN50081-2, EN50082-2, CE EMC and Safety Mark requirements

#### RFI Suppression:

CISPR 11, Group1 , Class A

### Rear Panel Connectors

- AC Input terminal block with cover
- AC output terminal block with cover
- IEEE-488 (GPIB) connector
- 9 pin D-Shell RS232C connector\*
- Remote voltage sense terminal block
- System Interface Connector (\*RS232 DB9 to DB9 cable supplied)

### Physical

#### Dimensions per 5001iX unit

Height : 7" (178 mm)

Width : 19" (483 mm)

Depth : 24" (610 mm)

(Depth includes rear panel connectors)

#### Weight per 5001iX chassis

61 lbs / 28 Kg net

115 lbs / 52 Kg shipping

#### Vibration and Shock:

Designed to meet NSTA project 1A transportation levels

#### Air Intake/Exhaust:

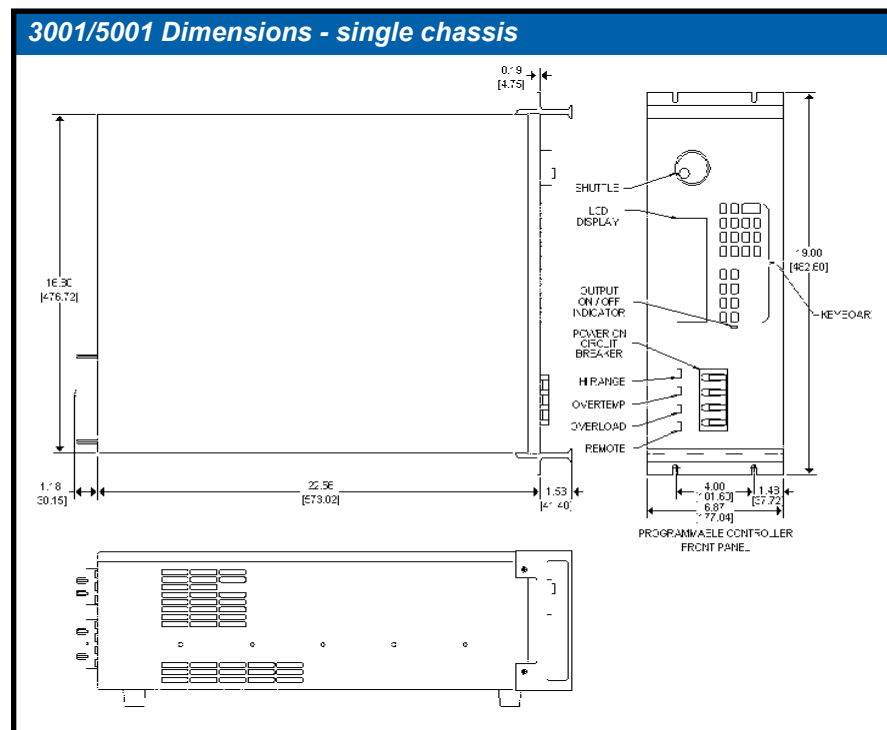
Forced air cooling, side air intake, rear exhaust

#### Operating Humidity:

0 to 95 % RAH, non condensing.

#### Operating Temperature:

0 to 40° C



## Ordering Information

Model	Output Power AC	Phase Output	Max. current per phase				Input Voltage <sup>2</sup>
			135 V range AC	DC	270 V range AC	DC	
3001i/iX	3 kVA	1	22	15.6	11	7.8	208-240V
5001i/iX	5 kVA	1	37	26	18.5	13	208-240V
5001i/iX-400	5 kVA	1	37	26	18.5	13	400-480V
9003iX <sup>1</sup>	9 kVA	3	22	15.6	11	7.8	208-240V
10001i/iX <sup>1</sup>	10 kVA	1	74	52	37	26	208-240V
10001i/iX-400 <sup>1</sup>	10 kVA	1	74	52	37	26	400-480V
10002i/iX <sup>1</sup>	10 kVA	2	37	26	18.5	13	208-240V
10002i/iX-400 <sup>1</sup>	10 kVA	2	37	26	18.5	13	400-480V
15001i/iX <sup>1</sup>	15 kVA	1	111	78	55.5	39	208-240V
15001i/X-400 <sup>1</sup>	15 kVA	1	111	78	55.5	39	400-480V
15003i/iX <sup>1</sup>	15 kVA	3	37	26	18.5	13	208-240V
15003i/iX-400 <sup>1</sup>	15 kVA	3	37	26	18.5	13	400-480V
30003i/iX <sup>1</sup>	30 kVA	3	74	52	37	26	208-240V
30003i/iX-400 <sup>1</sup>	30 kVA	3	74	52	37	26	400-480V

Note (1): Supplied with System Interface cable(s). Controller in master unit only.

Note (2): All input voltage specifications are for Line to Line three phase except 3001iX and 9003iX which require single phase input only.

Note (3): For 10002iX split phase system specifications, refer to 5001iX for each phase.

### Model

Refer to table shown for model numbers and configurations.

Output Switch (3 phase)  
Includes -411 option. Refer to EOS data sheet for details.

### Supplied with

User Manual, Programming Manual, Software (all on CD ROM) and RS232C serial cable.

-LKM Clock/Lock Master  
-LKS Clock/Lock Auxiliary  
-LNS Internal AC Line Sync.  
-MODE-iX Switches between 1 and 3 phz output modes, for 9003iX or 15003i/iX only.

### Options

- 160 RTCA/DO-160D and EU-ROCAE test firmware. Refer to -160 option data sheet for details.
- 400 400-480 Volt Line to Line AC input.
- 411 IEC61000-4-11 test firmware. See also EOS1/3.
- 413 IEC61000-4-13 Harmonics and Interharmonics test firmware.
- 704 Mil Std 704D/E test firmware. Refer to -704 option data sheet for details.
- EOS-1 IEC61000-4-11 Electronic Output Switch (1 phase) Includes -411 option. Refer to EOS data sheet for details.
- EOS-3 IEC61000-4-11 Electronic

OMNI-1-18i Impedance matching network for single phase 3001i/iX or 5001i/iX to support IEC-1000-3-3 flicker tests.  
OMNI-3-18i Impedance matching network for three phase 9003iX or 15003i/iX systems to support IEC-1000-3-3 flicker tests.  
OMNI-3-37i Impedance matching network for three phase 30003i/iX systems to support IEC-1000-3-3 flicker tests.  
-RMS Rackmount Slides.  
-WHM Watt-Hour Measurement option.  
-XLS External AC Line Sync adaptor. (-LNS and XLS are mutually exclusive)

## Feature Comparison

Series:	i	iX
AC mode	x	x
DC mode	x	x
AC+DC mode		x
Transient programming	x	x
Arbitrary waveforms		x
Measurements	x	x
Harmonic measurements		x
Waveform acquisition		x
Programmable Impedance		x
IEEE/RS232	x	x

### Cabinet Systems

Multi box iX Series systems can be factory installed and wired in 19 inch cabinets. Cabinet configurations can be ordered by preceding the model number with a "C" prefix. Contact factory for pricing and details



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