# **High-Power / High-Current Electronic Loads**

## **4700 SERIES**

- ☐ 120V, 1kW/200A to 36kW/7200A
- ☐ 18 Voltage, Current, Power and Timing Measurements
- ☐ Complex load profile playback
- ☐ Air cooling

#### **APPLICATION**

4700 Series Electronic Loads are designed for testing applications that require high-power and high-current plus measurement of UUT dynamic performance. The Loads provide exceptional reliability combined with the inherent simplicity and safety of air cooling. The 4700 Loads are controlled through a LabVIEW soft-panel or an emPower<sup>TM</sup> Test Executive enabled automatic test station. Typical power conversion products to be tested include higher-power DC supplies, telecom rectifiers, fuel cells and batteries.

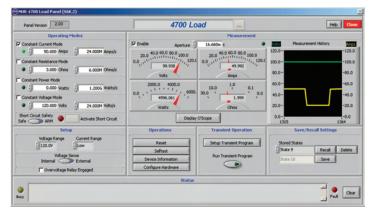
#### **FAULT TOLERANT**

The 4700 Loads are designed to keep running under just about any condition, even certain internal component failures. Standard for this class of instrument is protection against output over-voltage, over-current, over-power, reverse-voltage, and internal over-temperature. In addition, controller intelligence continuously monitors sub-circuit performance and redistributes the current load as necessary. This fault tolerant technique allows the user to continue testing with proper warning of a fault condition. Further load reliability is assured through extensive startup self-test and real-time monitoring.

#### FIELD EXPANDABLE

Because the 4700 Loads are modular, synchronously controlled and actively power-balanced, they operate efficiently in parallel as a single load. In this manner





**LabVIEW PANEL** 

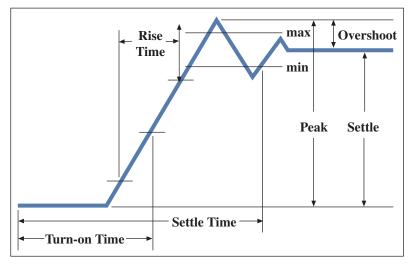
the Loads are field expandable with changes only to the input connections. This feature allows selection of only what is currently needed with confidence that future higher power requirements can be accommodated with minimum disruption and cost.

#### COMPLEX LOAD PROFILE PLAYBACK

To facilitate ease of re-creating complex, precisely timed, multi-mode load profiles, a 100-step macro-recording capability allows capturing a dynamic sequence for later playback from within the Load. Additional complex profiles can be stored in a system controller library to be downloaded to the Load when required.



### **MODEL 4700 DC ELECTRONIC LOAD**



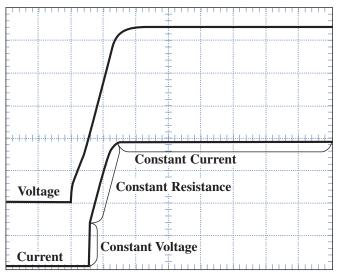
**TURN-ON VOLTAGE & CURRENT MEASUREMENTS** 

#### **EXTENDED INTERNAL MEASUREMENTS**

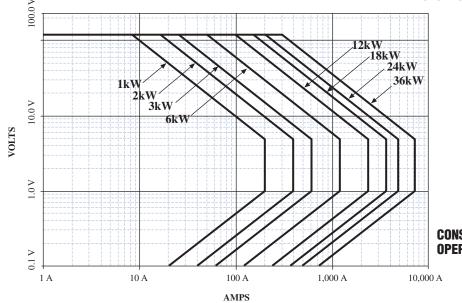
The 4700 Loads eliminate the need for separate external instruments and related switching to capture timing and other dynamic measurements during UUT turn-on and turn-off. This is accomplished by incorporating the task-essential features of a DMM, DSO and Transient Generator. With this built-in capability, the 4700 can rapidly generate engineering-characterization-like test information at faster test speeds with the additional benefit of cost savings from fewer measurement instruments, switches and interconnection wiring.

#### **AUTO MODE**

The 4700 contains a unique Auto Mode that provides glitchless automatic switching between CR, CC, CV and CP limits. Previously challenging tests that are now made possible include turn-on into a CR load, confirming the complete V-I curve for Lithium-Ion battery chargers, and preventing device-under-test blowup should a protection circuit fail.



POWER SUPPLY TURN-ON VOLTAGE & CURRENT WAVEFORMS IN AUTO MODE



CONSTANT POWER OPERATING ENVELOPES

## **SPECIFICATIONS**<sup>1</sup>

Rise Time   10 µs - 20 s   10 µs - 20	4700 Ratings	4700-1	4700-2	4700-3	4700-6	4700-12	4700-18	4700-24	4700-36
Accurate: % of Set + % of Range, Resolutions: % of Range   Resolutions	Maximum Current <sup>2</sup>	200 A	400 A	600 A	1200 A	2400 A	3600 A	4800 A	7200 A
Constant Violence   Cons						1-120 V	1-120 V	1-120 V	1-120 V
Ranges		Accuracies: % of	Set + % of Kang	е, кеѕошпоп: % ој	капде				
Resolution   O.025%									
Consider Number   Constitut Nu									
Samps		0.025%	0.025%	0.025%	0.025%	0.025%	0.025%	0.025%	0.025%
Accinary   0.05%+0.05%   0.05%+0.05%   0.05%+0.05%   0.05%+0.05%   0.05%+0.05%   0.0		6.6. 20. 66. 120 V	6.6 20 66 120 V	7 6 6 20 66 120 V	6.6 20 66 120 V	6.6 20 66 120 V	6.6 20 66 120 V	6.6. 20. 66. 120 V	6.6 20 66 120 V
Content Power   Part									
Residution   0.1 kW   0.2 kW   0.1 kW   0.1 kW   0.1 kW   0.1 kW   0.2 kW		0.025%	0.025%	0.025%	0.025%	0.025%	0.025%	0.025%	0.025%
Accuracy   19+ 196		0 - 1 kW	0 - 2 kW	0 - 3 1-W	0 - 6 kW	0 - 12 kW	0 - 18 kW	0 - 24 kW	0 - 36 kW
Resolution   0.025%									
Sample   Small   2.5 mll - 90 ll   167 mll - 60 ll   33 pll - 90 ll   21 pll - 15 ll   278 pll - 10 ll   208 pll - 75 ll   36 pll - 51 ll	Resolution	0.025%							
Accuracy 2		5 0 . 100 0	25 0 00 0	1.67 0 0	022 0 20 0	417 0 15 0	270 0 10 0	200 0 750	126 0 50
Slex Fair (10 - 90%)									
Range		270	270	270	270	270	270	270	270
Resolution		1 A/s - 20 A/µs	2 A/s - 40 A/µs	3 A/s - 60 A/µs	9 A/s - 180 A/μs	12 A/s - 240 A/μs	18 A/s - 360 A/μs	24 A/s - 480 A/µs	72 A/µs - 720 A/µ
15									
Short Circuit   Resistance   So, 5 mΩ   25, 25 mΩ   17, 17 mΩ   83 mΩ - 833 μΩ   4.17 mΩ - 417 μΩ   278 mΩ - 278 μΩ   208 mΩ - 208 μΩ   139 mΩ - 130 μΩ									
Sessionace   59,5 mf		1 70 +1- JµS	170 T/- JµS	170 T/- Jµs	170 T/- JµS	170 +1- 5µsec	170 TI- JµS	170 τι- 3μ8	170 T/- JµS
Macro Modes Repetition Single Burst or Continuous Sertings 10 40 pr. 20 x 40		50, 5 m $\Omega$	25, 2.5 m $\Omega$	17, 1.7 m $\Omega$	$8.3~\text{m}\Omega$ - $833~\mu\Omega$	$4.17~\text{m}\Omega$ - $417~\mu\Omega$	$2.78~\text{m}\Omega$ - $278~\mu\Omega$	$2.08~\text{m}\Omega$ - $208~\mu\Omega$	1.39 mΩ - 139 μΩ
Modes   Repetition   Single Burst or Continuous   100   1		33, 333 A	67, 667 A	60, 608 A					
Secting		Any single Mode							
Sedings									
Delay   Resolution   10 is   18		100							
10   15   15   15   15   15   15   15									
Netsurremts									
Accuracies: % of Measurement + % of Range, Resolution: % of Range   Current   20, 200 A									
Current Ranges   20,200 A		· · · · · · · · · · · · · · · · · · ·	214	C/ (D D 1	.: 0/ CD				
Ranges   20,20		Accuracies: % of	Measurement +	% oj Kange, Kesou	шоп: % ој капде				
Accuracy Resolution   0.12%+0.06%   0.12%+0.06%   0.12%+0.06%   0.12%+0.06%   0.12%+0.06%   0.015%   0.0		20, 200 A	40, 400 A	60, 600 A	120, 1200 A	240, 2400 A	360, 3600 A	480, 4800 A	720, 7200 A
DC Voltage   Ranges   Accuracy	Accuracy	0.12%+0.06%	0.12%+0.06%	0.12%+0.06%	0.12%+0.06%	0.12%+0.06%	0.12%+0.06%	0.12%+0.06%	0.12%+0.06%
Ranges		0.0015%	0.0015%	0.0015%	0.0015%	0.0015%	0.0015%	0.0015%	0.0015%
Accuracy   Resolution   O.015% 0.01%+0.02% 0.01%+0.02% 0.015% 0.0015		6.6 66 166 V	6.6.66.166.V	6.6.66.166.V	6.6.66.166.V	6.6.66.166.V	6.6.66.166.V	6.6.66.166.V	6.6.66.166.V
Resolution Power Ranges Accuracy Resolution Waveform Capture Bandwidth Accuracy Memory Timebase Triggering Waveform Analysis Control User Interface PC Regulated OS PC Resolution  Waveform Analysis  Notage, Current, Power, Overshoot, Undershoot, Rise/Fall Time, Turn-On Time, Settling Time, Hold-Up Time, AC RMS, AC+DC RMS  Control User Interface PC Required OS Windows XP, Vista NI LabVEW, emPower™ with integrated datalog/test report support Either RS232 or Ethernet (LXI) Dirensions (HsWxD) Weight  Additional Features Remote Voltage Sense Self Test Performance Monitoring Calibration Protection Trigger Output Trigger Input Current Monitor Analog Control OV, OT, Reverse Voltage and load step to an external device OV, OT, Reverse Voltage and stored in EEPROM OP, OC, OV, OT, Reverse Voltage and load step to an external device OP, OV, OT, Reverse Voltage and stored in EEPROM OP, OC, OV, OT, Reverse Voltage and stored in EEPROM OP, OC, OV, OT, Reverse Voltage and stored in EEPROM OP, OC, OV, OT, Reverse Voltage and stored in EEPROM OP, OC, OV, OT, Reverse Voltage and stored in EEPROM OP, OC, OV, OT, Reverse Voltage and stored in EEPROM OP, OC, OV, OT, Reverse Voltage and stored in EEPROM OP, OC, OV, OT, Reverse Voltage and stored in EEPROM OP, OC, OV, OT, Reverse Voltage and stored in EEPROM OP, OC, OV, OT, Reverse Voltage and and stored in EEPROM OP, OC, OV, OT, Reverse Voltage and there selected range O-10 V external signal appropriate to 100% current for the selected range O-10 V external signal appropriate to 100% current for the selected range									
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Voltage, Current, Power, Overshoot, Undershoot, Rise/Fall Time, Turn-On Time, Settling Time, Hold-Up Time, AC RMS, AC+DC RMS  Control  User Interface PC Required OS Usindows XP, Vista Test Executive Communications Drivers  Load Connectors Operating Temperature Input Power Dimensions (HxWxD) Weight  Silva 19 x 22 in 51/4 x 19 x 22 in 101/2 x 19 x 22 in 101/2 x 19 x 22 in 35 x 23 x 30 in 43 x 23 x 30 in 57 x 23 x 30 in 72 x 23 x 30 in 40 lbs Sol bs To b									
User Interface PC Required OS Windows XP, Vista NI LabVIEW, emPower™ with integrated datalog/test report support Either RS232 or Ethernet (LXI) Active X  Physical Load Connectors Operating Temperature Input Power Input Power Dimensions (HxWD) Weight 40 lbs 50 lbs 75 lbs 100 lbs 250 lbs 400 lbs 570 lbs 815 lbs  Additional Features Remote Voltage Sense Self Test Performance Monitoring Calibration Protection Trigger Output Trigger Output Trigger Input Current Monitor Current Monitor Current Monitor Analog Control  Soft Panel				Undershoot Rise	Fall Time Turn-O	n Time Settling Ti	me Hold-Un Time	AC RMS AC+DC	RMS
User Interface PC Required OS Windows XP, Vista NI LabVIEW, emPower <sup>TM</sup> with integrated datalog/test report support Either RS232 or Ethernet (LXI) Active X  Physical Load Connectors Operating Temperature Input Power Dimensions (HxWxD) Weight Additional Features Remote Voltage Sense Self Test Performance Monitoring Calibration Protection Trigger Output Trigger Input Current Monitor Current Monitor Current Monitor Analog Control  Soft Panel 3 GHz µP with 512 MB RAM, SVGA display, 80 GB HD Windows XP, Vista Windows XP, Vista Windows XP, Vista NI LabVIEW, emPower <sup>TM</sup> with integrated datalog/test report support Either RS232 or Ethernet (LXI) Active X  Bus bars with lugs 0 - 40° C at full power and <75% duty cycle 115/230 ± 10% VAC, 47 - 63 Hz 51/4 x 19 x 22 in 51/4 x 19 x 22 in 101/2 x 19 x 22 in 35 x 23 x 30 in 43 x 23 x 30 in 57 x 23 x 30 in 72 x 23 x 30 in 40 lbs 50 lbs 75 lbs 100 lbs 250 lbs 400 lbs 570 lbs 815 lbs  Additional Features Performance Monitoring Calibration OP, OC, OV, OT, Reverse Voltage and load input Synchronizes external device to programmed load step Synchronizes external device to programmed load step Synchronizes programmed load step to an external device O - 10 V external signal appropriate to 100% current for the selected range 0 - 10 V external signal appropriate to 100% current for the selected range	•	g., carrett,	, , , , , , , , , , , , , , , , , , , ,	,	, 10111 0	.,	.,p 11110	,	
Windows XP, Vista Test Executive Communications Drivers  NI LabVIEW, emPower™ with integrated datalog/test report support Either RS232 or Ethernet (LXI) Active X  Physical  Load Connectors Operating Temperature Input Power Dimensions (HxWxD) Weight  Additional Features Remote Voltage Sense Self Test Performance Monitoring Calibration Protection Protection Protection Protection Protection Prigger Output Trigger Output Trigger Input Current Monitor Analog Control  Windows XP, Vista NI LabVIEW, emPower™ with integrated datalog/test report support Sether texport support NI LabVIEW, emPower™ with integrated datalog/test report support Sether RS232 or Ethernet (LXI) Active X  Bus bars with lugs 0 - 40° C at full power and <75% duty cycle 115/230 ± 10% VAC, 47 - 63 Hz  10½ x 19 x 22 in 10½ x 19 x 22 in 35 x 23 x 30 in 43 x 23 x 30 in 57 x 23 x 30 in 72 x 23 x 30 in 40 lbs 50 lbs 815 lbs  Additional Features  Remote Voltage Sense Self Test Power-up self test of all major functions including status of input, output, control and protection circuits Continuous checking of performance parameters and appropriate error messages and/or LED fault indicators when necessary Closed cover, all adjustments made in software and stored in EEPROM OP, OC, OV, OT, Reverse Voltage and Undervoltage Lockout Synchronizes external device to programmed load step Synchronizes programmed load step to an external device O - 10 V external signal appropriate to 100% current for the selected range 0 - 10 V external signal appropriate to 100% current for the selected range		Soft Panel							
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Operating Temperature Input Power Dimensions (HxWxD) Weight  Additional Features Remote Voltage Sense Self Test Performance Monitoring Calibration Protection Trigger Output Trigger Input Trigger Input Current Monitor Analog Control  O - 40° C at full power and <75% duty cycle 115/230 ± 10% VAC, 47 - 63 Hz  5 1/4 x 19 x 22 in 10 1/2 x 19 x 22 in 10 1/2 x 19 x 22 in 35 x 23 x 30 in 43 x 23 x 30 in 57 x 23 x 30 in 72 x 23 x 30 in 815 lbs  75 lbs 100 lbs 250 lbs 400 lbs 570 lbs 815 lbs  2 VDC max drop between sense and load input Power-up self test of all major functions including status of input, output, control and protection circuits Continuous checking of performance parameters and appropriate error messages and/or LED fault indicators when necessary Closed cover, all adjustments made in software and stored in EEPROM OP, OC, OV, OT, Reverse Voltage and Undervoltage Lockout Synchronizes external device to programmed load step Synchronizes programmed load step to an external device O - 10 V external signal appropriate to 100% current for the selected range O -10 V external signal appropriate to 100% current for the selected range	Test Executive Communications	NI LabVIEW, em Either RS232 or							
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Dimensions (HxWxD) Weight  5 \(^1/4\) x 19 x 22 in 5 \(^1/4\) x 19 x 22 in 10 \(^1/2\) x 19 x 22 in 100 \(^1/2\) x 19 x 22 in 35 x 23 x 30 in 43 x 23 x 30 in 570 \(^1/2\) bs  400 \(^1/2\) bs  72 x 23 x 30 in 570 \(^1/2\) bs  815 \(^1/2\) bs  400 \(^1/2\) bs  72 x 23 x 30 in 400 \(^1/2\) bs  815 \(^1/2\) bs  400 \(^1/2\) bs  72 x 23 x 30 in 400 \(^1/2\) bs  815	Test Executive Communications Drivers  Physical Load Connectors	NI LabVIEW, em Either RS232 or Active X	Ethernet (LXI)	11					
Weight 40 lbs 50 lbs 75 lbs 100 lbs 250 lbs 400 lbs 570 lbs 815 lbs  Additional Features  Remote Voltage Sense Self Test Power-up self test of all major functions including status of input, output, control and protection circuits Continuous checking of performance parameters and appropriate error messages and/or LED fault indicators when necessary Closed cover, all adjustments made in software and stored in EEPROM Protection Protection Trigger Output Trigger Input Current Monitor Analog Control  40 lbs 570 lbs 815 lbs  815 lbs  815 lbs  Additional Features Power-up self test of all major functions including status of input, output, control and protection circuits Continuous checking of performance parameters and appropriate error messages and/or LED fault indicators when necessary Closed cover, all adjustments made in software and stored in EEPROM OP, OC, OV, OT, Reverse Voltage and Undervoltage Lockout Synchronizes external device to programmed load step Synchronizes programmed load step to an external device O - 10 V external signal appropriate to 100% current for the selected range 0 -10 V external signal appropriate to 100% current for the selected range	Test Executive Communications Drivers  Physical Load Connectors Operating Temperature	NI LabVIEW, enr Either RS232 or Active X  Bus bars with lug 0 - 40° C at full p	Ethernet (LXI) gs sower and <75% of	luty cycle					
Remote Voltage Sense Self Test Performance Monitoring Calibration Protection Trigger Output Trigger Input Current Monitor Analog Control  2 VDC max drop between sense and load input Power-up self test of all major functions including status of input, output, control and protection circuits Continuous checking of performance parameters and appropriate error messages and/or LED fault indicators when necessary Closed cover, all adjustments made in software and stored in EEPROM OP, OC, OV, OT, Reverse Voltage and Undervoltage Lockout Synchronizes external device to programmed load step Synchronizes programmed load step to an external device O - 10 V external signal appropriate to 100% current for the selected range O -10 V external signal appropriate to 100% current for the selected range	Test Executive Communications Drivers  Physical Load Connectors Operating Temperature Input Power	NI LabVIEW, em Either RS232 or Active X  Bus bars with lug 0 - 40° C at full p 115/230 ± 10% N	Ethernet (LXI) gs sower and <75% o 'AC, 47 - 63 Hz		10 <sup>1</sup> / <sub>2</sub> x 19 x 22 in	1 35 x 23 x 30 in	43 x 23 x 30 in	57 x 23 x 30 in	72 x 23 x 30 in
Self Test Performance Monitoring Calibration Protection Trigger Output Trigger Input Current Monitor Analog Control  Power-up self test of all major functions including status of input, output, control and protection circuits Continuous checking of performance parameters and appropriate error messages and/or LED fault indicators when necessary Closed cover, all adjustments made in software and stored in EEPROM OP, OC, OV, OT, Reverse Voltage and Undervoltage Lockout Synchronizes external device to programmed load step Synchronizes programmed load step to an external device 0 - 10 V external signal appropriate to 100% current for the selected range 0 -10 V external signal appropriate to 100% current for the selected range	Test Executive Communications Drivers  Physical Load Connectors Operating Temperature Input Power Dimensions (HxWxD)	NI LabVIEW, em Either RS232 or Active X  Bus bars with lug 0 - 40° C at full p 115/230 ± 10% V 5 1/4 x 19 x 22 in	Ethernet (LXI)  SS SOWER and <75% of AC, 47 - 63 Hz 5 1/4 x 19 x 22 in	10 <sup>1</sup> / <sub>2</sub> x 19 x 22 in					
Performance Monitoring Calibration Protection Trigger Output Trigger Input Current Monitor Analog Control  Continuous checking of performance parameters and appropriate error messages and/or LED fault indicators when necessary Closed cover, all adjustments made in software and stored in EEPROM OP, OC, OV, OT, Reverse Voltage and Undervoltage Lockout Synchronizes external device to programmed load step Synchronizes programmed load step to an external device O - 10 V external signal appropriate to 100% current for the selected range 0 - 10 V external signal appropriate to 100% current for the selected range	Test Executive Communications Drivers  Physical Load Connectors Operating Temperature Input Power Dimensions (HxWxD) Weight  Additional Features	NI LabVIEW, em Either RS232 or Active X  Bus bars with lug 0 - 40° C at full p 115/230 ± 10% V 5 1/4 x 19 x 22 in 40 lbs	gs ower and <75% o 'AC, 47 - 63 Hz 5 1/4 x 19 x 22 in 50 lbs	10 <sup>1</sup> / <sub>2</sub> x 19 x 22 in 75 lbs					
Calibration Closed cover, all adjustments made in software and stored in EEPROM Protection OP, OC, OV, OT, Reverse Voltage and Undervoltage Lockout Trigger Output Synchronizes external device to programmed load step Trigger Input Synchronizes programmed load step to an external device Current Monitor 0 - 10 V external signal appropriate to 100% current for the selected range Analog Control 0 - 10 V external signal appropriate to 100% current for the selected range	Test Executive Communications Drivers  Physical Load Connectors Operating Temperature Input Power Dimensions (HxWxD) Weight  Additional Features Remote Voltage Sense	NI LabVIEW, em Either RS232 or Active X  Bus bars with lug 0 - 40° C at full p 115/230 ± 10% V 5 1/4 x 19 x 22 in 40 lbs  2 VDC max drop	(LXI)  (So Sower and <75% of YAC, 47 - 63 Hz  5 1/4 x 19 x 22 in 50 lbs  between sense an	10 <sup>1</sup> / <sub>2</sub> x 19 x 22 in 75 lbs	100 lbs	250 lbs	400 lbs		
Protection OP, OC, OV, OT, Reverse Voltage and Undervoltage Lockout Trigger Output Synchronizes external device to programmed load step Trigger Input Synchronizes programmed load step to an external device Current Monitor 0 - 10 V external signal appropriate to 100% current for the selected range Analog Control 0 -10 V external signal appropriate to 100% current for the selected range	Test Executive Communications Drivers  Physical Load Connectors Operating Temperature Input Power Dimensions (HxWxD) Weight  Additional Features Remote Voltage Sense Self Test	NI LabVIEW, em Either RS232 or I Active X  Bus bars with lug 0 - 40° C at full p 115/230 ± 10% V 5 1/4 x 19 x 22 in 40 lbs  2 VDC max drop Power-up self tes	(s) sower and <75% of AC, 47 - 63 Hz 51/4 x 19 x 22 in 50 lbs between sense art of all major func	10 <sup>1</sup> / <sub>2</sub> x 19 x 22 in 75 lbs and load input etions including sta	100 lbs	250 lbs  ut, control and prot	400 lbs	570 lbs	
Trigger Output Synchronizes external device to programmed load step Synchronizes programmed load step to an external device Current Monitor Analog Control Synchronizes external device to programmed load step to an external device 0 - 10 V external signal appropriate to 100% current for the selected range 0 -10 V external signal appropriate to 100% current for the selected range	Test Executive Communications Drivers  Physical Load Connectors Operating Temperature Input Power Dimensions (HxWxD) Weight  Additional Features Remote Voltage Sense Self Test Performance Monitoring	NI LabVIEW, em Either RS232 or Active X  Bus bars with lug 0 - 40° C at full p 115/230 ± 10% V 5 1/4 x 19 x 22 in 40 lbs  2 VDC max drop Power-up self tes Continuous checl	gs sower and <75% of AC, 47 - 63 Hz 51/4 x 19 x 22 in 50 lbs between sense at t of all major funcing of performan	10 <sup>1</sup> / <sub>2</sub> x 19 x 22 in 75 lbs and load input ctions including statice parameters and	100 lbs	250 lbs ut, control and prot messages and/or L	400 lbs	570 lbs	
Current Monitor 0 - 10 V external signal appropriate to 100% current for the selected range Analog Control 0 -10 V external signal appropriate to 100% current for the selected range	Test Executive Communications Drivers  Physical Load Connectors Operating Temperature Input Power Dimensions (HxWxD) Weight  Additional Features Remote Voltage Sense Self Test Performance Monitoring Calibration	NI LabVIEW, em Either RS232 or Active X  Bus bars with lug 0 - 40° C at full p 115/230 ± 10% V 5 1/4 x 19 x 22 in 40 lbs  2 VDC max drop Power-up self tes Continuous checl Closed cover, all	gs sower and <75% of AC, 47 - 63 Hz 5 1/4 x 19 x 22 in 50 lbs between sense ar t of all major functing of performan adjustments made	10 <sup>1</sup> / <sub>2</sub> x 19 x 22 in 75 lbs and load input ctions including statice parameters and in software and st	atus of input, output appropriate error tored in EEPROM	250 lbs ut, control and prot messages and/or L	400 lbs	570 lbs	
Analog Control 0 -10 V external signal appropriate to 100% current for the selected range	Test Executive Communications Drivers  Physical Load Connectors Operating Temperature Input Power Dimensions (HxWxD) Weight  Additional Features Remote Voltage Sense Self Test Performance Monitoring Calibration Protection Trigger Output	NI LabVIEW, em Either RS232 or 1 Active X  Bus bars with lug 0 - 40° C at full p 115/230 ± 10% V 5¹/4 x 19 x 22 in 40 lbs  2 VDC max drop Power-up self tes Continuous checl Closed cover, all OP, OC, OV, OT, Synchronizes ext	Ethernet (LXI)  (S)  (S)  (S)  (S)  (AC, 47 - 63 Hz  (S)  (47 - 63 Hz  (5)  (47 - 63 Hz  (47 -	10 <sup>1</sup> / <sub>2</sub> x 19 x 22 in 75 lbs and load input etions including state to parameters and e in software and stand Undervoltage logrammed load ste	atus of input, output appropriate error tored in EEPROM Lockout	250 lbs ut, control and prot messages and/or L	400 lbs	570 lbs	
	Test Executive Communications Drivers  Physical Load Connectors Operating Temperature Input Power Dimensions (HxWxD) Weight  Additional Features Remote Voltage Sense Self Test Performance Monitoring Calibration Protection Trigger Output Trigger Input	NI LabVIEW, em Either RS232 or 1 Active X  Bus bars with lug 0 - 40° C at full p 115/230 ± 10% V 5 1/4 x 19 x 22 in 40 lbs  2 VDC max drop Power-up self tes Continuous check Closed cover, all OP, OC, OV, OT, Synchronizes ext Synchronizes pro	sower and <75% of AC, 47 - 63 Hz 50 lbs  between sense art of all major funcing of performan adjustments made Reverse Voltage ernal device to programmed load ste	10½ x 19 x 22 in 75 lbs and load input ctions including state parameters and e in software and stand Undervoltage I ogrammed load ste ept to an external de	atus of input, output appropriate error tored in EEPROM Lockout p	250 lbs ut, control and prot messages and/or L	400 lbs	570 lbs	
	Test Executive Communications Drivers  Physical Load Connectors Operating Temperature Input Power Dimensions (HxWxD) Weight  Additional Features Remote Voltage Sense Self Test Performance Monitoring Calibration Protection Trigger Output Trigger Input Current Monitor	NI LabVIEW, em Either RS232 or 1 Active X  Bus bars with lug 0 - 40° C at full p 115/230 ± 10% V 5 1/4 x 19 x 22 in 40 lbs  2 VDC max drop Power-up self tes Continuous checl Closed cover, all OP, OC, OV, OT, Synchronizes pro 0 - 10 V external	gs sower and <75% of AC, 47 - 63 Hz 51/4 x 19 x 22 in 50 lbs between sense ar t of all major functing of performan adjustments made Reverse Voltage ernal device to pr grammed load ste signal appropriate	10½ x 19 x 22 in 75 lbs  and load input ctions including statce parameters and e in software and stand Undervoltage logrammed load steep to an external de e to 100% current f	atus of input, output appropriate error tored in EEPROM Lockout provice for the selected rai	250 lbs  ut, control and prot messages and/or L	400 lbs	570 lbs	

 $<sup>^{\</sup>rm 1}$  Specifications apply at 23° +/- 5° C after a 10 minute warm up.

<sup>&</sup>lt;sup>2</sup> Accuracies apply when Settings and/or Measurements >10% of Range. <sup>3</sup> Current linearly reduced between 1 and 0.15 V.

Models 2 - 36 kW also have a 20 A /1 KW Range with reduced accuracy.

<sup>&</sup>lt;sup>5</sup> Set 1000% to 6000% of Range = 10% Accuracy.

<sup>&</sup>lt;sup>6</sup> Single channel capture. Simultaneous Voltage and Current captures would halve sample rate and memory available.

