3 Series
AC & DC Loads
Models from 1875VA to 22.5kVA

GPIB RS232 USB UNIVERSAL SERIAL BUS LAN CE

3C Series: Modular, AC & DC Loads

The 3C Series Programmable AC and DC Electronic Loads are ideally suited for testing **AC power supplies, frequency converters, DC/AC inverters, Uninterruptable Power Supplies (UPS) and transformers.** Target applications for these loads are research & development, production test, incoming inspection, quality control and service.

The 3C Series AC & DC loads comprises a range of medium to high power AC and DC capable load systems with support for up to 350Vac/500Vdc (Std) with available voltage range extension option -EV to 425Va/600Vdc. Some models offer standard 480Vac/700Vdc input voltages.

With their ability to support sinusoidal and non-sinusoidal AC voltage waveforms alike, the 3C Series loads can support a wide variety of AC test requirements.

- The high power density of 3750VA/W in a 4U high, single 19" wide rack-mount chassis supports bench testing of most single phase AC products.
- The 3C Series consists of a total of five bench models.
- Higher power system can be configured using multiple 4U units in a master/slave parallel mode or in 3 phase Delta or Wye configuration.
- All models offer dual current range capability for optimal accuracy and resolution using 5 digit precision metering.

Key Features

- **1875VA/W to 3750VA/W** per Chassis
- Parallel u**p to 22.5 kVA/kW**
- Current Ranges **up to 112.5 A**
- **Turbo Mode** doubles current & power ratings for overload testing
- **High Voltage Range:** 0 - 350Vac /0-500 Vdc, 450Vac/600Vdc or 480Vac/800Vdc
- **Frequency range:** 40Hz to 800Hz
- Programmable **Current Crest Factor to 5:1**
- Full Range **0.0 to ± 1.0 Power Factor**
- **High-Speed 5 Digit Precision** Metering
- **Current Inrush** Programming Mode
- Single or Three Phase Load **Delta or Wye Configuration** support
- **Operating Modes:** CC, Linear CC, CV, CP, CR and AC Rectifier
- **Fast Current Slew Rates**
- **Short Circuit** Test Modes;
- **Fuse Test** Modes
- **Over Current & Power Protection** Test Mode
- **Go/NoGo Test** Support
- **Auto-Sequencing**
- **4U / 7"** Bench or Rack-mount use
- **LAN, USB, RS232 or GPIB** Interface options
- **CE Mark**

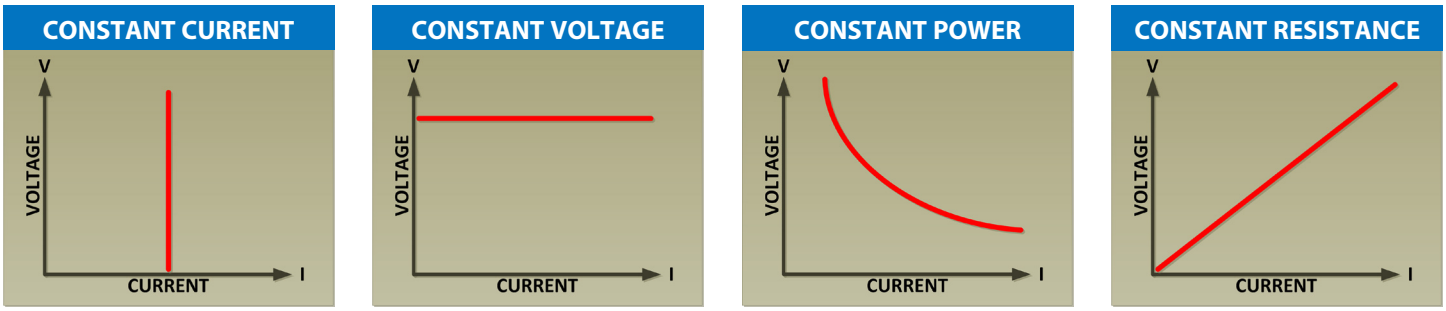
Applications

The 3C Series supports an AC frequency range from 40Hz to 800Hz. This covers testing at utility power frequencies for commercial and industrial power sources as well as at 400Hz avionics power for military, defense and commercial aviation power source testing.

OPERATING MODES - AC OR DC MODE

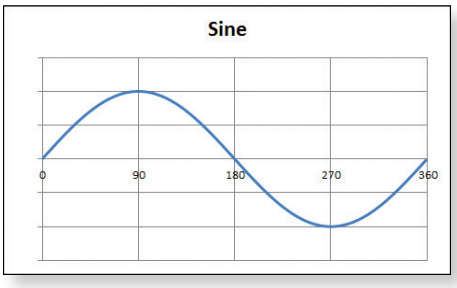
All 3C Series loads support several modes of operation to accommodate different test requirements. Voltage sources like AC or DC power supplies are best tested using Constant Current (CC) or Constant Resistance (CR) mode.

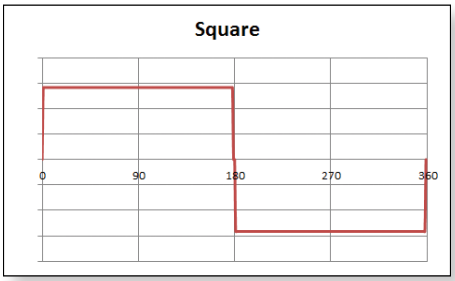
The available operating modes are Constant Current, Linear Constant Current and Constant Resistance. A graphical representation of these modes of operation is shown here.

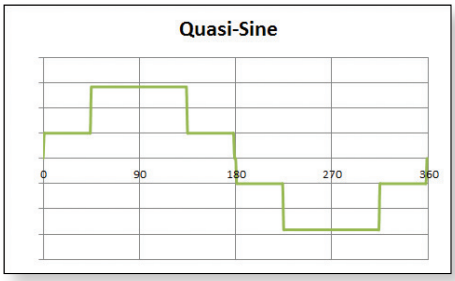


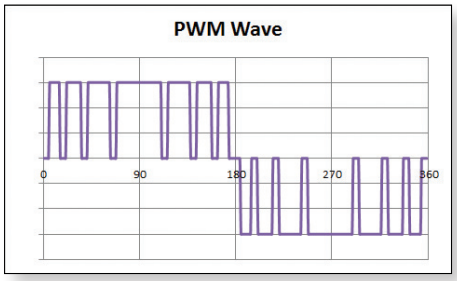
LINEAR CONSTANT CURRENT MODE

The Linear Constant Current mode differs from conventional CC load mode in that it uses a high bandwidth automatic gain control circuit to track changes in peak input voltage and provides near instantaneous load response. It's ideal for voltage square waves, stepped or pulsed DC waveforms, and distorted AC sine waves from high crest factor loads.







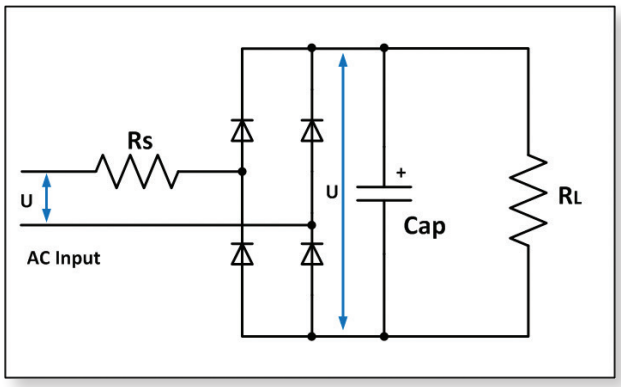


AC RECTIFIER MODE

The 3C Series also offers an AC Rectifier mode of operation that combines CC and CR modes to maintain AC current THD at exactly 80%.

This mode is fully compliant with IEC62040-3 - UPS Efficiency Measurement under non-linear loads - and IEC61683 - Resistive plus non-Linear Mode. In this mode of operation, the 3C load simulates the actual impedance of a non-linear rectifier capacitor AC input stage as found in many products.

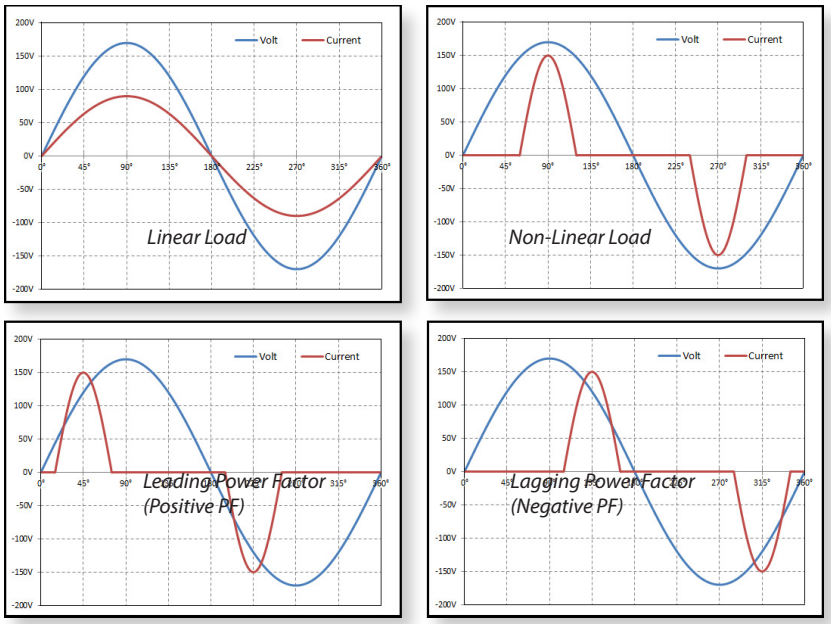
- **IEC62040-3 Compliance**
- **IEC61683 Compliance**



PROGRAMMABLE POWER & CREST FACTOR

Many real world AC loads draw non-sinusoidal load currents. Typical examples are bridge rectified input circuits that convert AC voltage into DC. These are called non-linear load and the AC current resulting from these circuits has a crest factor higher than that of a pure sinusoidal current. The 3C Series loads can simulate these load conditions using its programmable Crest Factor.

The phase angle between voltage and current in this mode of operation can be shifted to simulate leading or lagging displacement Power Factor conditions. The higher the crest factor of the current waveform selected, the wider the power factor can be varied. The waveforms on the right illustrate these load conditions.



Linear and Non Linear Loads

CURRENT INRUSH SIMULATION

The 3C Series support a unique Current Inrush mode of operation that allows decaying inrush current to be programmed easily. Using this "INRUS" mode, the user sets frequency, start current, current step size, end current and time duration. With inrush mode set and armed, the AC load waits for the AC voltage to be turned on and immediately executes the programmed inrush current profile. An example is shown to the right.

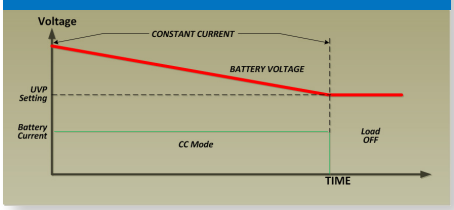
Programmed Inrush Current from 20A to 10A over 10 cycles at 60 Hz.

BATTERY TEST FUNCTIONS

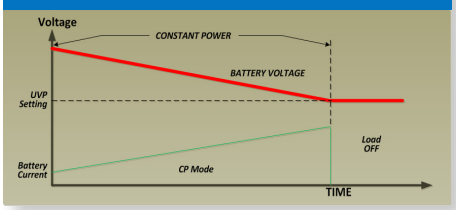
For discharge testing of large electric vehicle (EV) battery packs, the 3C Series offers built in Battery discharge profiles (BATT modes). This eliminates the need to develop special software for battery test applications. The three available battery test modes are shown in the table to the right.

BATT#	Test Type	Description
1	Discharge to state of charge and stop	Discharges battery in CC mode using set current level till preset battery end voltage is reached and then load is turned off.
2	Discharge to state of charge and hold	Discharges battery in CP mode using set current level till preset battery end voltage is reached and then switches to CV mode at set voltage.
3	Timed discharge test	Discharges battery in CC mode using set current level for the period of time specified. At end of test time, the load turns off and displays battery voltage.

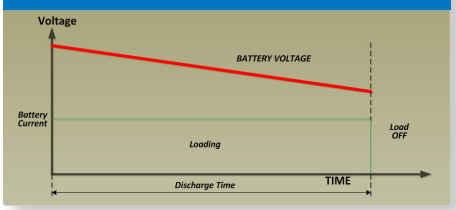
Type 1: CC + UVP Discharge Test



Type 2: CP + UVP Discharge Test

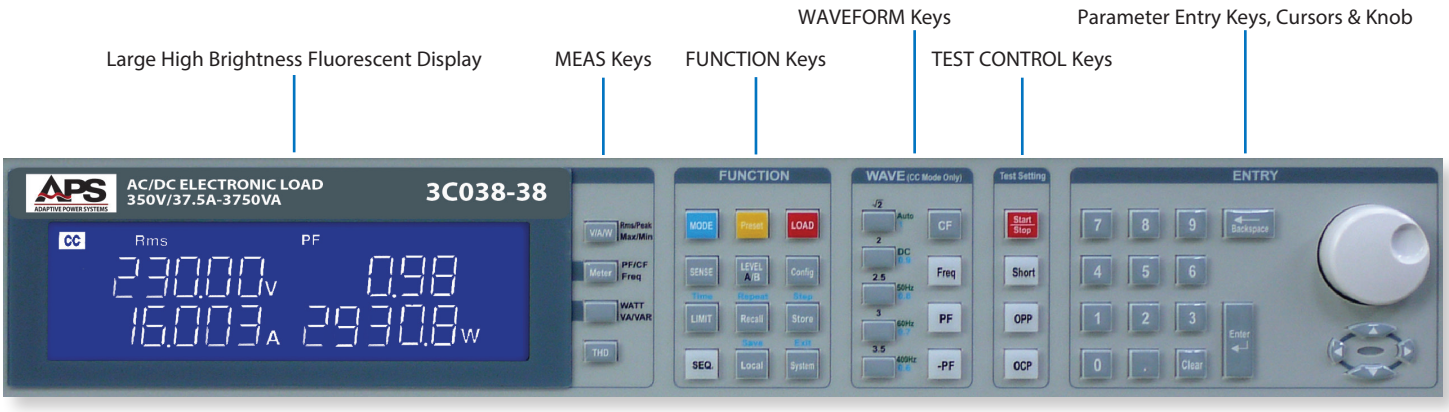


Type 3: Programmed Discharge Time Test



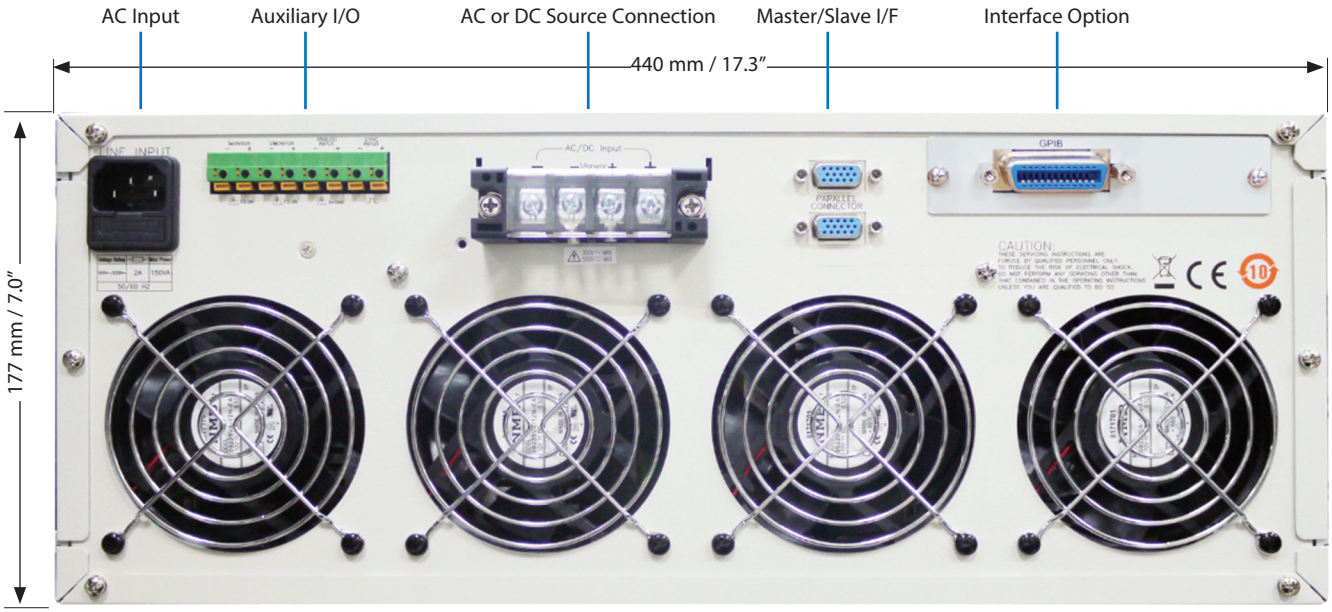
EASY FRONT PANEL OPERATION

3C Series AC & DC Loads are easily operated using the front panel keypad and large, bright fluorescent displays for ease viewing of settings and measurements. Keys are clearly marked and setting are shown using LED indicators right next to their keys.



REAR PANEL

All load and control connections are made on the rear panel of the load. Rear panel connectors are called out below.

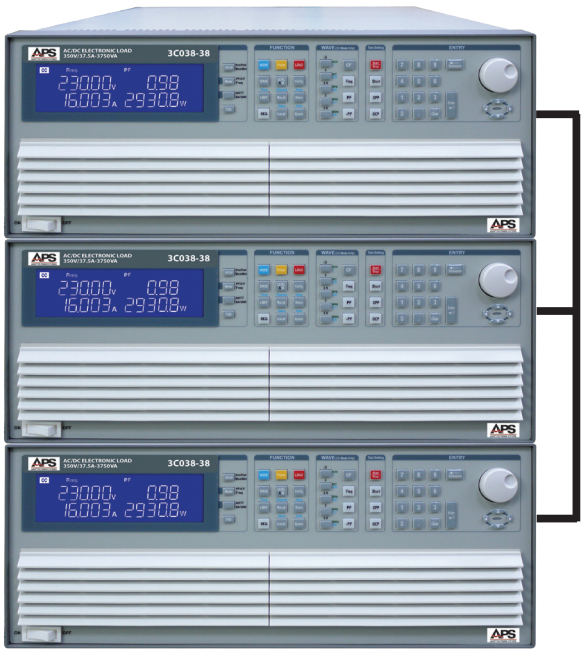


PARALLEL & 3 PHASE MODE AC LOADS

All 4U chassis height 3C Series AC+DC Loads can be configured as either MASTER or SLAVE unit. In this mode, up to three loads can be paralleled for higher power load applications. Models with different power ratings can be mixed in parallel systems.

For three phase AC load requirements, three 3C loads can also be configured in a Delta or Wye configuration. Only the master unit (Phase A) has to be programmed by the user. The phase B and C units automatically adopt the same set values as the master unit.

Configuring a parallel or three phase load system is easy by assigning one unit as the MASTER and up to two additional units as SLAVES. This is accomplished from the front panel and parallel settings are retained at power off. A system cable connects between MASTER and SLAVES and routes all control and measurement signals. The MASTER unit will display total measurements. All load control is accomplished through the MASTER unit as well. Preconfigured Master/Slave parallel and series switchable models are available as well using the **MODE4** or **MODE8** phase mode fixture option, which allows switching between 3P4W (Wye), 3P3W (Delta) or 1P2W (Single phase) AC Load configurations.

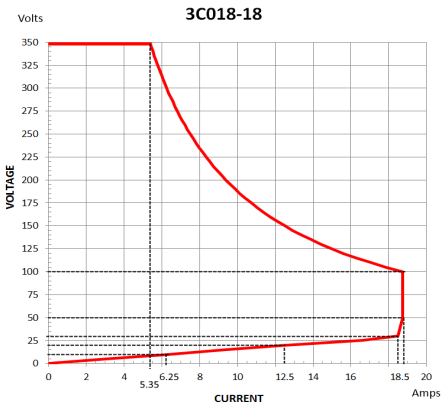


SPECIAL TEST FUNCTIONS

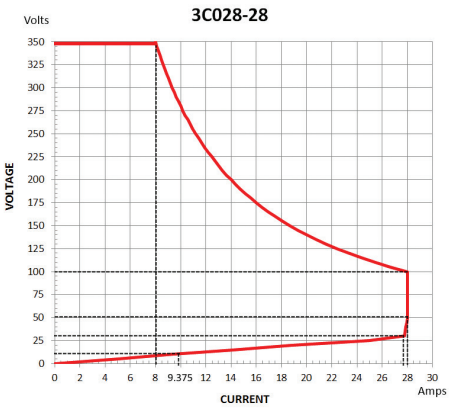
This new generation AC+DC Load offers a number of unique built-in test functions for commonly found AC and DC load simulation. Specifically, the following test modes are included:

- UPS Efficiency Test
- UPS Back-up Time Test
- UPS Transfer Time Test
- PV Inverter Efficiency Test
- Power Conditioner Efficiency Test
- Short Circuit Test
- Fuse Rating Test
- Battery Tests (see page 3)

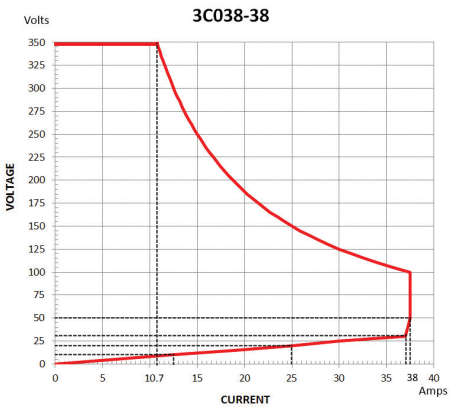
LOAD POWER CURVES



Model 3C018-18 Load Power Curve - 1875W



Model 3C028-28 Load Power Curve -2800W



Model 3C038-38 Load Power Curve - 3750W

SPECIFICATIONS - 4U CHASSIS UNITS

MODEL	3C018-18	3C028-18-EV	3C028-28	3C038-28-EV	3C038-38
OPERATING RANGES					
Power Ranges	0 - 1875 VA / W	0 - 2800 VA / W	0 - 2800 VA / W	0 - 3750 VA / W	0 - 3750 VA / W
Current	0-18.75Arms | 56.25Apeak	0-18.75Arms | 56.25Apeak	0-28.0Arms | 84.0 Apeak	0-28.0Arms | 84.0 Apeak	0-37.5Arms | 112.5Apeak
Voltage Range	50 - 350 Vrms/ 500.0 Vdc	50 - 480 Vrms/ 700.0 Vdc	50 - 350 Vrms/ 500.0 Vdc	50 - 480 Vrms/ 700.0 Vdc	50 - 350 Vrms/ 500.0 Vdc
Frequency	DC, 40 - 440 Hz in CC & CP Modes, DC - 440 Hz in LIN, CR & CV Modes. Up to 800Hz supported in CC, LIN CC & CR Mode.				
AC Waveforms	Sine, Square, Step, DC				
OPERATING MODES					
Constant Current Mode - Sinewave					
Range	0 - 18.75 A	0 - 18.75 A	0 - 28.0 A	0 - 28.0 A	0 - 37.5 A
Resolution	0.3125 mA / 16 bits	0.3125 mA / 16 bits	0.467 mA / 16 bits	0.467 mA / 16 bits	0.625 mA / 16 bits
Accuracy	50Hz & 60Hz: ± (0.1% SET + 0.2% RNG) / > 60 Hz: ± (0.5% SET + 0.5% RNG) / 440~800 Hz (1% SET + 1% RNG)				
Linear Constant Current Mode - Sinewave, Square Wave, Quasi-Square Wave. PWM Wave					
Range	0 - 18.75 A	0 - 18.75 A	0 - 28.0 A	0 - 28.0 A	0 - 37.5 A
Resolution	0.3125 mA / 16 bits	0.3125 mA / 16 bits	0.467 mA / 16 bits	0.467 mA / 16 bits	0.625 mA / 16 bits
Accuracy	50Hz & 60Hz: ± (0.1% SET + 0.2% RNG) / > 60 Hz: ± (0.5% SET + 0.5% RNG) / 440~800 Hz (1% SET + 1% RNG)				
Constant Resistance Mode					
Range	3.2 Ohm - 64 KOhm	3.2 Ohm - 64 KOhm	2.133 Ohm-42.66 KOhm	2.133 Ohm-42.66 KOhm	1.6 ohm - 32 KOhm
Resolution	0.010416 mS / 16 bits	0.010416 mS / 16 bits	0.0078137 mS / 16 bits	0.0078137 mS / 16 bits	0.0052083 mS / 16 bits
Accuracy	50Hz & 60Hz: ± (0.1% SET + 0.2% RNG) / > 60 Hz: ± (0.5% SET + 0.5% RNG) / 440~800 Hz (1% SET + 4% RNG)				
Constant Voltage Mode					
Range	50 - 350 Vrms/ 500.0 Vdc	50 - 480 Vrms/ 700.0 Vdc	50 - 350 Vrms/ 500.0 Vdc	50 - 480 Vrms/ 700.0 Vdc	50 - 350 Vrms/ 500.0 Vdc
Resolution[1]	0.1 V	0.125 V	0.1 V	0.1 V	0.125 V
Accuracy	± (0.1% SETTING + 0.1% RANGE)				
Constant Power Mode					
Range	1875 VA / W	2800 VA / W	2800 VA / W	3750 VA / W	3750 VA / W
Resolution	0.1 VA / W	0.1 VA / W	0.1 VA / W	0.1 VA / W	0.1 VA / W
Accuracy	± (0.1% SETTING + 0.1% RANGE)				
CREST / POWER FACTOR RANGE					
Range	CF: √2 to 5.0 / PF: 0.00 to 1.00 Leading or Lagging				
Resolution	CF: 0.1 / PF: 0.01				
Accuracy	CF: (0.5% / Irms) + 1.0% F.S. / PF: 1.0% F.S.				
TEST MODES					
UPS Efficiency Measurement (Non-linear Mode)					
Operating Frequency	Auto / 40 - 440 Hz				
Current Range	0 - 18.75 A	0 - 18.75 A	0 - 28.0 A	0 - 28.0 A	0 - 37.5 A
P.F. Range	0.00 ~ 1.00				
Measuring Efficiency for PV Systems and Power Conditioners for THD 80% - Resistive + Non Linear CC Mode					
Operating Frequency	Auto / 40 - 440 Hz				
Current Range	0 - 18.75 A	0 - 18.75 A	0 - 28.0 A	0 - 28.0 A	0 - 37.5 A
Resistive Range	3.2 Ohm - 64 KOhm	3.2 Ohm - 64 KOhm	2.133 Ohm-42.66 KOhm	2.133 Ohm-42.66 KOhm	1.6 Ohm - 32 KOhm
UPS Back-up Function (CC, LIN, CR, CP Modes)					
UVP (V_{TH})	50 - 350 Vrms / 500 Vdc				
UPS Back-up Time	1 - 99,999 Sec. (> 27 Hours)				
Battery Discharge Function (CC, LIN, CR, CP Modes)					
UVP (V_{TH})	50 - 350 Vrms / 500 Vdc				
Battery Discharge Time	1 - 99,999 Sec. (> 27 Hours)				
UPS Transfer Time					
Current Range	0 - 18.75 A	0 - 18.75 A	0 - 28.0 A	0 - 28.0 A	0 - 37.5 A
UVP (V_{TH})	2.5 V				
Time Range	0.15 mSec - 999.99 mSec				
Fuse Test Mode					
Max. Current (Turbo off/on)	18.75A / 37.5A	18.75A / 37.5A	0 - 28.0A / 56.0A	0 - 28.0A / 56.0A	0 - 37.5 A / 75A
Trip Time	0.1 - 9999,9 sec w Turbo mode OFF / 0.1 - 1.0 sec w Turbo mode ON				
Accuracy / Repeat Cycles	± 0.003 sec / 0 - 255				

SPECIFICATIONS - Continued

MODEL	3C018-18		3C028-18		3C028-28		3C038-28		3C038-38	
TEST MODES (Continued)										
Fuse Test Mode										
Trip & Non-Trip Times	0.1 - 1.0 Sec	0.1-9999.9Sec	0.1 - 1.0 Sec	0.1-9999.9Sec	0.1 - 1.0 Sec	0.1-9999.9Sec	0.1 - 1.0 Sec	0.1-9999.9Sec	0.1 - 1.0 Sec	0.1-9999.9Sec
Measurement Accuracy	± 0.003 Sec									
Repeat Count	0 - 255									
Short / OPP / OCP Test Function - Turbo Mode Available										
Short Time	0.1 - 1.0 S	0.1-10S/Cont.	0.1 - 1.0 S	0.1-10S/Cont.	0.1 - 1.0 S	0.1-10S/Cont.	0.1 - 1.0 S	0.1-10S/Cont.	0.1 - 1.0 S	0.1-10S/Cont.
OPP / OCP Step Time	100msupto 10 steps	100 ms	100msupto 10 steps	100 ms	100msupto 10 steps	100 ms	100msupto 10 steps	100 ms	100msupto 10 steps	100 ms
PROTECTION										
Over Power (OP)	1968.75 VA / W progr.		2940 VA / W progr.		2940 VA / W progr.		3937.5 VA / W progr.		3937.5 VA / W progr.	
Over Current (OC)	19.687 Arms progr.		29.4 Arms progr.		29.4 Arms progr.		39.375 Arms progr.		39.375 Arms progr.	
Over Voltage (OV)	367.5 Vrms / 525 Vdc									
Over Temperature (OT)	Yes									
METERING										
Voltage Range	0 - 500 V		0 - 700 V		0 - 500 V		0 - 700 V		0 - 500 V	
Resolution	0.01 V		0.0125 V		0.01 V		0.0125 V		0.01 V	
Accuracy	± (0.05% SETTING + 0.05% RANGE)									
Parameters	Vrms, V Max, V Min, ± Vpeak									
Current Ranges	0 - 9.375 A	0 - 18.75 A	0 - 9.375 A	0 - 18.75 A	0 - 14.0 A	0 - 28.0 A	0 - 14.0 A	0 - 28.0 A	0 - 18.75 A	0 - 37.5 A
Resolution	0.2 mA	0.4 mA	0.2 mA	0.4 mA	0.3 mA	0.6 mA	0.3 mA	0.6 mA	0.4 mA	0.8 mA
Accuracy	50Hz & 60Hz: ± (0.05% READING + 0.05% RANGE) / > 60 Hz: ± (0.2% READING + 0.2% RANGE)									
Parameters	Irms, I Max, I Min, ± Ipeak									
Power Range	0 - 1875 W		0 - 1875 W		0 - 2800 W		0 - 2800 W		0 - 3750 W	
Resolution	0.03125 W		0.03125 W		0.0467 W		0.0467 W		0.0625 W	
Accuracy	± (0.1% OF READING + 0.1% RANGE)									
Apparent Power VA Meter	Vrms x Irms									
Power Factor Range	± 0.000 - 1.000									
Accuracy	± (0.002 + (0.001/PF) * F)									
Frequency Range	DC, 40 - 440 Hz, 440- 800 Hz									
Accuracy	< 440 Hz ± 0.1 % / > 440Hz ± 0.2%									
Other Measurements	VA, VAR, CF_I, Ipeak, Imax, Imin, Vmax, Vmin, I_{HD}, V_{HD}, I_{THD}, V_{THD}									
OTHER SPECIFICATIONS										
MASTER / SLAVE 3 PHASE	Yes									
External Input (Option)	0 - 10 Vdc for Full Scale, Resolution 0.1V									
External Sync Input	TTL									
V Monitor Out (Isolated)	± 500V / ± 10V									
I Monitor Out (Isolated)	± 56.25 Apeak / ± 10 Vpeak		± 56.25 Apeak / ± 10 Vpeak		± 84 Apeak / ± 10 Vpeak		± 84 Apeak / ± 10 Vpeak		± 112.5 Apeak / ± 10 Vpeak	
Interface Options	LAN, USB, RS232, GPIB (select one)									
GENERAL										
AC Input	100 - 230 Vac ±10%, 50/60 Hz									
Cooling	Variable speed fan, front air intake, rear exhaust									
Dimensions (H x W x D)	177 x 513 x 440 mm / 7" x 20.2" x 17.32"									
Weight (Net)	21.5 kg / 47.4 lbs		21.5 kg / 47.4 lbs		27.5 kg / 60.6 lbs		27.5 kg / 60.6 lbs		33.5 kg / 73.9 lbs	
Operating Temp. Range	0 - 40° C / 32 - 104° F									
EMC & Safety	CE Mark									

Note 1: S = Siemens or mho, unit of conductance. 1S = 1/Ω = A/V.
Note 2: Accuracy specifications are valid for ambient temperature of 25 ± 5 °C

SPECIFICATIONS - CABINET SYSTEMS

MODEL	3C056-56		3C075-75		3C112-112	3C150-112	3C188-112	3C225-112
OPERATING RANGES								
Power Ranges	0 - 5600 VA / W		0 - 7500 VA / W		0 - 11250 VA / W	0 - 15000 VA / W	0 - 18750 VA / W	0 - 22500 VA / W
Current	0-56Arms	168Apeak	0-75Arms	225Apeak	0 - 112.5 Arms		337.5 Apeak	
Voltage Range	50 - 350 Vrms/ 500.0 Vdc							
Frequency	50Hz & 60Hz: ± (0.1% SET + 0.2% RNG) / > 60 Hz: ± (0.5% SET + 0.5% RNG) / 440~800 Hz (1% SET + 1% RNG)							
AC Waveforms	Sine, Square, Step, DC							
OPERATING MODES								
Constant Current Mode - Sinewave								
Range	0 - 56.0 A		0 - 75.0 A		0 - 112.5 A			
Resolution	1.0 mA / 16 bits		1.25 mA / 16 bits		1.875 mA / 16 bits			
Accuracy	50Hz & 60Hz: ± (0.1% SET + 0.2% RNG) / > 60 Hz: ± (0.5% SET + 0.5% RNG) / 440~800 Hz (1% SET + 1% RNG)							
Linear Constant Current Mode - Sinewave, Square Wave, Quasi-Square Wave. PWM Wave								
Range	0 - 56.0 A		0 - 75.0 A		0 - 112.5 A			
Resolution	1.0 mA / 16 bits		1.25 mA / 16 bits		1.875 mA / 16 bits			
Accuracy	50Hz & 60Hz: ± (0.1% SET + 0.2% RNG) / > 60 Hz: ± (0.5% SET + 0.5% RNG) / 440~800 Hz (1% SET + 1% RNG)							
Constant Resistance Mode								
Range	1.67ohm-21KOhm		0.8hm -16KOhm		0.533ohm-10.666 KOhm			
Resolution	0.015624mS/16bits		0.020832mS/16bits		0.031248 mS / 16 bits			
Accuracy	50Hz & 60Hz: ± (0.1% SET + 0.2% RNG) / > 60 Hz: ± (0.5% SET + 0.5% RNG) / 440~800 Hz (1% SET + 4% RNG)							
Constant Voltage Mode								
Range	50 - 350 Vrms/ 500.0 Vdc							
Resolution[1]	0.1 V							
Accuracy	± (0.1% SETTING + 0.1% RANGE)							
Constant Power Mode								
Range	5600 VA / W		7500 VA / W		11250 VA / W	15000 VA / W	18750 VA / W	22500 VA / W
Resolution	0.1 VA / W		0.1 VA / W		1.0 VA / W	1.0 VA / W	2.0 VA / W	2.0 VA / W
Accuracy	± (0.1% SETTING + 0.1% RANGE)							
CREST / POWER FACTOR RANGE								
Range	CF: √2 to 5.0 / PF: 0.00 to 1.00 Leading or Lagging							
Resolution	CF: 0.1 / PF: 0.01							
Accuracy	CF: (0.5% / Irms) + 1.0% F.S. / PF: 1.0% F.S.							
TEST MODES								
UPS Efficiency Measurement (Non-linear Mode)								
Operating Frequency	Auto / 40 - 440 Hz							
Current Range	0 - 56.0 A		0 - 75.0 A		0 - 112.5 A			
P.F. Range	0.00 ~ 1.00							
Measuring Efficiency for PV Systems and Power Conditioners for THD 80% - Resistive + Non Linear CC Mode								
Operating Frequency	Auto / 40 - 440 Hz							
Current Range	0 - 56.0 A		0 - 75.0 A		0 - 112.5 A			
Resistive Range	1.67ohm-21KOhm		0.8hm -16KOhm		0.533ohm-10.666 KOhm			
UPS Back-up Function (CC, LIN, CR, CP Modes)								
UVP (V_{TH})	50 - 350 Vrms / 500 Vdc							
UPS Back-up Time	1 - 99,999 Sec. (> 27 Hours)							
Battery Discharge Function (CC, LIN, CR, CP Modes)								
UVP (V_{TH})	50 - 350 Vrms / 500 Vdc							
Battery Discharge Time	1 - 99,999 Sec. (> 27 Hours)							
UPS Transfer Time								
Current Range	0 - 56.0 A		0 - 75.0 A		0 - 112.5 A			
UVP (V_{TH})	2.5 V							
Time Range	0.15 mSec - 999.99 mSec							
Fuse Test Mode								
Max. Current (Turbo off/on)	0 - 56A / 112.5A		0 - 75A / 150A		0 - 112.5 A / 225A			
Trip Time	0.1 - 9999,9 sec w Turbo mode OFF / 0.1 - 1.0 sec w Turbo mode ON							
Accuracy / Repeat Cycles	± 0.003 sec / 0 - 255							

SPECIFICATIONS - Continued

MODEL	3C056-56	3C075-75	3C112-112	3C150-112	3C188-112	3C225-112
TEST MODES (Continued)						
Fuse Test Mode						
Trip & Non-Trip Times	0.1 - 1.0 Sec	0.1-9999.9 Sec	0.1 - 1.0 Sec		0.1-9999.9 Sec	
Measurement Accuracy	± 0.003 Sec					
Repeat Count	0 - 255					
Short / OPP / OCP Test Function - Turbo Mode Available						
Short Time	0.1 - 1.0 S	0.1-10 S/Cont.	0.1 - 1.0 S		0.1-10 S/Cont.	
OPP / OCP Step Time	100 ms up to 10 steps	100 ms	100 ms up to 10 steps		100 ms	
PROTECTION						
Over Power (OP)	5580 VA / W progr.	7875 VA / W progr.	11812.5 VA / W progr.	15750 VA / W progr.	19687 VA / W progr.	23625 VA / W progr.
Over Current (OC)	55.8 Arms progr.	78.75 Arms progr.	118.125 Arms progr.			
Over Voltage (OV)	367.5 Vrms / 525 Vdc					
Over Temperature (OT)	Yes					
METERING						
Voltage Range	0 - 500 V					
Resolution	0.01 V					
Accuracy	± (0.05% SETTING + 0.05% RANGE)					
Parameters	Vrms, V Max, V Min, ± Vpeak					
Current Ranges	0 - 28.0 A / 0 - 56.0 A	0 - 37.5 A / 0 - 75.0 A	0 - 56.25 A		0 - 112.5 A	
Resolution	0.6 mA / 1.0 mA	0.8 mA / 1.6 mA	1.2 mA		2.4 mA	
Accuracy	50Hz & 60Hz: ± (0.05% READING + 0.05% RANGE) / > 60 Hz: ± (0.2% READING + 0.2% RANGE)					
Parameters	Irms, I Max, I Min, ± Ipeak					
Power Range	0 - 5600 W	0 - 7500 W	0 - 11250 W	0 - 15000 W	0 - 18750 W	0 - 22500 W
Resolution	0.1 W	0.125 W	0.1875 W	0.25 W	0.3125 W	0.375 W
Accuracy	± (0.1% OF READING + 0.1% RANGE)					
Apparent Power VA Meter	Vrms x Irms					
Power Factor Range	± 0.000 - 1.000					
Accuracy	± (0.002 + (0.001/PF) * F)					
Frequency Range	DC, 40 - 440 Hz, 440 - 800 Hz					
Accuracy	< 440 Hz ± 0.1 % / > 440Hz ± 0.2%					
Other Measurements	VA, VAR, CF_I, Ipeak, Imax, Imin, Vmax, Vmin, I_{HD}, V_{HD}, I_{THD}, V_{THD}					
OTHER SPECIFICATIONS						
MASTER / SLAVE 3 PHASE	Yes					
External Input (Option)	0 - 10 Vdc for Full Scale, Resolution 0.1V					
External Sync Input	TTL					
V Monitor Out (Isolated)	± 500V / ± 10V					
I Monitor Out (Isolated)	± 168 Apeak / ± 10 Vpeak	± 225 Apeak / ± 10 Vpeak	± 337.5 Apeak / ± 10 Vpeak			
Interface Options	LAN, USB, RS232, GPIB (select one)					
GENERAL						
AC Input	100 - 230 Vac ±10%, 50/60 Hz					
Cooling	Variable speed fan, front air intake, rear exhaust					
Dimensions (H x W x D)	458 x 480 x 593 mm 18.0" x 18.9" x 23.4"		636x480x593mm 25.0"x18.9"x23.4"	813x480x593mm 32.0"x18.9"x23.4"	990x480x593mm 39.0"x18.9"x23.4"	1168x480x593mm 46.0"x18.9"x23.4"
Weight (Net)	70 kg / 154.3 lbs		105 kg / 231.5 lbs	138.5kg/ 305.3 lbs	172kg / 379.2lbs	205.5kg / 453 lbs
Operating Temp. Range	0 - 40° C / 32 - 104° F					
EMC & Safety	CE Mark					

Note 1: S = Siemens or mho, unit of conductance. 1S = 1/Ω = A/V.
Note 2: Accuracy specifications are valid for ambient temperature of 25 ± 5 °C

ORDERING INFORMATION:

Model	Description
3C018-18	AC+DC Load, 350Vac/500Vdc, 18.75A, 1875VA/W
3C028-18-EV	AC+DC Load, 480Vac/800Vdc, 18.75A, 2800VA/W
3C028-28	AC+DC Load, 350Vac/500Vdc, 28.0A, 2800VA/W
3C038-28-EV	AC+DC Load, 480Vac/700Vdc, 28.0A, 3750VA/W
3C038-38	AC+DC Load, 350Vac/500Vdc, 37.5A, 3750VA/W
3C056-56	AC+DC Load, 350Vac/500Vdc, 56.0A, 5600VA/W
3C075-75[1]	AC+DC Load, 350Vac/500Vdc, 75A, 7500VA/W
3C112-112[1]	AC+DC Load, 350Vac/500Vdc, 112.5A, 11250VA/W
3C150-112[1]	AC+DC Load, 350Vac/500Vdc, 112.5A, 15000VA/W
3C188-112[1]	AC+DC Load, 350Vac/500Vdc, 112.5A, 18750VA/W
3C225-112[1]	AC+DC Load, 350Vac/500Vdc, 112.5A, 22500VA/W

Note 1: Models 3C075-75 through 3C225-112 are 19" cabinet mounted, master/slave systems.

Model 3C075-75

Model 3C112-112

Option	Description
-EXT	External Programming Input
-EV	Extended voltage range to 425Vrms/600Vdc
-USB[2]	USB Interface
-RS232[2]	RS232 Serial Interface
-LAN[2]	LAN (Ethernet) Interface
-GPIB[2]	GPIB Interface
-MODE4	Mode Switch Fixture, 4U. Switches AC Load input between 3P4W, 3P3W or 1P2W (up to 7500VA). Requires 19" Rack
-MODE8	Mode Switch Fixture, 8U. Switches AC Load input between 3P4W, 3P3W or 1P2W (11250VA to 22500VA). Requires RACK-xxU.
RACK-xxU	19" Instrument Rack. Consult factory for required rack height by model.

Note 2: Only one interface per unit can be installed.

Included in Mainframe Ship kit:

- AC Line Cord.
- Rack Handles (Removable).
- Certificate of Conformance.
- PDF User Manual (download at https://tr.adaptivepower.com/).

WORLDWIDE SERVICE AND SUPPORT

Adaptive Power Systems' customer support is second to none. Our Customer Support Program provides the training, repair, calibration, and technical support services that our customers value. Customers can rely on us for excellent support before, during and after the sale with support and service centers around the world.

Complete calibration and repair services are offered at our US, European and Chinese manufacturing facilities.Calibrations are to original factory specifications and are traceable to NIST (National Institute of Standards and Technology).

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