SEPTEMBER 2021

AMETEK®

ASTERION DC ASA SERIES

3 CHANNELS – 600 W/CHANNEL – 1U HIGH

CUSTOMER OVERVIEW

INTRODUCING THE ASTERION DC ASA SERIES

AMETEK®
PROGRAMMABLE POWER

NEW Sorensen™ Asterion® DC ASA Series:

The Next Evolution in Programmable Power

ONE POWER SUPPLY
3X
The Possibilities

The new Sorensen™ Asterion® DC ASA Series Multiple-Output Programmable Power Supply increases power efficiency while lowering costs and significantly reducing time to test.

INTRODUCING THE ASTERION DC ASA SERIES

Features

Three independent, isolated 600W channels, 1800W total ● 1U rack-mount chassis ● Four autoranging output options

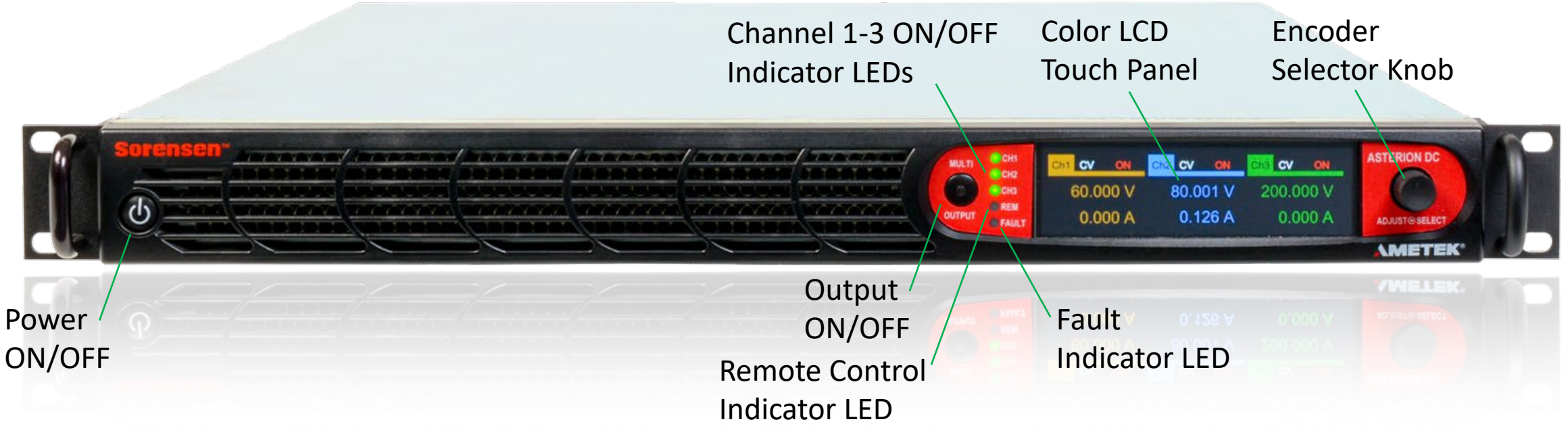
Multi-language, intuitive, color touch panel control ● Active power factor correction (PFC)

Multi-channel programmable sequencing, ramps and delays ● Full remote control via Virtual Panels™ GUI

Standard LXI Ethernet, USB and RS232 control interfaces ● Optional GPIB control interface

ASTERION DC ASA SERIES

Front Panel Controls



Primary Applications				
Military and Aerospace Electronics Testing	Commercial Manufacturing and Process Control	Research and Development	Automotive Component and Battery Testing	Automated Test Equipment (ATE) Applications

ASTERION DC ASA SERIES

Channel Options

Four Extended Wide-Range Autoranging Outputs

Option No.	Voltage (V)	Current (A)	Power (W)
060	60	42	600
080	80	22	600
200	200	17	600
400	400	6	600
000	0	Blank (Channel 3 only)	

1U
1.75 inch
44.45 mm

Select any 3 Channel Options to Create your Custom 2 or 3 Channel Solution

Asterion DC ASA Series outputs are configured at the factory and are not field replaceable.

ASTERION DC ASA SERIES

Channel Options

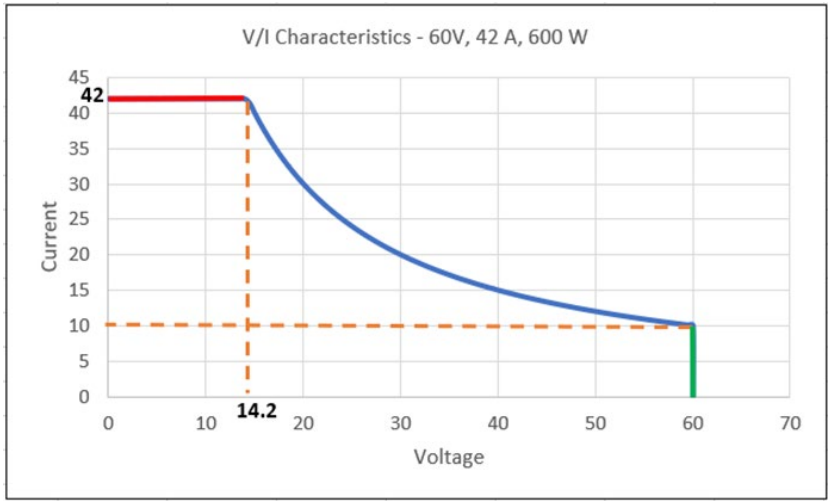
Four Extended Wide-Range Autoranging Outputs

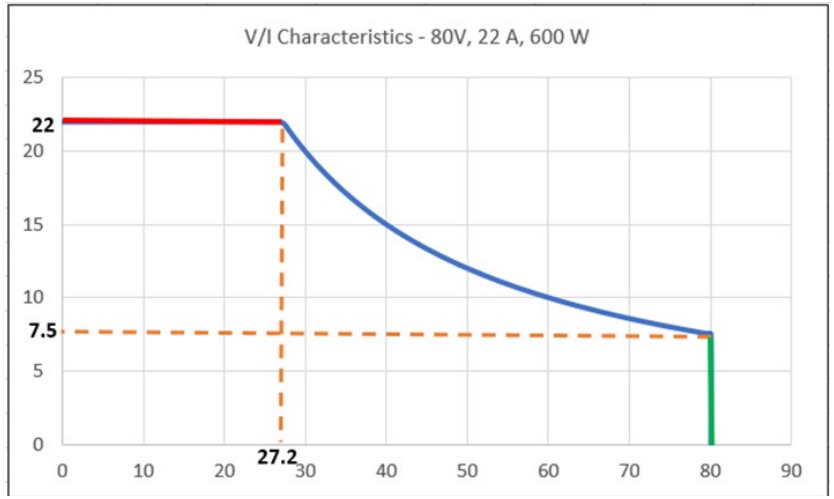
Output Modes

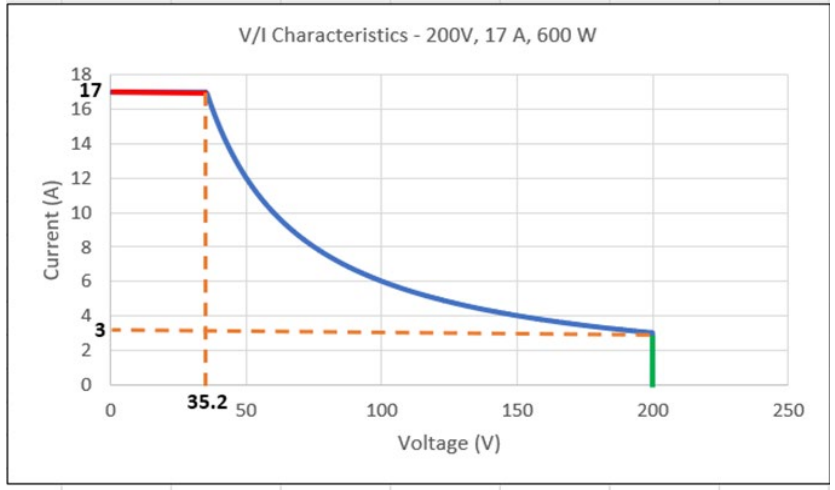
- Constant Voltage (CV)
- Constant Current (CC)
- Constant Power (CP)

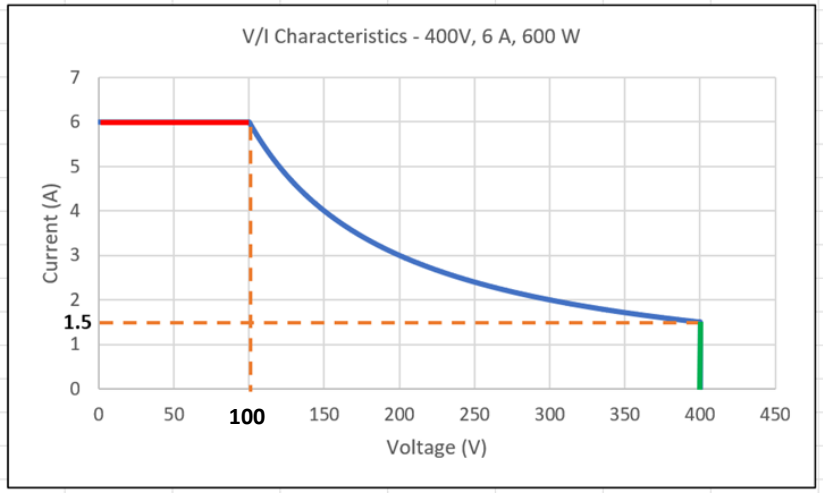
Other Features

- Optional Analog Programming by Voltage or Resistance
- Remote Output On/Off
- Latching or Live Remote Inhibit
- Trigger In/Out
- Output Status
- Fault Status









ASTERION DC ASA SERIES

Multi-channel programmable sequencing, ramps and delays

Sequencing [1]

- Store 50 sequences of 20 individual steps
- Sequences may be tied together
- Extensive list of step functions, ramping, looping, Go-To and subroutine calls

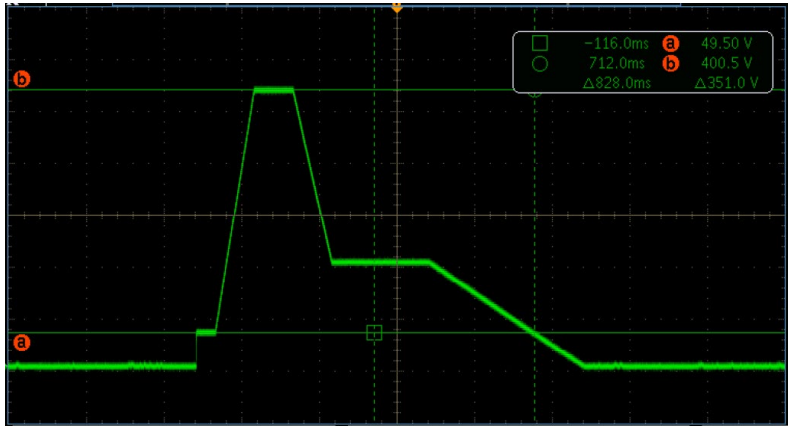
Voltage/Current Ramps

- Programmable dwell 1mS min. to 9999 S max.

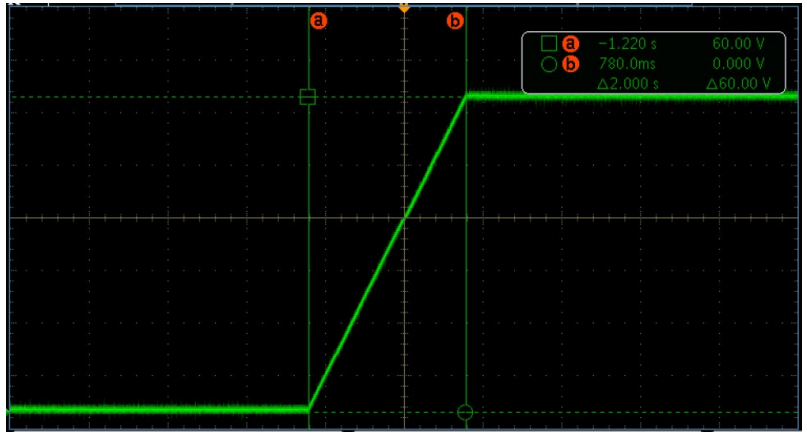
On/Off Delays

- Programmable 0.1 S min. to 100 S max.

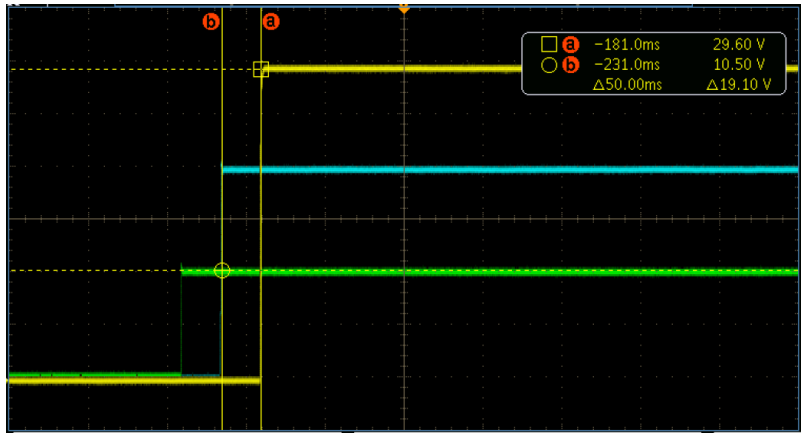
[1] Sequencing is only available through remote interfaces, not available on the front panel.



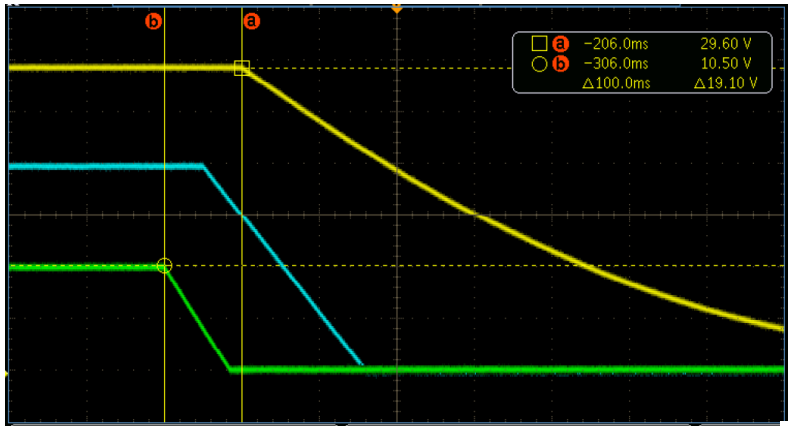
Sequencing



Ramps



Turn-On Delays



Turn-Off Delays

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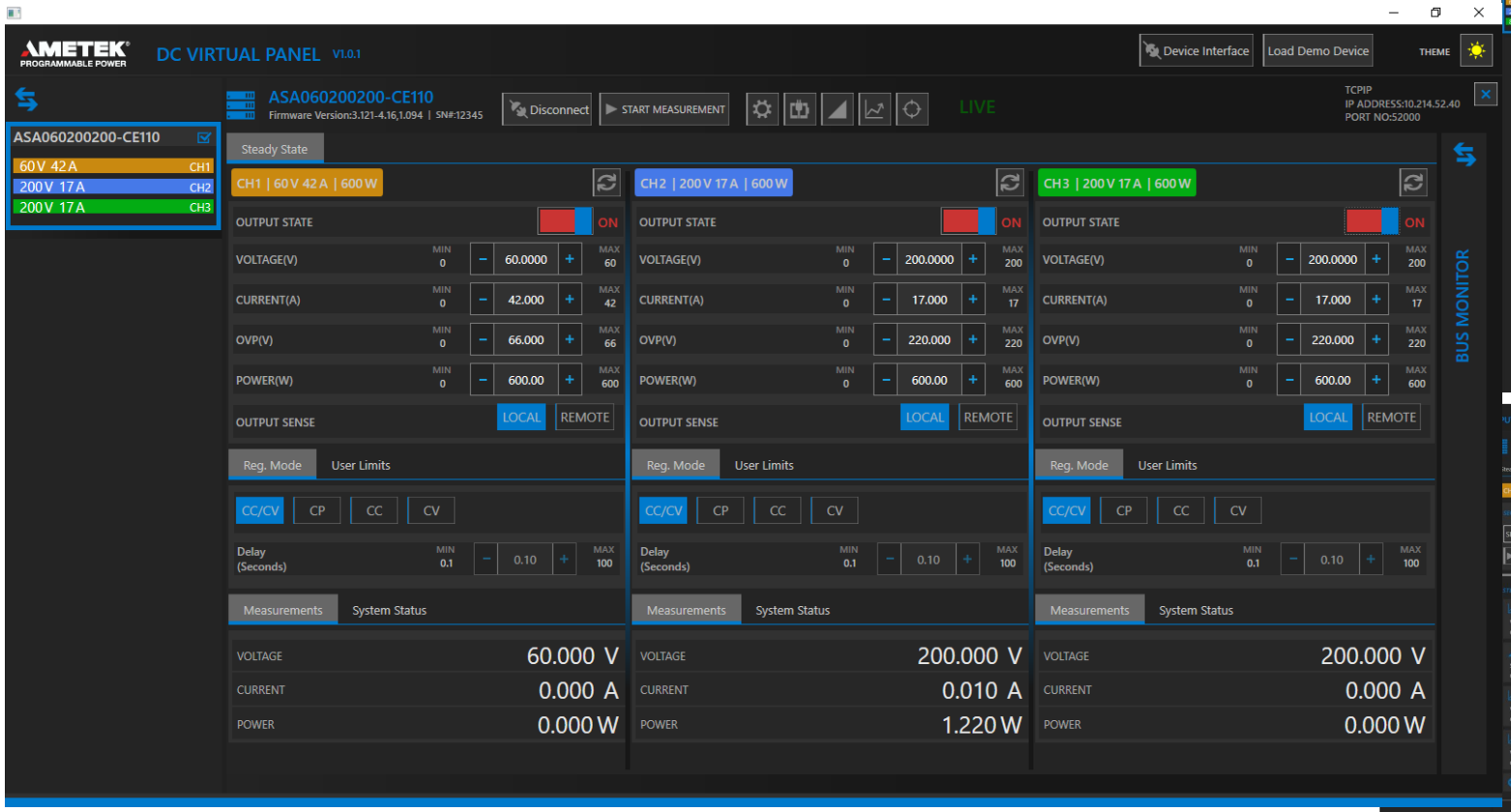
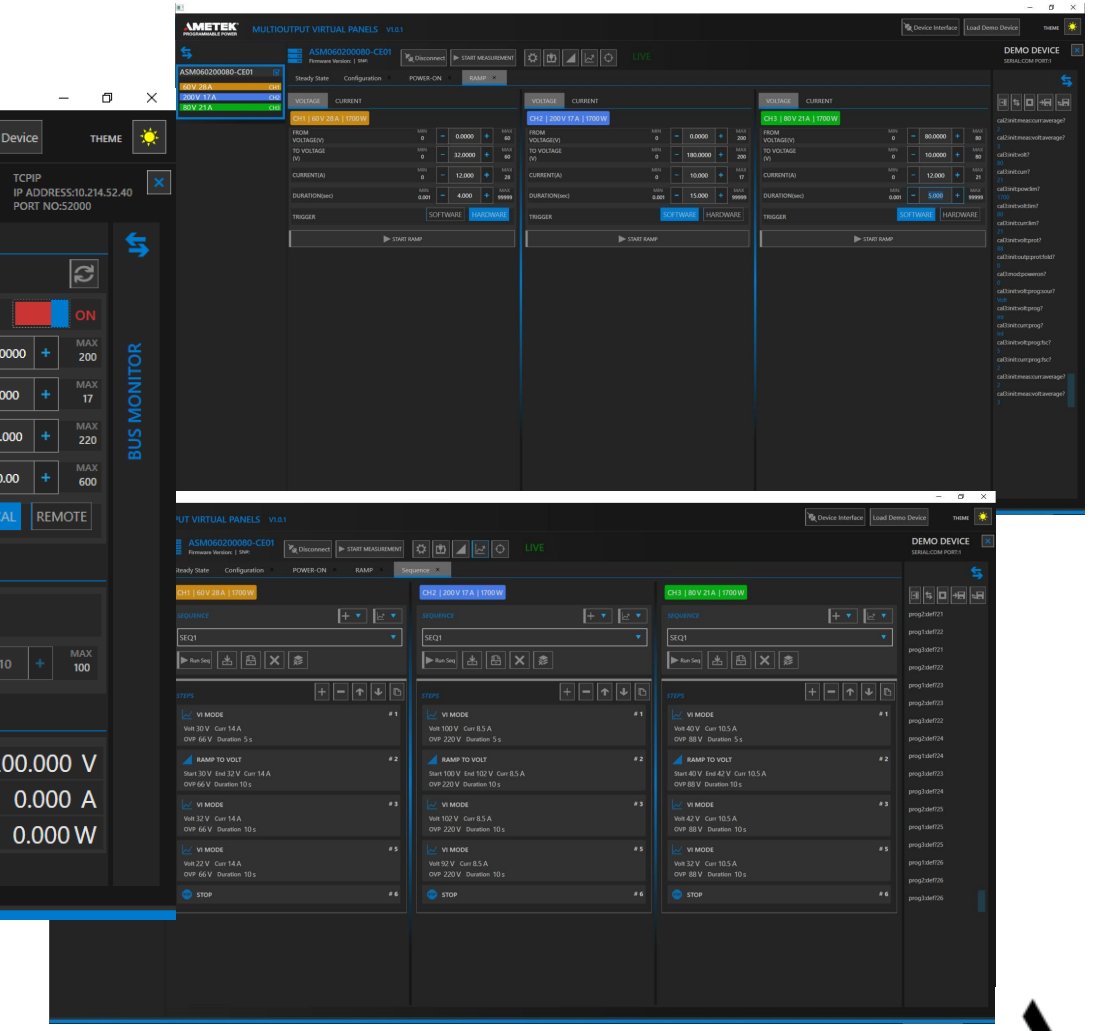
Multi-channel
Virtual Panels™ GUI





ASTERION DC ASA SERIES

Specifications

DC Output Specifications – 600W Autoranging Channel Options					
MODEL		**ASA60-42**	**ASA80-22**	**ASA200-17**	**ASA400-6**
Rated Output Voltage	V	60	80	200	400
Rated Output Current	A	42	22	17	6.0
Rated Output Power	W	600	600	600	600
Line Regulation	V	+/- 0.01% of rated voltage			
	A	+/- 0.05% of rated current			
Load Regulation	V	+/- 0.02% of rated voltage			
	A	+/- 0.15% of rated current			
Ripple RMS [1] (20Hz-300kHz) c.v	mV	12	15	40	80
Output noise p-p [2] (20Hz-20MHz) c.v	mV	75	90	150	300
Remote sense compensation	V	3	5	5	5
Temperature drift	PPM/°C	100			
Stability		0.05% of output rating			

[1)] RMS ripple/noise, over 20 Hz to 300 kHz bandwidth, is measured directly across the output terminals with the supply operating into 90% of rated resistive load in all channels and nominal AC input line voltage.

[2)] PK-PK ripple/noise, over 20 Hz to 20 MHz bandwidth with the supply operating into 90% of rated resistive load in all channels and nominal AC input line voltage.

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Specifications

Programming & Readback (Front Panel or Remote Digital Interface)	
Voltage Output Programming Accuracy	+/- 0.1% of rated output voltage
Current Output Programming Accuracy	+/- 0.2% of rated output current
Power Output Programming Accuracy	+/- 0.3% of rated output power
Overvoltage Programming Accuracy	±1%, maximum, of rated output voltage
Voltage Output Programming Resolution	0.012% of full scale
Current Output Programming Resolution	0.012% of full scale
Power Output Programming Resolution	0.012% of full scale
Overvoltage Programming Resolution	0.1% of full scale
Voltage Output Readback Accuracy	+/- 0.1% of rated output voltage
Current Output Readback Accuracy	+/- 0.2% of rated output current
Pout Readback Accuracy	+/- 0.3% of rated output power
Voltage Output Readback Resolution	0.012% of full scale
Current Output Readback Resolution	0.012% of full scale
Power Output Readback Resolution	0.012% of full scale
Overvoltage Response Time	20 ms

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Specifications

Output Transient Specifications				
	Rated Voltage (V)			
MODEL	**60 V**	**80 V**	**200 V**	**400 V**
Voltage Rise Time[3] (ms), Full load	20	25	75	100
Voltage Fall Time[4] (ms), Full load	50	60	150	200
Voltage Fall Time[5] (ms), No load	1500	2600	3500	4600
Transient response[6] (ms)	1	1	2	2

3) Maximum time, from 0-100% of programming change from zero to rated output voltage with rated resistive load. Current rise time is same as the voltage rise time.

4) Maximum time, from 100%-0 of programming change from rated output voltage to zero with rated resistive load. Current fall time is same as the voltage fall time.

5) Maximum time, from 100%-0 of programming change from rated output voltage to zero with No load.

6) Typical time to recover within 0.5% of rated output voltage for load step change 10-90% of rated output current.

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Specifications

Remote Isolated User Control I/O Signal Interface Characteristics	
Remote Output ON/OFF Control	Each channel is provided with control inputs to turn output ON/OFF the power supply. DC Input (+) 2.7V-24V will enable (turn-on) the output of the supply.
Remote Inhibit Input	Switch/Relay contact closure or direct short from this terminal to signal return is required to Turn ON/OFF the power supply. Opening the contact would shut down the output. Remote inhibit can be configured in two modes (LATCH and LIVE) Latch - after reclosing the contact, user needs to clear the fault and turn ON the output. Live - after reclosing the contact, user needs to turn ON the output. Remote circuit must sink up to 10 mA from 5 VDC to enable.
TRIGGER IN	TTL compatible Input signal, active-high; provides external hardware triggering of voltage, current Ramp, and sequencing functions. Signal connects to Open-anode of opto-isolator diode with internal 1kΩ series resistor internal to power supply. Voltage Rating: Maximum 24V, Minimum -5V Low state: 0.3 V max, High State 2.7V min
TRIGGER OUT	Output signal, active-high; synchronization pulse of 10 ms when a change in the output occurs. Open collector transistor output, Collector is connected the 26-pin connector. Emitter point of transistor is connected to common return pin of the interface connector. Voltage Rating: Maximum 30V, Minimum 3V for Active High Sink Current: 50mA

ASTERION DC ASA SERIES

Specifications

Remote Isolated User Control I/O Signal Interface Characteristics	
CC/CV status Output	Output signal, High state indicates Constant Current mode operation and Low state indicates Constant Voltage mode operation. Open collector transistor output, Collector is connected the 26-pin connector. Emitter point of transistor is connected to common return pin of the interface connector. Voltage Rating: Maximum 30V, Minimum 3V for Active High, Sink Current: 50mA
Output ON/OFF Status	Output signal, High state indicates Channel Output is ON and Low state indicates Channel Output is OFF Open collector transistor output, Collector is connected the 26-pin connector. Emitter point of transistor is connected to common return pin of the interface connector. Voltage Rating: Maximum 30V, Minimum 3V for Active High, Sink Current: 50mA
FAULT Status	Output Signal, High state indicates fault state of the power supply. Open collector transistor output, Collector is connected the 26-pin connector. Emitter point of transistor is connected to common return pin of the interface connector. Voltage Rating: Maximum 30V, Minimum 3V for Active High, Sink Current: 50mA

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Specifications

Optional Remote Isolated Analog Programming Interface Characteristics	
Remote Analog Programming of Output Voltage and Output Current	Independent Signal inputs for output voltage and current programming using External Analog Reference. Analog reference source is user selectable and can be a voltage or resistance. Selected analog reference source type is common to both voltage and current programming. Voltage as Reference Source: Full Scale Voltage could be set by the user from 5V to 10V. Resistance as Reference Source: Full Scale Voltage could be set by the user from 5kΩ to 10kΩ. Programming accuracy and linearity: ±1% of rated output Programming accuracy and linearity: ±1% of rated output
Monitor Signals for the Output Voltage and Output Current	Monitor Signals for the Output Voltage and Current. Full Scale range: 0V to 10V corresponds to 0-100% full-scale output Minimum recommended Load: 100kΩ, typical Maximum Load: 20 kΩ Monitor accuracy and linearity: ±1% of full-scale output

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Specifications

Remote Control Digital Interfaces	
LAN	Ethernet 10BASE-T and 100BASE-T over twisted-pair cables compliant with IEEE 802.3; Connector: 8P8C modular jack.
RS-232	Serial interface compliant to RS-232C; Protocol: data bits, 7 with parity and 8 without parity; stop bits, 2; baud rate, 9600 to 115200; handshake, CTS and RTS; Connector: Subminiature-D, 9-contact receptacle.
USB	Serial interface compliant to USB 2.0; Connector: Type-B receptacle.
IEEE-488 (Option)	Parallel interface complies with IEEE-488.1, IEEE-488.2, and the SCPI command specification; command execution response time, 10 ms, typical; connector: IEEE-488.1 compliant.
Firmware Upgrade	Firmware can be upgraded through the LAN interface.

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Specifications

Unit Protection	
Output Overvoltage Protection (OVP)	Programmable to 110% of full-scale output voltage, exceeding OVP threshold results in shutdown of output.
Output Mode Limit Protection	User-selectable fold back mode CV/CC/CP or CV or CC or CP modes.
	In CV/CC/CP mode, output current or power is regulated to setpoint on reaching limit.
	In CV mode, on reaching current or power limits results in shutdown of output.
	In CC mode, on reaching voltage or power limits results in shutdown of output.
	In CP mode, on reaching voltage or current limits results in shutdown of output.
	In CV or CC or CP mode, shutdown delay on reaching the limit is programmable from 100 ms to 5 s.
AC Input Overcurrent Protection	Internal fuses in each phase for fault isolation; not user replaceable.
AC Input Undervoltage Protection	Automatic shutdown for insufficient AC input voltage.
AC Input Transient Protection	Protection to withstand EN61326-1, Class-A surge levels.
Overtemperature Protection (OTP)	Internal temperature monitors cause shutdown of output if temperature thresholds are exceeded.

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Specifications

Output Isolation	
Output terminal Positive (+Ve) and Negative (-Ve)	±600 VRMS, maximum, with respect to chassis ground.
Isolated Analog interface Signals and External User Control I/O interface to Output Negative terminal	±600 VRMS, maximum; optional Isolated Analog programming and external user interface signals are isolated from negative output terminal; operation of Isolated Analog Interface signals should be at SELV safety voltage conditions to chassis ground.

ASTERION DC ASA SERIES

Specifications

AC Input Specifications	600 W per Channel, Total 1800 W for 3 Channels in a Chassis
Input Voltage, Nominal Rating (Factory Configurable Only)	**Input Option "C": 3 phase, 3 wire + Gnd or 1 Phase, 2 wire + Gnd** Nominal Rating Range for 3 phase 3 wire+ Gnd: 200- 240 VAC, 3 Phase, Line- Line. Nominal Rating Range for 1 phase, 2 wire+ Gnd Low Line range: 100 – 132 VAC(7), 1 Phase, Line- Neutral. Nominal Rating for 1 phase, 2 wire+ Gnd High Line range: 200 – 240 VAC(8), 1 Phase, Line-Neutral. **Input Option "D", 3 phase, 3 wire + Gnd** Nominal Rating: 380 – 415 VAC, 3 Phase, Line- Line **Input Option "E", 3 phase, 3 wire + Gnd** Nominal Rating: 440- 480 VAC, 3 Phase, Line- Line
Input Voltage, Operating Range	**Input Option "C": 3 phase, 3 wire + Gnd,** Operating Range 180 V-264 VAC Line-Line. **Input Option "C": 1 phase, 2 wire + Gnd, Low line,** Operating Range 90V-145 VAC Line-Neutral. **Input Option "C": 1 phase, 2 wire + Gnd, High line,** Operating Range 180V-264 VAC Line-Neutral. **Input Option "D": 3 phase, 3 wire + Gnd,** Operating Range 342-456 VAC Line-Line. **Input Option "E": 3 phase, 3 wire + Gnd,** Operating Range 396-528 VAC Line-Line.
Input Current, Maximum RMS	**Input Option "C": 3 phase, 3 wire + Gnd:** 7.2 A at 180 VAC Line-Line **Input Option "C": 1 phase, 2 wire + Gnd, Low line:** 25 A at 90 VAC Line-Neutral. **Input Option "C": 1 phase, 2 wire + Gnd, High line:** 12.5 A at 180 VAC Line-Neutral. **Input Option "D", 3 phase, 3 wire + Gnd:** 3.8 A at 342 VAC Line- Line. **Input Option "E", 3 phase, 3 wire + Gnd:** 4.4 A at 396 VAC Line- Line
Efficiency	**Input Option "C": 3 phase, 3 wire + Gnd:** 80%(9) **Input Option "C": 1 phase, 2 wire + Gnd, Low line:** 80%(10) **Input Option "C": 1 phase, 2 wire + Gnd, High line:** 80%(11) **Input Option "D", 3 phase, 3 wire + Gnd:** 80%(12) **Input Option "E", 3 phase, 3 wire + Gnd:** 80%(13)

ASTERION DC ASA SERIES

Specifications

AC Input Specifications	600 W per Channel, Total 1800 W for 3 Channels in a Chassis
Inrush Current, typical[8]	**Input Option "C": 3 phase, 3 wire + Gnd:** 55 A Peak @ 264 V L-L **Input Option "C": 1 phase, 2 wire + Gnd, Low line:** 30 A Peak @ 132 V L-N **Input Option "C": 1 phase, 2 wire + Gnd, High line:** 55 A Peak @ 264 V L-N **Input Option "D", 3 phase, 3 wire + Gnd:** 55 A Peak @ 456 VAC L-L **Input Option "E", 3 phase, 3 wire + Gnd:** 55 A Peak @ 528 VAC L-L
Input Frequency, Nominal Rating	50 Hz, 60 Hz
Input Frequency Range	47 Hz - 63 Hz
Power Factor[14], **typical**	a) 1-Ph: 0.98; active PFC b) 3-Ph: 0.95, active PFC
Hold-Up Time[15], **typical**	≥ 10 ms
Isolation Voltage	1500 VAC Input to Ground, 3000 VAC Input to Hazardous Secondary, 3000 VAC Input to Isolated SELV barriers

[7] In Single Phase the Low Line Range 90 – 132 V AC, operating ambient temperature of operation to be limited to 40° C. Ensure the inlet wiring is capable of handling current up to 25 A to load up to 1800 W (600 W per Channel). *If the unit is powered from the standard 15 A outlet, unit power to be derated to 1200 W (400W Per Channel).*

[8] In Single Phase High Line Range 180 – 264 V AC, operating ambient temperature to be limited to 40° C.

[9] Typical value at full load 1800 W output (600 W per channel) and nominal AC input voltage of 208VAC L-L at 50/60 Hz input frequency.

[10] Typical value at full load 1800 W output (600 W per channel) and nominal AC input voltage of 110VAC L-N at 50/60 Hz input frequency.

[11] Typical value at full load 1800 W output (600 W per channel) and nominal AC input voltage of 220VAC L-N at 50/60 Hz input frequency.

[12] Typical value at full load 1800 W output (600 W per channel) and nominal AC input voltage of 400VAC L-L at 50/60 Hz input frequency

[13] Typical value at full load 1800 W output (600 W per channel) and nominal AC input voltage of 480VAC L-L at 50/60 Hz input frequency.

[14] Not including EMI filter inrush less than 200us.

[15] Measured at full load at rated nominal AC input voltage of 208 VAC/ 400 VAC/ 480 VAC L-L for 3 phase input and 110 VAC/ 220 VAC L-N for single phase input.

ASTERION DC ASA SERIES

Specifications

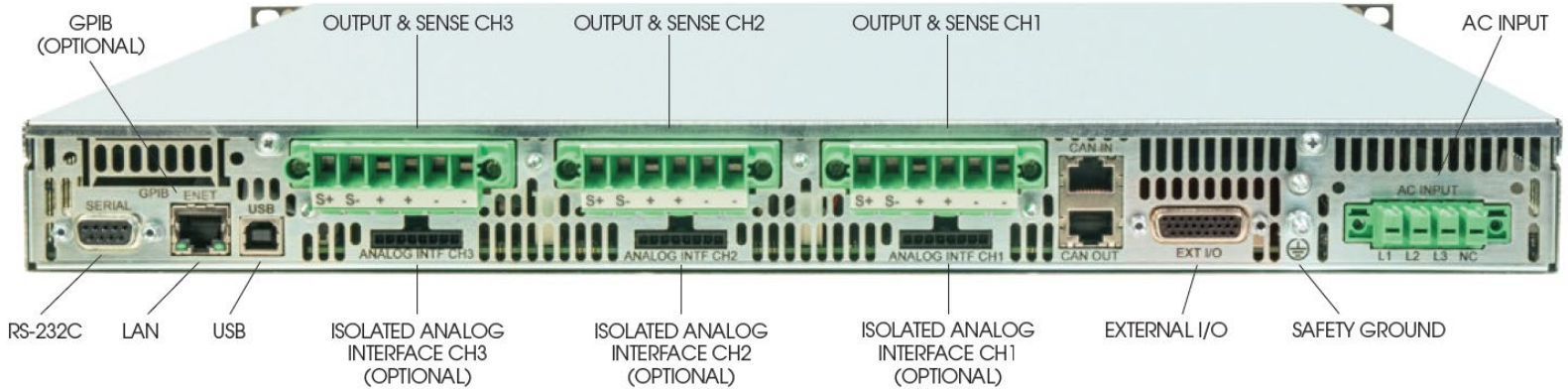
Environmental Specifications	
Operating Temp	0° to +50° C (+32° to +122° F)
Storage Temp	-30° to +85 °C (-22° to +185° F)
Operating Humidity	20-90 %, non-condensing
Storage Humidity	10-95 %, non-condensing
Altitude	3000 m (10,000 ft), output current derating 2%/100 m or $T_{ambient}$ 1ºC/100 m above 2000 m
Cooling	Force-air cooling; linear, variable fan speed control; air intake at front/sides and exhaust at rear
Acoustic Noise	68 dBA, maximum; measured at 1 m with A-weighting
Vibration	MIL-PRF-28800F, Class 3; 5-500 Hz per Paragraph 4.5.5.3.1
Shock	MIL-PRF-28800F, Class 3; 30G half-sine with 11ms duration per Paragraph 4.5.5.4.1
Transportation Integrity	ISTA Test Procedure 1A

Regulatory Agency Compliance	
EMC	CE marked for EMC Directive 2014/30/EU per EN61326-1:2013, Class-A for emissions and immunity as required for the EU CE mark
Safety	CSA NRTL certified for US and Canada to AN/CSA-C22.2 No. 61010-1-12, UL 61010-1 Third Edition. CE marked for LVD compliance 2014/35/EU to EN 61010-1 Third Edition as required for the EU CE mark.
CE Mark LVD Categories	Installation Overvoltage Category: II; Pollution Degree: 2; Class II equipment; indoor use only
RoHS	CE marked for compliance with RoHS3 EU Directive 2015/863/EU for Restriction of Hazardous Substances in Electrical and Electronic Equipment

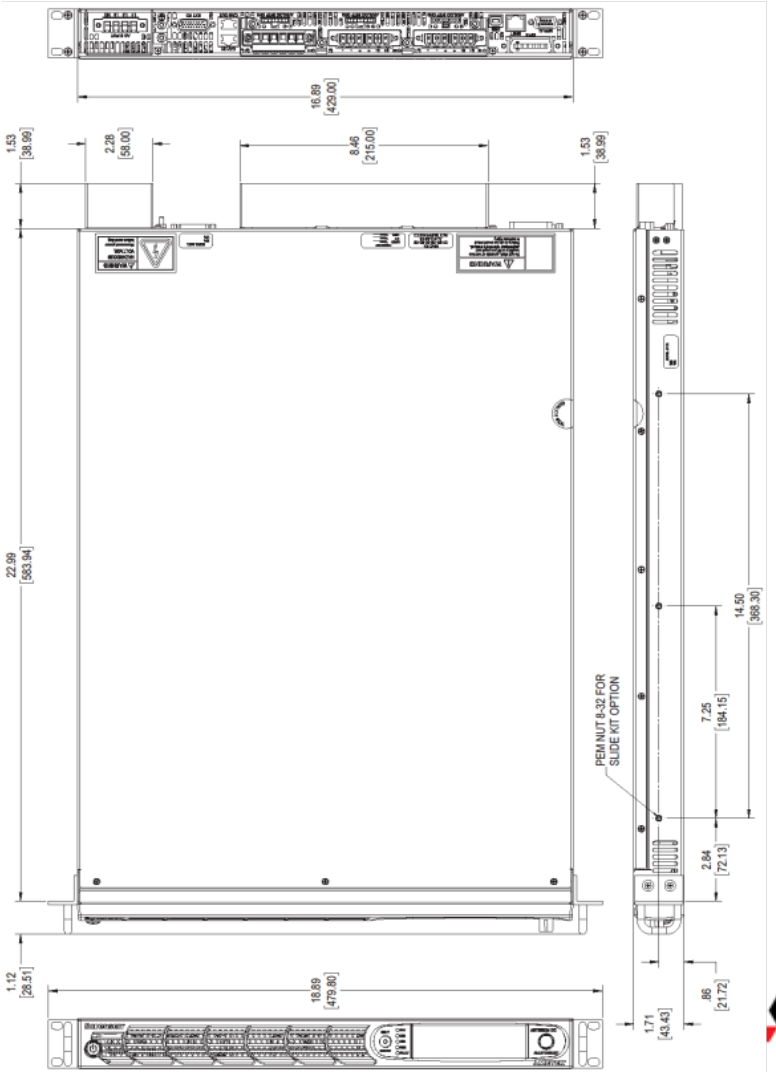
ASTERION DC ASA SERIES

Specifications

Mechanical Specifications	
Dimensions	H, 1.75” (44.45 mm); W (front panel), 19.0” (483 mm); D, 24.0” (609.6 mm) H, 1.75” (44.45 mm); W (chassis), 16.9” (429 mm); D, 23.0” (584 mm).
Unit Weight	28 lbs (12.7 kg)
Shipping Weight	34 lbs (15.4 kg)
Chassis Material	Steel with plastic front panel
Chassis Finish	Galvanized Zinc, G90
Installation	Protective covers are provided for AC input and DC output. Rackmount as per ANSI-EIA-310-D, with front panel mounting flange brackets and chassis provisions for mounting rack slides; slides and flange brackets/handles options available.

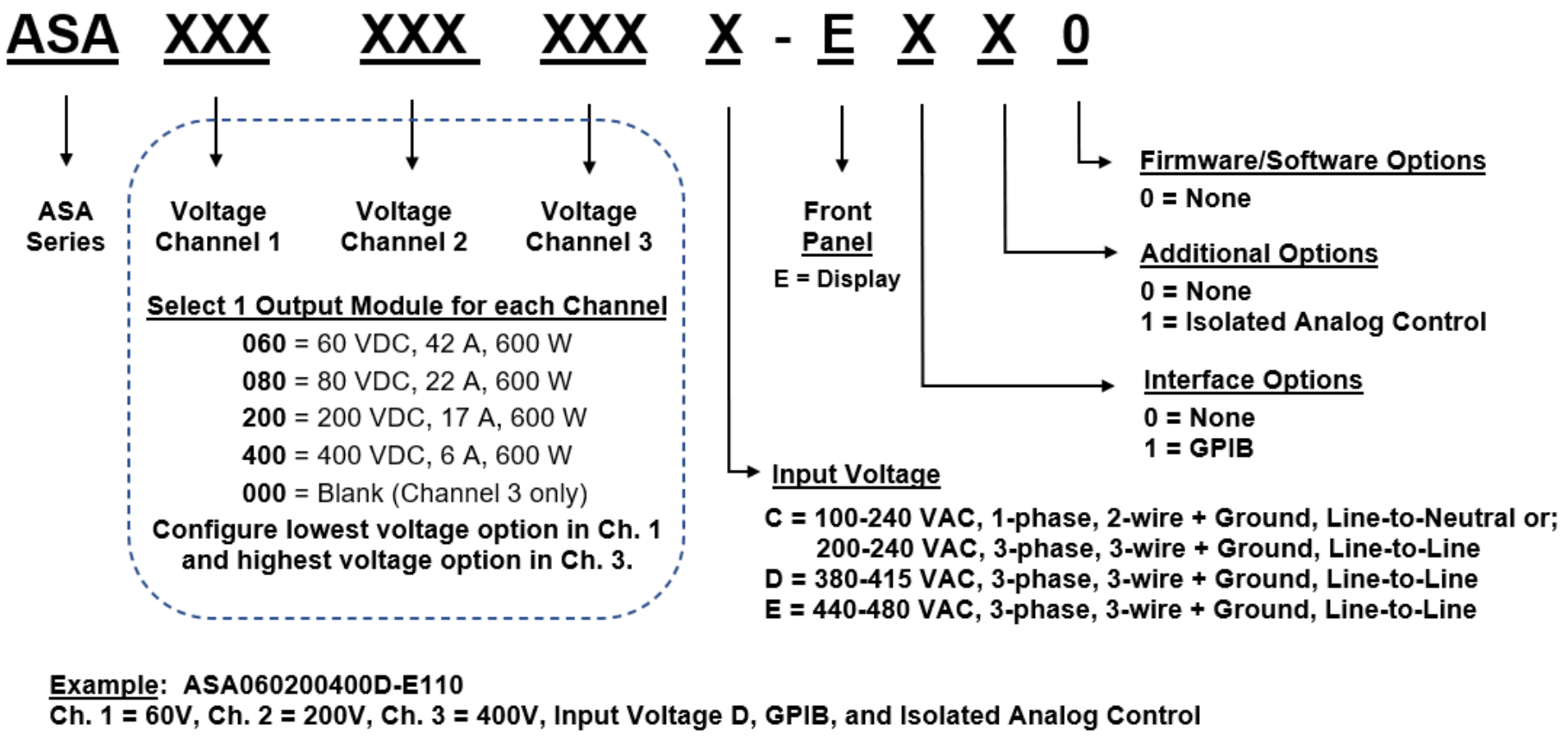


Rear Panel Connections



ASTERION DC ASA SERIES

Model Number Description



Example: ASA060200400D-E110
Ch. 1 = 60V, Ch. 2 = 200V, Ch. 3 = 400V, Input Voltage D, GPIB, and Isolated Analog Control

When selecting different voltage channel options always configure the lowest voltage option in Channel 1 and highest voltage option in Channel 3.

ASTERION DC ASA SERIES

Product Documentation

- Info Graphic Flyer
- FAQ Multi-Channel Power Supplies
- Sales Cut Sheet
- Data Sheet
- Operators Manual
- Programming Manual
- Price List

New Webpage & Video Coming Soon!

ASTERION DC ASA SERIES

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