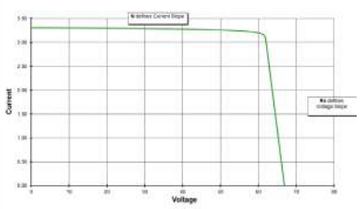
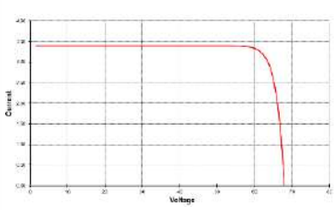
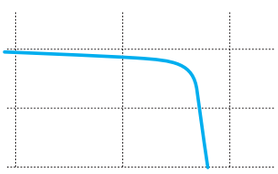
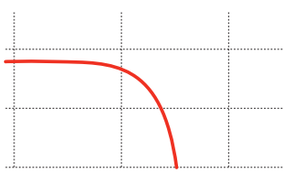
AMETEK®
PROGRAMMABLE POWER

Differences Between the ASPS SAS and m-SAS Systems

Power Supply Specifics	ASPS SAS	ETSM m-SAS
Power Supply Output Power and Size	• 1CH -1200W • 2CH – 600W/channel • 1U	1CH - 840W
Max Voc	40-220V in 5V increments	60V, 80V, 150V
Max Isc	• 15A for 600W channel • 20A for 1200W channel	14A, 10.5A, 5.6A
Voltage Programming Accuracy	± 0.05% + 0.05% V_{ocmax}	±0.2% of full scale voltage
Voltage Readback Accuracy	± 0.05% + 0.05% V_{ocmax}	±0.2% of full scale voltage
Current Programming Accuracy	± 0.08% + 0.08% I_{scmax}	±0.5% of full scale current
Current Readback Accuracy	± 0.1% + 0.1% I_{scmax}	±0.5% of full scale current
OVP Accuracy	± 0.25% V_{ocmax}	0.2% of full scale voltage
Output Capacitance	≤70nF	≤10nF
Output Voltage Noise Peak to Peak	≤0.2% of V_{ocmax}	• 60V, 80V: ≤0.35V • 150V: ≤0.60V
Output Current Noise Peak to Peak	≤0.4% of I_{scmax}	≤60mA
Protections	• Programmable Primary OVP • Programmable Secondary OVP • Programmable Primary OCP • Programmable Secondary OCP • Output Electronic Circuit Breaker (ECB) • 10µs external interlock shutdown • Overtemp	• Programmable OVP • Fixed OCP 150% of Iscmax • Interlock shuts down unit through the microcontroller and is not intended for safety critical applications
Output Isolation Relays	Standard	Not available
Shunt Switching Performance	≤2µsecond current recovery	Not capable
Series Switching Performance	≤100µsecond current response	Not capable
Peak Power Tracking	200Hz tracking speed	250Hz tracking speed
IV Curve Formula	$V = \frac{\left(\frac{Voc\ ln\left(2-\left(\frac{I}{Isc}\right)^{N}\right)}{ln(2)}\right) - Rs(I - Isc)}{1 + \left(\frac{RsIsc}{Voc}\right)}$	$I = Isc * (1 - C1 * \left(\exp\left(\frac{V}{C2 * Voc}\right)\right) - 1)$ $C1 = \left(1 - \left(\frac{Imp}{Isc}\right)\right) * (\exp\left(-\frac{Vmp}{C2 * Voc}\right))$ $C2 = \left(\left(\frac{Vmp}{Voc}\right) - 1\right) * \left(Ln\left(1 - \frac{Imp}{Isc}\right)\right)^{-1}$
Typical IV Curve Shape		
IV Knee Shape		

System Specifics	ASPS SAS	ETSM m-SAS
Cabinet	Heavy duty, 24" wide bays	Medium duty, 22" wide bays
AC Input and Control	Full AC Control chassis with AC contactor controlled by system On/Off panel. IEC pin and sleeve AC input connector, Mains circuit breaker. On/Off panel includes 3 phase voltage measurements, System On button, System EMO Off button, Fault tolerant shutdown system indicators	AC control and distribution consisting of Mains AC breaker with trip coil and distribution block. AC input wiring terminal block. On/Off panel with system On and Off buttons
DC Output	Custom Interface Test Adapter with MS style connector	6 pin Positronic connectors on I/O panel
Shutdown Interlock	• Fault tolerant shutdown board • MS style shutdown connector	D-sub 9 shutdown connector
Computer and Communication to Power Supplies	2U server style computer with AMETEK SAS software Ethernet communication through industrial Ethernet switch to power supplies	2U server style computer with AMETEK m-SAS software Ethernet communication through industrial Ethernet switch to power supplies