

MS-9600UDLS Battery Calculation

Secondary Power Source Requirements

Device Type	Standby Current (amps)				Secondary Alarm Current (amps)			
	Qty		Current Draw	Total	Qty		Current Draw	Total
Main Circuit Board	1	x	0.103000	= 0.103000	1	x	0.253000	= 0.253000
DACT-UD2	1	x	0.017000	= 0.017000	1	x	0.029000	= 0.029000
SLC-2LS Expander Module	0	x	0.019000	=	0	x	0.026000	=
4XTMF	0	x	0.005000	=	0	x	0.011000	=
IPDACT-2	0	x	0.093000	=	0	x	0.136000	=
IPDACT-2UD	0	x	0.098000	=	0	x	0.155000	=
ANN-BUS Devices								
ANN-80(-W)	2	x	0.015000	= 0.030000	2	x	0.040000	= 0.080000
ANN-LED	0	x	0.028000	=	0	x	0.068000	=
ANN-RLED	0	x	0.028000	=	0	x	0.068000	=
ANN-RLY	0	x	0.015000	=	0	x	0.075000	=
ANN-I/O	0	x	0.035000	=	0	x	0.200000	=
ANN-S/PG	0	x	0.045000	=	0	x	0.045000	=
ACS Annunciators								
ACM-8RF	0	x	0.030000	=	0	x	0.158000	=
ACM-16ATF	0	x	0.040000	=	0	x	0.056000	=
ACM-32AF	0	x	0.040000	=	0	x	0.056000	=
AEM-16ATF	0	x	0.002000	=	0	x	0.018000	=
AEM-32AF	0	x	0.002000	=	0	x	0.018000	=
AFM-16ATF	0	x	0.040000	=	0	x	0.056000	=
AFM-32AF	0	x	0.040000	=	0	x	0.056000	=
AFM-16AF	0	x	0.025000	=	0	x	0.065000	=
LDM-32F	0	x	0.040000	=	0	x	0.056000	=
LDM-E32F	0	x	0.002000	=	0	x	0.018000	=
LCD-80F	0	x	0.025000	=	0	x	0.064000	=
Resettable Power								
4-wire Detector Heads	0	x	0.000000	=	0	x	0.000000	=
Addressable Devices								
BEAM355	0	x	0.002000	=				
BEAM355S	0	x	0.002000	=				
BEAM1224	0	x	0.017000	=				
CP355	0	x	0.000300	=				
SD355	126	x	0.000300	= 0.037800				
SD355T	0	x	0.000300	=				
AD355	0	x	0.000300	=				
H355	6	x	0.000300	= 0.001800				
H355R	0	x	0.000300	=				
H355HT	0	x	0.000300	=				
D350P	0	x	0.000300	=				
D350RP	0	x	0.000300	=				
D350PL	0	x	0.000300	=				
D350RPL	0	x	0.000300	=				
D355PL	11	x	0.000300	= 0.003300				
MMF-300	2	x	0.000400	= 0.000800				
MMF-300-10	0	x	0.003500	=				
MDF-300	5	x	0.000750	= 0.003750				
MMF-301	2	x	0.000375	= 0.000750				
MMF-302	0	x	0.000270	=				
MMF-302-6	0	x	0.002000	=				
BG-12LX	6	x	0.000300	= 0.001800				

CMF-300	0	x	0.000390	=					
CMF-300-6	0	x	0.002250	=					
CRF-300	11	x	0.000270	=	0.002970				
CRF-300-6	0	x	0.001450	=					
I300	7	x	0.000400	=	0.002800				
B501BH-2	0	x	0.001000	=					
B501BHT-2	0	x	0.001000	=					
B224RB	0	x	0.000500	=					
B224BI	0	x	0.000450	=					
B200SR	0	x	0.000500	=					
CDRM-300	0	x	0.001300	=					
	Maximum alarm draw for Addressable devices (SLC 1)								0.40000
	Maximum alarm draw for Addressable devices (SLC 2)								0.00000
EOLR-1	0	x	0.020000	=		0	x	0.020000	=
PAM-2	1	x	0.015000	=	0.015000	1	x	0.000000	=
DOOR HOLDERS	5	x	0.020000	=	0.100000	5	x	0.000000	=
CO1224T	2	x	0.020000	=	0.040000	2	x	0.040000	=
CELLULAR COMMUNICATOR	1	x	0.150000	=	0.150000	1	x	0.300000	=
Miscellaneous Device 5	0	x	0.000000	=		0	x	0.000000	=
NAC #1						1	x	1.286000	=
NAC #2						1	x	1.346000	=
NAC #3						1	x	0.916000	=
NAC #4						0	x	0.000000	=
Current Draw from TB3 (non-alarm)			0.000000	=				0.000000	=
Sum each column for totals	Total Standby Current			0.51077	Total Alarm Current			4.69000	

MS-9600UDLS Battery Calculation

Note: You can edit all current draws and are **fully responsible for verifying** these calculations. Only enter values in **yellow** cells.

		Required Standby Time in Hours			
		24 Hours			
Standby Load Current (Amps)	0.511 A	x	24	=	12.258 AH
		Required Alarm Time in Hours			
		5 Minutes			
Alarm Load Current (Amps)	4.690 A	x	0.084	=	0.394 AH
					Standby and Alarm Load Subtotal = 12.652 AH
					Derating Factor = x 1.2
					Total Ampere Hours Required = 15.183 AH

Recommended Batteries:	BAT-12180 - 18AH Batteries
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Battery Check

The batteries can be charged by the MS-9600UDLS Charger.
 The batteries can be housed in the MS-9600UDLS Cabinet.

Current Draw Check

NAC#1 current is within the limitations of the circuit.
 NAC#2 current is within the limitations of the circuit.
 NAC#3 current is within the limitations of the circuit.
 NAC#4 current is within the limitations of the circuit.
 The standby current is within the limitations of the panel.
 The alarm current is within output limitations of the panel.

Voltage Drop Analysis

FireLite MS-9600UDLS Control Panel (2.0-amp circuit)

Source Voltage: 20.40 VDC Low Battery

Protected Premises: THE SPRINGS OF BALLENTINE Date: 2/14/23
 Address: 40 RAWLS CLUB RD. City: FUQUAY VARINA
 State: NC Zip: _____ Note: FACP- NAC 1

Prepared By: WARDEN ENTERPRISE, INC. Phone: _____
 Address: 1013 WARDEN DRIVE City: YADKINVILLE
 State: NC Zip: 27055

Device #	PartNumber	Current (amps)	Distance (Feet)		Circuit Voltage @ Each Device			
			Between	Total			14 AWG	
1	GEC3-24WW15	0.1340	31	31			20.16	
2	GEC3-24WW30	0.1520	29	60			19.95	
3	GEC3-24WW15	0.1340	21	81			19.82	
4	GES3-24WW15	0.0780	23	104			19.70	
5	GES3-24WW15	0.0780	21	125			19.60	
6	GEC3-24WW15	0.1340	32	157			19.46	
7	GEC3-24WW15	0.1340	16	173			19.40	
8	GES3-24WW15	0.0780	20	193			19.35	
9	GEC3-24WW15	0.1340	21	214			19.30	
10	GEC3-24WW15	0.1340	26	240			19.26	
11	GES3-24WW30	0.0960	17	257			19.25	
Total Current:		1.2860	% Voltage Drop:				5.62	
							Go	

Strikethrough indicates a value below the device's minimum voltage at indicated location and wire gauge

These calculations assume a worst-case source voltage as measured by UL with the batteries depleted to 20.4 volts. Under AC power and for most of the drain cycle of the batteries, the circuit voltages will be substantially higher and thus, would support a greater number of devices. A device's minimum operating voltage is derived from the UL-requirement that it work down to 80% of its rated (published) minimum operating voltage.

Voltage Drop Analysis

FireLite MS-9600UDLS Control Panel (2.0-amp circuit)

Source Voltage: 20.40 VDC Low Battery

Protected Premises: THE SPRINGS OF BALLENTINE Date: 2/14/23
 Address: 40 RAWLS CLUB RD. City: FUQUAY VARINA
 State: NC Zip: _____ Note: FACP- NAC 2

Prepared By: WARDEN ENTERPRISE, INC. Phone: _____
 Address: 1013 WARDEN DRIVE City: YADKINVILLE
 State: NC Zip: 27055

Device #	PartNumber	Current (amps)	Distance (Feet)		Circuit Voltage @ Each Device			
			Between	Total			14 AWG	
1	GEC3-24WW75	0.2360	24	24			20.20	
2	GEC3-24WW15	0.1340	26	50			20.02	
3	GEC3-24WW75	0.2360	21	71			19.90	
4	GEC3-24WW15	0.1340	18	89			19.82	
5	GEC3-24WW75	0.2360	38	127			19.68	
6	GEC3-24WW15	0.1340	33	160			19.60	
7	GEC3-24WW75	0.2360	24	184			19.57	
Total Current:		1.3460	% Voltage Drop:				4.09	
							Go	

Strikethrough indicates a value below the device's minimum voltage at indicated location and wire gauge

These calculations assume a worst-case source voltage as measured by UL with the batteries depleted to 20.4 volts. Under AC power and for most of the drain cycle of the batteries, the circuit voltages will be substantially higher and thus, would support a greater number of devices. A device's minimum operating voltage is derived from the UL-requirement that it work down to 80% of its rated (published) minimum operating voltage.

Voltage Drop Analysis

FireLite MS-9600UDLS Control Panel (2.0-amp circuit)

Source Voltage: 20.40 VDC Low Battery

Protected Premises: THE SPRINGS OF BALLENTINE Date: 2/14/23
 Address: 40 RAWLS CLUB RD. City: FUQUAY VARINA
 State: NC Zip: _____ Note: FACP- NAC 3

Prepared By: WARDEN ENTERPRISE, INC. Phone: _____
 Address: 1013 WARDEN DRIVE City: YADKINVILLE
 State: NC Zip: 27055

Device #	PartNumber	Current (amps)	Distance (Feet)		Circuit Voltage @ Each Device			
			Between	Total			14 AWG	
1	GEC3-24WW75	0.2360	103	103			19.82	
2	GES3-24WW15	0.0780	28	131			19.70	
3	GES3-24WW15	0.0780	10	141			19.67	
4	GES3-24WW15	0.0780	28	169			19.58	
5	GES3-24WW15	0.0780	38	207			19.47	
6	GES3-24WW15	0.0780	10	217			19.45	
7	GES3-24WW15	0.0780	23	240			19.41	
8	GES3-24WW15	0.0780	33	273			19.37	
9	GEC3-24WW15	0.1340	20	293			19.35	
Total Current:		0.9160	% Voltage Drop:				5.15	
							Go	

Strikethrough indicates a value below the device's minimum voltage at indicated location and wire gauge

These calculations assume a worst-case source voltage as measured by UL with the batteries depleted to 20.4 volts. Under AC power and for most of the drain cycle of the batteries, the circuit voltages will be substantially higher and thus, would support a greater number of devices. A device's minimum operating voltage is derived from the UL-requirement that it work down to 80% of its rated (published) minimum operating voltage.

PS#1 PSE-10 Battery Calculation

Secondary Power Source Requirements

Device Type	Standby Current (amps)				Secondary Alarm Current (amps)				
	Qty		Current Draw	Total	Qty		Current Draw	Total	
Main Circuit Board									
Choose EOLR used ↓									
4.7k	1	X	0.1560	= 0.1560	1	X	0.1850	= 0.1850	
Main Circuit Board with ZNAC-PS Class A card	0	X	0.1490	= 0.0000	0	X	0.1590	= 0.0000	
NAC / Output # 1	1	X	0.0000	= 0.0000	1	X	2.0600	= 2.0600	
NAC / Output # 2	1	X	0.0000	= 0.0000	1	X	1.6300	= 1.6300	
NAC / Output # 3	1	X	0.0000	= 0.0000	1	X	1.3620	= 1.3620	
NAC / Output # 4	1	X	0.0000	= 0.0000	1	X	1.0700	= 1.0700	
NAC / Output # 5	1	X	0.0000	= 0.0000	1	X	0.0000	= 0.0000	
NAC / Output # 6	1	X	0.0000	= 0.0000	1	X	0.0000	= 0.0000	
NAC / Output # 7	1	X	0.0000	= 0.0000	1	X	0.0000	= 0.0000	
Total Standby Load				0.1560	Total Alarm Load				6.3070

PSE-10 Battery Calculation

Note 1: You are **fully responsible for verifying these calculations.**

Note 2: You only need to make entries in the **yellow** cells

Calculation in Total Sheet

		Required Standby Time in Hours			
		24 Hours			
Standby Load Current (Amps)	0.1560 Amps	X	24	=	3.744 AH
		Required Alarm Time in Hours			
		5 Minutes			
Alarm Load Current (Amps)	6.3070 Amps	X	0.084	=	0.530 AH
Total Current Load					4.27 AH
*Multiply by the Derating Factor		1.2		=	x 1.20
Total Ampere Hours Required					5.13 AH

Recommended Batteries: BAT-1270 - 7AH Batteries

* Derating Factor required to compensate for the non-linear discharge characteristic of a battery.

Voltage Drop Analysis

FireLite FCPS-24FS6 & FS8 Power Supply (3.0-amp circuit)

Source Voltage: 20.40 VDC Low Battery

Protected Premises: <u>THE SPRINGS OF BALLENTINE</u>		Date: <u>2/14/23</u>
Address: <u>40 RAWLS CLUB RD.</u>		City: <u>FUQUAY VARINA</u>
State: <u>NC</u>	Zip: _____	Note: <u>POWER SUPPLY 1- NAC 1</u>
Prepared By: <u>WARDEN ENTERPRISE, INC.</u>		Phone: _____
Address: <u>1013 WARDEN DRIVE</u>		City: <u>YADKINVILLE</u>
State: <u>NC</u>	Zip: <u>27055</u>	

Device #	PartNumber	Current (amps)	Distance (Feet)		Circuit Voltage @ Each Device			
			Between	Total			14 AWG	
1	GEC3-24WW30	0.1520	39	39			19.91	
2	GEC3-24WW15	0.1340	21	60			19.66	
3	GEC3-24WW15	0.1340	10	70			19.55	
4	GEC3-24WW75	0.2360	42	112			19.13	
5	GEC3-24WW30	0.1520	32	144			18.85	
6	GEC3-24WW15	0.1340	30	174			18.62	
7	GEC3-24WW15	0.1340	24	198			18.46	
8	GEC3-24WW30	0.1520	15	213			18.37	
9	GEC3-24WW30	0.1520	27	240			18.23	
10	GES3-24WW15	0.0780	32	272			18.10	
11	GES3-24WW15	0.0780	33	305			17.97	
12	GES3-24WW15	0.0780	10	315			17.94	
13	GEC3-24WW15	0.1340	30	345			17.86	
14	GES3-24WW15	0.0780	13	358			17.83	
15	GES3-24WW15	0.0780	16	374			17.81	
16	GES3-24WW15	0.0780	33	407			17.78	
17	GES3-24WW15	0.0780	10	417			17.77	
Total Current:		2.0600	% Voltage Drop:				12.87	
							Go	

Strikethrough indicates a value below the device's minimum voltage at indicated location and wire gauge

These calculations assume a worst-case source voltage as measured by UL with the batteries depleted to 20.4 volts. Under AC power and for most of the drain cycle of the batteries, the circuit voltages will be substantially higher and thus, would support a greater number of devices. A device's minimum operating voltage is derived from the UL-requirement that it work down to 80% of its rated (published) minimum operating voltage.

Voltage Drop Analysis

FireLite FCPS-24FS6 & FS8 Power Supply (3.0-amp circuit)

Source Voltage: 20.40 VDC Low Battery

Protected Premises: <u>THE SPRINGS OF BALLENTINE</u>		Date: <u>2/14/23</u>
Address: <u>40 RAWLS CLUB RD.</u>		City: <u>FUQUAY VARINA</u>
State: <u>NC</u>	Zip: _____	Note: <u>POWER SUPPLY 1- NAC 2</u>
Prepared By: <u>WARDEN ENTERPRISE, INC.</u>		Phone: _____
Address: <u>1013 WARDEN DRIVE</u>		City: <u>YADKINVILLE</u>
State: <u>NC</u>	Zip: <u>27055</u>	

Device #	PartNumber	Current (amps)	Distance (Feet)		Circuit Voltage @ Each Device			
			Between	Total			14 AWG	
1	WGEC24-75WW	0.2360	58	58			19.82	
2	GEC3-24WW15	0.1340	58	116			19.32	
3	GES3-24WW15	0.0780	19	135			19.18	
4	GES3-24WW15	0.0780	16	151			19.06	
5	GES3-24WW15	0.0780	25	176			18.89	
6	GEC3-24WW15	0.1340	20	196			18.76	
7	GES3-24WW15	0.0780	11	207			18.70	
8	GEC3-24WW15	0.1340	27	234			18.57	
9	GES3-24WW15	0.0780	10	244			18.53	
10	GES3-24WW15	0.0780	16	260			18.47	
11	GEC3-24WW15	0.1340	38	298			18.35	
12	GES3-24WW15	0.0780	17	315			18.31	
13	GES3-24WW15	0.0780	33	348			18.24	
14	GES3-24WW15	0.0780	10	358			18.23	
15	GES3-24WW15	0.0780	36	394			18.19	
16	GES3-24WW15	0.0780	10	404			18.19	
Total Current:		1.6300	% Voltage Drop:				10.84	
							Go	

Strikethrough indicates a value below the device's minimum voltage at indicated location and wire gauge

These calculations assume a worst-case source voltage as measured by UL with the batteries depleted to 20.4 volts. Under AC power and for most of the drain cycle of the batteries, the circuit voltages will be substantially higher and thus, would support a greater number of devices. A device's minimum operating voltage is derived from the UL-requirement that it work down to 80% of its rated (published) minimum operating voltage.

Voltage Drop Analysis

FireLite FCPS-24FS6 & FS8 Power Supply (3.0-amp circuit)

Source Voltage: 20.40 VDC Low Battery

Protected Premises: THE SPRINGS OF BALLENTINE Date: 2/14/23
 Address: 40 RAWLS CLUB RD. City: FUQUAY VARINA
 State: NC Zip: _____ Note: POWER SUPPLY 1- NAC 3
 Prepared By: WARDEN ENTERPRISE, INC. Phone: _____
 Address: 1013 WARDEN DRIVE City: YADKINVILLE
 State: NC Zip: 27055

Device #	PartNumber	Current (amps)	Distance (Feet)		Circuit Voltage @ Each Device			
			Between	Total			14 AWG	
1	GES3-24WW15	0.0780	118	118			19.41	
2	GES3-24WW15	0.0780	10	128			19.33	
3	GES3-24WW15	0.0780	36	164			19.07	
4	GES3-24WW15	0.0780	10	174			19.00	
5	WGEC24-75WW	0.2360	31	205			18.80	
6	GES3-24WW15	0.0780	36	241			18.62	
7	GES3-24WW15	0.0780	10	251			18.57	
8	GES3-24WW15	0.0780	33	284			18.44	
9	GES3-24WW15	0.0780	30	314			18.33	
10	GEC3-24WW15	0.1340	15	329			18.29	
11	GES3-24WW15	0.0780	10	339			18.26	
12	GES3-24WW15	0.0780	30	369			18.21	
13	GES3-24WW15	0.0780	16	385			18.19	
14	GEC3-24WW15	0.1340	10	395			18.18	
Total Current:		1.3620	% Voltage Drop:				10.87	
							Go	

Strikethrough indicates a value below the device's minimum voltage at indicated location and wire gauge
 These calculations assume a worst-case source voltage as measured by UL with the batteries depleted to 20.4 volts. Under AC power and for most of the drain cycle of the batteries, the circuit voltages will be substantially higher and thus, would support a greater number of devices. A device's minimum operating voltage is derived from the UL-requirement that it work down to 80% of its rated (published) minimum operating voltage.

Voltage Drop Analysis

FireLite FCPS-24FS6 & FS8 Power Supply (3.0-amp circuit)

Source Voltage: 20.40 VDC Low Battery

Protected Premises: <u>THE SPRINGS OF BALLENTINE</u>		Date: <u>2/14/23</u>
Address: <u>40 RAWLS CLUB RD.</u>		City: <u>FUQUAY VARINA</u>
State: <u>NC</u>	Zip: _____	Note: <u>POWER SUPPLY 1- NAC 4</u>
Prepared By: <u>WARDEN ENTERPRISE, INC.</u>		Phone: _____
Address: <u>1013 WARDEN DRIVE</u>		City: <u>YADKINVILLE</u>
State: <u>NC</u>	Zip: <u>27055</u>	

Device #	PartNumber	Current (amps)	Distance (Feet)		Circuit Voltage @ Each Device			
			Between	Total			14 AWG	
1	GES3-24WW15	0.0780	150	150			19.41	
2	GES3-24WW15	0.0780	10	160			19.35	
3	GES3-24WW15	0.0780	38	198			19.14	
4	GES3-24WW15	0.0780	32	230			18.98	
5	GES3-24WW15	0.0780	10	240			18.93	
6	GES3-24WW15	0.0780	38	278			18.77	
7	GES3-24WW15	0.0780	32	310			18.65	
8	GES3-24WW15	0.0780	10	320			18.62	
9	GES3-24WW15	0.0780	22	342			18.56	
10	GEC3-24WW15	0.1340	29	371			18.49	
11	GES3-24WW15	0.0780	14	385			18.47	
12	GES3-24WW15	0.0780	23	408			18.45	
13	GES3-24WW15	0.0780	19	427			18.44	
Total Current:		1.0700	% Voltage Drop:				9.59	
							Go	

Strikethrough indicates a value below the device's minimum voltage at indicated location and wire gauge

These calculations assume a worst-case source voltage as measured by UL with the batteries depleted to 20.4 volts. Under AC power and for most of the drain cycle of the batteries, the circuit voltages will be substantially higher and thus, would support a greater number of devices. A device's minimum operating voltage is derived from the UL-requirement that it work down to 80% of its rated (published) minimum operating voltage.

PS#2 PSE-10 Battery Calculation

Secondary Power Source Requirements

Device Type	Standby Current (amps)				Secondary Alarm Current (amps)				
	Qty		Current Draw	Total	Qty		Current Draw	Total	
Main Circuit Board									
Choose EOLR used ↓									
4.7k	1	X	0.1560	= 0.1560	1	X	0.1850	= 0.1850	
Main Circuit Board with ZNAC-PS Class A card	0	X	0.1490	= 0.0000	0	X	0.1590	= 0.0000	
NAC / Output # 1	1	X	0.0000	= 0.0000	1	X	1.6340	= 1.6340	
NAC / Output # 2	1	X	0.0000	= 0.0000	1	X	1.4380	= 1.4380	
NAC / Output # 3	1	X	0.0000	= 0.0000	1	X	1.2040	= 1.2040	
NAC / Output # 4	1	X	0.0000	= 0.0000	1	X	1.2060	= 1.2060	
NAC / Output # 5	1	X	0.0000	= 0.0000	1	X	1.4740	= 1.4740	
NAC / Output # 6	1	X	0.0000	= 0.0000	1	X	0.0000	= 0.0000	
NAC / Output # 7	1	X	0.0000	= 0.0000	1	X	0.0000	= 0.0000	
Total Standby Load				0.1560	Total Alarm Load				7.1410

PSE-10 Battery Calculation

Note 1: You are **fully responsible for verifying these calculations.**

Note 2: You only need to make entries in the **yellow** cells

Calculation in Total Sheet

		Required Standby Time in Hours			
		24 Hours			
Standby Load Current (Amps)	0.1560 Amps	X	24	=	3.744 AH
		Required Alarm Time in Hours			
		5 Minutes			
Alarm Load Current (Amps)	7.1410 Amps	X	0.084	=	0.600 AH
Total Current Load					4.34 AH
*Multiply by the Derating Factor		1.2		=	x 1.20
Total Ampere Hours Required					5.21 AH

Recommended Batteries:	BAT-1270 - 7AH Batteries
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* Derating Factor required to compensate for the non-linear discharge characteristic of a battery.

Voltage Drop Analysis

FireLite FCPS-24FS6 & FS8 Power Supply (3.0-amp circuit)

Source Voltage: 20.40 VDC Low Battery

Protected Premises: <u>THE SPRINGS OF BALLENTINE</u>		Date: <u>2/14/23</u>
Address: <u>40 RAWLS CLUB RD.</u>		City: <u>FUQUAY VARINA</u>
State: <u>NC</u>	Zip: _____	Note: <u>POWER SUPPLY 2- NAC 1</u>
Prepared By: <u>WARDEN ENTERPRISE, INC.</u>		Phone: _____
Address: <u>1013 WARDEN DRIVE</u>		City: <u>YADKINVILLE</u>
State: <u>NC</u>	Zip: <u>27055</u>	

Device #	PartNumber	Current (amps)	Distance (Feet)		Circuit Voltage @ Each Device			
			Between	Total			14 AWG	
1	GEC3-24WW15	0.1340	40	40			20.00	
2	WGEC24-75WW	0.2360	29	69			19.73	
3	GEC3-24WW15	0.1340	29	98			19.51	
4	GEC3-24WW15	0.1340	10	108			19.44	
5	GEC3-24WW75	0.2360	39	147			19.20	
6	GEC3-24WW15	0.1340	41	188			19.01	
7	GES3-24WW15	0.0780	15	203			18.95	
8	GES3-24WW15	0.0780	32	235			18.84	
9	WGEC24-75WW	0.2360	21	256			18.78	
10	GES3-24WW15	0.0780	21	277			18.75	
11	GES3-24WW15	0.0780	33	310			18.72	
12	GES3-24WW15	0.0780	16	326			18.71	
Total Current:		1.6340	% Voltage Drop:				8.27	
							Go	

Strikethrough indicates a value below the device's minimum voltage at indicated location and wire gauge

These calculations assume a worst-case source voltage as measured by UL with the batteries depleted to 20.4 volts. Under AC power and for most of the drain cycle of the batteries, the circuit voltages will be substantially higher and thus, would support a greater number of devices. A device's minimum operating voltage is derived from the UL-requirement that it work down to 80% of its rated (published) minimum operating voltage.

Voltage Drop Analysis

FireLite FCPS-24FS6 & FS8 Power Supply (3.0-amp circuit)

Source Voltage: 20.40 VDC Low Battery

Protected Premises: <u>THE SPRINGS OF BALLENTINE</u>		Date: <u>2/14/23</u>
Address: <u>40 RAWLS CLUB RD.</u>		City: <u>FUQUAY VARINA</u>
State: <u>NC</u>	Zip: _____	Note: <u>POWER SUPPLY 2- NAC 2</u>
Prepared By: <u>WARDEN ENTERPRISE, INC.</u>		Phone: _____
Address: <u>1013 WARDEN DRIVE</u>		City: <u>YADKINVILLE</u>
State: <u>NC</u>	Zip: <u>27055</u>	

Device #	PartNumber	Current (amps)	Distance (Feet)		Circuit Voltage @ Each Device			
			Between	Total			14 AWG	
1	GEC3-24WW15	0.1340	19	19			20.23	
2	GES3-24WW15	0.0780	20	39			20.07	
3	GES3-24WW15	0.0780	32	71			19.83	
4	GES3-24WW15	0.0780	10	81			19.76	
5	GES3-24WW15	0.0780	33	114			19.54	
6	GES3-24WW15	0.0780	16	130			19.45	
7	GES3-24WW15	0.0780	32	162			19.27	
8	GES3-24WW15	0.0780	10	172			19.22	
9	GES3-24WW15	0.0780	33	205			19.06	
10	GES3-24WW15	0.0780	16	221			19.00	
11	GEC3-24WW15	0.1340	13	234			18.95	
12	GES3-24WW15	0.0780	30	264			18.86	
13	GES3-24WW15	0.0780	10	274			18.84	
14	GES3-24WW15	0.0780	33	307			18.77	
15	GES3-24WW15	0.0780	16	323			18.75	
16	GES3-24WW15	0.0780	32	355			18.72	
17	GES3-24WW15	0.0780	10	365			18.72	
Total Current:		1.4380	% Voltage Drop:				8.26	
							Go	

Strikethrough indicates a value below the device's minimum voltage at indicated location and wire gauge

These calculations assume a worst-case source voltage as measured by UL with the batteries depleted to 20.4 volts. Under AC power and for most of the drain cycle of the batteries, the circuit voltages will be substantially higher and thus, would support a greater number of devices. A device's minimum operating voltage is derived from the UL-requirement that it work down to 80% of its rated (published) minimum operating voltage.

Voltage Drop Analysis

FireLite FCPS-24FS6 & FS8 Power Supply (3.0-amp circuit)

Source Voltage: 20.40 VDC Low Battery

Protected Premises: <u>THE SPRINGS OF BALLENTINE</u>		Date: <u>2/14/23</u>
Address: <u>40 RAWLS CLUB RD.</u>		City: <u>FUQUAY VARINA</u>
State: <u>NC</u>	Zip: _____	Note: <u>POWER SUPPLY 2- NAC 3</u>
Prepared By: <u>WARDEN ENTERPRISE, INC.</u>		Phone: _____
Address: <u>1013 WARDEN DRIVE</u>		City: <u>YADKINVILLE</u>
State: <u>NC</u>	Zip: <u>27055</u>	

Device #	PartNumber	Current (amps)	Distance (Feet)		Circuit Voltage @ Each Device			
			Between	Total			14 AWG	
1	GES3-24WW15	0.0780	121	121			19.51	
2	GEC3-24WW15	0.1340	13	134			19.42	
3	GES3-24WW15	0.0780	13	147			19.34	
4	GES3-24WW15	0.0780	32	179			19.16	
5	GES3-24WW15	0.0780	10	189			19.11	
6	GES3-24WW15	0.0780	33	222			18.95	
7	GES3-24WW15	0.0780	16	238			18.89	
8	GES3-24WW15	0.0780	32	270			18.77	
9	GES3-24WW15	0.0780	10	280			18.73	
10	GES3-24WW15	0.0780	33	313			18.64	
11	GEC3-24WW15	0.1340	16	329			18.61	
12	GES3-24WW15	0.0780	32	361			18.56	
13	GES3-24WW15	0.0780	10	371			18.55	
14	GES3-24WW15	0.0780	33	404			18.54	
Total Current:		1.2040	% Voltage Drop:				9.13	
							Go	

Strikethrough indicates a value below the device's minimum voltage at indicated location and wire gauge

These calculations assume a worst-case source voltage as measured by UL with the batteries depleted to 20.4 volts. Under AC power and for most of the drain cycle of the batteries, the circuit voltages will be substantially higher and thus, would support a greater number of devices. A device's minimum operating voltage is derived from the UL-requirement that it work down to 80% of its rated (published) minimum operating voltage.

Voltage Drop Analysis

FireLite FCPS-24FS6 & FS8 Power Supply (3.0-amp circuit)

Source Voltage: 20.40 VDC Low Battery

Protected Premises: THE SPRINGS OF BALLENTINE Date: 2/14/23
 Address: 40 RAWLS CLUB RD. City: FUQUAY VARINA
 State: NC Zip: _____ Note: POWER SUPPLY 2- NAC 4
 Prepared By: WARDEN ENTERPRISE, INC. Phone: _____
 Address: 1013 WARDEN DRIVE City: YADKINVILLE
 State: NC Zip: 27055

Device #	PartNumber	Current (amps)	Distance (Feet)		Circuit Voltage @ Each Device			
			Between	Total			14 AWG	
1	GES3-24WW15	0.0780	136	136			19.39	
2	GES3-24WW15	0.0780	10	146			19.32	
3	GES3-24WW15	0.0780	32	178			19.12	
4	GES3-24WW15	0.0780	16	194			19.02	
5	GEC3-24WW15	0.1340	27	221			18.87	
6	GES3-24WW15	0.0780	13	234			18.81	
7	GES3-24WW15	0.0780	22	256			18.72	
8	GES3-24WW15	0.0780	16	272			18.66	
9	GEC3-24WW15	0.1340	24	296			18.58	
10	WGEC24-75WW	0.2360	42	338			18.48	
11	GES3-24WW15	0.0780	24	362			18.46	
12	GES3-24WW15	0.0780	10	372			18.46	
Total Current:		1.2060	% Voltage Drop:				9.53	
							Go	

Strikethrough indicates a value below the device's minimum voltage at indicated location and wire gauge
 These calculations assume a worst-case source voltage as measured by UL with the batteries depleted to 20.4 volts. Under AC power and for most of the drain cycle of the batteries, the circuit voltages will be substantially higher and thus, would support a greater number of devices. A device's minimum operating voltage is derived from the UL-requirement that it work down to 80% of its rated (published) minimum operating voltage.

Voltage Drop Analysis

FireLite FCPS-24FS6 & FS8 Power Supply (3.0-amp circuit)

Source Voltage: 20.40 VDC Low Battery

Protected Premises: <u>THE SPRINGS OF BALLENTINE</u>		Date: <u>2/14/23</u>
Address: <u>40 RAWLS CLUB RD.</u>		City: <u>FUQUAY VARINA</u>
State: <u>NC</u>	Zip: _____	Note: <u>POWER SUPPLY 2- NAC 5</u>
Prepared By: <u>WARDEN ENTERPRISE, INC.</u>		Phone: _____
Address: <u>1013 WARDEN DRIVE</u>		City: <u>YADKINVILLE</u>
State: <u>NC</u>	Zip: <u>27055</u>	

Device #	PartNumber	Current (amps)	Distance (Feet)		Circuit Voltage @ Each Device			
			Between	Total			14 AWG	
1	GES3-24WW15	0.0780	196	196			18.63	
2	GES3-24WW15	0.0780	10	206			18.54	
3	GES3-24WW15	0.0780	33	239			18.27	
4	GES3-24WW15	0.0780	16	255			18.15	
5	GES3-24WW15	0.0780	33	288			17.92	
6	GES3-24WW15	0.0780	10	298			17.85	
7	GEC3-24WW15	0.1340	30	328			17.66	
8	GES3-24WW15	0.0780	13	341			17.59	
9	GEC3-24WW15	0.1340	27	368			17.46	
10	GES3-24WW15	0.0780	12	380			17.41	
11	GEC3-24WW15	0.1340	37	417			17.28	
12	GES3-24WW15	0.0780	16	433			17.24	
13	WGEC24-75WW	0.2360	43	476			17.14	
14	GEC3-24WW15	0.1340	27	503			17.12	
Total Current:		1.4740	% Voltage Drop:				16.09	
							Go	

Strikethrough indicates a value below the device's minimum voltage at indicated location and wire gauge

These calculations assume a worst-case source voltage as measured by UL with the batteries depleted to 20.4 volts. Under AC power and for most of the drain cycle of the batteries, the circuit voltages will be substantially higher and thus, would support a greater number of devices. A device's minimum operating voltage is derived from the UL-requirement that it work down to 80% of its rated (published) minimum operating voltage.