

3.6 Current Draw Calculations

3.6.1 Worksheet Requirements

The following steps must be taken when determining SK-5208 current draw and standby battery requirements.

Filling in the Current Draw Worksheet, Table 3-2 (Section 3.6.2)

1. For the SK-5208, the worst case current draw is listed for the panel and panel accessories. Fill in the number of devices that will be used in the system and compute the current draw requirements for alarm and standby. Record this information in Table 3-2 at Line A.
2. Add up the current draw for all smoke detectors and record in the table at Line B.
3. Add up all notification appliance loads and record in the table at Line C.
4. For notification appliances and auxiliary devices not mentioned in the manual, refer to the device manual for the current ratings.
5. Make sure that the total alarm current you calculated, including current for the panel itself, does not exceed 6.0 A. This is the maximum alarm current for the SK-5208 control panel.

If the current is above 6.0 A you will need to use a notification power expander(s) such as the Silent Knight 5495 to distribute the power loads so that the SK-5208 or the power expanders do not exceed their power rating. Refer to the current draw worksheets provided with the 5495 manuals so you do not exceed their power requirements.

6. Complete the remaining instructions in Table 3-2 for determining battery size requirements.

3.6.2 Current Draw Worksheet

Use Table 3-2 to determine current requirements during alarm/battery standby operation.
(Copy the page if additional space is required.)

Table 3-2: Current Draw Calculations

Device	# of Devices	Current per Device		Standby Current	Alarm Current	
For each device use this formula: This column X This column = Current per number of devices.						
SK-5208 Fire Panel (Current draw from battery)	1	Standby:	140 mA	140 mA		
		Alarm:	460 mA		460 mA	
Panel Accessories						
SK-5217 Zone Expander	(2 max.)	Standby:	60 mA	mA		
		Alarm:	260 mA		mA	
5220 Direct Connect		Standby:	15 mA	mA		
		Alarm:	15 mA		mA	
SK-5235 Annunciator	(6 max.)	Standby:	30 mA	mA		
		Alarm:	50 mA		mA	
SK-5280 Status Display Module	(8 max.)	Relay (max.)	Standby:	10 mA	mA	
			Alarm:	80 mA		mA
		Outputs	Per output	100 mA		mA
			Max.	700 mA		mA
7181 Zone Converter		Standby:	35 mA	mA		
		Alarm:	65 mA		mA	
A	Total System Current					
Smoke Detectors						
		Standby:	mA	mA		
		Alarm:	mA		mA	
		Standby:	mA	mA		
		Alarm:	mA		mA	
		Standby:	mA	mA		
		Alarm:	mA		mA	
		Standby:	mA	mA		
		Alarm:	mA		mA	
B	Smoke Detector Current				mA	mA
Notification Appliances						
		Alarm:	mA		mA	
		Alarm:	mA		mA	
		Alarm:	mA		mA	
		Alarm:	mA		mA	
C	Notification Appliances Current					mA
Additional Devices						
		Standby:	mA			
		Alarm:	mA			
		Standby:	mA			
		Alarm:	mA			
D	Total current ratings of all devices in system (line A + line B + C)				mA	mA
E	Total current ratings converted to amperes (line D x .001):				A	A
F	Number of standby hours (24 or 60 for NFPA 72, chapter 1, 1-5.2.5):				H	
G	Multiply lines E and F. Total standby AH				AH	
H	Alarm sounding period in hours. (For example, 5 minutes = .0833 hours)					H
I	Multiply lines E and H. Total alarm AH					AH
J	*Add lines G and I. Total ampere hours required				AH	

* Use next size battery with capacity greater than required.

3.6.3 Maximum Battery Standby Load

Table 3-3 shows the maximum battery standby load for the SK-5208 based on 24 and 60 hours of standby. The standby load calculations of line D in the Current Draw Calculation Worksheet (Table 3-2) must be less than the number shown in Table 3-3 for the battery size used and standby hours required.

Batteries larger than 17 AH will not fit into the SK-5208 cabinet and must be housed in the AB-33 Accessory Battery Cabinet. See Section 3.8 for battery installation.

Table 3-3: Maximum Battery Standby Load

Rechargeable Battery Size	Max. Load for 24 hrs. Standby, 5 mins. Alarm	*Max. Load for 60 hrs. Standby, 5 mins. Alarm
7 AH	270 mA	105 mA
12 AH	475 mA	190 mA
18 AH	685 mA	270 mA
33 AH	1.1 A	450 mA

- * Required for NFPA 72 Auxiliary Protected Fire Alarm systems for Fire Alarm Service (City Box) and Remote Station Protected Fire Alarm systems (Polarity Reversal) and Digital Alarm Communicator/Transmitter (DACT).

Warning!

Silent Knight does not support the use of batteries smaller than those listed in Table 3-3. If you use a battery too small for the installation, the system could overload the battery resulting in the installation having less than the required 24 hours standby power. Use Table 3-2 to calculate the correct battery amperes/hour rating needed for your installation.