

# CFP-102 / CFP-105

## Fire Alarm Control Panel Calculation for Standby Battery Requirement

Step	Device		Current per device (mA)		Number of device		Total Standby Current (mA)	Total Alarm Current (mA)
1	CFP-102 / CFP-105	Standby:	90 / 130	x	1	=	90 / 130	
		Alarm:	365 / 415	x	1	=		365 / 415
2	Zone 1	Standby:		x		=		
		Alarm:	60	x	1	=		60
	Zone 2	Standby:		x		=		
		Alarm:	60	x	1	=		
	Zone 3	Standby:		x		=		
		Alarm:	60	x	1	=		
	Zone 4	Standby:		x		=		
		Alarm:	60	x	1	=		
3	NAC 1	Standby:		x		=		
		Alarm:		x		=		
4	CFP-200	Standby:	15	x				
		Alarm:	15	x				
	CFP-205	Standby:	15	x				
		Alarm:	25	x				
	CFP-500	Standby:	33	x				
		Alarm:	60	x				
	CFP-161 Pol. Rev.	Standby:	20 (Note 4)	x				
		Alarm:	35	x				
5	AUX+ (5)	Standby:		x		=		
		Alarm:		x		=		
6	Total 'standby' and 'alarm' current:						mA	mA
7	Divide 'standby' mA and 'alarm' mA by 1000:						Amp	Amp
8	Select 'standby' time required (24 or 60 Hr.):						Hr.	
9	Standby Amp-Hr. - multiply 7 x 8 = (Amps x Hr.):							Amp-Hr.
10	Select 'alarm' time required (5 min. = .08 Hr.):							Hr.
11	Alarm Amp-Hr. - multiply 7 x 10 = (Amps x Hr.):							Amp-Hr.
12	Total Amp-Hr = standby Amp-Hr (9) + alarm Amp-Hr. (11):							Amp-Hr. Total
13	Multiply the total Amp-Hr. by the safety margin:						x 1.20	
14	Total battery Amp-Hr required to support the system:							Amp-Hr.

### NOTES:

1. Select a battery with an Amp-Hr. rating that is equal to or larger than the calculated minimum Amp-Hr. battery required. Note: The maximum battery allowed is 12 Ah.
2. For the relay module, add 8 mA as 'Standby' for each relay programmed for 'Trouble' and add 8 mA as 'alarm' for each relay programmed for 'alarm'.
3. The Class A modules do not add any 'Standby' or 'alarm' current above that calculated for each zone.
4. When the CFP-161 is used as a Polarity reversal transmitter, add the current draw of the remote receiver input in the 'standby' mode.
5. For panels used in a 'Remote Station' application (60 Hr. standby), the dialer may be installed but no current may be drawn from the AUX+ output.

## Standby Battery Calculation Chart

All components that draw current from the panel while it is in the 'standby' mode (AC OFF) must be considered for the standby battery calculation. All components that draw current while in the 'Alarm' mode must be considered for the alarm battery calculation.

- Step 1:** The control panel will always draw the currents as shown in the chart.
- Step 2:** Typically the alarm current is calculated assuming only one initiating zone is in alarm. If it is required that more than one zone be considered, add 60 mA per zone in the Alarm column. Consult the smoke detector manufacture's installation sheet to determine the standby current of these devices. Write that number in the 'current per device' column then multiply that number by the number of devices on the zone. Repeat for each zone.
- Step 3:** Consult the Notification Appliance installation sheet to determine the current draw for each device connected to the NAC. For each NAC, calculate the total current in alarm and put that number (mA) in the 'Alarm' column. Note: each NAC can supply 1.5 Amps max. and the output voltage is 24 volts FWR.
- Step 4:** Add up all the current drawn from the AUX+ output in the standby and alarm mode and put those totals in the 'standby' and 'alarm' columns.
- Step 5:** For each module added to the system, multiply the number of modules times the module's 'standby' and 'alarm' currents and write those totals in the 'alarm' and 'standby' columns.
- Step 6:** Add up all the currents in the 'standby' column and the 'Alarm' column.
- Step 7:** Convert the 'standby' and 'alarm' currents from mA to Amps. (divide mA by 1000)
- Step 8:** Write in the 'standby' time required. (24 or 60 Hr.)
- Step 9:** Multiply the 'standby' Amps times the 'standby' time to get the 'standby' Amp-Hr. required.
- Step 10:** Write in the 'alarm' time required in hours. (5 min. = .08 Hr.)
- Step 11:** Multiply the 'alarm' Amps times the 'alarm' time to get the 'alarm' Amp-Hr required.
- Step 12:** Add the 'standby' Amp-Hr. to the 'alarm' Amp-Hr. for the total Amp-Hr. required.
- Step 13:** Multiply the total Amp-Hr. times 1.20 for the **minimum Amp-Hr. battery required** to support the system for the selected 'standby time and the selected 'alarm' time.

For details on the control panel and modules, see their respective installation documents.



**WARNING:** Please refer to the System Instruction manual for information on limitations regarding product use and function and information on the limitations as to liability of the manufacturer.

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