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Subject: Beacon Inrush Current

In addition to the nominal current rating for a beacon, often times there is an inrush current and, for flashing beacons, a repetitive surge current. These currents can play a factor in the design of a system.

Inrush current is the current drawn by the beacon when it is first turned on. Inrush current can be very high, but usually only lasts for a short duration, typically less than a few milliseconds.

Repetitive surge current is drawn by the beacon each time it flashes after it's powered up (so a steady beacon would not have a repetitive surge, but may have an inrush current). Repetitive surge currents can also be quite high and last up to a few milliseconds, but usually not as high as the initial inrush.

Although a beacon may have a relatively small nominal current rating, sizing your power source just based on that can cause problems. A 3 amp power source, for example, may appear capable of handling six beacons with a 500mA nominal current rating, but if those beacons have a substantial inrush or surge current, and the power source is not "stiff" enough or capable of handling the higher currents for short durations, the beacons may not work properly, if at all. This can also affect wire run distances. A beacon near the source may work, but one at the far end may not.

Generally, one or two beacons on a circuit with an inrush or repetitive surge current substantially higher than the power source's rating is usually Ok. A 120VAC strobe with a 30A inrush, for example, will probably still work on a circuit rated for 15 amps. This is because the duration of the inrush is very short.

However, if you have a situation requiring multiple beacons turning on at the same time and your power source cannot handle the inrush or surge currents, there are a couple things you can try:

1. If it's an AC powered beacon, try reversing the hot and neutral connections to half the units. This way some will fire off the positive side of the wave, the others the negative.

2. Don't power all the beacons from the same circuit (this might require a multi-pole switch, one pole per circuit, to turn them all on).
3. Use time delay relay(s) set for different times so that the beacons do not all turn on at exactly the same time. Even a fraction of a second difference could be enough to separate the firing times and alleviate the problem.

On the following pages is a list of most of the beacons we offer and their respective current ratings. We have not, to date, tested all of our beacons for inrush and repetitive surge currents, so some values may be blank. *Do not assume there is no inrush or surge if it's blank.* You can call Tech Support if you want to verify a value or if a beacon is not on the list. Also refer to the beacon's installation instructions for additional information.

Current Ratings for Edwards Beacons

Edwards Model #	Current Rating	Voltage Rating	Peak Inrush Current	Repetitive Surge Current
48FIN*-N5-25WH	0.20A	120 VAC		1.3A SD 8mS (1Hz)
48FIN*-G5-20WH	0.80A	24 VAC		2.2A SD 8mS (1Hz)
48FIN*-E1	1A	12 VDC		3.5A ED 100mS (1Hz)
48FIN*-G1-20WH	0.80A	24 VDC		2.2A ED 100mS (1Hz)
48FLED*-G1	0.065A	24 VDC		0.070A
48FLED*-N5	0.025A	120 VAC		0.090A SD 8mS (60Hz)
48SIN*-N5-25WH	0.20A	120 VAC	0.8 SD 8mS (60Hz)	
48SIN*-G5-20WH	0.80A	24 VAC	1.25A SD 8mS (60Hz)	
48SIN*-E1	1A	12 VDC	1.1A	
48SIN*-G1-20WH	0.80A	24 VDC	0.90A	
48SLED*-G1	0.065A	24 VDC	0.070A	
48SLED*-N5	0.025A	120 VAC	0.090A SD 8mS (60Hz)	
49*-N5-40WH	0.30A	120 VAC		0.47 SD 8mS (60Hz)
49*-R5	0.1A	240 VAC		
50*-N5-40WH	0.30A	120 VAC		2.0A SD 8mS (1Hz)
50*-R5	0.1A	240 VAC		
50*-G5-20WH	0.80A	24 VAC		2.2A SD 8mS (1Hz)
50SIN*-N5-40WH	0.29A	120 VAC	0.47 SD 8mS (60Hz)	
51*-N5-40W	0.29A	120 VAC		0.9A SD 8mS (1Hz)
51*-E1	1A	12 VDC		3.5A ED 100mS (1Hz)
51*-G1	1.1A	24 VDC		3A ED 100mS (1Hz)
51SIN*-G5-20W	1.1A	24 VAC		
51SIN*-G1	0.80A	24 VDC	0.90A	
51SIN*-N5-40W	0.29A	120 VAC		
52*-N5-40WH	0.35A	120 VAC		0.47 SD 8mS (60Hz)
52*-G5-20WH	0.80A	24 VAC		1.25A SD 8mS (60Hz)
52*-R5	0.1A	240 VAC		
53*-E1	1.8A	12 VDC		2.0A
53*-G1	1A	24 VDC		1.1A
53D*-GW	1A	24-28V		
57EDF*-G1	2.2A	24 VDC	40A @ 100uS	4.5A @ 100uS
57EDF*-N5	0.2A	120 VAC		20A ED 300uS (1Hz)
57EDF*-R5	0.1A	240 VAC		
58*-N5-100WH	1A	120 VAC		
89STR*-AQ	0.158A	24 VAC		
89STR*-AQ	0.219A	24 VDC		
89STR*-N5	0.09A	120 VAC		
89SMSTR*-AQ	0.158A	24 VAC		
89SMSTR*-AQ	0.219A	24 VDC		
89SMSTR*-N5	0.09A	120 VAC		
90*-N5	0.1A	120 VAC		50A ED 1mS (1Hz)
91B*-	0.5A	12 VDC		
92*-N5	0.1A	120 VAC		50A ED 1mS (1Hz)
92*-R5	0.05A	240 VAC		
92PLC*-N5	0.1A	120 VAC		20A ED 75uS (1Hz)
92PLC-DF*-N5	0.1A	120 VAC		20A ED 75uS (1Hz)
93*-N5	0.1A	120 VAC		
93*-R5	0.05A	240 VAC		
93DF*-N5	0.1A	120 VAC	40A @ 70uS	12A @ 500uS
93DF*-R5	0.05A	240 VAC		

94*-N5	0.1A	120 VAC		
94*-R5	0.05A	240 VAC		
94DF*-N5	0.1A	120 VAC	40A @ 70uS	12A @ 500uS
94DF*-R5	0.05A	240 VAC		
94DDV2*-G1	1.2A			
94DV2*-N5	0.1A	120 VAC		
95*-N5	0.1A	120 VAC		50A ED 1mS (1Hz)
96B*-N5	0.1A	120 VAC	30A @ 25uS	2.1A @ 1mS
96B*-R5	0.02A	240 VAC		2A @ 1mS
98B*-E1	0.5A	12 VDC		0.6A
98B*-G1	0.3A	24 VAC		0.33A
98B*-FY	0.3A	36 VDC		0.33A
96DV2*-N5	0.1A	120 VAC	30A @ 25uS	2.1A @ 1mS
97*-EK	1.2A	12-48 VDC		
97*-MP	0.2A	75-125 VDC	75A @ 100uS	.7A @ 35mS
97DF*-EK	1.2A	12-48 VDC		
97DF*-MP	0.2A	75-125 VDC		
99B*-E1	0.5A	12 VDC		0.6A
100SB*-N5	0.8A	120 VAC		
101BS-E1	0.05A	12 VDC		
101BS-G1	0.05A	24 VDC		2A @ 1ms
101BS-N5	0.05A	120 VAC		2A @ 1ms
101FIN*-E1	1A	12 VDC		3.5A ED 100mS (1Hz)
101FINH*-G1	0.32A	24 VDC		1.2A ED 100mS (1Hz)
101FINH*-N5	0.11A	120 VAC		1.15A SD 8mS (1Hz)
101FLED*-G1	0.065A	24 VDC		.07A @ 1mS
101FLED*-N5	0.025A	120 VAC		.09A SD 8mS (60Hz)
101SIN*-E1	1A	12 VDC	1.1A	
101SINH*-G1	0.32A	24 VDC	.36A @ 1mS	
101SINH*-N5	0.11A	120 VAC	.5A SD 8mS (60Hz)	
101SLED*-G1	0.065A	24 VDC	.07A @ 1mS	
101SLED*-N5	0.025A	120 VAC	.09A SD 8mS (60Hz)	
101ST*-E1	0.5A	12 VDC		0.6A
101ST*-G1	0.3A	24 VDC		.33A @ 1mS
101ST*-N5	0.12A	120 VAC	30A @ 25uS	2.1A ED 1mS
102LS-SINH-G1	0.32A	24 VDC	0.36A	
102LS-SINH-N5	0.11A	120 VAC	0.5A SD 8mS (60Hz)	
102LS-SIN-G1	0.32A	24 VDC	0.36A	
102LS-SIN-N5	0.08A	120 VAC	0.15A SD 8mS (60Hz)	
102LS-FINH-G1	0.32A	24 VDC		1.2A ED 100mS (1Hz)
102LS-FINH-N5	0.11A	120 VAC		1.15A SD 8mS (1Hz)
102LS-FIN-G1	0.32A	24 VDC		1.4A ED 100mS (1Hz)
102LS-FIN-N5	0.08A	120 VAC		0.3A SD 8mS (1Hz)
102LS-ST-G1	0.3A	24 VDC		0.33A
102LS-ST-N5	0.12A	120 VAC		50A ED 1mS (1Hz)
102LS-SLED*-G1	0.062A	24 VDC	0.070A	
102LS-SLED*-N5	0.022A	120 VAC	0.090A SD 8mS (60Hz)	
102LS-FLED*-G1	0.062A	24 VDC		0.070A
102LS-FLED*-N5	0.022A	120 VAC		0.090A SD 8mS (60Hz)
102TBS-DN-G1	1.75AA	24 VDC		
102TBS-DN-N5	0.6AA	120 VAC		
102SIGST-G1	0.05A	24 VDC		0.24A SQ 0.2mS (1.2KHz)
102SIGST-N5	0.07A	120 VAC	30A @ 4uS	0.35A ED 0.5mS (60Hz)
102SIGMT-G1	0.05A	24 VDC		0.24A SQ 0.2mS (1.2KHz)
102SIGMT-N5	0.07A	120 VAC	30A @ 4uS	0.35A ED 0.5mS (60Hz)

102SIGMT-DN-G1	0.05A	24 VDC		
102SIGMT-DN-N5	0.05A	120 VAC		
103-RGA-G1	0.055A	24 VDC		0.070A
103-RGA-G1	0.065A	24 VDC		0.070A
103-RGA-N5	0.045A	120 VAC		0.100A SD 8mS (60Hz)
103-RGA-N5	0.055A	120 VAC		0.100A SD 8mS (60Hz)
103-RBA-G1	0.055A	24 VDC		0.070A
103-RBA-G1	0.065A	24 VDC		0.070A
103-RBA-N5	0.045A	120 VAC		0.100A SD 8mS (60Hz)
103-RBA-N5	0.055A	120 VAC		0.100A SD 8mS (60Hz)
104FINH*-G1	0.77A	24 VDC		1.2A ED 100mS (1Hz)
104FINH*-G5	0.77A	24 VAC		1.2A SD 8mS (1Hz)
104FINH*-N5	0.25A	120 VAC		1.15A SD 8mS (1Hz)
104FLED*-G1	0.065A	24 VDC		0.070A
104FLED*-N5	0.025A	120 VAC		0.090A SD 8mS (60Hz)
104SINH*-G1	0.77A	24 VDC	0.36A	
104SINH*-G5	0.77A	24 VAC	0.5A SD 8mS (60Hz)	
104SINH*-N5	0.25A	120 VAC	0.5A SD 8mS (60Hz)	
104SLED*-G1	0.065A	24 VDC	0.070A	
104SLED*-N5	0.025A	120 VAC	0.090A SD 8mS (60Hz)	
104ST*-N5	0.12A	120 VAC		2.1A @ 1mS
105SLED*-G1	0.062A	24 VDC	0.070A	
105SLED*-N5	0.022A	120 VAC	0.090A SD 8mS (60Hz)	
105FLEDA-G1	0.062A	24 VDC		0.070A
105FLEDA-N5	0.022A	120 VAC		0.090A SD 8mS (60Hz)
105SINH*-G1	0.80A	24 VDC	0.90A	
105SINH*-G5	0.80A	24 VAC	1.25A SD 8mS (60Hz)	
105SINH*-N5	0.20A	120 VAC	0.8 SD 8mS (60Hz)	
105FINH*-G1	0.80A	24 VDC		2.2A ED 100mS (1Hz)
105FINH*-G5	0.80A	24 VAC		2.2A SD 8mS (1Hz)
105FINH*-N5	0.20A	120 VAC		1.3A SD 8mS (1Hz)
105ST*-G1	0.3A	24 VDC	4.4A @ 300uS	0.20A
105ST*-N5	0.1A	120 VAC	30A @ 25uS	2.1A @ 1mS
105ST*-R5	0.02A	240 VAC		2A @ 1mS
105DHIST*-FJ	1.08A	20-30 VDC	3.14A @ 1.27mS	2.24A @ 450mS
105HIST*-N5	0.1A	120 VAC	50A ED 1mS	50A ED 1mS (1Hz)
105HIST*-R5	0.05A	240 VAC	50A ED 1mS	50A ED 1mS (1Hz)
105HIST*-EK	1.2A	12-48 VDC	65A @ 50uS	4.2A @ 500mS
107DDV2(+)*ST*-G1	1.4A	24 VDC		
107DV2(+)*RINH*-N5	0.35A	120 VAC		
107DV2(+)*RINH*-R5	0.1A	240 VAC		
107DV2(+)*ST*-N5	0.1A	120 VAC		
107DV2(+)*ST*-R5	0.05A	240 VAC		
107DV2(+)*ST*-EK	1.2A	12-48 VDC	65A @ 50uS	4.2A @ 500mS
107DV2(+)*ST*-S1	0.1A	250 VDC		
108I-RGA-N5	0.115A	120 VAC	30A @ 2uS	0.45A @ 2mS (120Hz)
108I-RGA-G1	0.105A	24 VDC	5A @ 1mS	0.275A @ 2mS (500-1KHz)
108I-RBA-N5	0.115A	120 VAC	30A @ 2uS	0.45A @ 2mS (120Hz)
108I-RGA-G1	0.105A	24 VDC	5A @ 1mS	0.275A @ 2mS (500-1KHz)
108IP-RGA-N5	0.045A	120 VAC	13A @ 2uS	0.10A @ 4mS (60Hz)
108IP-RGA-G1	0.055A	24 VDC	5A @ 1mS	55mA
108IP-RBA-N5	0.045A	120 VAC	13A @ 2uS	0.10A @ 4mS (60Hz)
108IP-RBA-G1	0.055A	24 VDC	5A @ 1mS	55mA
108ID-RGA-N5	0.045A	120 VAC	13A @ 2uS	0.10A @ 4mS (60Hz)
108ID-RGA-G1	0.055A	24 VDC	5A @ 1mS	55mA

108ID-RBA-N5	0.045A	120 VAC	13A @ 2uS	0.10A @ 4mS (60Hz)
108ID-RBA-G1	0.055A	24 VDC	5A @ 1mS	55mA
108-DN-RGA-N5	0.12A	120 VAC		
108-DN-RBA-N5	0.12A	120 VAC		
108-DN-RGA-G1	0.105A	24 VDC		
108-DN-RBA-G1	0.105A	24 VDC		
109*-G1	0.475 A	24V AC/DC		
109*-N5	0.140 A	120 VAC		
110FIN*-N5	0.96 A	120 VAC		
110ST*-N5	0.03 A	120 VAC		
111SIN*-B	0.08 A (100 Watt) 1.25A (150 Watt)	120 VAC		
111SIN*	0.08 A (100 Watt) 1.25A (150 Watt)	120 VAC		
111SFL*-B	0.36	120 VAC		
111SFL*	0.36	120 VAC		
111SIN*-CM-B	0.08 A (100 Watt) 1.25A (150 Watt)	120 VAC		
111SIN*-CM	0.08 A (100 Watt) 1.25A (150 Watt)	120 VAC		
111SFL*-CM-B	0.36	120 VAC		
111SFL*-CM	0.36	120 VAC		
111SIN*-WM-B	0.08 A (100 Watt) 1.25A (150 Watt)	120 VAC		0.96A SD 8mS (60HZ)
111SIN*-WM	0.08 A (100 Watt) 1.25A (150 Watt)	120 VAC	3@ ED 30mS	
111SFL*-WM-B	0.36	120 VAC		
111SFL*-WM	0.36	120 VAC		
112DV2BFL*-N5		120 VAC		
112DV2CFL*-N5		120 VAC		
112DV2PFL*-N5		120 VAC		
113SP-RGA-AQ	0.24 A	24 VAC/VDC	2.5A @ 5mS	
113SP-RGA-N5	0.062 A	120 VAC	0.5A @ 5mS	
113FP-RGA-AQ	0.24 A	24 VAC/VDC	2.5A @ 5mS	
113FP-RGA-N5	0.062 A	120 VAC	0.5A @ 5mS	
113SS-RGA-AQ	0.24 A	24 VAC/VDC	2.5A @ 5mS	
113SS-RGA-N5	0.062 A	120 VAC	0.5A @ 5mS	
113FS-RGA-AQ	0.24 A	24 VAC/VDC	2.5A @ 5mS	
113FS-RGA-N5	0.062 A	120 VAC	0.5A @ 5mS	
114SST*-EK	0.35 A	12-48 VDC	22A @ 200uS	.450A @ 20uS.
114PST*-EK	0.35 A	12-48 VDC	22A @ 200uS	.450A @ 20uS.
114SSIN*-G1	0.61A	24 VDC	0.68A	
114PSIN*-G1	0.61A	24 VDC	0.68A	
114SSIN*-N5	0.15A	120 VAC	0.3A SD 8mS (60Hz)	
114PSIN*-N5	0.15A	120 VAC	0.3A SD 8mS (60Hz)	
114SFIN*-G1	0.61A	24 VDC		2.5A ED 60mS (1Hz)
114SFIN*-N5	0.15A	120 VAC		0.5A SD 8mS (1Hz)
114PFIN*-G1	0.61A	24 VDC		2.5A ED 60mS (1Hz)
114PFIN*-N5	0.15A	120 VAC		0.5A SD 8mS (1Hz)
116EXMST*-N5	0.10 A	120 VAC	50A ED @ 1mS	50A ED @ 1mS
116EXST*-EK	1.2A - 0.38A	12-48 VDC	65A @ 50uS	4.2A @ 500mS

116DEGEX-FJ	.520A - .505A**	16-33VDC	Negligible	Negligible
116DEXSTC-FJ	1.104 A - 0.802**	16-33 VDC	1.45A @ 323mS	0.85A @ 130uS
116DEXMST*-FJ	0.95A - 0.55A	16-33 VDC	1.45A @ 323mS	0.85A @ 130uS
116EXMRINH*-N5	0.35A	120 VAC		0.47A SD 8mS
116DEXMRINH*-GW	0.8 A	24-28 VDC	3A @ ED 30mS	
116EXMSINH*-N5	0.35A	120 VAC		
116DEXMSINH*-GW	0.8 A	24-28 VDC	3A @ ED 30mS	
117*-EM	0.35A	10-110 VDC		
117*-N5	0.02 A	120 VAC		
117*-R5	0.015 A	240 VAC		
867STR*-N5	0.111 A	120 VAC		
	0.462			
867STR*-AQ	0.412	24 VAC/DC		
868STR*-N5	0.111 A	120 VAC		
	0.462			
868STR*-AQ	0.412	24 VAC/DC		
869STR*-N5	0.111 A	120 VAC		
	0.462			
869STR*-AQ	0.412	24 VAC/DC		
869DSTR-G1	0.145 A	24 VDC		
3000SD*-EK	0.13 A	12-48 VDC	30A @ <.3mS	0.63A @ <650mS

** UL RMS worst case values

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