

Instruction Manual

D1xB2XH1 & D1xB2XH2 Xenon Beacons

For use in hazardous Locations

Marking Information

Unit Type No.: D1xB2XH1
D1xB2XH2

Input Voltage: DC Unit Range : 20-28Vdc

Codes: D1xB2XH1: 10J Xenon Beacon
Class / Division Ratings for US
Class I Div 1 Group ABCD T5 Ta -55°C to +80°C
Class I Div 1 Group ABCD T6 Ta -55°C to +60°C

Class / Division Ratings for Canada
Class I Div 1 Group CD T5 Ta -55°C to +80°C
Class I Div 1 Group CD T6 Ta -55°C to +60°C

Class / Division Ratings for US and Canada
Class II Div 1 Group EFG T4A Ta -55°C to +80°C
Class II Div 1 Group EFG T5 Ta -55°C to +65°C
Class II Div 1 Group EFG T6 Ta -55°C to +50°C
Class III Div 1 Ta -55°C to +80°C

Class / Zone ratings for US
Class I Zone 1 AEx db IIC T5 Ta -55°C to +80°C
Class I Zone 1 AEx db IIC T6 Ta -55°C to +60°C
Zone 21 AEx tb IIIC 107°C Ta -55°C to +80°C

Class / Zone ratings for Canada
Ex db IIC T5 Ta -55°C to +80°C
Ex db IIC T6 Ta -55°C to +60°C
Ex tb IIIC 107°C Ta -55°C to +80°C

D1xB2XH2: 21J Xenon Beacon
Class / Division Ratings for US
Class I Div 1 Group ABCD T4A Ta -55°C to +80°C
Class I Div 1 Group ABCD T5 Ta -55°C to +55°C
Class I Div 1 Group ABCD T6 Ta -55°C to +40°C

Class / Division Ratings for Canada
Class I Div 1 Group CD T4A Ta -55°C to +80°C
Class I Div 1 Group CD T5 Ta -55°C to +55°C
Class I Div 1 Group CD T6 Ta -55°C to +40°C

Class / Division Ratings for US and Canada
Class II Div 1 Group EFG T4 Ta -55°C to +80°C
Class II Div 1 Group EFG T4A Ta -55°C to +60°C
Class III Div 1 Ta -55°C to +80°C

Class / Zone ratings for US
Class I Zone 1 AEx db IIC T4 Ta -55°C to +80°C
Class I Zone 1 AEx db IIC T5 Ta -55°C to +55°C
Class I Zone 1 AEx db IIC T6 Ta -55°C to +40°C
Zone 21 AEx tb IIIC 131°C Ta -55°C to +80°C

Class / Zone ratings for Canada
Ex db IIC T4 Ta -55°C to +80°C
Ex db IIC T5 Ta -55°C to +55°C
Ex db IIC T6 Ta -55°C to +40°C
Ex tb IIIC 131°C Ta -55°C to +80°C

The certification approval has validated continuous use up to 38C ambient and are for transient use up to 80C ambient

WARNING:

DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT
DO NOT OPEN WHEN ENERGISED
POTENTIAL ELECTROSTATIC CHARGING HAZARD - CLEAN ONLY WITH A DAMP CLOTH
HIGH VOLTAGE SHOCK HAZARD. WAIT 5 MINUTES AFTER REMOVING POWER BEFORE OPENING THE ENCLOSURE
DO NOT PAINT
TO REDUCE THE RISK OF IGNITION OF HAZARDOUS ATMOSPHERES, CONDUIT RUNS MUST HAVE A SEALING FITTING CONNECTED WITHIN 18 INCHES OF ENCLOSURE
TO PREVENT IGNITION OF GROUP A, B, C AND D ATMOSPHERES - SEE INSTRUCTION FOR CHEMICAL COMPATIBILITY

AVERTISSEMENT:

NE PAS OUVRIR EN PRÉSENCE D'ATMOSPHERE EXPLOSIVE
NE PAS OUVRIR ENERGIE
DANGER POTENTIEL CHARGE ÉLECTROSTATIQUE - NETTOYER UNIQUEMENT AVEC UN CHIFFON HUMIDE
HAUT TENSION, RISK DE CHOC. ATTENDEZ 5 MINUTES APRES AVOIR DEBRANCHE L'ALIMENTATION AVANT D'OUVRIR LA BOITIER
NE PAS PEINTURER
POUR RÉDUIRE LE RISQUE D'INFLAMMATION DES ATMOSPHÈRES DANGEREUSES, LES CONDUITES DE CONDUIT DOIVENT AVOIR UN RACCORD D'ÉTANCHÉITÉ RACCORDÉ À MOINS DE 18 POUCHES DE L'ENFERMEMENT
POUR PRÉVENIR L'INFLAMMATION DES ATMOSPHÈRES DES GROUPES A, B, C ET D-VOIR L'INSTRUCTION POUR LA COMPATIBILITÉ CHIMIQUE

Type Approval Standards:

UL 1203
CSA C22.2 No. 30-M1986
CSA C22.2 No. 25-1966
UL1638 & UL1971
CAN/ULC S526

Ingress Protection Ratings

The product is rated for ingress protection as follows:

IP rating per EN60529: IP66
Type rating per UL50E / NEMA250: 4 / 4X / 3R / 13

Suitable for exposure to Acetone , Ammonium Hydroxide , Diethyl Ether , Ethyl Acetate , Ethylene Dichloride , Furfural , n-hexane , Methyl Ethyl Ketone , Methanol , 2-NitroPropane and Toulene.

Electrical Ratings per UL Listing**13.1 Operating current Consumption**

Electrical Ratings					
Model	Nom. Voltage	Voltage Range	Flash Rate Setting	Nom. operating current#	Max. operating current##
D1xB2XH1DC024	24Vdc	20-28Vdc	1Hz (60fpm)*	635 mA	765 mA
			1.5Hz (90fpm)*	700 mA	765 mA
			1.33Hz (80fpm)*	695 mA	765 mA
			Double flash	580 mA	765 mA
D1xB2XH2DC024	24Vdc	20-28Vdc	1Hz (60fpm)*	1165 mA	1360 mA
			1.5Hz (90fpm)*	1230 mA	1360 mA
			1.33Hz (80fpm)*	1215 mA	1360 mA
			Double flash	1085 mA	1360 mA

* Flash rates Public Mode Fire
 # nominal rms current at nominal voltage
 ## max. rms current at worst-case voltage in voltage range.

Surge Current for Fire Alarm use per UL Listing

Surge Currents					
Model	Nom. Voltage	Voltage Range	Flash Rate Setting	Init. Peak Surge Current (A)	Init. RMS Surge Current (mA)
D1xB2XH1DC024	24Vdc	20-28Vdc	1Hz (60fpm)	1150 mA	697 mA
			1.5Hz (90fpm)	1100 mA	742 mA
			1.33Hz (80fpm)	1090 mA	680 mA
			Double flash	1070 mA	639 mA
D1xB2XH2DC024	24Vdc	20-28Vdc	1Hz (60fpm)	1590 mA	1180 mA
			1.5Hz (90fpm)	1590 mA	1120 mA
			1.33Hz (80fpm)	1710 mA	1130 mA
			Double flash	1650 mA	1200 mA

Surge current given at worst case voltage

Installation

There are no restrictions on unit orientation.

Safe Installation Requirements

To maintain the ingress protection rating and mode of protection, the cable entries must be fitted with suitably rated cable entry and/or blanking devices during installation. If conduit is used for installation, seal conduit within 18 inches from the enclosure.

If entries are fitted with adaptors they must be suitably rated for the application. Fitting of blanking elements into adaptors is not permitted.

Connections are to be made into the terminal blocks using solid or stranded wire, sizes 0.5-2.5mm² / AWG 20-14. Wire insulation needs to be stripped 6-7mm. Wires may be fitted securely with crimped ferrules. Terminal screws need to be tightened down with a tightening torque of 0.4 Nm / 3.5 Lb-in.

Earthing connections should be made to the Internal Earth terminal in the explosionproof chamber or the external earth stud.

Check that the 'O' ring seal is in place before replacing the explosionproof cover.

Selection of Cable, Cable Glands, Blanking Elements & Adapters

When selecting the cable size, consideration must be given to the input current that each unit draws (see Table), the number of beacons on the line and the length of the cable runs. The cable size selected must have the necessary capacity to provide the input current to all of the sounders connected to the line.

When selecting the cable size consideration must be given to the voltage drop over the length of the cable run to ensure the min. input voltage at the point of use (voltage range)

The voltage drop depends on:

- The total current draw if the devices installed on this cable run
- The wire size and total length of the cable run, determining the total resistance of this cable run
- The minimum output voltage supplied by the power supply

The voltage drop and input voltage at the point of use can be calculated.

Total Wire resistance =

Wire resistance / 1000ft x length of cable run x 2

(length of cable run needs to be multiplied by two to account for two wires going to and from the unit)

Total current draw =
Current draw per unit x number of units

Voltage Drop = Total current draw x Total wire resistance

Minimum output of power supply =
Min. voltage at point of use + voltage drop

Flash Rate Settings

The D1xB2XH1 & D1xB2XH2 beacons can produce different flash patterns as shown in Table. The flash patterns are selected by operation of the flash setting DIP switch on the PCBA

Switch Setting	S1 Mode
00	1Hz* (60FPM)
01	1.33Hz* (80FPM)
10	1.5Hz* (90FPM)
11	Double Flash

(*setting permitted for use as public mode fire alarm device)

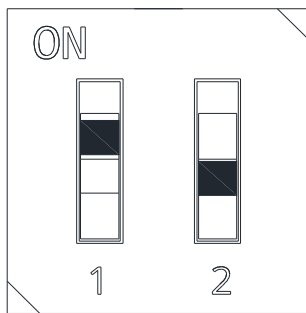


Fig. 8 Dip Switch

1=ON; 0=OFF
Example shown: 10 = Flashing 1.5Hz
(Default setting is 00 1Hz)

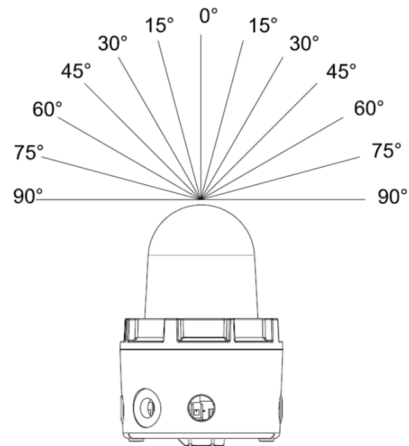
Line Monitoring

All DC units have a blocking diode fitted in their supply input lines.
An end of line monitoring diode or an end of line monitoring resistor can be connected across the +ve and -ve terminals in the flameproof chamber.
If an end of line resistor is used it must have the following values:

Minimum resistance 3K3 Ohms Minimum Power 0.5W
Minimum resistance 500 Ohms Minimum Power 2.0W

Light output for Fire alarm use

In order to meet the requirements for UL 1971 & UL1638 for Public Mode Fire alarm Use when used with 1Hz (60FPM), 1.5Hz (90FPM) & 1.33Hz (80FPM) the installation must be carried out to the correct NFPA standards and guidelines or CEC regulations.



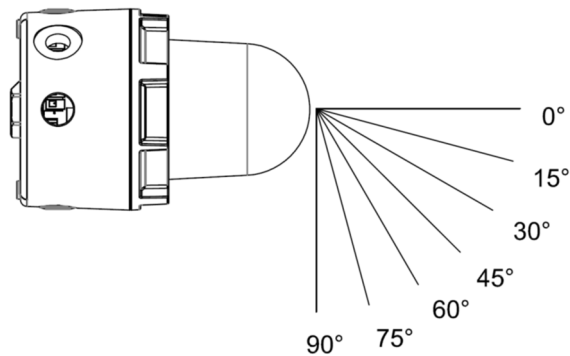
Horizontal Light Output Dispersion for wall mounting – public mode

Horizontal dispersion angles for wall mounting

D1xB2XH1 - Horizontal Light Output Dispersion for Wall Mounting				
Viewing Angle	% Of Rating	Intensity (cd) at 1Hz flash rate (60FPM)	Intensity (cd) at 1.5Hz flash rate (90FPM)	Intensity (cd) at 1.33Hz flash rate (80FPM)
0°	100	86.37	51.65	58.57
5-25°	90	77.73	46.49	52.71
30-45°	75	64.78	38.74	43.93
50°	55	47.50	28.41	32.21
55°	45	38.87	23.24	26.36
60°	40	34.55	20.66	23.43
65°	35	30.23	18.08	20.50
70°	35	30.23	18.08	20.50
75°	30	25.91	15.50	17.57
80°	30	25.91	15.50	17.57
85°	25	21.59	12.91	14.64
90°	25	21.59	12.91	14.64
Compound 45° to Right	24	20.73	12.40	14.06
Compound 45° to Left	24	20.73	12.40	14.06

D1xB2XH2 - Horizontal Light Output Dispersion for Wall Mounting				
Viewing Angle	% Of Rating	Intensity (cd) at 1Hz flash rate (60FPM)	Intensity (cd) at 1.5Hz flash rate (90FPM)	Intensity (cd) at 1.33Hz flash rate (80FPM)
0°	100	190.60	114.69	128.48
5-25°	90	171.54	103.22	115.63
30-45°	75	142.95	86.02	96.36
50°	55	104.83	63.08	70.66
55°	45	85.77	51.61	57.82
60°	40	76.24	45.88	51.39
65°	35	66.71	40.14	44.97
70°	35	66.71	40.14	44.97
75°	30	57.18	34.41	38.54
80°	30	57.18	34.41	38.54
85°	25	47.65	28.67	32.12
90°	25	47.65	28.67	32.12
Compound 45° to Right	24	45.74	27.53	30.84
Compound 45° to Left	24	45.74	27.53	30.84

Vertical Light Output Dispersion for wall mounting – public mode

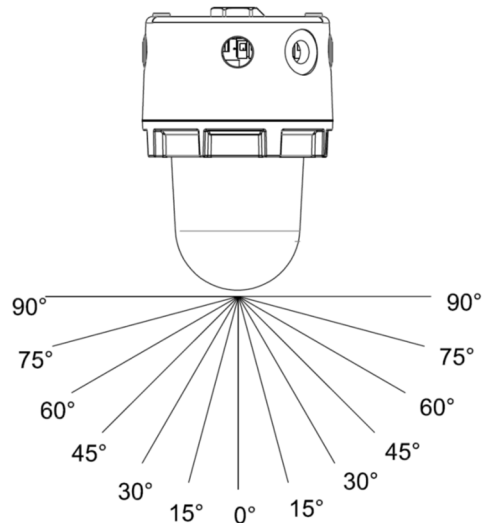


Vertical dispersion angles for wall mounting

D1xB2XH1 - Vertical Light Output Dispersion for Wall Mounting				
Viewing Angle	% Of Rating	Intensity (cd) at 1Hz flash rate (60FPM)	Intensity (cd) at 1.5Hz flash rate (90FPM)	Intensity (cd) at 1.33Hz flash rate (80FPM)
0°	100	86.37	51.65	58.57
5-30°	90	77.73	46.49	52.71
35°	65	56.14	33.57	38.07
40°	46	39.73	23.76	26.94
45°	34	29.37	17.56	19.91
50°	27	23.32	13.95	15.81
55°	22	19.00	11.36	12.89
60°	18	15.55	9.30	10.54
65°	16	13.82	8.26	9.37
70°	15	12.96	7.75	8.79
75°	13	11.23	6.71	7.61
80-90°	12	10.36	6.20	7.03

D1xB2XH2 - Vertical Light Output Dispersion for Wall Mounting				
Viewing Angle	% Of Rating	Intensity (cd) at 1Hz flash rate (60FPM)	Intensity (cd) at 1.5Hz flash rate (90FPM)	Intensity (cd) at 1.33Hz flash rate (80FPM)
0°	100	190.60	114.69	128.48
5-30°	90	171.54	103.22	115.63
35°	65	123.89	74.55	83.51
40°	46	87.68	52.76	59.10
45°	34	64.80	38.99	43.68
50°	27	51.46	30.97	34.69
55°	22	41.93	25.23	28.27
60°	18	34.31	20.64	23.13
65°	16	30.50	18.35	20.56
70°	15	28.59	17.20	19.27
75°	13	24.78	14.91	16.70
80-90°	12	22.87	13.76	15.42

**Vertical Light Output Dispersion
for ceiling mounting – public mode**



Vertical dispersion angles for ceiling mounting X and Y planes

D1xB2XH1 - Vertical Light Output Dispersion for Ceiling Mounting				
Viewing Angle	% Of Rating	Intensity (cd) at 1Hz flash rate (60FPM)	Intensity (cd) at 1.5Hz flash rate (90FPM)	Intensity (cd) at 1.33Hz flash rate (80FPM)
0°	100	86.37	51.65	58.57
5-25°	90	77.73	46.49	52.71
30-45°	75	64.78	38.74	43.93
50°	55	47.50	28.41	32.21
55°	45	38.87	23.24	26.36
60°	40	34.55	20.66	23.43
65°	35	30.23	18.08	20.50
70°	35	30.23	18.08	20.50
75°	30	25.91	15.50	17.57
80°	30	25.91	15.50	17.57
85°	25	21.59	12.91	14.64
90°	25	21.59	12.91	14.64

D1xB2XH2 - Vertical Light Output Dispersion for Ceiling Mounting				
Viewing Angle	% Of Rating	Intensity (cd) at 1Hz flash rate (60FPM)	Intensity (cd) at 1.5Hz flash rate (90FPM)	Intensity (cd) at 1.33Hz flash rate (80FPM)
0°	100	190.6	114.69	128.48
5-25°	90	171.54	103.22	115.63
30-45°	75	142.95	86.02	96.36
50°	55	104.83	63.08	70.66
55°	45	85.77	51.61	57.82
60°	40	76.24	45.88	51.39
65°	35	66.71	40.14	44.97
70°	35	66.71	40.14	44.97
75°	30	57.18	34.41	38.54
80°	30	57.18	34.41	38.54
85°	25	47.65	28.67	32.12
90°	25	47.65	28.67	32.12

All light output ratings min. values as per UL 1971 / UL1638 / CAN/ULC-S526 at worst-case (min.) input voltage.