

## Type EB3L-N Relay Barrier (alias Lamp Barrier) For Intrinsically Safe System [Exia]IIC, [Exia]IIIC

Draw. No. B-1341-2  
Rev. C, Jun 11, 2012

Certificate No. IECEXPTB10.0015

When installing an IDEC Type EB3L-N Relay Barrier (thereafter, called Barrier), make sure it conforms to the following drawings and descriptions as well as all applicable requirements.

IEC Standard IEC 60079-0, IEC 60079-11, IEC 60079-25, IEC 60079-14,

All intrinsically safe systems must have "EB3L-N" in the part number. Barrier must be located in a safe area (non-hazardous area). The intrinsically safe apparatus, such as the Contact certificated, approved or considered to be a "simple apparatus" such as the Switch specified by standard, may be located in the hazardous area.

- **Servicing – Replacement and Repairs:** Inspection and replacement of Barrier shall not be made until power is disconnected and shall not be connected again until all replacement Barrier are properly re-assembled. All electrical components, including the interconnecting wiring, shall be kept in safe condition. Defective Barrier should be returned to the factory for repair.

*Warning ! Substitution of components or unauthorized repair may impair intrinsic safety of apparatus.*

- **Mounting :** All bolts, nuts, screws, and other means of fastening, including the unused wiring screws, shall be fastened in place, properly tightened and secured. Mount Barrier on a 35mm track or directly mount on a panel surface using screws.
- **Certified Barrier:** Type EB3L-abcdeN "EB3L-...N"= Series type

a = Output    **S:** for Supper LED    b = channels    **01, 02, 03, 05, 06, 08, 08C, 10, 16C**(C: common wiring only)  
c = Signal type    **K:** Sink, **S:** Source    d = Power supply    **A:** 100~240Vac, **D:** 24Vdc    e = connection    Blank: Terminal, **-C:** Connector

### • Rating and Parameters of I.S.

Ta= 60°C, Um= 250V, Uo=13.2V, Io= 14.2mA, Po= 46.9mW at each channel Pn-Nn

Io=227.2mA, Po= 750mW at max 16 channels Pn-Nn

Io(mA)	14.2	28.4	42.6	56.8	71.0	85.2	99.4	113.6	127.8	142.0	156.2	170.4	184.6	198.8	213.0	227.2	Combined Lo(mH)	Note 2 The intrinsic safe apparatus and wirings shall be accordance to following formulas; for examples, $U_i > U_o$ $I_i \geq I_o$ $P_i \geq P_o$ $C_i + C_c \leq C_o$ $L_i + L_c \leq L_o$
Po(mW)	46.9	93.8	140.6	187.5	234.3	281.2	328.1	375.9	421.8	468.7	515.5	562.4	609.2	656.1	702.9	750	1.0	
Co(μF)	0.67	0.65	0.63	0.61	0.59	0.57	0.55	0.53	0.51	0.49	0.47	0.44	0.42	0.39	-	-	0.5	
	0.79	0.77	0.76	0.75	0.73	0.72	0.70	0.69	0.67	0.66	0.64	0.62	0.61	0.59	0.57	0.55	0.2	
	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.93	0.92	0.91	0.90	0.88	0.87	0.86	0.85	0.84	0.1	
	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.1	

Note 1 Added to above table, the next values combined Lo and Co are allowable;

Io(mA)	14.2						28.4						227.2					
Lo(mH)	175*	87.5	30.0	2.5	0.55	0.25	43.5*	21.5	20.0	3.5	0.43	0.25	0.68*	0.34	0.68	0.6	0.22	0.13
Co(μF)	0.90*	0.45	0.33	0.54	0.77	0.90	0.90*	0.45	0.30	0.48	0.80	0.90	0.90*	0.45	0.45	0.49	0.80	0.90

\*: Therefore, the values are allowable only at  $L_i \leq 1\%L_o$  and  $C_i \leq 1\%C_o$  of the intrinsic safe apparatus.

- **Typical Installation:** Install Barrier must be according to the above Ratings and Parameters of I.S. and descriptions.

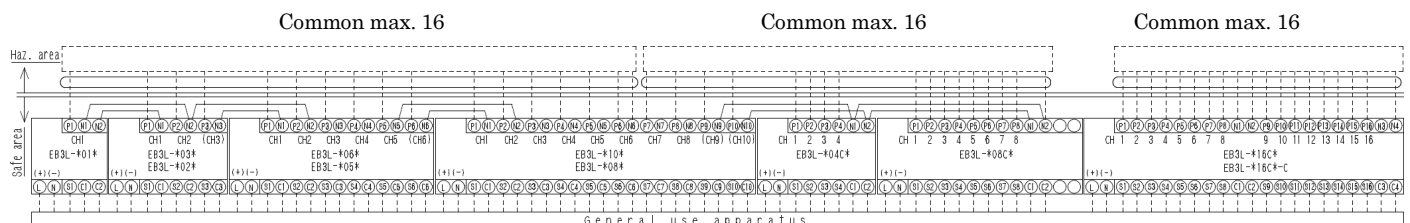
To avoid electrical shock, install Barrier in a tool-accessible enclosure.

Layout and wiring must be done to prevent the inductive or capacitive induction to the intrinsically safe circuit. For example, separate intrinsically safe circuits from non-intrinsically safe circuits, by a minimum space of 50mm or using a full height metal separator. If color-coding is required use for the intrinsic safe components and terminals, use only cables and terminals with light blue markings.

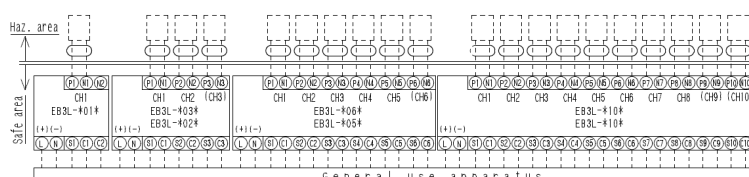
Interconnection between the Barriers to setting Common Wiring: connect two independent wires in parallel at each two " N " terminals between adjacent the Barrier inside the panel.

**Example of connections:** The marks indicate the samples of single intrinsic safe circuits, and marks indicate IS apparatus.

### Common Wiring (e.g. Io=227.2mA with 16 channels)



### Separate Wiring (e.g. Io=14.2mA with 1 channel)



### • Operating rating

Power input	EB3L...A	Terminal L - N	100 ~ 240V AC
	EB3L...D	Terminal + - -	24V DC
Signal	output	EB3L-S...	Terminal Pn - Nn
	input	EB3L-.S.	Terminal / Connector
		EB3L-.K.	An, Cn