IDEC **Installation Manual**

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Installations of IDEC Intrinsically Safe System	Certificate No. E234997	Draw. N	o. B-2270-7 (0)
Type EB3C-N-2 Relay Barrier		Rev. F,	NOV. 17, 2022
When installing an IDEC Type EB3C-N-2 Relay Barrier, make sure it conforms to the following drawings and descriptions as well as all applicable requirements. ANSI/NFPA70.			
• This associated apparatus may also be connected to simple apparatus as defined in Article 504.2 and installed and temperature classified in			
accordance with Article 504.10(B) of the National Electrical Code (ANSI/NFPA 70), or other local codes, as applicable.			
be included in the system calculations. Cable capacitance, Ccable, plus intrinsically safe equipment capacitance, Ci must be less than the marked capacitance, Ca			
(or Co), shown on any associated apparatus used. The same applies for inductance (Lcable, Li and La or Lo, respectively). Where the cable capacitance and in-			
ductance per foot are not known, the following values shall be used: Ccable = 6	50 pF/ft., Lcable = 0.2μ H/ft.	as or in one cable baying	
suitable insulation. Refer to Article 504.30(B) of the National Electrical Code	(ANSI/NFPA 70) and Instrument	Society of America Re	commended Practice
ISA RP12.6 for installing intrinsically safe equipment.			
• Intrinsically safe circuits must be wired and separated in accordance with Article 504.20 of the National Electrical Code (ANSI/NFPA 70) or other local codes, as applicable			
• This associated apparatus has not been evaluated for use in combination with another associated apparatus.			
• Control equipment must not use or generate more than 125V rms or 125V dc w	th respect to earth.		
<u>Warning</u> ! Substitution of components or unauthorized repair maintain intrinsic safety, the Signal input terminal (ay impair intrinsic safety of a Pn-Nn) may only be connected	i <u>pparatus.</u> to intrinsically safe ci	ircuits where both the
wiring and the connected equipment maintain 500 V isolation to the hazardous area earthing/bonding connections.			
AVERTISSEMENT - La substitution de composants peut compromettre la sécurité intrinsèque de l'appareil. Wiring Example (IS terminals: Pn=+ Nn=-)			
withing Example (is terminals, $1 = +, 4 = -)$	IS apparatus (Note 1) Haz. area] [][][][][][][][][]]	
Channel concrete wiring (any and channel)			
HAZARDOUS (CLASSIFIED) LOCATION	21 DH OH	(3) CHI CH2 CH3 CH4 CH6 (CH6) EB3C=*06*N EB3C=*05*N	CHI CH2 CH3 CH4 CH6 CH6 CH7 CH8 (CH9) (CH10) EB3C-+104N EB3C-+1084N
Class I, II and III, Division 1, Groups A, B, C, D, E, F and G	Type of BARRIER		
Class I, Zone U , [AExiaGa] IIC	(Note 2) Po	wer Supply and Non-intrinsic safe Apparatus(Con UNCLASSIFIED LOCAT	trol Equipment(Note 3)) TON
Channel common wiring (Common max, 16 between any Pn(+) terminals and any Nn(-) terminal)			
Note:To set up common wiring, connect two "N" terminals betw	een adjoining Relay Barrie	rs in parallel.	
HAZARDOUS (CLASSIFIED) LOCATION Class I, II and III, Division Is apparatus Class I, Zone 0, [AExia	Ga] IIC	and G	
(Note 1)	Comm	on max. 16	Common max. 16
20 01 04 02 031 01 02 08 04 06 038 21 E83C=01/H E83Z=03/H E83Z=04/H Type of 50 (+)= (+)= (83Z=402/H (+)= (83Z=405/H (+)) (43Z=405/H (+)) (CHI CH2 CH3 CH4 CH5 CH5 CH7 CH8 ICH9) ICHI0 CH I 2 3 EB3C=*10#N EB3C=*0 II-1 EB3C=*08#N (+)(-)	4 CH I 2 3 4 5 6 7 8 D4C#N EB3C=+08C#N (+1(-) (+	CH I 2 3 4 5 6 7 8 9 10 11 12 13 14 16 16 EB3C-#16C4N 1(-) EB3C-#16C4N
BARRIER (Note 2)	Power Supply, and Non-intrinsic safe Apparatus(Control	GOCCOCCOCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	000000000000000000000000000000000000000
• Rating and Parameters of LS.	UNCLASSIFIED LOCATION	NA/	Da Ma
[lo(mA)] 14.2 28.4 42.6 56.8 71.0 85.2 99.4 113.6 127.8 14	2.0 156.2 170.4 184.6 198.8	213.0 227.2 Combined	Note 2 The intrinsic safe
Po(mW) 46.9 93.8 140.6 187.5 234.3 281.2 328.1 374.9 421.8 46	8.6 515.5 562.4 609.2 656.1	702.9 750 Lo(mH)	apparatus and wirings
	49 0.47 0.44 0.42 0.39 66 0.64 0.62 0.61 0.59	0.57 0.55 0.5	following formulas; for
Co(µF) 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 0.2	examples,
0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94	94 0.94 0.94 0.94 0.94	0.94 0.94 0.1	Ui <u>≥</u> Uo li > lo
lo(mA) 14.2 28.4		227.2	Pi > Po
Lo(mH) 176* 88.0 2.50 1.60 0.84 0.48 0.25 44.0* 22.0 3.50 1.40 0	.76 0.45 0.25 0.68* 0.68 0.60	0.42 0.30 0.22 0.15	Ci+Cc <u><</u> Co
Co(μF) 0.94* 0.47 0.55 0.60 0.70 0.80 0.94 0.94* 0.47 0.48 0.60 0	.70 0.80 0.93 0.94* 0.45 0.49	0.60 0.70 0.80 0.94	Li+Lc <u><</u> Lo
*: Therefore, the values are allowable only at Li<1%Lo or Ci<1%Co of the intrinsic sa			
Na4a	fe apparatus.		
Note 1. Use intrinsically safe equipment that is UL or simple apparatus (a device which	fe apparatus. will neither generate nor store more	than 1.5V, 0.1A, 25mW	such as switches, ther-
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 Note Use intrinsically safe equipment that is UL or simple apparatus (a device which mocouples, LED's and RTD's). Install the EB3C-N-2 relay barrier in compliance with the enclosure, mounting, Make sure that the control equipment compared to the EB3C N-2 relay barrier. 	fe apparatus. will neither generate nor store more spacing, and segregation requirement	than 1.5V, 0.1A, 25mW	such as switches, ther-
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T: Transistor output R: Relay output