

Member of the FM Global Group

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CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

BA304D-a-b-c-d-e. 2-Wire 4/20 mA 3 1/2 Digit Indicator

IS / 1,II,III / 1 / ABCDEFG / T4 Ta = 60°C — CI300-27; Entity; Type 4X, IP66 IS / 1 / 0 / AEx ia IIC / T4 Ta = 60°C — CI300-27; Entity; Type 4X, IP66

N1/1/2 / ABCD / T4 Ta = 60°C; S / II,III / 2 / FG / T4 Ta = 60°C; Type 4X, IP66

NI/I/2/IIC/T4Ta = 60°C; Type 4X, IP66

Entity Parameters:

Terminals 1, 2, 3 & 4:

VMax = 32 V, IMax = 200 mA, Pi = 1.2 W, Ci = 0.02 μ F, Li = 0.01 mH

Terminals 12 & 13:

VMax = 32 V, IMax = 159 mA, Pi = 1.2 W, $Ci = 0.03 \mu\text{F}$, Li = 0.01 mH

a = Display at 4 mA XXXX (with decimal point position and polarity).

b = Display at 20 mA XXXX (with decimal point position and polarity).

c = Accessories Separately Powered Backlight, Loop Powered Backlight

d = Root Extractor or Calculator

e = Accessories Scale legend, Tag legend.

f = Accessories Stainless Legend Plate, Pipe mounting kit.

BA324D-a-b-c-d-e. 2-Wire 4/20 mA 4 1/2 Digit Indicator

IS / I,II,III / 1 / ABCDEFG / T4 Ta = 60°C — Cl320-27; Entity; Type 4X, IP66

IS / 1 / 0 / AEx ia IIC / T4 Ta = 60°C — Cl320-27; Entity; Type 4X, IP66

NI/I/2/ABCD/T4.Ta = 60°C; S/II,III/2/FG/T4.Ta = 60°C; Type 4X, IP66

NI/I/2/IIC/T4 Ta = 60°C; Type 4X, IP66

Entity Parameters:

Terminals 1, 2, 3 & 4:

VMax = 32 V, IMax = 200 mA, Pi = 1.2 W, Ci = 0.02 µF, Li = 0.01 mH

Terminals 12 & 13:

VMax = 32 V, IMax = 159 mA, Pi = 1.2 W, Ci = 0.03 μ F, Li = 0.01 mH

Terminals 8 & 9 or 10 & 11:

VMax = 32 V, IMax = 159 mA, Pi = 1.2 W, Ci = 0.04 μ F, Li = 0.02 mH

a = Display at 4 mA XXXX (with decimal point position and polarity if negative)

b = Display at 20 mA XXXX (with decimal point position and polarity if negative)

c = Accessories Separately Powered Backlight, Loop Powered Backlight



d = Alarms

e = Tare

f = Lineariser

g = external push-buttons

h = Accessories Scale legend, Tag legend, Stainless legend plate

i = Accessories Pipe mounting kit

Equipment Ratings:

Intrinsically safe apparatus for use in Class I, II, III, Division 1, Groups A, B, C, D, E and F; Class I, Zone 0, AEx ia IIC temperature class T4 at Ta = 60°C in accordance with Entity requirements and Control Drawings Cl300-27 Issue 1 and Cl320-27 Issue 1; Nonincendive for use in Class I, II, III, Division 2, Groups A, B, C, D, F and G; Class I, Zone 2, Group IIC temperature class T4 at Ta = 60°C Hazardous (Classified) indoor or outdoor (Type 4X, IP66) Locations.

FM Approved for:

BEKA associates Hitchin, Hertfordshire SG5 2DA, United Kingdom



This certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

Class 3600	1998
Class 3610	2010
Class 3611	2004
Class 3810	2005

Original Project ID: 3008809

Approval Granted: July 18, 2001

Subsequent Revision Reports / Date Approval Amended

Report Number

Date

Report Number

Date

040527 101217 July 8, 2004

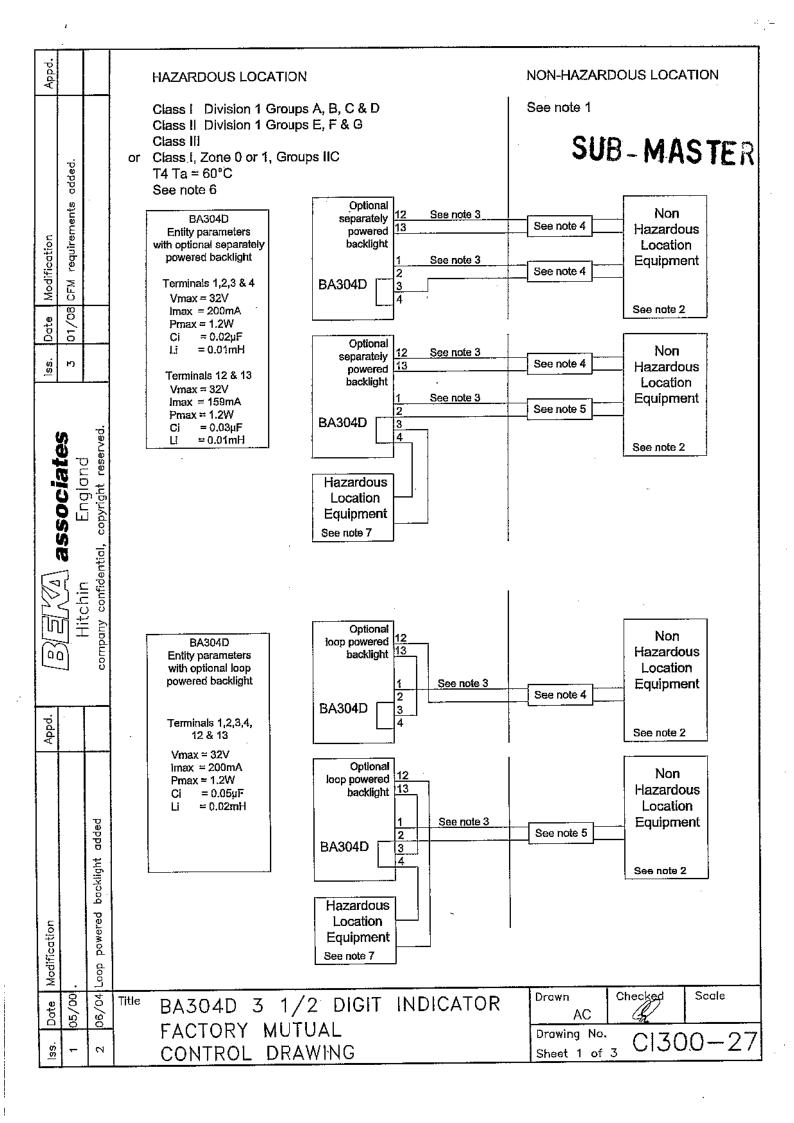
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FM Approvals LLC

Timothy J-Adam

Technical Team Manager

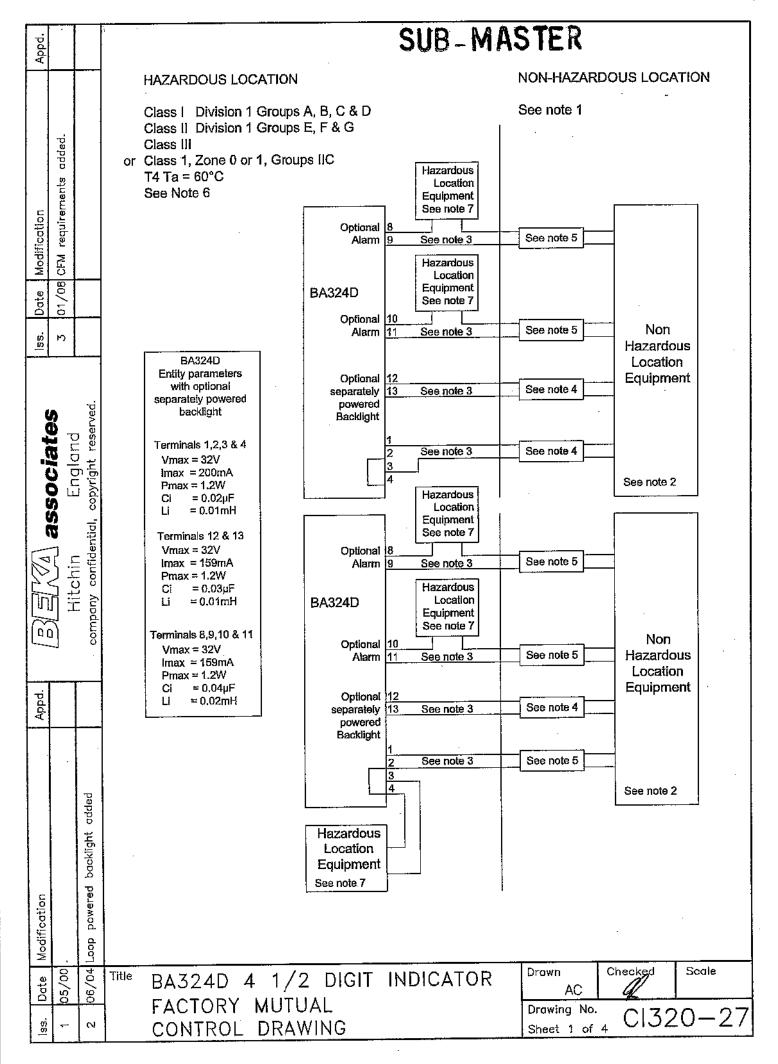
March 16, 2011



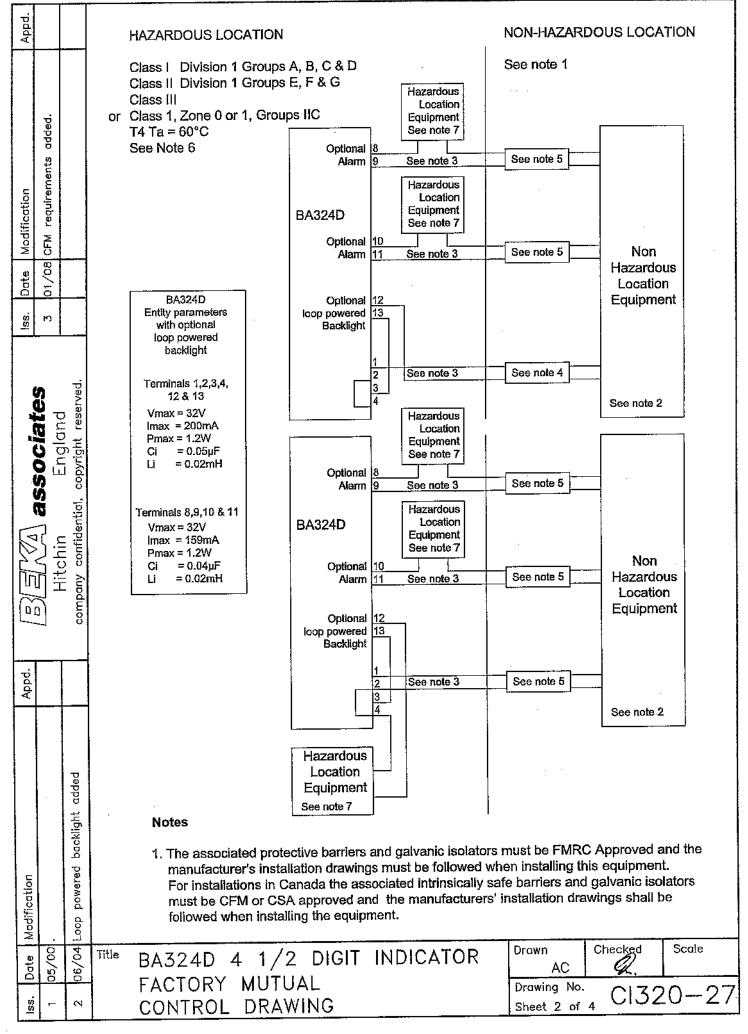
Appd.							•			
						•	SUB-N	MASTE	R	
				Notes			- •	# 8m		
	nents added.			and the mar equipment. I and galvanid	nufacturer's installation dra For installations in Canada c isolators must be CFM o	d galvanic isolators must be awings must be followed what the associated intrinsically or CSA approved and the many when installing the equipm	hen installing t ly safe barriers nanufacturers'	this		
Modification	CFM requirements			2. The non-haz barriers or ga	ardous location equipmen alvanic isolators shall not u	ted protective 250V rms or 2	250V dc.			
Date Modif	01/08 CFM 1			prevent short ANSI/ISA RF (Classified) L	ting between pairs. Install 2 12.6 "Installation of Intrin _ocations" and the Nationa	ation should be in accordar nsically Safe Systems for H al Electrical Code ANSI/NF	ith individually grounded screens to tion should be in accordance with sically Safe Systems for Hazardous Electrical Code ANSI/NFPA 70. rdance with the Canadian Electrical Code C22.2.			
lss.	(14			4. One single c isolator with	hannel or one two channe entity parameters meeting	ol associated protective bar g the following requirement	rier or galvani s :	c		
	ares	copyright reserved.			equal to or less than		·			
I.	TOCK	Erigiaria pyright res		5. One single c	hannel or one two channe	el associated protective bar g the following requirement	rier or galvanios :	c		
	ESELVA as Hitchin company confidential,			CAUTION:	THESE REQUIREMEN	TS MUST BE FOLLOWED ODIFICATIONS TO EXIST	FOR NEW			
				Voc or Vt	equal to or less than	The lowest Vmax of the Approved apparatus in respective loop.		or CSA		
			TT	lsc or lt	equal to or less than	The lowest Imax of the Approved apparatus in respective loop.	-	or CSA		
Appd.				Po	equal to or less than	The lowest Pmax of the apparatus in the respe		or CSA Approv	<i>r</i> ed	
		ed		La	equal to or greater than	The sum of the cable in and the internal inducta FMRC, CFM or CSA A in the respective loop.	ance of Li of ea			
, man man and a second a second and a second a second and		backlight added		Ca	equal to or greater than	The sum of the cable of the internal capacitance FMRC, CFM or CSA A respective loop.	e of Ci of each)		
Modification		Loop powered t		6. If connected to AEx [ib] associated protective barrier or galvanic issolator, the BA304D is only sultable for Class I, Zone 1 or 2 hazardous locations.						
\vdash		06/04 L	Title	<u>ΒΔ304</u> D	3 1/2 DIGIT	INDICATOR	Drawn	Checked	Scale	
Date	00/50	19	-		MUTUAL		AC Drawing No	1 44		
lss.	-	2			DRAWING		Sheet 2 of	1 1 71	0-27	

Appd.			SUB-MASTER
*		·	7. Hazardous location equipment may be simple apparatus or FMRC Approved equipment with entity parameters meeting the requirements of note 5 .
Modification CFM requirements added.			 The BA304D is also FMRC and CFM Approved as non-incendive for Class I, Division 2 Groups A, B, C and D; suitable for use in Class II and III, Division 2 Groups F & G and for Class I, Zone 2, Group IIC hazardous (classified) location without connection to associated protective barriers when installed per the National Electrical Code (ANSI/NFPA 70) and the voltages do not exceed 32Vdc. When installed in a hazardous (classified) location the BA304D 3½ digit indicator shall be fitted with cable glands /conduit hubs selected from the following table. Metallic glands and hubs must be grounded - see note 10.
	/08 CFM		Class Permitted gland or conduit hub
lss. Date	3 01/		Class I Any metallic or plastic cable gland or conduit hub that provides the required environmental protection.
1			Class II and III Crouse - Hinds Myler hubs SSTG-1 STG-1 STAG-1 MHUB-1
	Shin England Englettes confidential, copyright reserved.		O-Z / Gedfrey Hubs CHMG-50DT REMKE hub WH-1-G Killark Glands CMCXAA050 MCR050 MCX050
		company cor	10.In addition to the supplied bonding plate, when 3 metallic glands or conduit hubs are fitted to a BA304D 3½ digit indicator, all metallic glands or conduit hubs must be connected together and grounded.
Appd.			11.CAUTION The BA304D 3½ digit indicator is manufactured from conductive plastic per Article 250 of the National Electrical Code the enclosure shall be grounded using the 'E' terminal on the terminal block.
			12.The BA304D 3½ digit indicator should be mounted where it is shielded from direct sunlight.
Modification		Loop powered backlight added	
lss. Date	1 05/00	2 06/04	Title BA304D 3 1/2 DIGIT INDICATOR FACTORY MUTUAL CONTROL DRAWING Drawn Checked Scale AC Drawing No. Sheet 3 of 3

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SUB-MASTER

				~~~	- MASIEN	
Appd.		2. The non-haza	rdous location equipment Ivanic isolators shall not u	connected to the	ne associated protective more than 250V rms or 250V dc.	
fication requirements added.		<ol> <li>Wire each pair separately or together with individually grounded screens to prevent shorting between pairs. Installation should be in accordance with ANSI/ISA RP 12.6 "Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations" and the National Electrical Code ANSI/NFPA 70. Installations in Canada shall be in accordance with the Canadian Electrical Code C22.2</li> <li>One single channel or one two channel associated protective barrier or galvanic isolator with entity parameters meeting the following requirements:</li> </ol>				
Date Modification 01/08 CFM require		Voc or V lsc or It Po La Ca		than than than ter than	Vmax Imax Pmax Lcable + Li Ccable + Ci	
<u>ස</u> ව		5. One single ch isolator with e	annel or one two channel on tity parameters meeting	associated pro the following re	tective barrier or galvanic quirements :	
sə	reserved.		THESE REQUIREMENT INSTALLATIONS OR MOINSTALLATIONS.			
associat	copyright rese	Voc or Vt 🦸	equal to or less than		max of the FMRC, CFM or CSA paratus installed in the op.	
3	iential,	lsc or It	equal to or less than		nax of the FMRC, CFM or CSA paratus installed in the op.	
		Ро	equal to or less than		max of the FMRC, CFM or CSA paratus in the respective loop.	
(۵۵	compd	La	equal to or greater than	and the inter	ne cable inductances nal inductance of Li of each or CSA Approved apparatus installed tive loop.	
Appd.		Ca	equal to or greater than	the internal o	he cable capacitance and capacitance of Ci of each or CSA Approved apparatus in the op.	
	added	6. If connected the BA324D is or	to AEx [ib] associated prot nly suitable for Class I, Zor	ective barrier o ne 1 or 2 hazan	f galvanic issolator, the dous locations.	
	backlight c	7. Hazardous lo equipment wi	cation equipment may be ith entity parameters meet	simple apparat ing the requirer	us or FMRC Approved ments of <b>note 5</b> .	
Modification	Loop powered bo	Groups A, B, and Class I, 2 associated p	8. The BA324D is also FMRC and CFM Approved as non-incendive for Class I, Division 2 Groups A, B, C and D; suitable for use in Class II and III, Division 2 Groups F & G and Class I, Zone 2, Group IIC hazardous (classified) location without connection to associated protective barriers when installed per the National Electrical Code (ANSI/NFPA 70) and the voltages do not exceed 32Vdc.			
lss. Date 1 05/00	2 08/04 Title	FACTORY	4 1/2 DIGIT II MUTUAL DRAWING	NDICATO	Prawn Checked Scale  AC  Drawing No. C1320—27  Sheet 3 of 4	

Appd.				CIN	-MAST	en jou	
Ap			be fitted with cable gla	zardous (classified) location the BA32 nds /conduit hubs selected from the fo be grounded - see note 10.	24D 41/2 digit ind	icator shall	
	added.		Class	Permitted gland or conduit i	nub		
			Class I	Any metallic or plastic cable g provides the required environ	land or conduit i nental protectio	hub that n.	
Modification	CFM requirements		Class II and III	Crouse - Hinds Myler hubs SSTG-1 STG-1 STAG-1 MHUB-1		:	
Date	01/08			O-Z / Gedfrey Hubs CHMG-50DT			
lss.	ъ			REMKE hub WH-1-G			
	(n	reserved.		Killark Glands CMCXAA050 MCR050 MC	X050	•	
	Ley Elly 1 associat	company confidential, copyright	of the National Electri on the terminal block.	indicator is manufactured from conducat Code the enclosure shall be groun indicator should be mounted where it	nded using the 'i	E' terminal	jht.
Appd.							
		backlight odded					
Modification		Loop powered back					
Date 1	05/00	<del> </del>		/2 DIGIT INDICATOR	Drawn AC	Checked	Scale
l o			FACTORY MU	<b></b>			