



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:

BR385 Sounder

IS / I / 1 / ABCD / T4 Ta = 60°C – Entity- CI385-32; IP66

I / 0 / AEx ia IIC T4 Ta = 60°C – Entity- CI385-32; IP66

Entity parameters

Terminals "+" and "-"

Ui = 28V Ii = 93mA Pi = 660mW Ci = 0 Li = 0

Terminals S2 and S3 to "-"

Ui = 28V Ii = 0 Ci = 0
Uo = 16.8V Io = 7.23mA Po = 31mW

Equipment Ratings:

Intrinsically safe, with entity parameters, for use in Class I, Division 1, Groups A, B, C, D, and Class I, Zone 0, Group IIC, in accordance with manufacturing's Control Drawing No.CI385-32, Hazardous (Classified) indoor/outdoor (IP66) Locations.

FM Approved for:

BEKA associates
Hitchin, Hertfordshire 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	1999
Class 3810	2005
IEC 60529	1989

Original Project ID: 3027157

Approval Granted: *June 19, 2006*

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
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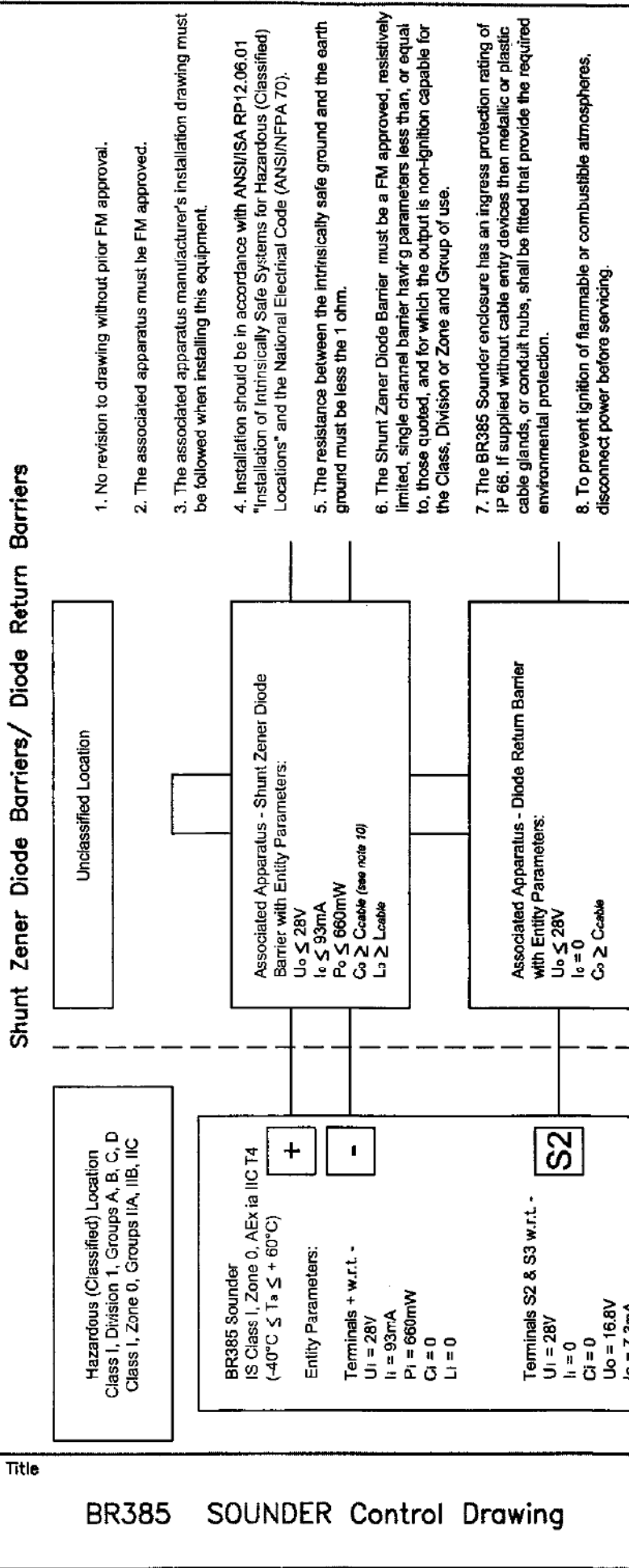
David W. Styracula
Technical Team Manager

June 22, 2006
Date

Iss.	Date	Modification	Ckd.	Appd.
1	02.05 2006	First issue		

BEKA associates
Hitchin
England
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Iss.	Date	Modification	Ckd.	Appd.



- No revision to drawing without prior FM approval.
 - The associated apparatus must be FM approved.
 - The associated apparatus manufacturer's installation drawing must be followed when installing this equipment.
 - Installation should be in accordance with ANSI/ISA RP12.06.01 "Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations" and the National Electrical Code (ANSI/NFPA 70).
 - The resistance between the intrinsically safe ground and the earth ground must be less than 1 ohm.
 - The Shunt Zener Diode Barrier must be a FM approved, resistively limited, single channel barrier having parameters less than, or equal to, those quoted, and for which the output is non-ignition capable for the Class, Division or Zone and Group of use.
 - The BR385 Sounder enclosure has an ingress protection rating of IP 66. If supplied without cable entry devices then metallic or plastic cable glands, or conduit hubs, shall be fitted that provide the required environmental protection.
 - To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.
 - Substitution of components may impair safety.
 - The total capacitance connected to terminals +/- of the sounder, i.e. Cable plus any other capacitance, shall not exceed 83nF.
- Notes:**
CAUTION - Bonding between conduit connections is not automatic and must be provided as part of this installation.
CAUTION - The clearance between sounder terminals S2 and S3 is less than 6mm.

Drawn RC	Checked <i>[Signature]</i>	Scale 1:1
Drawing No. Sheet 1 of 2		CI385-32

BR385 SOUNDER Control Drawing

Iss.	Date	Modification	Ckd.	Appd.
1	02.05 2006	First issue		

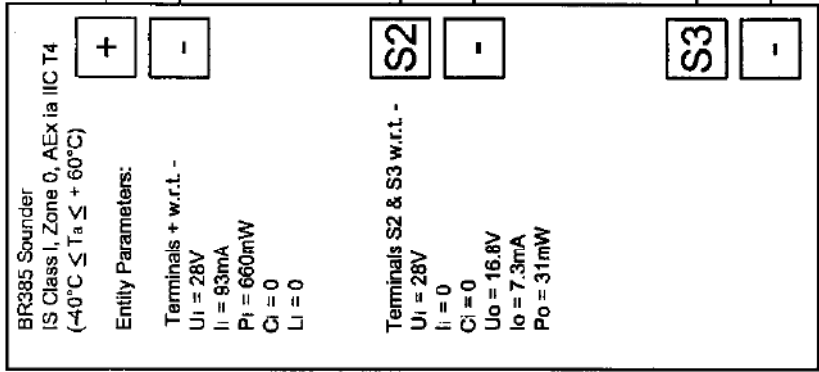
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Galvanically Isolated Supply / Isolated Relay Installation

Hazardous (Classified) Location
Class I, Division 1, Groups A, B, C, D
Class I, Zone 0, Groups IIA, IIB, IIC

Unclassified Location



Associated Apparatus - Galvanically Isolated Supply with Entity Parameters:
 $U_o \leq 28V$
 $I_o \leq 93mA$
 $P_o \leq 660mW$
 $C_o \geq C_{cable}$ (see note 9)
 $L_o \geq L_{cable}$

Associated Apparatus - Galvanically Isolated Relay with Entity Parameters:
 $U_o = 0$
 $I_o = 0$

Associated Apparatus - Galvanically Isolated Relay with Entity Parameters:
 $U_o = 0$
 $I_o = 0$
 (See Note 10)

- No revision to drawing without prior FM approval.
- The associated apparatus must be FM approved.
- The associated apparatus manufacturer's installation drawing must be followed when installing this equipment.
- Installation should be in accordance with ANSI/ISA RP12.06.01 "Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations" and the National Electrical Code (ANSI/NFPA 70).
- The Galvanically Isolated Supply must be a FM approved, resistively limited, single channel supply having parameters less than, or equal to, those quoted, and for which the output is non-ignition capable for the Class, Division or Zone and Group of use.
- The BR385 Sounder enclosure has an ingress protection rating of IP 66. If supplied without cable entry devices then metallic or plastic cable glands, or conduit hubs, shall be fitted that provide the required environmental protection.
- To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.
- Substitution of components may impair safety.
- The total capacitance connected to terminals +/- of the sounder, i.e. C_{cable} plus any other capacitance, shall not exceed 83nF.
- The C_{cable} and L_{cable} of the cables connecting the galvanically isolated relays to sounder terminals S2/- and S3/- shall be less than, or equal to, the C_{cable} and L_{cable} of the cable connecting the galvanically isolated supply to sounder terminals +/-.

Notes:
 CAUTION - Bonding between conduit connections is not automatic and must be provided as part of this installation.
 CAUTION - The clearance between sounder terminals S2 and S3 is less than 6mm.

BR385 SOUNDER Control Drawing

Drawn RC	Checked 	Scale 1:1
Drawing No. Sheet 2 of 2		CI385-32