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EC-TYPE EXAMINATION CERTIFICATE N° BAS99ATEX7001

15

Description of Equipment or Protective System

The Isolated Electronic Switch Repeater Types WIS1111 & WIS1121 are designed for mounting within a safe area, as an interface between safe area and hazardous area apparatus.

For Type WIS1122 connected as a 4/5 wire circuit:- Hazardous Area Terminals 23, 43, 13, 33 & 44
The switch repeater safe area circuitry is protected from thermal damage by three fuses. The circuit contains a transformer and two optocouplers which provide galvanic isolation across the repeater. The hazardous area output voltage is clamped at the terminals by duplicated zener diodes and the output current is limited by current limiting resistors.

Both units have two electronic switching circuits associated with the safe area circuitry. The WIS1111 has a single channel switch repeater circuit, with a "fault" switching circuit, and the WIS1121 has dual channel switch repeater circuits. For the dual channel unit, the hazardous area channels may be combined or considered as two separate intrinsically safe circuits.

The switch repeaters use surface mounted components mounted on a glass fibre printed circuit board. A further glass fibre printed circuit board mounted at right angles to the main board connects to the terminals. The switch repeater circuit is housed within an outer plastic enclosure which provides a degree of protection of at least IP20, is fitted with terminals and incorporates a universal mounting foot.

Types WIS1111 & WIS1121 - SAFE AREA TERMINALS 11, 21, 22 & 31/41

$U_m = 250V$ d.c. or r.m.s.

For a single channel 2/3 wire circuit connected as a separate I.S. circuit:-

Type WIS1111 - HAZARDOUS AREA TERMINALS 23, 13 & 44,
OR Type WIS1121 (Ch1) - HAZARDOUS AREA TERMINALS 23, (13 or 33) & 44,
OR Type WIS1121 (Ch2) - HAZARDOUS AREA TERMINALS 43, (13 or 33) & 44,

$U_o = 10.5V$ $I_o = 19.8mA$ $P_o = 0.052W$

For Type WIS1121 connected as a 4/5 wire circuit:-

HAZARDOUS AREA TERMINALS 23, 43, 13, 33 & 44,

$U_o = 11.6V$ $I_o = 39.5mA$ $P_o = 0.104W$

CABLE PARAMETERS

The Capacitance and either the Inductance or Inductance to Resistance (L/R) Ratio of the cables connected to the combined output terminals of the isolator should not exceed the following values-



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For a single channel 2/3 wire circuit connected as a separate I.S. circuit:-
 Type WIS1111 - Hazardous Area Terminals 23, 13 & 44,
 OR Type WIS1121 (Ch1) - Hazardous Area Terminals 23, (13 or 33) & 44,
 OR Type WIS1121 (Ch2) - Hazardous Area Terminals 43, (13 or 33) & 44,

GROUP	CAPACITANCE in μF	INDUCTANCE in mH	OR	L/R RATIO in $\mu\text{H}/\text{ohm}$
IIC	2.41	87.5		662
IIB	16.8	328		1886
IIA	75	633		1886

For Type WIS1121 connected as a 4/5 wire circuit:-
 Hazardous Area Terminals 23, 43, 13, 33 & 44

GROUP	CAPACITANCE in μF	INDUCTANCE in mH	OR	L/R RATIO in $\mu\text{H}/\text{ohm}$
IIC	1.59	23.19		149
IIB	10.8	85.42		560
IIA	43	180.19		1078

16 **Report No.**

98(C)0896

17 **Special Conditions For Safe Use**

None

18 **Essential Health and Safety Requirements**

Essential Health & Safety Requirements not covered by Standards at (9)		
Clause	Subject	Compliance
1.0.4	Surrounding area conditions	See Report 98(C)0896 Clause 6
1.0.5	Marking	See Report 98(C)0896 Clause 6
1.0.6	Instructions	See Report 98(C)0896 Clause 6
1.1.3	Changes in characteristics of materials and combinations thereof	See Report 98(C)0896 Clause 6
1.2.2	Components for incorporation or replacement	See Report 98(C)0896 Clause 6



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Clause	Subject	Compliance
1.2.4	Dust deposits	See Report 98(C)0896 Clause 6
1.2.5	Additional means of protection	See Report 98(C)0896 Clause 6
1.2.7	Protection against other hazards	See Report 98(C)0896 Clause 6
1.3.1	Hazards arising from different ignition sources	See Report 98(C)0896 Clause 6
1.4.2	Withstanding attack by aggressive substances	See Report 98(C)0896 Clause 6
1.6.4	Hazards arising from connections	See Report 98(C)0896 Clause 6
2.1.1	Category IG	See Report 98(C)0896 Clause 6

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DRAWINGS

Number	Issue	Date	Description
ST2965	A	19/1/99	Circuit Diagram
ST2968	A	24/07/98	Main p.c.b.
ST2966	A	19/08/98	Sub Board p.c.b.
ST2967	A	19/1/99	Main Assembly
*ST2952	A	18/03/98	EFD20 Wound Transformer
*ST2949	A	19/1/99	Multilayer Transformer
**ST2867	A	07/02/97	Marking / Printing Details
**ST2873	A	16/04/97	Terminal details
***ST2826	A	31/01/96	EG12 Housing

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BASEEFA List Keywords
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