



EC-TYPE EXAMINATION CERTIFICATE

Equipment or Protective System Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC

EC-Type Examination Certificate Number : **BAS98ATEX7327**

Equipment or Protective System: **THE ISOLATED RELAY SWITCH REPEATER TYPES
WIS1112 AND WIS1122**

Manufacturer: **WEIDMÜLLER LTD
INTRINSIC SAFETY AND ELECTRONICS DIVISION**

Address: **West Malling, Kent, ME19 6EX**

This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

The Electrical Equipment Certification Service, notified body number 600 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Report N°

98(C)0436 dated 18 January 1999

Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014: 1997


EN 50020: 1994

except in respect of those requirements listed at item 18 of the Schedule.

If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment or protective system.

The marking of the equipment or protective system shall include the following:-

 II [1] G [EEx ia] IIC (T_a ≤ 60°C)

This certificate may only be reproduced in its entirety and without any change, schedule included.

File No: EECS 0932/02/023

This certificate is granted subject to the general conditions of the Electrical Equipment Certification Service. It does not necessarily indicate that the apparatus may be used in particular industries or circumstances.



Electrical Equipment Certification Service
Health and Safety Executive
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PP

I M CLEARE
DIRECTOR
3 March 1999



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Description of Equipment or Protective System

The Isolated Relay Switch Repeater Types WIS1112 & WIS1122 are designed for mounting within a safe area, as an interface between safe area and hazardous area apparatus.

The switch repeater safe area circuitry is protected from thermal damage by a fuse, crowbar circuit and two relays. 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 relays associated with the safe area circuitry. The WIS1112 has a single channel switch repeater relay, with a "fault" relay, and the WIS1122 has dual channel switch repeater relays. 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 WIS1112 & WIS1122 - SAFE AREA TERMINALS 11, 14, 21, 22, 31 & 34

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

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

Type WIS1112 - HAZARDOUS AREA TERMINALS 23, 13 & 44,
OR Type WIS1122 (Ch1) - HAZARDOUS AREA TERMINALS 23, (13 or 33) & 44,
OR Type WIS1122 (Ch2) - HAZARDOUS AREA TERMINALS 43, (13 or 33) & 44,

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

For Type WIS1122 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 WIS1112 - Hazardous Area Terminals 23, 13 & 44,
 OR Type WIS1122 (Ch1) - Hazardous Area Terminals 23, (13 or 33) & 44,
 OR Type WIS1122 (Ch2) - Hazardous Area Terminals 43, (13 or 33) & 44,

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

For Type WIS1122 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 $\mu H/ohm$
IIC	1.59	23.19		149
IIB	10.8	85.42		560
IIA	43	180.19		1078

16 **Report No.**

98(C)0436

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)0436 Clause 6
1.0.5	Marking	See Report 98(C)0436 Clause 6
1.0.6	Instructions	See Report 98(C)0436 Clause 6
1.1.3	Changes in characteristics of materials and combinations thereof	See Report 98(C)0436 Clause 6
1.2.2	Components for incorporation or replacement	See Report 98(C)0436 Clause 6
1.2.4	Dust deposits	See Report 98(C)0436 Clause 6



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Clause	Subject	Compliance
1.2.5	Additional means of protection	See Report 98(C)0436 Clause 6
1.2.7	Protection against other hazards	See Report 98(C)0436 Clause 6
1.3.1	Hazards arising from different ignition sources	See Report 98(C)0436 Clause 6
1.4.2	Withstanding attack by aggressive substances	See Report 98(C)0436 Clause 6
1.6.4	Hazards arising from connections	See Report 98(C)0436 Clause 6
2.1.1	Category 1G	See Report 98(C)0436 Clause 6

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DRAWINGS

Number	Issue	Date	Description
ST2954	A	19/1/99	Circuit Diagram
ST2950	A	02/11/98	Main p.c.b.
ST2951	A	5/1/99	Sub Board p.c.b.
ST2953	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

*These drawings are also associated with BASEEFA Certificate No BAS99ATEX7001

**These drawings are held with BASEEFA Certificate No Ex 97D2111

***This drawing is held with BASEEFA Certificate No Ex 96D2241

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BASEEFA List Keywords
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