

1 EC TYPE-EXAMINATION CERTIFICATE

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **LRV06ATEX3001X**

4 Equipment: **GER Range of Process Heaters**

5 Manufacturer: **Elwatec Warmetechnik GmbH**

6 Address: **Weiherdamm
17a 57250 Netphen
Germany**

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

8 Lloyd's Register Verification Limited, notified body number 0038 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Sira report number R53A11702A.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0:2004
EN 60079-7:2003

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

11 This EC type-examination certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

 II 2 G II
EEx e IIC T# (# - T6 to T1 dependent on process temperature selected)

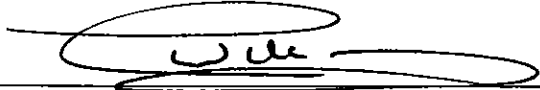
This certificate may only be reproduced in its entirety, without any change, schedule included.

LRV reference: 0038/ATEX/20060001/A

Original Approval: 3 February 2006

Current Certificate: 3 February 2006

LRV Notified Body Number 0038


P A Williams on behalf of Lloyd's Register Verification



SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE

LRV 06ATEX3001X

13 DESCRIPTION OF EQUIPMENT

The GER Range of Process Heaters are rated at up to 420 V, 2 to 900 kW. Each heater comprises a junction box fitted with a number of tubular steel heaters via a gas proof welded sealing plate. The heater elements are taken through additional tubing to a vessel that is fitted with a suitable flange.

Inside the junction box the heaters are fitted with flying leads, covered with heat shrink sleeving and connected to an arrangement of rail mounted terminals. The bank of heaters may be connected in series/parallel combinations to achieve the correct rating. The maximum current per heating element is 20 A and the maximum current per group of heaters is 110 A.

Two temperature detection circuits are provided. One is fitted to the surface of one heater inside the vessel, for temperature control purposes. The second temperature detector is installed under the vessel insulating jacket, top centre. This is a safety circuit to detect an increase in temperature due to reduced flow.

14 DESCRIPTIVE DOCUMENTS

14.1	Drawing number	Sheet	Rev.	Date Reviewed	Description
	Label	1 of 1	-	03 Feb 06	Label detail
	05-0999-A-1	1 of 1	2	03 Feb 06	GER Electric Heater
	05-0999-A-1 Parts List	1 of 1	01	03 Feb 06	Parts List

14.2 Sira Report No. R53A11702A

15 SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)

- 15.1 The temperature detectors shall be connected to intrinsically safe circuits.
- 15.2 The temperature detection circuit shall be connected to a system that will disconnect the heater when the case temperature under the insulation reaches:

Temperature class	Set temperature
T6	80°C
T5	95°C
T4	130°C
T3	195°C
T2	290°C
T1	440°C

15.3 Cable entry to the junction box shall be made via cable glands and not a conduit system.

16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in Sira Report No. R53A11702A.



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17 CONDITIONS OF CERTIFICATION

- 17.1 The use of this certificate is subject to the conditions applicable within the LRV customer agreement.
- 17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.
- 17.3 The manufacturer shall select a suitably certified steel or stainless steel increased safety enclosure for the terminals and heater connections. The power dissipated by the rail mounted terminals and wiring shall be calculated in accordance with EN 60079-7 Annex E, E.2. The power dissipated in the enclosure shall not exceed the limit set by the following table:

Enclosure internal diagonal length (m)	Maximum power (W)
0.55	27
0.6	30
0.7	40
0.8	56
0.9	70
1.0	84
1.1	100
1.2	120

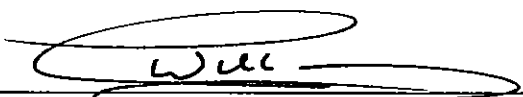
- 17.4 The manufacturer shall fit suitably certified increased safety rail mounted terminals in the connected enclosure.
- 17.5 The manufacture shall carry out an electric strength test on all units manufactured in accordance with EN 60079-7:2003 clause 6.1 b) 2) at 1000 V + 2U +5% / -0% or the modified test as clause 7.2 in the same standard.

LRV reference: 0038/ATEX/20060001/A

Schedule Issue: 01

Date of Schedule Issue: 3 February 2006

LRV Notified Body Number 0038


P A Williams on behalf of Lloyd's Register Verification