LECKANZEIGETECHNIK

SGB

Underpressure leak detector

VL – H3

08 / PTB No.: III B/S 1762

Documentation VL-H3

Art. No.: 601 002
Status: 10/2000

SICHERUNGS**G**ERÄTE**B**AU GMBH
Hofstraße 10
57076 Siegen

LLOYD'S REGISTER QUALITY ASSURANCE ISO9001

Table of Contents
to the Documentation of the

Underpressure leak detector VL – H3

1. Field of application

The leak detector VL – H 3 working according to the vacuum principle, with a minimum alarm pressure of 255 mbar underpressure, serves to display leaks at reservoirs for the storage of combustible liquids of the Danger Class A III pursuant to VbF and can be used at

(1) flat bottom reservoirs according to DIN 4119 or similar design that are provided with a second bottom and whose interstitial space between the bottoms is suitable as a monitoring space and which have been granted a registration.

In the case of a leak in the walls of the monitoring space and in the lines and components in connection with the monitoring space, the leak detector VL – H 3 signals the leakage optically and acoustically.

2. Functional characteristics and description

The vacuum pressure pump installed in the leak detector VL – H3 produces in the monitoring space an underpressure which ranges at a fixed amount below the atmospheric pressure and the inside pressure of the reservoir. By monitoring this vacuum, leaks of the walls of the space monitored are detected.

The leak detector is connected on the side of the pump via the suction line (evacuation line) and the vertically installed liquidity safety device with the monitoring space; on the measuring side, the connection of the monitoring space is created by the measuring line with the liquidity arrest device (compare Drawing No. 3568).

The underpressure created by the vacuum pump Rp is gauged and regulated by the vacuum switch D (compare Drawing No. 3568 and 3569). When reaching a vacuum range of 355 to 380 mbar, the vacuum pump will be switched off via the manometric switch (Switch M 2). Since an absolute impermeability of the total installation cannot be achieved, the underpressure will slowly decrease. At a vacuum range of 305 to 345 mbar, the vacuum pump will be switched on via Switch M 2, so that the vacuum is restored to its upper regular level. In the normal operation, the vacuum will fluctuate between these two pressure threshold values with brief cycles of running and extended idle periods o the vacuum pump, depending on the degree of leak-proof design of the total installation.

In the event of a monitoring system pressure drop below the operating pressure threshold value that is due to a leak in the walls of the monitoring space or also due to a leak of the lines and fixtures in connection with the monitoring space below the lower operating pressure threshold value, via the manometric Switch M 1 in the vacuum switch D an alarm will be issued as soon as the pressure arrives at a vacuum between 280 to 300 mbar. This alarm is issued optically by the red status signal A and acoustically by the buzzer Su. During normal operation, the acoustic signal can be shut off by actuating the leaded switch T. Parallel to the buzzer installed in the leak detector, an additional external signal can be installed at the relevant terminals on the terminal board.

The alarm is cancelled by the manometric switch M 1 in the vacuum switch D when the pressure continues to rise (e.g. system start-up and performance testing) at a vacuum threshold value between 310 and 350 mbar.

In the event of a leak, as a consequence of which the liquid enters the monitoring space, then the underpressure will drop and the vacuum pump will be switched on via the vacuum switch. As soon as the liquid arrives on account of the evacuation process

through the vacuum pump at the liquid safety device, this safety device will respond and block the suction line (evacuation line) towards the monitoring space. After the blocking of this safety device, no more liquid will be taken in, the vacuum is no longer restored, and in the case of a further drop of the vacuum in the measuring line, the alarm is triggered via the switch M 1 in the vacuum switch D.

The leak detector is designed for connecting up to 220 VAC and 50 Hz. The green signal light (operative status) is lighted when the unit is in operation.

The vacuum pump and the vacuum switch installed in the leak detector are resistant to frost down to a temperature of –25 °C (248 K).

3. Function test of the leak detector and the leak detection device

The tests covering functions and operative safety of the Lekk Detection VL – H 3 and of the leak detection device are to be carried out

- after each system start-up
- according to the periods stated in the design registration for the leak detector VL – H3
- after every time a trouble has been remedied

The function test is to be executed via the three-way cock with test connection piece in connection with the venting device also installed in the suction line also below the leak detector.

The **aeration** of the monitoring space must be effected **slowly**, in order to avoid gauging errors.

Each function test must also comprise the testing of the unobstructed passage in the suction and measuring line between the monitoring space and the leak detector. In addition, the free passage of the exhaust line is to be checked.

The minimum extent of the function test is to be carried out as follows:

(1) The leak detection device (monitoring space with connecting line and leak detector) is to be checked for density by connecting a pressure gauge (of a minimum 1.6 precision rating) at the connection piece – test position "B" -.

(2) The pneumatic system is to be aerated **slowly** via the aerating device in test position "B" in such a way that through the pressure increase the switching values of the manometric switch can be measured.

In this way simultaneously the passage tests in the in the suction and monitoring line are carried out.

(3) The optical and acoustical alarm issue of the leak detector are to be established. The alarm must be issued **at the latest** at a vacuum of **255 mbar**.

(4) After closing the aeration device, the test of the total installation can be carried out at a rising vacuum.

(5) In the test position "A" of the test connection piece, the discharge head of the vacuum pump is to be tested. This must be a minimum of 450 mbar under free suction.

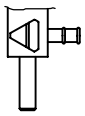
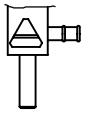
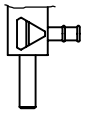
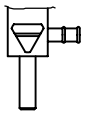
In the same test position, the pneumatic components of the operating device can be checked for leak-proof properties.

(6) The test position "C" serves to check leak-proof properties of the connection lines and the monitoring space connected.

(7) The fixtures necessary and required for operation and components of the installation (e.g. liquidity safety device, condensate vessels, etc.) are to be checked for function and operative safety.

(8) After the tests have been carried out, the test connection piece is to be placed into "Operating Position" and the alarm switch must be leaded again.

(9) A report must be made out about the results of the

	Operating position:	Air vent and test vent closed.
	Test position A:	Testing of the discharge head of the vacuum pump and impermeability of the system
	Test position B:	Testing of the total installation, venting through ventilation device.
	Test position C:	Testing impermeability of the monitoring space and the connection lines

4. Installation instructions

The installation of the leak detector VL – H 3 must be carried out by technical specialists under observation of the Provisions of TRbF 503.

4.1. Mounting the leak detector

The leak detector is allowed to be installed only outside explosion endangered areas.

(1) The assembly location should be in direct vicinity of the monitoring and suction line connections of the tank. The leak detector proper is to be installed on a suitable mounting plate at the tank wall or, in the case of tanks erected in a containment space with ring jacket, at the outside of the ring jacket or in the vicinity.

When installing the leak detector in the containment space of the tank, it must be seen to it that the installation is carried out at such a height above the floor of the containment space that the liquid entering the containment space cannot reach the leak detector.

(2) When mounting the leak detector outside of closed and dry rooms, it must be accommodated in a weather-proof protective housing with a clear view lid (DIN 40 050 IP 55) and equipped with an additional acoustic external alarm (signal horn).

(3) The leak detector is not allowed to be mounted beside heat sources.

4.2. Electric installation

The leak detector is designed for an electric connection of 220 V 50 Hz a.c. The connection must be The leak detector is designed for a connection with 220 VAC – 50 Hz. The connection must be hard wired. Plug and socket connections are not allowed. Make sure of a proper grounding.

The rules and regulations of public utility companies and VDE or equivalent institutions are to be adhered to.

The additional acoustic outside signal is connected to the terminals marked in the leak detector. The external signal power draw is not allowed to exceed 50 VA.

4.3. Mounting the connecting lines

(1) For connection lines necessary for the connection of the leak detector to the monitoring space and for the exhaust line, firm tubes are to be used, for instance such made of commercial copper tubing.

The piping must be of the following **dimensions** and **color identification**:

Venting pipe: minimum 8 x 1 mm – white rings at the ends

Monitoring pipe: minimum 6 x 1 mm – red rings at the ends

Exhaust pipe: minimum 8 x 1 mm – green rings at the ends

When installing the piping, take care to ensure that the full cross-section is maintained throughout the pipe length. The pipes are not allowed to be dented or bent.

(2) The connecting pieces for the connection of the connecting lines are marked both at the leak detector and the monitoring space or ring jacket. For the connection of the liens to the connecting pieces with the nominal width 6 mm of the leak detector, metal transitional pieces are to used.

(3) The **evacuation line** is to be connected that the connecting piece marked with "Suction". The connecting piece is equipped already by the manufacturer of the monitoring space with a blocking fixture, a pressure-proof condensate vessel with a minimum capacity of 1 liter and a vertically arranged liquid blocking device.

(4) The **monitoring line** is to be connected to the connecting piece marked with "Monitoring" by the manufacturer of the monitoring space. The connecting piece has been equipped by the manufacturer of the monitoring space both with a blocking fixture and a vertically arranged liquid blocking device.

(5) It must be possible to lead the **blocking fixtures** in the open position, and the possible switching positions must be identified.

(6) The **evacuation and monitoring line** is connected to the liquid blocking device arranged in each of these lines.

(7) In the case of leak detectors that are arranged outside of a ring jacket, the break-throughs required for the evacuation and monitoring lines must be dense.

(8) The **exhaust line** is to be arranged from the leak detector in such a way that no liquid (neither water nor stored material) can reach the leak detector via the exhaust exit. The exhaust line does not have to be connected to the venting pipe of the tank but should end at a sufficiently high level in the containment space.

When the leak detector is arranged above of the containment space at the tank wall in a weather protective housing, then the exhaust line must be conducted at least downwards.

(9) The monitoring and evacuation lines are to be placed with **uninterrupted rising** from the connecting piece at the monitoring space to the leak detector. It this is not possible, **liquid separators** must be installed **at each bottom point** which must be accessible for inspection.

In the case of an exhaust line conducted beyond the edge of the ring jacket, a liquid separator must also be installed at the bottom point thus created.

(10) The installation instructions for the manufacture of the monitoring space (double bottom) are also to be observed. It must be **safeguarded, in particular, that the evacuation line is conducted as far as to the lowest point of the monitoring space.**

5. Putting into operation

(1) The monitoring space is to be manufactured while adhering to the provisions issued by the manufacturer.

(2) After the impermeability test carried out by the manufacturer of the monitoring space, the test vacuum is to be vented.

While the gauging instrument is connected at the monitoring connection (stop valve) of the monitoring space, it must be tested via the venting connection at the monitoring space by means of a mounting pump with a vacuum pressure of 0.6 bar whether no liquid is any longer in the monitoring space.

(3) Subsequently, the mounting pump is to be switched off and the impermeability of the monitoring space is to be tested at 0.6 bar vacuum via the monitoring instrument installed in the monitoring line.

(4) The test vacuum is not allowed to drop markedly within ten minutes after equalization of pressure.

(5) After the impermeability test has been carried out, the mounting pump is removed and the monitoring space is slowly aerated via the suction connection. The underpressure is to be reduced, in this case, to 380 mbar.

(6) Only now the monitoring and suction lines are to be connected at the tank and at the device by means of the corresponding connection pieces and the leak detector is to be connected to the electric mains.

(7) Subsequently, a function test is to be carried out according to Section 3.

(8) After the termination of all test procedures and after system start-up, lead the alarm switch (sound OFF switch) and the blocking valves in the venting and monitoring line.

6. Operating instructions

Provided the leak detector has been installed properly and under consideration of the impermeable properties (monitoring space, connecting lines and leak detector device) it can be presumed that the leak detector will work only in the rated range if the underpressure drops on account of unavoidable leaks and restored to its upper gauge level.

Frequent operation of the vacuum pump or also a continuous operation of the pump indicate leaks which are to be repaired.

In the **case of an alarm**, there is evidence of a major leak that must be repaired immediately.

6.1. In case of an alarm

(1) Remove lead at the alarm switch, switch off acoustic signal and notify the repair company.

(2) Remove lead at the blocking valve at the tank and close shut-off valve.

6.2. Maintenance

(1) The leak detector VL – H 3 must be checked annually one time by the competent technical company in terms of function and operating safety.

(2) The installed liquid separators must be checked in **regular intervals**. Liquid that has penetrated (condensate9 must be removed.

To the Test Certificate

(Stamp)

Addendum
to Qualification Approval

January 17, 1984

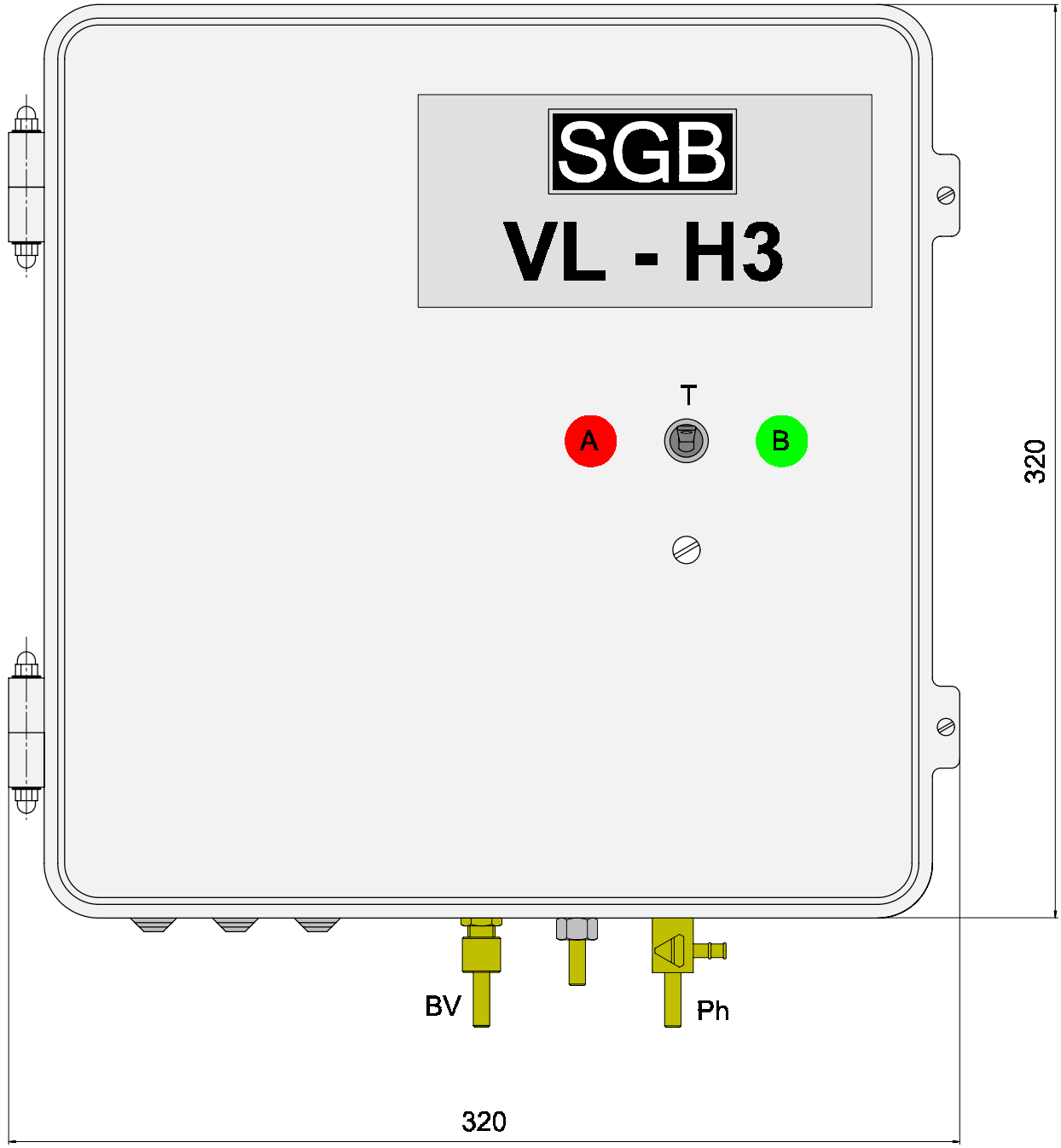
Tested December 16, 1982

Hamburg, December 29, 1982

Technischer Überwachungsverein
Norddeutschland e.V.

Parts list

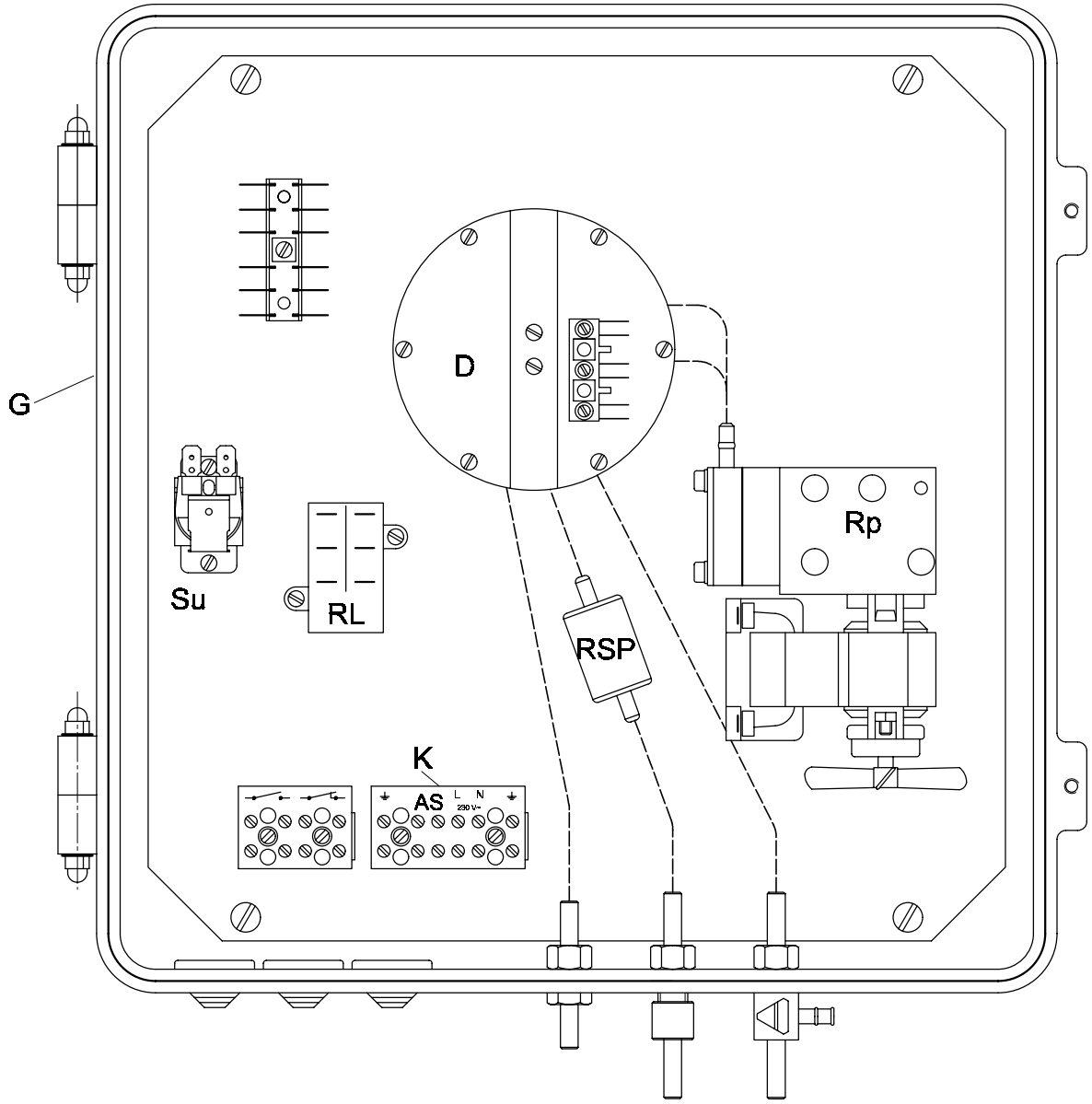
Item	Object	Material/Designation	Manufacturer
A	Signal lamp red (alarm)	Glow lamp 220 V	Pistor-Krönert, suitable
B	Signal lamp green (operation)	Glow lamp 220 V	Pistor-Krönert, suitable
T	Alarm switch	Toggle switch 1620-0401	Marquardt, suitable
D	Underpressure switch	PU-H, 4000/1	Sicherungsgerätebau GmbH
M 1	Alarm switch in D	Microswitch	Marquart, suitable
M 2	Pump switch in D	Microswitch	Marquart, suitable
Rp	Vacuum pump	7009 V	ASF
Rp	Vacuum pump	Type 1239	W. Sauer
Rp	Vacuum pump	Type 2039	W. Sauer
Su	Buzzer	E 2774	Eichhoff-Werke, suitable
G	Housing	Plastic (GFK) minimum wall thickness 2 mm	Sicherungsgerätebau GmbH
K	Plug-in screw terminal board	Weco 424, 6-pole	Weco, suitable
Rsp	Check valve with filter	Drawing 2568	Sicherungsgerätebau GmbH
Ph	Check cock	Brass, square	Burger Industriewerke, suitable
Bv	Venting device	Brass	Burger Industriewerke, suitable
F1	Liquid safety device	No. 68055	Oventrop
ls	Suction line		Commercially available
lm	Monitoring line		Commercially available
la	Exhaust line		Commercially available
KG	Condensate vessel	No. 16812351	Oventrop
Mb	Brass sheet with PE connection	Ms Drawing 3570	Sicherungsgerätebau GmbH
Ss	Hose band clips	S 9 - 9 Zy	Kotthaeuser, Wuppertal
DK	Condensate vessel	Pressure-proof, minimum contents 1 litre	Schuhmacher'sche Fabrik GmBH GmbH, Beitigheim, suitable



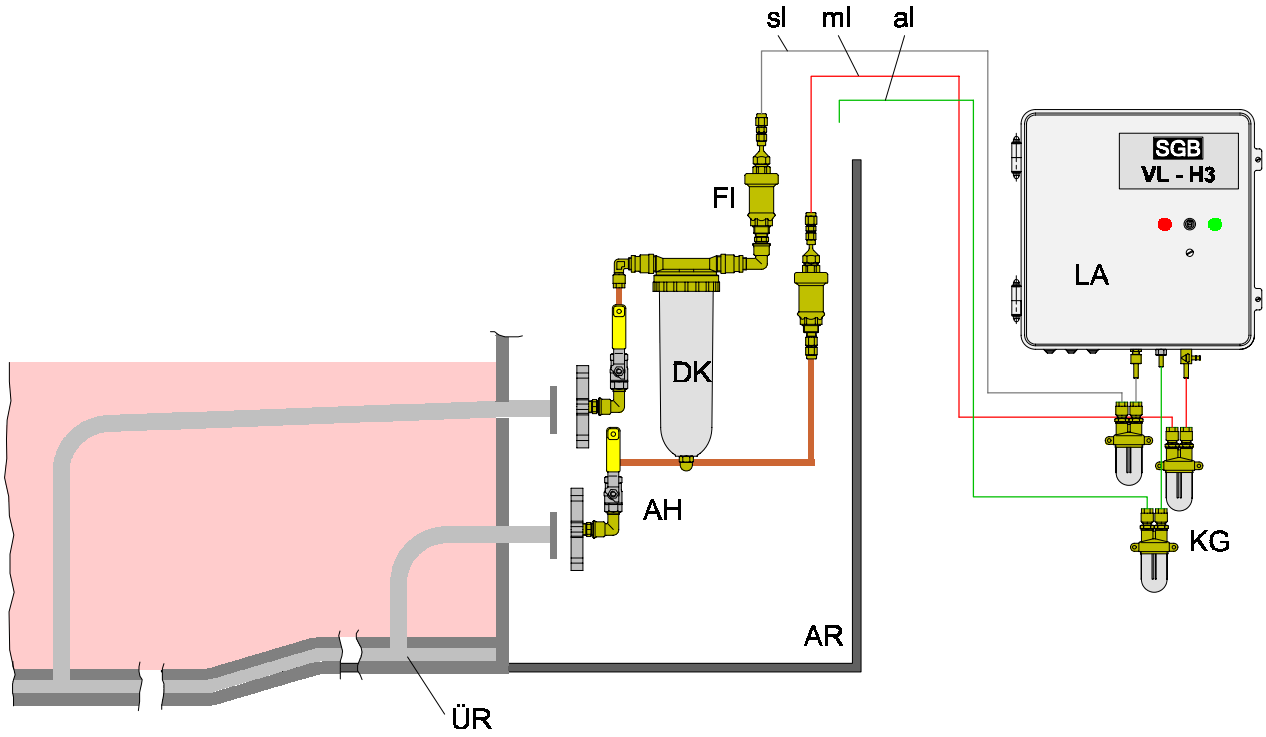
Hight: 145 mm

Drawing no: 3566, external view

A	"Alarm" switch
B	"Operation" switch
BV	Venting device
Ph	Check cock
T	Alarm switch I

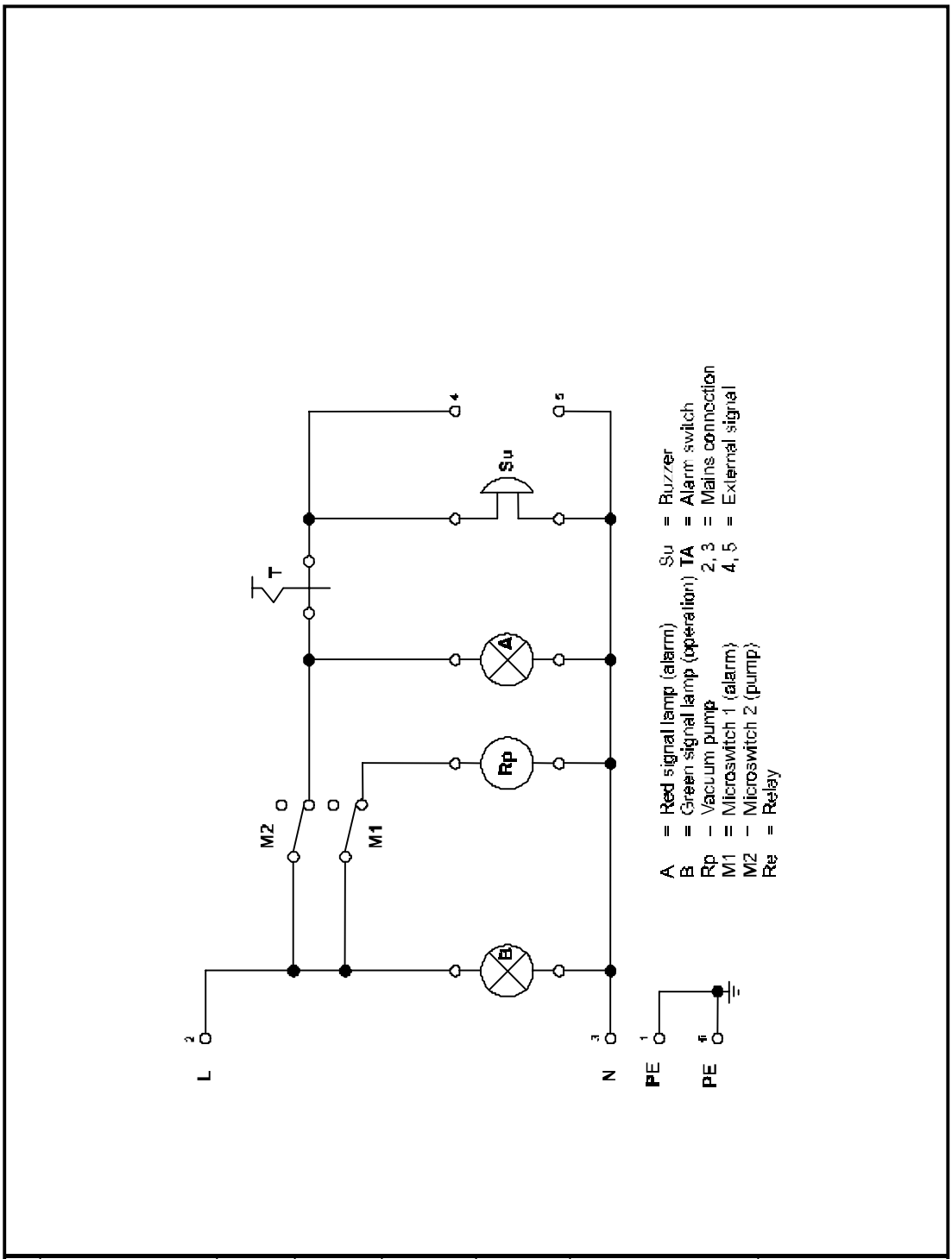


G = Housing
BV = Venting device
Ph = Test vent
Rp = Vacuum pump
K = Terminal
AS = External signal
L, N = Mains connection
PE = Grounding
Su = Buzzer
Rsp = Check valve
D = Vacuum switch
Fv = Flat plug-in connection terminal
Mb = Brass sheet with PE connection

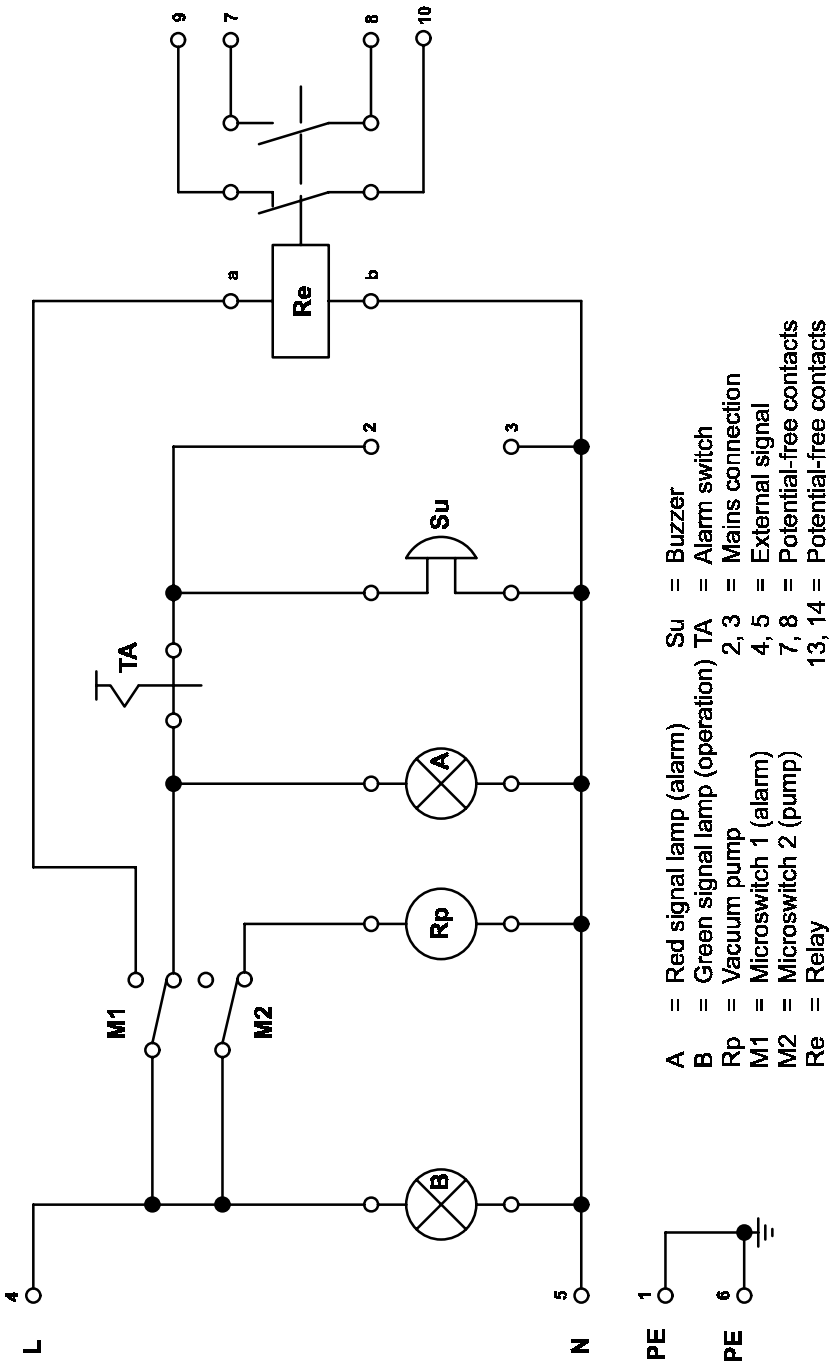


Drawing no.: 3568, installation example

AH	Shut-off cock
AR	Containment space
DK	Pressure-proof condensate vessel
KG	Condensate vessel
LA	Leak detector
ÜR	Monitoring space
al	Exhaust line
ml	Monitor line
sl	Suction line



						Werkstoff	Ma3stab
						Bezeichnung Cirquit diagram without relay	
				Bearb.	02.09.1996	Hücking	
				Gepr.			
				SGB		Zeichnungsnummer SL - 850 330	Blatt Bl.
Nr.	Änderung	Datum	Name				



1	Klemmenbezeichnung	26.02.98	Borheier
Nr.	Änderung	Datum	Name

Bearb.	12.01.98	Borheier
Gepr.		

SGB

Werkstoff	Maßstab
Bezeichnung: Cirquit diagram with relay	
Zeichnungsnummer: SL - 850 300	Blatt Bl.

Technical data

1. External electrical data

Electrical supply (without external signal)		230V~ - 50 Hz - 50 W
Switch contact load, terminal strips AS		230V~ - 50 Hz – 50 VA
Switch contact load, potential free contacts	max:	230V~ - 50 Hz - 16 A
	min:	6 V / 10 mA
External fuse of the leak detector		max. 10 A
Category of overvoltage		2

2. Pneumatic data

	Alarm ON mbar (psi)	**Alarm late ON / mbar (psi)**	**Alarm OFF mbar (psi)**	**Pump ON mbar (psi)**	**Pump OFF mbar (psi)**
VL-H3	255 - 300 (3.70 – 4.35)		310 - 350 (4.50 – 5.08)	305 - 345 (4.42 – 5.00)	355 – 380 (5.14 – 5.51)

3. Pneumatic data (requirements concerning the test measuring instrument)

Nominal size	min. 100 mm
Accuracy class	min. 1.6
Scale end value	-1.0 bar and -600 mbar

Technischer Überwachungs-Verein
Norddeutschland e.V.
Anlagentechnik

TÜV
Anlagentechnik

Hamburg, December 29, 1982
–436 F/Rhn
Document: 113BL SGB
Order no. 113 BM 02411

Test Report

on the testing of a leak detector as a part of a leak detector system

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1 Client

Sicherungsgerätebau GmbH, 5900 Siegen 21
Order dated August 06, 1981 Ref. I/Sch

2 Leak detector data

2.1 Type "VLL – H 3"

2.2 Manufacturer

Sicherungsgerätebau GmbH

2.3 Type of construction

Underpressure leak detector with pressure switch controlled evacuation pump that creates in the operation in the connected monitoring space an underpressure between 305 mbar to 380 mbar.
The pressure switch will trigger an alarm at the latest at a reduction of the underpressure at 255 mbar.
Details of the construction type can be seen in the description and the installation instructions of the SGB Company in the version dated December 16, 1982.

2.4 Field of application

Double-wall tank bottoms as monitoring space of standing cylindrical flat bottom tank constructions without interior overpressure, used to store inflammable liquids of the Danger Class A III.

3 Test

3.1 Function and operative safety in the field of application intended

The basis are the construction and test criteria for leak detectors for tanks (TRbF 501).

Construction types of double-wall tank bottoms are to be expected, whose level differences between the high and low points of the monitored space do not considerably exceed one meter. In addition, the suction line is to be connected, on principle, at the low point and the monitoring line at the high point of the monitored space, so that the underpressure for alarm of the leak detector is with > 255 mbar higher than for the safeguarding of the functional safety required.

In the case of a leak in the upper tank bottom, material stored will penetrate into the monitored space. As a consequence, after the interruption of the evacuation process, the air volume trapped in the monitored space, including as far as to the pressure switch in the leak detector device, is compressed. In the monitoring line, conducting the underpressure, as far as to the pressure switch, suddenly an overpressure will be created which, simplified, corresponds to the hydrostatic pressure of the material stored on the tank bottom. In addition, the connections of the monitoring space for the leak detector are conducted to the outside in the range of the first course.

For all these reasons, it is necessary for all components of the leak detector device must, in the case of a leak, be designed overpressure safe.

3.2 Design of the leak detector

The components used for the leak detector type "VL – H 3" are identical with those components used for the types "VL – H 2" (Approval Number 08/PTB No. III B/S 1500) and "VL – HF ~ 2" (Approval Number 08/PTB No. III B/S 1236).

The principle function and operative safety of the components used for the leak detector type "VL – H 3" can be regarded as assured.

The design of a sample device of the type "VL – H 3" was submitted to a simple function test and tested for the adherence to the currently valid VDE Regulations.

The switching pressures measured at the pressure switch for the switching ON and OFF both of the evacuation pump and also of the alarm comply with the values set by the manufacture before shipment.

The characteristic line of the evacuation pump results in a volume flow of approximately 90 liter air/h for an alarm triggering point of 255 mbar underpressure.

The testing of the acoustic alarm signal after a 24-hour continuous operation resulted in sonar volume of approximately 73 dB (A) at a distance of one meter.

On the basis of a formerly executed burst pressure test with the pressure switch capsule which resulted in 6.0 bar overpressure, the pressure switch can be regarded as overpressure-proof up to 4.0 bar. An overpressure test with the hose

connections arranged in the interior of the leak detector showed at a temperature of 70 °C in the heat chamber that the hoses slip from the connection pieces already at an overpressure of approximately 1.3 bar. It is regarded necessary, as a consequence, to secure all hose connections within the leak detector with hose band clips against slipping off.

The design of the type "VL – H 3" is resistant to frost. If the leak detector is installed outdoors, however, it must be accommodated in a weather-proof protective housing with clear view lid of the type of protection IP 55 according to DIN 40050. The installation within explosion-prone areas is not permissible.

4 Summary

The leak detector type "VL – H 3" complies with the construction and test principles for leak detectors for tanks (TRbF 501) and is suitable as a part of a leak detection device for the monitoring of double-wall tank bottoms of vertical cylindrical flat bottom tank constructions.

The overpressure incurred in the case of a leak in the connecting lines to the leak detector and in the leak detector itself must not exceed, however, the value of 4 bar overpressure.

(signed) (signature)

Fassl

Technical Expert of the
Technischer Überwachungs-Verein
Norddeutschland e.V.

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT
(Federal Physicotechnical Institute)

TEST CERTIFICATE
PTB No. III B/S 1251
on the test of the leak dectector type "VL-H3"

I General Data:

Manufacturer: Sicherungsgerätebau GmbH,
Siegen, Weidenau

Type designation: "VL-H3"

Object: A device working according to the vacuum principle with an alarm pressure of – 255 mbar for indicating leaks at moni-tored spaces, consisting of double-wall tank bottoms of standing cylindrical flat bottom tank constructions according to DIN 4119, in which only mineral oil products of the Danger Class A III are stored.

Test records:

a) Drawings and descriptions according to Appendix 1 of the Test Certificate, bearing the signature and official stamp of the Physikalisch-Technische Bundesanstalt.

b) Report dated December 29, 1982 issued by the TÜV Norddeutschland e.V., Hamburg, regarding tests of the func-tion safety of the leak detector Type "VL – H 3".

II Evaluation

On the strength of the test records submitted and the results of the function test car-ried out by TÜV Norddeutschland e.V., Hamburg, pursuant to the report dated De-cember 29, 1982, the leak detector is assessed as follows:

Judging by the current state of knowledge no hesitations exist against using the leak De-tector type "VL – H 3" for indicating at monitored spaces (double-walled tank bot-toms) of standing cylindrical flat bottom tank constructions according to DIN 4119, as far as in these tanks only mineral oil products of the Danger Class A 111 are stored and the following conditions are met:

1. The leak detector may be connected exclusively at monitoring spaces (double-walled tank bottoms) of flat bottom tank constructions according to DIN 4119, for which this leak detector is permissible according to the restrictions and conditions of the qualification approval for the monitored space.
2. The leak detector is not permitted to be installed in explosion-prone areas.
3. The installation guidelines included in the test documents must be adhered to.

III Routine tests

Manufacturer shall – by means of a routine test of each and every leak detector Type "VL – H 3" warrant that –

1. the design, performance, individual component parts, materials and the electric wiring are in conformity with the specifications and drawings listed in Annex 1,
2. all parts have been manufactured from flawless materials,
3. the control points (switch points) indicated in the specification are adhered to.

IV Special Conditions

Each and every purchaser of a leak detector shall be acquainted in writing with the condi-tions governing the installation, the recommendations for maintaining opera-tional safety and the restrictions governing application. Steps shall be taken to en-sure that all installed units will be checked at regular intervals, that is at least once a year. Each and every pur-chaser shall be furnished a copy of this test certificate.

The manufacturer shall mount the company symbol, the type designation and the approval number at a visible location for ensuring that the above requirements are adhered to.

Brunswick, December 22, 1983

Physikalisch-Technische Bundesanstalt
- Abteilung III –
By Order

(signed) C-H. Degener
Senior Executive Officer

ADDENDUM NUMBER 1

V. Amendment to the field of application

The leak detector may optionally also be connected to flat bottom tank constructions for which corresponding test certificates of the Prüfstelle für Leckanzeigegeräte of the TÜV Norddeutschland e.V., Hamburg, have been submitted which show that the monitoring spaces are suitable in connection with this leak detector as a part of a leak detector de-vice. The restrictions and conditions stated in the certificate of the test agency are to be adhered to.

The other restrictions and conditions of the Test Certificate are also to be adhered to.

Brunswick, January 05, 1990

Physikalisch-Technische Bundesanstal
- Abteilung III –
By Order

(signed) C-H. Degener
Senior Executive Officer

Annex 1 to the Test certificate PTB Nr. III B/S 1762 dated 22-12-83

Test documents,
bearing the signature and official stamp
of the Physikalisch-Technische Bundesanstalt

Designation	**Sheet No.** **Drawing No.**	**Date**
Description of function and installation instructions	1 - 8	16.12.1982
Unit list	1 sheet	None
Outside view	3566	3.11.1982
Inside view	3567	3.11.1982
Pneumatic principle	3568	3.11.1982
Electrical circuit diagram	3569	3.11.1982

ZENTRALSTELLE FÜR SICHERHEITSTECHNIK
STRAHLENSCHUTZ UND KERNTECHNIK DER GEWERBEAUFSICHT
DES LANDES NORDRHEIN-WESTFALEN
4 DÜSSELDORF, ULENBERGSTR. 127 - 131
TELEFON 3101 - 0

(THE LAND NORDRHEIN-WESTFALEN TRADE BOARD
CENTRAL OFFICE FOR SAFETY ENGINEERING
PROTECTION AGAINST RADIATION AND NUCLEAR ENGINEERING)

Düsseldorf
January 17, 1984

File ref. II.5-8604.2-Do/Me

QUALIFICATION APPROVAL

On the strength of Sec. 12 of the Ordinance governing installations designed for storing, racking and transporting inflammable liquids on land (VbF – Ordinance on in-flammable Liquids) issued on February 27, 1980 (Federal Law Gazette I page 229),

leak detectors Type "VL-H3"

for the indication of leaks at monitoring spaces (double-walled tank bottoms) of standing cylindrical flat bottom tank constructions according to DIN 4119, on the condition that only mineral oil products of the Danger Class A III are stored in these tanks,

manufactured by the company

Sicherungsgerätebau GmbH, Siegen

are approved pursuant to the design under the Qualification Approval Number

08/PTE No. III B/S 1752

This Qualification Approval is based on the Test Certificate of the Physikalisch-Tech-nische Bundesanstalt (Federal Physicotechnical Institute) – PTB No. III B/S 1762 – dated Decem-ber 22, 1983 and the supporting documents listed therein which shall form a binding part thereof.

The Qualification Approval is granted with the following conditions:

1. Each and every leak detector shall be subjected to a routine test pursuant to Sec-tion III of the above-mentioned PTB Test Certificate.
2. The measures and special conditions specified in the above-mentioned PTB Test Cer-tificate are applicable conditions of this Qualification Approval.
3. This Qualification Approval is to be sent back to the Approval Authority after the Quali-fication Approval has elapsed.

Note:

This Qualification Approval shall elapse if the holder of this Qualification Approval has not made use of it for three years or devices have no longer been manufactured for three years and the period of time has not been extended.

Advice on applicable remedies:

You may lodge an appeal against this decision within one month of the notification thereof. This appeal must be made in writing, or verbally for recording at the Zentral-stelle für Sicherheitstechnik, Ulenbergstrasse 127-131, 4000 Düsseldorf.
Should your authorized representative fail to lodge an appeal within the time allowed, then the responsibility for such neglect will be imputed to your failure to do so.

By Order

(signed) B. Ziegler (Official stamp)

ZENTRALSTELLE FÜR SICHERHEITSTECHNIK
STRAHLENSCHUTZ UND KERNTECHNIK DER GEWERBEAUFSICHT
DES LANDES NORDRHEIN-WESTFALEN
4 DÜSSELDORF, ULENBERGSTR. 127 - 131
TELEFON 3101 - 0

(THE LAND NORDRHEIN-WESTFALEN TRADE BOARD
CENTRAL OFFICE FOR SAFETY ENGINEERING
PROTECTION AGAINST RADIATION AND NUCLEAR ENGINEERING)

Düsseldorf
February 06, 1990

File ref. II.1.3-8604.2-Do/He

ADDENDUM NUMBER 1
OF
QUALIFICATION APPROVAL

The qualification approval

"08/PTB-Nr. III B/S 1762"
dated 17.1.1994

issued to the company

Sicherungsgerätebau GmBH, Siegen

is extended on the strength of Section 12 of the Ordinance governing installations de-signed for storing, racking and transporting inflammable liquids on land (Verord-nung über brennbare Flüssigkeiten – VbF), issued on February 27, 1980 (Federal Law Gazette I page 229) in the wording as valid from time to time.

The modification reads as follows:

I. The leak detectors type "VL – H3" are allowed to be connected to monitor-ing spaces of flat bottom tank constructions for which the corre-sponding test certifi-cates of the test agency for leak detector devices of the TÜV Norddeutschland e.V., Hamburg, have been issued and which state that the monitoring spaces are suitable in connection with a leak detector as a part of a leak detector de-vice.

II. The restrictions and conditions stated in the test certificate of the test agency must be adhered to.

This addendum is based on the Physikalisch-Technische Bundesanstalt (Federal Physi-cotechnical Institute) Test Certificate PTB No. III B/S 1762 – Addendum I of January 03, 1990 – which shall form a binding part thereof.

The provisions governing the qualification approval 08/PTB No. III B/S 1762 are not hereby prejudiced and continue to apply.

Advice on applicable remedies:

You may lodge an appeal against this decision within one month of the notification thereof. This appeal must be made in writing, or verbally for recording at the Zentral-stelle für Sicherheitstechnik, Ulenbergstrasse 127 – 131, 4000 Düsseldorf.

Should your authorized representative fail to lodge an appeal within the time allowed, then the responsibility for such neglect will be imputed to your failure to do so.

By Order:

(signed) Jahn (Official stamp)

EC Declaration of Conformity

This declaration is valid for the

UNDERPRESSURE LEAK DETECTOR
Type **VL – H3**

and confirms that the above-mentioned leak detector complies with the protection requirements, specified in the EC Directive 89/336/EEC of harmonization of the legal provisions applicable in the member states concerning electromagnetic compatibility (EMVG), dated November 09, 1999 (Article 4, subparagraph 1).

This declaration is valid for leak detectors manufactured in accordance with the at-tached technical documents which are an integral part of the declaration.

For product assessment with respect to the electromagnetic compatibility, the follow-ing provisions were referred to:

- EN 50082 Part 1: 1992
- EN 55 014:1993
- EN 60 555-2: 1987
- EN 60 555-3: 1987
- EN 60 555-3/A1: 1991

This declaration is issued under responsibility for the manufacturer

SICHERUNGSGERÄTEBAU GMBH
Hofstrasse 10
D-57076 Siegen
Federal Republic of Germany

by the Managing Director

Mr. Berg

57076 Siegen, March 27, 1995

(signed) (signature)
J. Berg, Managing Director

Warranty

Dear customer,

You have purchased a high-quality leak detector from our company.

All of our leak detectors undergo a 100% quality control examination.

The type plate with the serial number is only affixed after all test criteria have been complied with.

The **warranty period** for our leak detectors is **24 months**, beginning on the date of installation on site.

The maximum warranty period is 27 months from our date of sale.

Our warranty will be effective only if the customer submits to us the functional report or test report on initial putting into service, prepared by a recognised company specialised in water and water protection systems, including the serial number of the leak detector.

Our warranty shall not apply in the event of faulty or improper installation or improper operation, or if modifications or repairs are carried out without the manufacturer's consent.

In case of malfunction, please contact your local specialist company:

Stamp of the specialist company

Yours sincerely

Sicherungsgerätebau GmbH
Hofstraße 10 - D - 57076 Siegen
☎ +49 / 271 / 48964 - 0
Fax: +49 / 271 / 48964 - 6