



Instruction Manual

Magnet-Ex 12



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## 1. Introduction

The intrinsically safe magnet probe type Magnet-Ex 12 is an easy to use handheld device for the detection and testing of magnetic fields in Ex-hazardous areas (with the exception of mining application) classified as either Zone 1 or 2 according to IEC/CENELEC (PTB-Authorisation), or Zones 2, 1 & 0 according to NEC (FM-authorisation).

Its use enables the magnetic fields on such as solenoid valves, spools, transformers, relays and flowmeters to be quickly and precisely detected.

The Magnet-Ex 12 responds to all types of magnetic fields – permanent or otherwise, the red LED showing indication without the probe even having to make direct contact with the object being tested.

The integral test magnet allows the working state of both the unit and batteries to be established.

## 2. Safety Information

Safe operation of the device is maintained providing that all instructions and warnings contained in this manual are fully observed.

## 3. Faults and Damage

If there is any reason to suspect that the safety of the unit has been affected then it must be immediately withdrawn from use and precautionary measures taken in order to prevent any further use of in the hazardous area.

The safety and integrity of the unit may be compromised by, for example:

- External damage to the housing.
- Exposure to excessive loads.
- Incorrect storage of the unit.
- Damage sustained in transit
- Correct certification is illegible.
- Functioning errors occur
- The permitted limitations are exceeded

#### 4. Safety Regulations


The use of the intrinsically safe Magnet-Ex 12 meets the requirements of the regulations providing that the user observes and applies the requirements as laid down in the regulations and that improper and incorrect use of the unit is avoided.

- The device must not be opened within the hazardous area.
- Batteries must only be changed outside the hazardous area.
- Only primary alkaline batteries type LR03 or R03 according to IEC be used.

#### 5. Ex-Data



Certificate of Conformity: PTB 01 ATEX 2018

Certification:  II 2 G EEx ia IIC T4

Permitted for Zone 1, Equipment groups II, Gas group C hazardous gases, vapour or fog, Temperature class T4.



Report Job Identification No.: 3009962

FM - Indicator:

Class I Zone 0 AEx ia IIC T6

I.S. Class I Division 1 Group A-D T6

Permitted for Zone 0, Equipment group II, Gas group C, Temperature Class T6

#### 6. Technical Data

Detection: no contact with test object required

Detectable magnetic : alternating, direct and permanent fields

Indicator: red LED

Working temperature: -20°C...+50°C

Storage temperature: -40°C...+60°C

Power supply: 2 x LR03 according to ICE, AAA  
(Table with type tested batteries)

Description:	Manufacturer:
Alkaline Electric Power No. 8003	Varta
Alkaline Universal No. 4003	Varta
Alkaline	Duracell
Alkaline Power Line Industrial Battery	Panasonic
Alkaline Energizer	Eveready
SUPER Alkaline Battery 24A	GP

IP Level: IP 54

Dimensions: 150 mm x ø 18 mm

Weight: approx. 60g  
(including batteries).

Casing: Metal bodied with thermoplastic probe point.

CE-Marking: CÉ 0102

## 7. Operating instructions

### Replacing batteries

When the power of the batteries are becoming exhausted, the LED becomes noticeably darker when the unit is sensing a magnetic field.

Use of the test magnet, which is located in the end of the unit, can also check the brightness of the LED. The batteries must only be changed outside the Ex-hazardous area.

The use of any other type of batteries is strictly forbidden in that it will invalidate the Ex-data certification.

In order to change the batteries, first remove the battery cap by unscrewing in an anti-clockwise direction.

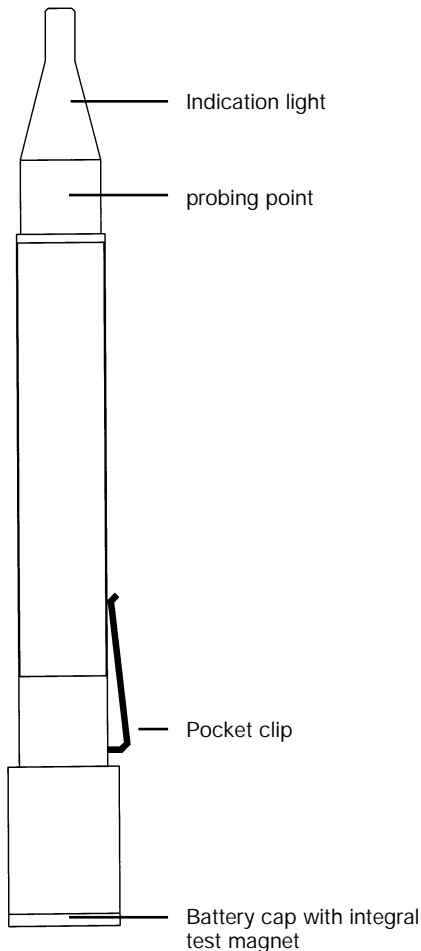
When replacing the batteries, please ensure correct polarity before replacing the battery cap.

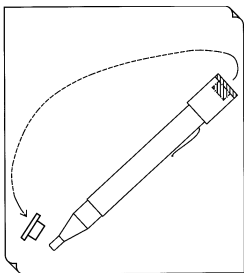
### Introduction

Before each use, it is recommended that the Magnet-Ex 12 is tested. This can be done by using the test magnet located in the top of the battery cap.

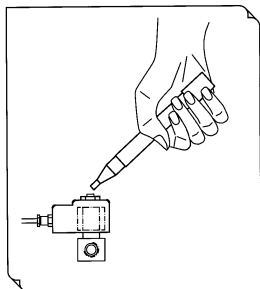
The probe of the Magnet-Ex 12 can now be placed near to a suspected magnetic field of, for example, a solenoid valve.

Whilst a current or voltage can be measured with the use of an intrinsically safe multimeter, the Magnet-Ex 12 will indicate as to whether or not there is a sufficiently active magnetic field. Therefore fault finding of solenoid actuated valves is made simpler and quicker.





Using the test magnet. Unscrew the test magnet and place it on or near the probe, the LED indicator should then light up.



E.g. sensing a magnetic field in a solenoid valve. If a magnetic field is present then the LED indicator in the probe will light up.

## 8. Repairs

The general terms and conditions of ELEX V apply to repair work. The manufacturer must carry out the repair work in order to check for the safe functioning of the protective circuits.

## 9. Cleaning and Maintenance

The equipment should only be cleaned using a cloth or sponge dampened with water. Do not use solvents, abrasives or other cleaning solutions. It is recommended that the manufacturer tests the operation and accuracy of the equipment every 2 years.

## 10. Guarantee and Liability

ECOM Rolf Nied GmbH grants a guarantee, for a period of 2 years from the date of delivery, for the operation and material of this product under normal operating and maintenance conditions.

This guarantee does not apply to products used improperly, altered or neglected, or exposed to accidental damage or abnormal operating conditions as well as improper handling.

Guarantee claims can only be granted if the defective equipment is returned to ECOM. We reserve the right to repair, modify or exchange any equipment.

The guarantee regulations are the only rights to compensation of a purchase and are valid above all other contracts or legal guarantee duties. ECOM takes no responsibility for any consequential damages or losses, including the loss of data, independent of whether legal or illegal actions, or actions treated as other handling, can be traced back to violation of the guarantee.

In the case of some countries, where the restrictions of a legal guarantee as well as the exception or restriction of consequential damage is not permitted, it could be that the above mentioned limitations and exceptions are not valid for every purchase.

Should an appropriate court find any condition of such regulations ineffective or non-acceptable, the effectiveness or forcibility of any other condition, under such guarantee regulations, remains untouched.

## 11. Declaration of Conformity

We **ECOM Rolf Nied GmbH**,  
**Industriestraße 2, D-97959 Assamstadt**  
declare under our sole responsibility that the  
product **Magnet-Ex-12**

to which this declaration relates is in  
accordance with the provision of the following  
directives

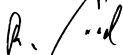
94/9/EC                      Equipment and protection system  
                                    in explosion hazardous area  
89/336/EEC                 Electromagnetic compatibility

and is in conformity with the following  
standards or other normative documents

EN 50014:1997              Electrical apparatus for potentially  
                                    explosive atmospheres  
                                    General requirements  
EN 50020:1994              Electrical apparatus for potentially  
                                    explosive atmospheres  
                                    Intrinsic safety "i"  
EN 50082-1:1997            Electromagnetic compatibility (EMC)  
                                    Generic immunity standard

ECOM Rolf Nied GmbH  
Assamstadt, 29.11.01

Rolf Nied  
Managing Director



## 12. EG Conformity Declaration



Translation of a document from German into English

**Physikalisch-Technische Bundesanstalt (PTB)**  
[tagged: Physical-Technical Federal German Institute]  
Braunschweig and Berlin

- (1) **EC Prototype Test Certificate**
- (2) Equipment and protection systems used for the purpose it was built in explosion-hazardous areas – Directive 94/9/EC
- (3) EC Prototype Test Certificate Number  
**PTB 01 A TEX 2018**
- (4) Instrument: Magnet testing pen, Type Magnet – Ex 12
- (5) Manufacturer: ECOM Rolf Nied GmbH
- (6) Address: Industriestraße 2, 97959 Assamstadt, Germany
- (7) The type of this instrument as well as the different approval versions are determined in the Appendix to this Prototype Test Certificate.
- (8) The Physikalisch-Technische Bundesanstalt (PTB) certifies as the named agency No. 0102 in accordance with Article 9 of the Directives of the Council of the European Communities of 23 March 1994 (94/9/EC) the fulfillment of the basic safety and health requirements for the conception and construction of equipment and protective systems for use for the purpose it is built in explosion-hazardous areas in accordance with Appendix II of the Directive.  
  
The results of the test are laid down in the confidential test report PTB Ex 01-20462.
- (9) The basic safety and health requirements are fulfilled in conformity with  
**EN 50014: 1997 + A1 + A2      EN 50020:1994**
- (10) Should the letter "X" be entered behind the certification number this indicates special conditions for the safe use of the instrument in the appendix to this certificate.
- (11) This EC Prototype Test Certificate refers only to the conception and construction of the determined instrument in accordance with Directive 94/9/EC. Further requirements under this directive are applicable for the production and distribution of this instrument.
- (12) The instrument marking must contain the following details:

 **II 2 G EE x Ia IIC T4**

Certification Agency for Explosion Protection  
By Order:

Braunschweig, 20.03.2001

Signature: illegible  
Dr.-Ing. U. Johannsmeyer  
Government Director

Round seal: Physikalisch-Technische Bundesanstalt (PTB)  
Braunschweig and Berlin

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(13) **Appendix**

(14) **EC Prototype Test Certificate PTB 01 ATEX 2018**

(15) **Description of instrument**

Magnet testing pen, Magnet – Ex 12, serves for function testing of solenoid valves in explosion-hazardous areas. The test is carried out without contact whereby the illumination of the test pen tip indicates the existence of a magnetic field.

The type of protection of the instrument is as follows:  
II 2 G EEx ia IIC T4

The permissible ambient temperature is as follows:  
-20°C to +50°C

**Electrical data**

Power supply:  $U_{max} \leq 3.3 \text{ V}$   
2 only Standard AAA batteries LR03/R03 (primary cells)

(16) **Test report PTB Ex 01-20462**

(17) **Special conditions**  
none

(18) **Basic safety and health requirements**  
Covered by the above-mentioned standards

Certification Agency for Explosion Protection  
By Order:

Braunschweig, 20.03.2001

Signature: illegible  
Dr.-Ing. U. Johannmeyer  
Government Director

Round seal:  
Physikalisch-Technische Bundesanstalt (PTB)  
Braunschweig and Berlin

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I hereby certify that this is a true and complete translation of a document in the German language  
04/2009 Vetzschschheim, November 6, 2001

## 13. APPROVAL REPORT

Factory Mutual Research

*NOT to be distributed outside of FMGlobal except by CUSTOMER.*

## APPROVAL REPORT

### MAGNET-Ex 12 MAGNET PROBE FOR USE IN HAZARDOUS (CLASSIFIED) LOCATIONS

Prepared for:

**ECOM Rolf Nied GmbH**  
Industriestraße 2  
D-97959 Assamstadt, Germany

**Project ID: 3009962**  
**Class 3610, 3611**  
**Date: February 2, 2001**  
*Supersedes report dated December 20, 2000*

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