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Ex-Pt 720

适用于危险区域的
温度测量仪

Bedienungsanleitung
操作手册



介绍

亲爱的德图用户

非常高兴您购买了**Ex-Pt 720**.我们希望您购买这个产品能长期获益，并对您工作有所帮助。

请花时间自己阅读操作手册，确保在使用前熟悉仪器操作。

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1. 基本安全指导

操作手册包括必须遵守的安全和其它的信息,
以确保能安全工作在提及的条件下.

请仔细通读下列安全指导.

要是有疑问(以翻译错误的形式),以德文版本
的操作手册为主.

⚠ 避免触电:

- ▶ 如果仪器没有特别支持电流和电压测量,就
  不要用仪器和外部探头测量带电体!

⚠ 保护仪器:

- ▶ 不要把仪器保存在溶剂中(例如丙酮).

⚠ 安全保存产品/保修授权:

- ▶ 仪器只应该在技术数据参数容许范围内进行操作.
- ▶ 请根据操作手册合理使用仪器.
- ▶ 不要挤压!
- ▶ 除非操作手册明确表示可用于维修目的,
  否则仪器不应打开.
- ▶ 探头的温度数据指的是传感器测量范围.
  不要使手柄或管受热超过70°C ,除非它
  们特别耐高温.

♻ 回收:

- ▶ 用完的电池应合理回收.
- ▶ 请将报废的仪器发给我们,我们将为您回收.

2. Ex- 安全指导

故障和不容许操作

一旦觉察到仪器的安全受到威胁,必须停止使用仪器,
立即拿到Ex-区域. 必须采取预防措施防止无目的的
重新使用.

我们推荐仪器返回生产商检查.

仪器的安全会受到威胁,例如:
- 外壳可见损坏.
- 仪器受到不正当劳损.
- 仪器不正确存放.
- 仪器在运输过程中损坏.
- 仪器上的标记不可读.
- 发生故障.
- 发生明显错误的测量.
- 仪器测量不再可能.
- 超过容许限值.

安全规则

为了避免仪器的不正确操作,使用时假设用户知道并
遵守有用的安全规则.
- 电池只 Ex-区域外更换.
- 不容许将其它电池带进 Ex-区域.
- 只使用明确认可的电池.
- 只使用规定和容许的探头.
- 必须确保仪器不进入区域0.
- 不容许测量电子带电体.
- 注意温度传感器的测量范围.过热会损坏传感器.
- 避免使用强酸、强碱.
- 仪器不应在Ex-区域打开。

区域0的特殊条件是使用：

区域0内使用 **Ex-Pt 720** 测量温度只有在下列条件
满足时才可实现:
- 使用不锈钢探头,类型0628 2232或0628 6432.
- **Ex-Pt 720** 本身不应该被带进区域0.
- 必须绝对确保仪器不会碰巧进入区域0.为了确保
  这一点,仪器的运送带(见24页)必须特别系到用户
  的腰带上或通过一个环系到用户的腰带上.当仪器
  能自由悬挂在运送带上时,运送带的长度必须刚好
  调节到Ex-Pt720保持离区域0边界50cm 的距离.
- 要是仪器放在可选择的皮革箱内使用(编号0516 0133),
  仪器的运送带仍需系到用户的腰带上.

使用探头

只可使用批准证书中规定的传感器.探头号0628 2232
和0628 2432可使用在区域0!

3.1 预定用途

Ex-Pt 720 是一精密、功能强大的、容易操作的温度测量装置 ,根据IEC/CENELEC可用于区域2和1有爆炸危险区域(不包括有瓦斯爆炸危险的地下采矿区域)

3.2 显示器和操作部件



3.3 初始操作

1 请遵守操作手册。
2 用 Allan 键打开仪器后盖。
3 正确放入电池(+/-).
4 盖上电池室盖。
5 用螺丝合上仪器。

3.4 开机和测量

3.4.1 开机

1 连接探头（注意插座编码）。
2 开机, 用 ⏻ 键。
- 开机后，有一简短的显示和功能测试。
测量仪器现可投入使用。

3.4.2 保持功能

▶ 在显示器上保持读数，通过 HOLD 键。

3.4.3 自动关机功能

操作10分钟后，自动关机功能将关闭仪器，以避免电池无谓放电。
/

! 如果保持键激活就不能关机。

3.4.4 更改测量单位



显示器能在 °C 和 °F 键切换。

1 按 ⏻ 键打开仪器。
2 按住 HOLD 键，在显示和功能测试时。
- 一旦显示和功能测试完成，测量仪器当前设置闪烁。
2 5秒内可在 °C 和 °F 间切换, 通过 HOLD 键。
- 如果5秒内没有按键,
新的测量单位就生效了。

3.4.5 关机

▶ 关机, 用 ⏻ 键。
- 如显示器不再激活，仪器将关闭。

4.1 更换电池

电池只应在Ex-区域外更换。

不容许将其它电池带进Ex-区域。

只按照IEC使用电池类型 6LR61
（参考7.技术数据， P.29）
严格禁止使用其它电池.

要是连续不断显示 ▭ 符号,
电池需要在1-2小时内更换.
要是电池电量太低,仪器将自动
关闭.

1.打开仪器后盖,拿走,
取出用完的电池.

2.正确放入新的电池 (+/-), 装上
底部部件,旋紧螺丝.

4.2 修理

要是需要修理,必须遵守 ELEX V条件.
我们推荐修理在生产商工厂进行,
因为有必要对仪器进行技术和安全检查.

4.3 清洁仪器

仪器只能用湿布和湿海绵清洁.
不应使用去污剂或腐蚀材料.

4.4 定期检查

我们推荐每两年生产商应检查仪器的功能
和精度.

标准探头

Name	Meas. range	Accuracy	Ex-Zone	Probe pipe	t_{99} [2]	Part no.
Immersion / penetration probe	- 50 to 400°C	Class A	2, 1	110 x ø4mm	12s	0628 1232
Surface probe	- 50 to 400°C	Class B	2, 1	110 x ø4mm Surface ø9mm	40s	0628 1932
Stainless steel probe	- 50 to 400°C	Class A	2, 1, 0	125 x ø4mm	10s	0628 2232
Tank immersion probe	- 50 to 400°C	Class A	2, 1, 0	190 x ø24mm	15s	0628 2432

特殊探头

Name	Meas. range	Accuracy	Ex-Zone	Probe pipe [1]	t_{99} [2]	Part no.
Immersion / penetration probe	- 50 to 400°C	Class A	2, 1	> 50 x > ø4mm	12s	0600 9999 0628 1232
Surface probe	- 50 to 400°C	Class B	2, 1	> 50 x > ø4mm	40s	0600 9999 0628 1932
Stainless steel probe	- 50 to 400°C	Class A	2, 1, 0	> 50 x > ø4mm	10s	0600 9999 0628 2232
Tank immersion probe	- 50 to 400°C	Class A	2, 1, 0	190 x ø24mm Cable length: 1 to 50m	15s	0600 9999 0628 2432

1 给出的值是最小尺寸,探头可根据顾客设计.
2 响应时间(99%)

6. Ex-数据

EC-test 支持号： TÜV 01 ATEX 1757 X

Ex-指定： Ex II 2(1) G EEx ia IIC T4

支持区域1，仪器组II, 气体组C
爆炸危险气体，蒸气或雾气，
温度级别T4.

只可使用批准证书中规定的传感器。传感器编号0628 2232
和0628 2432可在区域0使用。

7. 技术数据

Power	9V-Block, 6LR61 as per IEC (only type tested batteries, see below)
Operating life	approx. 100h
Storage temperature	- 20 to + 70°C
Ambient temperature	- 10 to + 50°C
weight with batteries	approx. 200g
Case material	ABS, coated, discolouring may occur
Dimensions (L x W x H)	190 x 57 x 42mm
Display	LCD, digit height 14mm
Measuring device	PT 100-Sensor, 4-wire-technology
Measuring range	-50 to +400°C
Accuracy	- 50 to + 199.9°C: ± 0.2°C, ± 1 digit + 200 to + 400°C: ± 0.2% of reading, ± 1 digit
Resolution	- 50 to + 199.9°C: 0.1°C + 200 to + 400°C: 1°C
System accuracy (with immersion / penetration probe)	- 50 to + 99.9°C: ± 0.6°C, ± 1 digit + 100 to + 400°C: ± 0.5% of reading, ± 1 digit
CE-designation	CE 0102

认可的电池类型

Manufacturer	Type
Varta	Alkaline No.4822, Alkaline Universal No.4022, Alkaline Electric Power No.8022
Duracell	Alkaline, Alkaline Ultra, Professional Alkaline Battery Procell
Everady (Ralston Energy Systems SA)	Alkaline Energizer
Panasonic	Alkaline Power Line Industrial Battery
Daimon	Alkaline

保修

我们承诺仪器自购买之日起12个月的保修期.探头也是12个月.保修涉及到所有材料和生产缺陷.

在保修期内发生故障由Testo AG公司负责 , 其授权的分支机构或经销商将根据下列情况不收劳务和材料费。

要么有缺陷的部分更换新的备件, 要么更换Testo选择的整个产品。

生产厂家保修不包括：

-磨损部件（例如电池）和易耗品。

-由下列情况造成的损坏：

-不按预定目的使用；不按操作手册和/或安全建议使用；

-粗心, 事故或正常磨损;

-外部影响（ 例如运输损坏, 震动、过热、水、潮湿或酸造成的损坏）；

-使用不合适的附件。

保修不包括：

-如果产品的型号或序列号改变、抹去、撕走或难以辨认,

-由未经授权方修理或改装。

保修不涉及下列各项：

-由于正常磨损而定期维修、修理或更换的部件,

-包装和运输成本,

-与保修有关的直接和间接运输风险,

-保修外的修理、调节或类似情况下发生的成本。

如要保修 , 向您的供货商或贵国的销售分支机构咨询。地址可通过www.testo.com找到。

随信附寄上产品故障的简短描述和有购买交货日期的收据。请提供您的电话号码以便调查。

保修修理不延长保修期。

任何形式的针对Testo的其它要求（例如销售解约、价格折扣或补偿等）都是无效的。

Testo AG 公司不承担特殊、直接、间接、伴随或随后损坏的责任, 也不承担独立使用或获得仪器造成的损失（包括数据损失）, 不管其是否造成对保修义务的侵害, 行动是否合法或非法, 行动出于良好愿望或其它目的。

Declaration of EC-Conformity

We **ecom Instruments GmbH, Industriestraße 2**
D-97959 Assamstadt

declare under our sole responsibility that the product
Ex-Pt 720
to which this declaration relates is in accordance with the provision of the following directives

94/9/EC	Equipment and protective systems in explosion-endangered areas
89/336/EEC	Electromagnetic compatibility

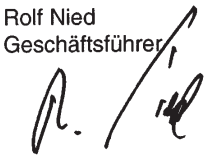
and is in conformity with the following standards or other normative documents

EN 50014:1997	Electrical equipment for explosion-endangered areas
EN 50020:1994	Electrical equipment for explosion-endangered areas Intrinsic safety "i"
EN 61326-1:1997	Electromagnetic compatibility (small business). The equipment was tested for electromagnetic compatibility in the frequency range of 60-1000 mHz. The specified tolerances could not be complied with in the frequency band 280-300 mHz.

ecom instruments GmbH

Assamstadt, 28.05.02

Rolf Nied
Geschäftsführer



TÜV CERT

(1) **EC – Type approval test certificate**

(2) Equipment and protective systems for use according to certain regulations in explosion-endangered areas – Guideline 94/9/EC

(3) EG Type approval test certificate number

TÜV 01 ATEX 1757 X

(4) Equipment: Explosion-protected temperature measuring unit Type Ex-Pt 720*

(5) Manufacturer: ecom instruments GmbH

(6) Address: D-97959 Assamstadt, Industriestrasse 2

(7) The type of design as well as the various permissible versions are specified in the appen dix to this type approval test certificate.

(8) The TÜV Hannover/Sachsen-Anhalt e.V., TÜV CERT-certification authority, hereby con firms, as recognized authority no. 0032 according to Article 9 of the Guidelines of the Council of the European Union dated March 23rd, 1994 (94/9/EG), the fulfilment of the fundamental safety and health requirements for the conception and design of equipment and protective systems according to certain regulations in explosion-endangered areas in line with Appendix II of the guidelines.

The test results are recorded in the confidential test report No. 01 YEX 137383.

(9) The fundamental safety and health requirements are fulfilled on account of compatibility with

EN 50014:1997 **EN 50020:1994**

(10) Should the letter "X" appear at the end of the certification number, attention is drawn to special conditions for the safe use of the equipment which can be found in the appendix.

(11) This EG type approval test certificate only refers to the conception and testing of certain equipment in line with Guideline 94/9/EG. The additional requirements of this guideline which are valid for the manufacture and commissioning of this equipment are not covered by this certificate.

(12) The designation of the equipment must contain the following details:

II 2 (1) G EEx ia IIC T4

TÜV Hannover/Sachsen-Anhalt e.V
TÜV CERT-certification authority
Am TÜV 1
D-30519 Hannover

Hannover, 19.02.2002

The person in charge

This EG type approval test certification may only be distributed in unchanged form. Extracts or changes need the approval of the TÜV Hannover/Sachsen-Anhalt e.V

(13) **Appendix**

(14) **EC – Type approval test certificate No. TÜV 01 ATEX 1757 X**

(15) Description of the equipment

The explosion-protected temperature measurement unit Type Ex-Pt 720* may be used in explosion-endangered areas which require category 2 or 3 respectively. The sensors which are specially mentioned in the operating instructions may be used for the measure ment of temperatures in category 1.

The permissible ambient temperature range is 0°C to +50°C.

Electrical data

Power supply (internal battery) one block battery as per IEC 6LR61 or 6F22 U = 9V

Only batteries which have satisfied the type–testing in accordance with section 10.9 of EN 50020:1994 are allowed to be used. The manufacturers and their type numbers are listed in the operating instructions.

(16) Test documentation is listed in test report No. YEX 137383.

(17) Special conditions

The temperature measuring unit Type Ex-Pt 720* may not be opened within the explosion-endangered area.

The version with the type designation EX-Pt 720L may only be used within explosion-endangered areas when it is enclose in the leather case which is supplied with it.

In addition, the following applies to the measurement of temperatures within category 1:

The temperature measuring unit Type Ex-Pt 720* itself may not be taken into areas which require category 1 operating equipment. Only the sensors listed in the operating instruc tions as being suitable for category 1 may be used.

The carrying strap of the unit is to be attached to a loop on the user's belt in such a way that when the unit hangs freely on the strap it always maintains a spacing of > 50 cm from the boundary of the area which requires category 1. Only the manufacturer's carrying strap may be used.

(18) Fundamental safety and health requirements

No additional ones.

1st Supplement
to
EC – Type approval test certificate No. TÜV 01 ATEX 1757

The company: ecom instruments GmbH
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D-97959 Assamstadt

In the future, the explosion-protected temperature measuring instrument Type Ex-Pt 720* may be manufactured in accordance with the documentation listed in the test report. The changes are concerned with the external design and the use of further sensors.
The permissible ambient temperature is dependent on the type as shown in the following table:

Type	Permissible ambient temperature range
Ex-Pt 720 L	0°C to +50°C
Ex-Pt 720	-10°C to +50°C

The electrical data are valid without change for this supplement.

(16) Test documentation is listed in test report No. 02 YEX 164755.

(17) Special conditions

The temperature measuring unit Type Ex-Pt 720* may not be opened within the explosion-endangered area. The version with the type designation EX-Pt 720L may only be used within explosion-endangered areas when it is enclose in the leather case which is supp lied with it.

In addition, the following applies to the measurement of temperatures within explosion-endangered areas which need category 1 equipment:

The temperature measuring unit Type Ex-Pt 720* itself may not be taken into areas which require category 1 equipment. Only the sensors listed in the operating instructions as being suitable for category 1 may be used.
The carrying strap of the unit is to be attached to a loop on the user's belt in such a way that when the unit hangs freely on the strap it always maintains a spacing of > 50 cm from the boundary of the area which requires category 1. Only the manufacturer's carrying strap may be used.

(18) Fundamental safety and health requirements

No additional ones.

2nd Supplement
to
EC – Type approval test certificate No. TÜV 01 ATEX 1757 X

The company: ecom instruments GmbH
Industriestrasse 2
D-97959 Assamstadt

In the future, the explosion-protected temperature measuring instrument Type Ex-Pt 720* may be manufactured in accordance with the documentation listed in the test report. The changes are concerned with the external design and the use of further sensors.

The electrical data and special conditions are valid without change for this supplement.

Test documentation is listed in test report No. 02 YEX 550274.

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