
The ATEX Directive and IEC Standards

The ATEX name derives from French: ATmosphère EXplosible.

The primary purpose of the *Directive 94/9/EC of the European Parliament and the Council of 23 March 1994* – the ATEX directive - is to protect the workforce against the risk of explosions in working environments. The directive sets out essential requirements only, and the requirements have been defined in detail in the following standards:

- European standard EN 60079-0
- European standard EN 50020

International Electrotechnical Commission (IEC) has developed standards parallel to the European standards:

- International standard IEC 60079-0
- International standard IEC 60079-11

The standards are not all compulsory, but describe approved methods on how to comply with the purpose of the directive. The national implementation of the standards is secured by national legislation, typically by authorities and ministries regulating working environments, fire protection etc.

Local implementation of the standards is secured by fire protection agencies and organisations. They will direct companies with potentially explosive working environments on how to define the different classes of zones in potential explosive environments.

The KIRK 4080 handset has been approved (certified) by Danish UL Demko to comply with the ATEX directive. For specific national regulations, you may have to contact your national authorities

For a list of members of Cenelec (European standards) and IEC (International standards), please refer to annex 1 and 2 respectively.

EN / IEC 60079-0

Different categories and standards are defined for electrical apparatus to be used in potentially explosive areas:

Equipment Groups

Equipment Group I Equipment intended for use in underground parts in mines.

Equipment Group II Equipment intended for use in other areas than mines (above ground) in areas in which explosive atmospheres caused by

1: mixtures of air and gases, vapours or mists or by air/dust mixtures are present continuously, for long periods or frequently.

2: gases, vapours or mists or air/dust mixtures are likely to occur.

3: gases, vapour, mists, or air/dust mixtures are unlikely to occur or, if they do occur, are likely to do so only infrequently and for a short period only

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KIRK 4080 is in equipment group II

- Equipment group II 2G (gas)
- Equipment group II 3D (dust)

Zone classification

Hazardous areas are classified in different zones according to the time-related and local probability of the presence of a dangerous explosive atmosphere (defined in ElexV and installation specifications DIN VDE 0165/2.91)

Zone	Area covered	Examples
Zone 0	Areas in which there is a continuous or long-term dangerous explosive atmosphere	In the interior of vessels or equipment (evaporators, reaction vessels, etc.)
Zone 1	Areas in which the occasional occurrence of a dangerous, explosive atmosphere can be expected	Immediate vicinity of zone 0; immediate vicinity of charging doors, in the area of filling and discharge equipment or lines made of glass, ceramics and the like; in the close vicinity of insufficiently tight packing glands, e.g. on pumps, gate valves within equipment such as evaporators, reaction vessels
Zone 2	Areas in which the occurrence of a dangerous, explosive atmosphere can be expected, but only rarely and briefly	Areas surrounding zones 0 and 1; in the close vicinity of flange joints with flat packings of the usual design on piping in enclosed rooms

Electrical apparatus in equipment group II1 may be used in zone 0, II2 apparatus in zone 1, and II3 apparatus in zone 2. (Some authorities may use zone 0, 1, 2 for gas zones, and 20, 21, and 22 for dust zones).

Types of protection (EN / IEC 60079-0)

Different types of protection may be applied to secure electrical apparatus for use in potentially explosive areas

- o: oil immersion
- p: pressurization
- q: powder filling
- d: flameproof enclosure
- e: increased safety
- ia: intrinsic safety, category ia
- ib: intrinsic safety, category ib
- m: encapsulation

The type of protection selected for the KIRK 4080 is intrinsic safety “ib”: Electrical equipment is designated as intrinsically safe when all the circuits it contains are intrinsically safe. An intrinsically safe circuit is a circuit in which the short-circuit current and no-load current are limited so that sparks and thermal effects capable of causing ignition cannot occur in normal operation or during a malfunction. This means that the energy in an intrinsically safe circuit is less than the minimum ignition energy required for igniting an ignitable mixture.

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“Ib”: intended for installation in zones 1 and 2. No ignition must be caused by the following operational states: normal operation and occurrence of a fault.

For the types of protection “ib” intrinsic safety, electrical apparatus of Group II is subdivided into IIA, IIB, and IIC as required in the specific European Standards concerning those types of protection. This subdivision is based on the maximum experimental safe gap (MESG) for flameproof enclosures or the minimum ignition current (MIC) for intrinsically safe electrical apparatus.

(Apparatus marked IIB is suitable for applications requiring Group IIA apparatus. Similarly, apparatus marked IIC is suitable for applications requiring Group IIA or Group IIB apparatus).

KIRK 4080 is marked IIC (relevant for gas).

Temperatures (EN / IEC 60079-0)

Apparatus of Group II shall be marked as a function of its maximum surface temperature

Temperature Class	Maximum surface temperature °C
T1	450
T2	300
T3	200
T4	135
T5	100
T6	85

KIRK 4080 is marked T3

Ambient temperatures in service and additional marking

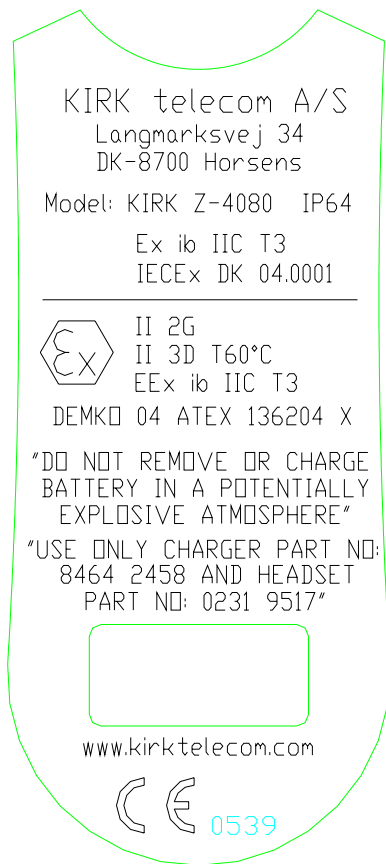
Electrical apparatus	Ambient temperature in service	Additional marking
Normal	Maximum: +40 °C Minimum: - 20 °C	None
Special	Special range stated by the manufacturer and specified in the certificate	Ta or Tamb with the special range, for example “-30 °C ≤ Ta ≤ 40 °C” or the symbol “X”

KIRK 4080 is not marked, as the ambient temperatures are within the “normal” category.

Label information

SN: 00077 0612630 4 00W36	HW PCS: 4 SW PIE: 1
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Serial number
Production date (year 2000, week 36)
Hardware version
Software version



Name and address of manufacturer

KIRK Z-4080	Product name
IP64	IP 64 classification
Ex	KIRK Z-4080 is approved according to International standards
ib	Intrinsic safe, ib category
IIC	Equipment group II, ib group C (gas group C)
T3	Temperature group T3 (relevant for gas)
IECEX.....	International standards/country code for notified body/year/certification number
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II 2G	Equipment group II, zone 1 (gas)
II 3D	Equipment group II, zone 2 (dust)
T60°C	Max. surface temperature of KIRK Z-4080 in use
Ex logo	Specific marking of explosion protection
EEx	KIRK Z-4080 is approved according to European standards
ib	Intrinsic safe, ib category
IIC	Equipment group II, ib group C (gas group C)
T3	Temperature group T3 (relevant for gas)
Demko.....	Name of notified body/year/certification number
X	Special warnings concerning the use of KIRK Z-4080 exist, please refer to the users guide
CE 0539	Demko identification number

Warnings

For safe use of KIRK 4080, please remind the following:

- Please consult your system manager for instruction before using KIRK 4080
- Do not open KIRK 4080 in a potentially explosive atmosphere
- Use only the dedicated charger **8464 2458** (orange) for charging KIRK 4080
- The AC power adaptor used in connection with the charger must **not** be connected to a higher voltage than 250V AC.
- Do not charge KIRK 4080 in a potentially explosive atmosphere
- Use only battery pack **8474 3416** for battery replacement
- The leather pouch **0231 9543 must** be used with KIRK 4080
 1. In dry areas with humidity conditions of less than 60%
 2. When the user is wearing clothes that could cause electrostatic charging of the handset
- If defects occur, remove KIRK 4080 immediately from the potentially explosive atmosphere
- Only KIRK telecom A/S may repair and service KIRK 4080
- Relevant data concerning repairs must be logged
- For traceability it is advisable to keep a record of type- and serial numbers of the handsets, as well as the name of users of the handset

Annex 1 Members of Cenelec (www.cenelec.org)

The 28 current CENELEC members are national organizations entrusted with electrotechnical standardization, recognized both at National and European level as being able to represent all standardization interests in their country. Only one organization per country may be member of CENELEC.

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[France](#) [Germany](#) [Greece](#) [Hungary](#) [Iceland](#) [Ireland](#) [Italy](#)
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[Portugal](#) [Spain](#) [Slovakia](#) [Slovenia](#) [Sweden](#) [Switzerland](#) [United Kingdom](#)

AUSTRIA - ÖVE



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BELGIUM - BEC-CEB



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CYPRUS - CYS



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CZECH REPUBLIC - CSNI

Czech Standards Institute

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DENMARK - DS



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Electrotechnical Sector
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ESTONIA - EVS



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GERMANY - DKE



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FINLAND - SESKO



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FRANCE - UTE

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GREECE - ELOT



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ICELAND - IST



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LITHUANIA - LST



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MALTA - MSA



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NORWAY - NEK



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POLAND - PKN



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PORTUGAL - IPQ



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SPAIN - AENOR



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SLOVAKIA - SEV

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SWEDEN - SEK



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UNITED KINGDOM - BEC



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For any information contact the CENELEC Online Info Service (Info@cenelec)

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Annex 2: Members of IEC (www.iec.ch)

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes international standards for all electrical, electronic and related technologies. These serve as a basis for national standardization and as references when drafting international tenders and contracts.

Through its members, the IEC promotes international cooperation on all questions of electrotechnical standardization and related matters, such as the assessment of conformity to standards, in the fields of electricity, electronics and related technologies.

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