What are ATEX two-way radios and do I need them for my business?

If you work in an industry where your business is at risk from a potentially explosive atmosphere, then you should be aware of the ATEX directive. This provides regulations to safeguard employees working in dangerous environments such as oil, gas, mining or chemical installations.

From 2003 the ATEX Directive 94/9/EC was introduced by the European Union to ensure that intrinsically-safe equipment and systems, including two-way radios were available to workers in potentially explosive environments. ATEX approved radios meet very stringent requirements and use high manufacturing standards, to reduce and eliminate any risk of the tiniest spark or heat produced by the device. From the radio's casing to the batteries used, everything is constructed for safety. ATEX radios operate at a low output power and are normally IP67 compliant to protect them from dust and allowing immersion in water. ATEX radios may be coloured blue and marked with an 'EX' symbol indicating ATEX certification.

There are a number of classifications for ATEX equipment. These can be mainly divided into two Groups: I and II. Equipment within Group I can be used in mines or similar environments susceptible to methane. Group II equipment can be used in other areas than mining where explosions can occur, such as the oil and gas industry, power stations and ports.

Group II can be divided into three subgroups:

IIA: For atmospheres containing propane or gases of an equivalent hazard.
IIB: For atmospheres containing ethylene or gases of an equivalent hazard.
IIC: For atmospheres containing hydrogen or gases of an equivalent hazard.

For an in-depth explanation of the classifications, please see the table below.

ATEX Mining Protection and Meaning

I: Group I, Mining
M2: Must be switched OFF in case of firedamp
Ex: Explosion proof equipment
ib: Intrinsic safety
I: Protection in mining group: Methane
Mb: Mining equipment protection level: High protection

ATEX Gas Protection and Meaning

II: Group II, other (non-mining) areas
2: High level protection for use in Zone 1 (gas)
G: Gas, vapour and mist
Ex: Explosion proof equipment ib: Intrinsic safety
IIC: Protection in GAS group Acetylene, Hydrogen
T4: Device surface temperature will not exceed 135°C
Gb: Gas equipment protection level: High protection

ATEX Dust Protection and Meaning

II: Group II, other (non-mining) areas
2: High level protection for use in Zone 21 (dust)
D: Dust
Ex: Explosion proof equipment
ib: Intrinsic safety
IIIC: Dust group: Conductive dust (R≤10Ωm)
T110°C: Maximum temperature of device surface
Db: Dust equipment protection level. High protection

NB: T4 temperature specification to 135°C is normally as the requested industry standard.

Despite these potentially dangerous scenarios, ATEX two-way radios are the best way for your organisation staff to communicate quickly in the event of an emergency.

So What is Available?

ICOM has a new range of ATEX approved digital radios that meet Class 1 and Class 2 specifications. The pocket sized IC-F51ATEX series is available in both VHF and UHF and meets Class 2 ATEX standards. They are IP-67 dust and waterproof and feature many signalling standards and lone-worker function.

Alternatively, ICOM's new IC-F3202DEX ATEX digital series meets both Class 1 and 2 IEC Ex/ATEX-based I/S specifications, specifically IIC and T4. They work as a basic conventional ATEX radio, but can also be used as part of a dPMR multi-site radio system. This radio series also features lone-worker and man-down functions to automatically send an emergency signal should a worker have difficulties. An extra consideration for those looking for a complete ATEX health and safety solution.

Like the IC-F51ATEX series the IC-F3202DEX ATEX digital series provides rugged protection against dust and water, equivalent to IP67. It is also perfect for use as an analogue ATEX system and is also ready for digital migration, should you wish to add more radios to your ATEX fleet in the future.

For more information about ICOM's new range of ATEX approved equipment, please visit the IC-F51ATEX series and IC-F3202DEX digital series product pages.

Alternatively, give our sales team a call on 01227 741741 or email sales@icomuk.co.uk.

ICOM-UK
Blacksole House, Altira Park, Herne Bay, Kent CT6 6GZ. Telephone: 01227 741741. Fax: 01227 741742.
e-mail: info@icomuk.co.uk website: www.icomuk.co.uk