

Intrinsically Safe Mobile Phones

A potentially explosive atmosphere is composed of air - mixtures of gases, vapors, mists or dusts. Usually we don't care about the air composition in our home or in work environment but industries like Petrochemical plants, mines, flour mills and some other areas are most concerned about atmospheric condition as they all hold potentially explosive atmosphere. We generally are not aware of the danger that can happen through our mobile phones in this atmosphere. Our mobile phones work at a very low voltage. But this small equipments are incapable of releasing sufficient electrical or thermal energy to cause ignition in hazardous atmospheric.

Do you know that mobile phones are the reason behind most of the accident at hazardous explosive atmosphere? For example: while filling fuel in your car. Other example is while filling aviation fuels in plane. These areas are having a sign of "NO MOBILE PHONE USE".

That's why mobile phones are prohibited at all hazardous place like petrol pumps, mines, nuclear power plants etc.

So, what is the solution to this problem? Do you have to leave all your important call while working in these atmospheres? The answer is NO, you don't want to leave your important call. Then what will be the solution?

The solution is much simpler: now you can purchase an explosive safe mobile phone. Yes, the simplest and most common solution to your problem. Now a question arises, that how these mobile phones are differs from normal mobile phones?

These phones are designed in such a way that, the electricity inside these phones never exceeds a particular level that can produce a spark in circuit and can ignite the atmosphere. And these phone are additionally covered with special packing to ensure that no spark or heat energy comes out of it and causes ignition in hazardous environment. The special packing also ensures that dust cannot reach the circuit of the mobile phone. The shielding also creates a bridge between the mobile phone circuit and the outside atmosphere. Due to this feature there is a breakage between mobile phone circuit and outside atmosphere and hence if there is and spark or over heating in mobile phone circuit, it will not lead to a danger. These phones have an integrated acceleration sensor which keeps the tracks on mobile phone temperature. The normal operating temperature is $-10\text{ }^{\circ}\text{C}$ to $+50\text{ }^{\circ}\text{C}$. Thus phone can work in extreme condition. These phones also provide GPS system to track the location of the person where they are working in emergency condition. They offer a high level of stability and durability against shock and also dust proof. There body is generally made of polymers (like rubber) which provides a good grip to user and is also an insulated medium. The insulated medium increases the capability to handle the phone in extreme conditions. Like, in nuclear power plants where temperature is high. And in radioactive waves zone

where phone can be damaged due to the high radioactive waves which produce heat in phone circuit and leads to damage or explosion in that area.

Rest these phones have all feature which are in normal mobile phone:

Like

- GSM 900/1800/1900 networks
- LCD display with 65,536 colors
- Bluetooth
- Data transmission via GPRS
- Java for individual application builds
- Integrated office functionality
- Synchronization
- Rechargeable Li-Ion battery with 850 mAh