

Personnel Tracking Ex UWB Long Range



ATEX Certified for use in
Zone 1 Hazardous areas

Long Range UWB Location

Ultra Wide Band (UWB) provides a precise real-time location system which delivers very high positional accuracy (better than +/- 0.5 metres at distances up to 250 metres) in traditionally challenging environments. Our standard UWB sensor is ruggedized to give excellent performance characteristics in even the harshest of environments - operating at temperatures down to -40°C.

Patented Technology

The Ex UWB Long Range sensor forms part of the S3 ID's patented eLocator™ long range personnel location system which includes:

- Active (battery powered) tags which transmit UWB pulses used to determine their location.
- Sensors mounted on fixed infrastructure which receive and evaluate the signals from the tags.

Software platform to aggregate the positional data generated, presenting, analysing and communicating information to users and relevant information systems

Operation

The tags transmit UWB pulses of extremely short duration which are received by sensors and used to determine where the tag is located using a combination of measurement methods. The use of UWB together with the unique sensor functionality ensures both the high accuracy and the reliability of operation in challenging environments where there are often disturbing reflections from walls or metal objects. Sensors are grouped into cells which are typically rectangular in shape with additional sensors being added to a cell depending on the geometry of the area to be covered. In each cell a master sensor coordinates the activities of the other sensors and communicates with all the tags whose location is detected within the cell. By designing overlapping cells, it is possible to cover very large areas in a similar way to the cellular layout of a mobile telephone network.

Series 7000 UWB Sensor

The Series 7000 sensor detects ultra wideband (UWB) pulses transmitted by Tags which are used to accurately determine location using a unique combination of Time Difference Of Arrival (TDOA) and Angle of Arrival (AOA) techniques. The sensors have an array of four UWB receivers enabling angle to be calculated with a high degree of accuracy. The sensors also support two way standard RF communications permitting dynamic changes to tag update rates and enabling interactive applications.

General arrangement

The Ex UWB sensor comprises of three main components, the sensor head, its mounting bracket and the termination box. The sensor head houses a Series 7000 sensor.

The sensor head can be mounted on a fully adjustable stainless steel bracket to allow precise positioning and alignment of the UWB sensor.

The head is connected by an umbilical cable to an Ex e termination junction box for simple connection of field cabling.

Series 7000 ULT Variant Technical Specification

Sensor Head: EExe enclosure constructed from high impact GRP

Manufacturer: S3 ID
Type: Ex UWB long range sensor
Material: Anti Static GFRP
Cover bolts: Permanently Sealed Construction
Colour: Black / Yellow
Weight: 6kg
IP protection : IP66
Ex certification : EEx q IIB IP66 T4
Temperature range: -40°C to +55°C T4
Power consumption: 10w
Connection: Flying lead to Junction Box

Termination Box: EExe GRP Termination box

Manufacturer: S3 ID
Material: Anti Static GFRP
Colour: Black
Weight : 5Kg
IP protection : IP66
Ex certification : EExe IIB IP66 T4
Temperature range: -40°C TO +55°C T4
Power consumption: N/A
Cable entry: M20/M25



Ex UWB Type Sensor Head

S3 ID Group

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