

## Radar Dome 10223-18 Ex(p)

Ex II 2 G Ex db eb ia [ia Ga] mb pxb qb IIB T4 Gb

### Overview

The Ex(p)-Radome is a self-regulating system designed primarily for X-band radar, both with respect to physical dimensions and frequency but may be used for all kinds of surveillance equipment needing an Ex(p)-protected enclosure for harsh weather conditions.



### Benefits:

- Ideally suits housing sensitive equipment (radars, etc.) in potentially explosive atmospheres
- Allows radar use during gas leakages
- Protects equipment from harsh weather conditions
- Increases equipment lifetime and durability
- Does not affect electromagnetic equipment performance
- Allows remote monitoring of temperature, pressure and operational status of the system.

### Areas of use:

- Oil platform, FPSO / FSO surveillance radar systems
- Ship surveillance radars
- Oil field surveillance vessels
- Harbour radar / radio surveillance
- Coastal zone radar surveillance
- VTMS - Vessel Traffic Management Systems

### How the radome works

#### 1. Initialization phase

When the power is turned on the Radome flushing / purging starts. This is used to expel gas that might have intruded the Radome if it has been without power or out of use. Air is normally purged at 2950 litres per minute.

#### 2. Ready for turn on the equipment inside the Radome

Once the purging is finished the vent is closed and the radar equipment is powered on.

#### 3. Operation phase

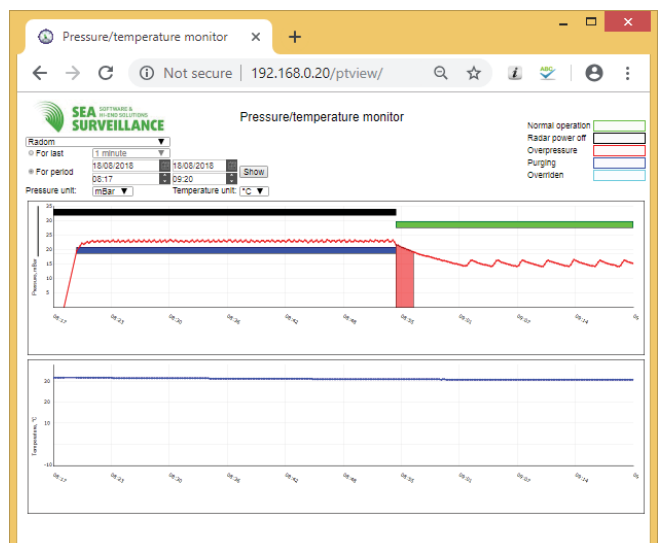
Feedback from pressure and temperature sensors controls a maintenance vent. This operates at no more than 205 litres per minute.

#### 4. Shut down

Normal operating pressure is between 13mBar and 17mBar. Lower than 8mBar the power is cut to the equipment inside.

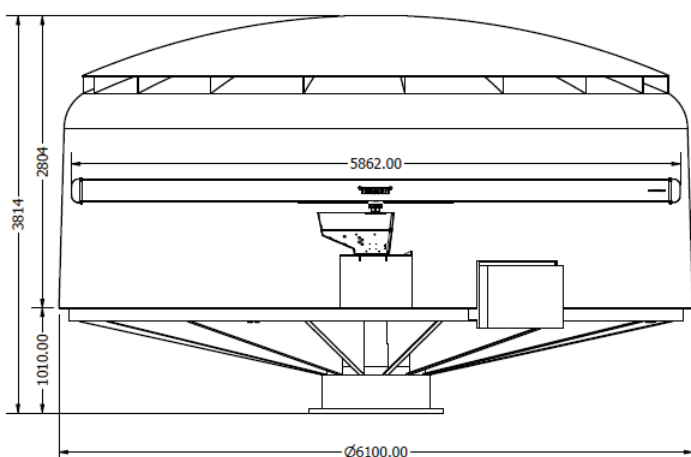
### Remote monitoring system

Pressure, temperature and operational status parameters are logged in a database. The data is accessible through a web browser either locally or remotely. This performance history is available for 12 months.




## Radars Dome specification

Radars	Terma Scanter 2202, 18 foot antenna
Volume	67000 litres
Weight	3350 kg
Material dome	gas and dust-proof fiberglass optimized for 9,4GHz
Material support frame	aluminium 6082-T6
Purging time	140 min
Wind tolerance	designed for 350 km/hr (225mph)
Seal tolerance (ATEX)	air tight, max leakage 205 lit/min
Compressed air	dry air pressurized @6.9 Bar at radar dome released air 2950 lit/min oil and particles class 3 supplied air: 1" pipe
Mounting	36X P41 Z 40 on PCD 1201 (ANSI 16.47B) recommended bolts M36 or M39
Optional	internal ex-heaters microwave absorption kit shielding panel kit



## Certificates and standards

EN 60079-0,-1,-2,-7,-11,-18  
ATEX  II 2 G Ex db eb ia [ia Ga] mb pxb qb IIB T4 Gb  
ISO 8573-1:2001(E)

## Radars specification

### Transmitter specification

Frequency band	9410 MHz
SSPA RF peak power	200 W
Type	High efficiency Solid-State Power Amplifier Low voltage and low temperature Long-life with graceful degradation
Chirp duration	150 ns to 160 $\mu$ s - Short, medium, long

### Receiver specification

Dynamic range	> 140 dB
Sub-clutter visibility	25 dB typical
Minimum Detectable Signal	-130 dBm
Type	Dual channel - Superheterodyne 14 bit IF sampling @ 400 MHz
Noise factor	2.5 dB

### Antenna specification

Frequency	9430 MHz (X-band)
Antenna aperture length (L)	18 ft
Horizontal beamwidth	0.39°
Vertical beamwidth	11° nom
Sidelobes within 10° (min)	-35 dB
Sidelobes outside 10° (min)	-38 dB
Gain (nominal)	36.2 dB
Polarization	horizontal
Rotation rate (standard/high)	10-40 rpm

## Non-ex version of Radar Dome

Radome in non-ex version is used for protection of nearby personnel from being accidentally struck by quickly rotating antennas and for protection of equipment from harsh weather conditions: wind, ice, freezing rain, UV rays etc.