

Overview

The Ex(s)-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 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 heating of gas detectors starts and controller sniffs for gas that might have intruded. During this phase pressure might increase to 40-50mBar. After 5-10minutes inlet vent closes and radome goes to normal operation

2. After 3 minutes radar shall start turning and transmit.

3. Operation phase

In rest mode radome uses up to 200 liters normal air a minute. Under normal powered operation 25 liter normal air a minute.

4. Shut down

Normal operating pressure is 5-10mBar. Below 5mBar radar shuts down.

Remote monitoring system

Pressure, temperature, and operational status parameters is accessible remote.



Radars Dome specification

Radars	Terma Scanter 5202, 9ft antenna
Volume	11000 litres
Weight	Single 1869 kg / Dual 1946 kg
Material dome	gas and dust-proof fiberglass optimized for 9,2- 9,5GHz
Material support frame	stainless steel SS316L painted ral9010
Mounting	20 bolts M33, standard 24" ANSI flange
Wind tolerance	designed for 350 km/hr (225mph)
Seal tolerance (IECEX)	Air tight, max leakage 25lit/min
Interfaces	Power: 230 VAC/16A Control cable: 4x2x0,34mm ² supplied air: pressurized 4-12 Bar 50 litres/minute 1/2" pipe
Optional	internal ex-heaters microwave absorption kit shielding panel kit



Certificates and standards

IEC 60079-17 IIC T3

Ex Sb IIC 4 Gb

Ex Sb IIIC T120°C Db

Radars specification

Key Features

Weight	26kg
h x w x d	466mm x 422mm x 422mm
Type	Solid State power amplifier
Frequency	9.2-9.5 GHz
Sector Transmission	Blanking/reduce d tx-power
Sampling	12bit @ 200MHz
Dynamic Range	> 100 dB (incl. processing)
Noise figure	2.5 dB typical
Emitter	>80W peak (equivalent to 25 kW magnetron)

Antenna specifications

Frequency	9.14-9.50 GHz
Antenna aperture length (L)	9ft (2.89m)
Horizontal beamwidth	0.82° max
Vertical beamwidth	16° nom
Sidelobes within 10° (min)	-24dB
Sidelobes outside 10° (min)	-30 dB
Gain (nominal)	32 dBi
Polarization	horizontal
Rotation rate (standard/high)	20rpm

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.