SEA SOFTWARE & HI-END SOLUTIONS SURVEILLANCE

Radar Dome 10223-6 Ex(s)

Ex Sb IIC T4 Gb

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

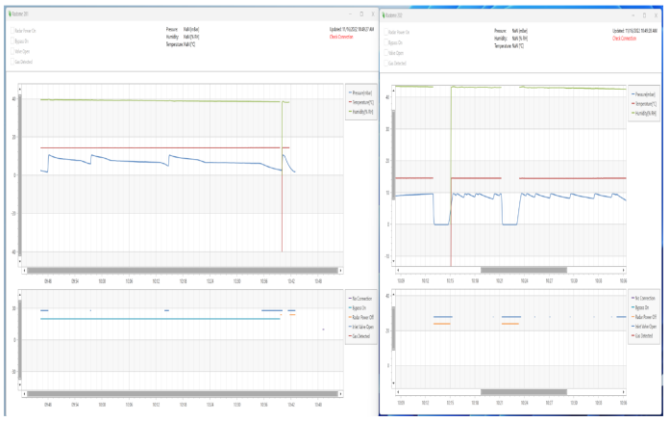
In rest mode radome uses up to 200 liters normal air a minute. Under normal powered operation 15 liter normal air a minute.

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.



Laksevågneset 12, 5160 Laksevåg, Bergen, Norway, +47 55 13 65 00, www.seabrokers.no

Radar Dome specification

Radar	Sperry Marine Vision Master, model 65925WAR, 6 foot antenna Model 65606/A
Volume	7000 litres
Weight	960 kg
Material dome	gas and dust-proof fiberglass optimized for 9,4GHz
Material support frame	stainless steel
Mounting	20 bolts M33, standard 24" ANSI flange
Wind tolerance	designed for 350 km/hr (225mph)
Seal tolerance (IECEx)	Air tight, max leakage 15lit/min
Interfaces	radar video: 75 Ohm coaxial cable radar pre-trig: 75 Ohm power: 230 VAC/10A radar control: 8×2×0.75 mm^2 supplied air: pressurized 4-12 Bar 50 litres/minute ½" 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

Radar specification

Transceiver specifications

Magnetron frequency	9410 MHz
Magnetron peak power	25 kW
Pulse length/PRF	0.05 µs/1800 Hz (short) 0.25 µs/1800 Hz (medium) 0.75 µs/785 Hz (long)
Pulse generator	solid-state with pulse forming network driving the magnetron

Receiver specifications

Type	logarithmic, with low noise front end
Tuning	AFC/manual
IF (intermediate frequency)	centered at 60 MHz
IF bandwidth	20 MHz (short/medium pulses) 3 MHz (long pulse)
Noise factor	5.0 dB

Antenna specifications

Frequency	9430 MHz (X-band)
Antenna aperture length (L)	6 ft (1.82m)
Horizontal beamwidth	1.2° max
Vertical beamwidth	24° nom
Sidelobes within 10° (min)	–23 dB
Sidelobes outside 10° (min)	–30 dB
Gain (nominal)	30 dB
Polarization	horizontal
Rotation rate (standard/high)	28/45rpm

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.