Sub Mk IIIF

datasheet

Panel mount real time hyperbaric monitoring of oxygen, carbon dioxide, depth, temperature and relative humidity

Real time in chamber information:

- In chamber and out of chamber readouts of the monitored parameters

- **Infrastructure associated with external analysers:**

- All sample lines required

Minimises downtime:

- Oxygen and carbon dioixde sensors are field replaceable

- Temperature and humidity module changed at service intervals

Data outputs as standard:

- Offering real time data on a serial port for logging or displaying on an external system

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Description

The Analox Sub Mk IIIF is a hyperbaric atmosphere monitoring system capable of measuring oxygen (O_2), carbon dioxide (CO_2), pressure (depth) temperature and relative humidity.

It is ideal for use in hyperbaric chambers for HBOT or diving and for monitoring the atmosphere in Submarine Rescue Vehicles (SRV's).

The Sub Mk IIIF can also be configured as an O_2 controller to automatically maintain oxygen concentrations to a preset level. The O_2 controller would typically be used to maintain the chamber oxygen concentration or the oxygen concentration delivered from a bibs system on an SRV.

The Sub Mk IIIF consists of a main control panel (operator console) and a number of remote sensor modules (REM's).

A large graphic display on the operator console shows the value of each measured parameter its units of measurement and alarm set points. Two audio/visual alarm channels are available for each measured parameter. The REM's provide local, in chamber displays of the monitored parameters and repeat the audio visual alarm status

Sensor measurement techniques

Parameter	Technology	Location
Oxygen	**Electrochemical**	**REM 1**
Carbon dioxide	**Infra-red absorption**	**REM 1**
Pressure	**Strain gauge**	**REM 1**
Temperature	**Platinum resistor**	**REM 2**
Humidity	**Capacitive**	**REM 2**

The Sub Mk IIIF is powered from a 9 to 24vDC supply, however an option to power from a mains AC is available. The operator console is designed to provide power to the REM's.

5 cores through a penetrator would be required to enable this (2 power, 3 comm's). Alternatively the REM's could be powered locally.

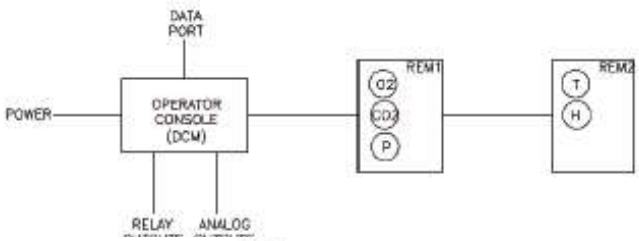
In its standard mode of operation the Sub Mk IIIF monitors the atmosphere via diffusion. This removes the need for pumps and their associated maintenance.

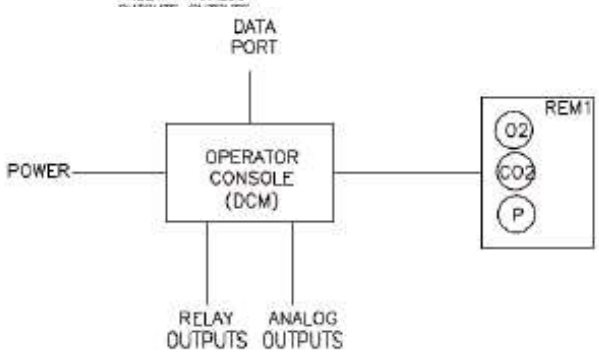
Sub Mk III F variations:

The Sub Mk IIIF is factory configurable to suit your individual application and requirements. The part numbers provided are indications of what we offer to suit these different applications.

Medical chambers

Basic installation might consist of an operator console with a REM1 and an optional REM2. Power is 24V as standard with external power supply provided as an optional extra.





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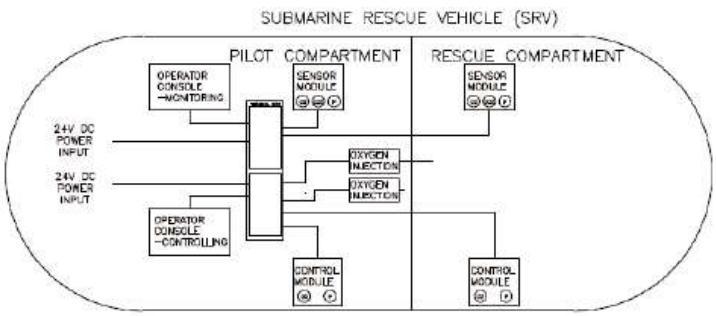
Medical chamber part numbers

ASF3AEDAXXY	0 to 3000mBar ppO_2 0.00 to 20.00mBar $ppCO_2$ 0.80 to 10.00 BarA
ASF3AEDACYY	0 to 3000mBar ppO_2 0.00 20.00mBar $ppCO_2$ 0.80 to 10.00 BarA 0 to 50°C 0 to 100% RH

The quoted part numbers are for a Sub Mk IIIF system designed to work up to 3BarA. The O_2 sensor range is ideal for medical chamber use where the CO_2 range is to ensure the CO_2 levels remain below safe levels within a decompression chamber.

Submarine rescue vehicles

Drawing below shows a Sub Mk IIIF monitoring system; operator console with 2 REM1 sensor modules, and also a Sub Mk IIIF O_2 control system; operator console with 2 REM3 control modules. This provides monitoring and control in two compartments.



Submarine rescue vehicles part numbers

Monitoring System

ASF3BAAAXXY	0 to 1500mBar ppO_2 0.0 to 100.0 mBar $ppCO_2$ 0.80 to 10.00 BarA

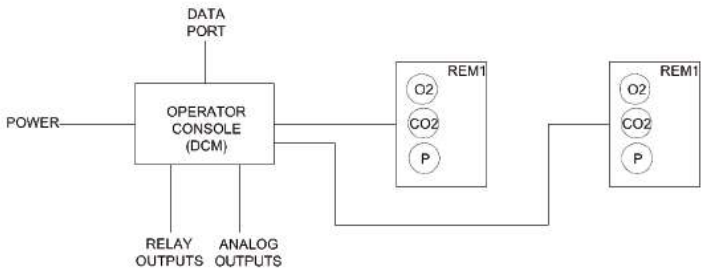
Control System

ASF3OCBAXAXXYY	0 to 1500mBar ppO_2 0.80 to 10.00 BarA

The quoted part numbers are for a Sub Mk IIIF system is designed to work up to 10BarA. O_2 levels are at ambient concentrations, the 10mBar CO_2 range offered is suitable as personnel will be loacted in compartments for very short periods of time.

Diving chambers

Simple system as per medical chambers above, but this time fitted with a different pressure sensor range and designed for use within a helium environment. Also available with REM2 option.



Diving chambers part numbers:

ASF3AAGJXXY	0 to 1500mBar ppO_2 0.00 to 20.00mBar $ppCO_2$ 0.0 to 350.0 MSW
ASF3AAGJCYY	0 to 1500mBar ppO_2 0.00 to 20.00mBar $ppCO_2$ 0.0 to 350.0 MSW 0.0 to 50° deg C 0 to 100% RH

The quoted part numbers are for a Sub Mk IIIF system working within a reduced O_2 range whilst keeping the CO_2 range is below 5mBar for safe working levels.

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Specifications

Range CO_2:
0 to 20.00 mBar, 0 to 100.0 mBar

Range O_2:
0 to 1500 mBar pO_2, 0 to 3000 mBar pO_2

Range Depth:
0.50 to 10.00 BarA, 0.50 to 60.00 BarA

Range Temperature:
0 to +50°C

Range Humidity:
0 to 100% RH

Operating Temp:
0 to +50°C

Power Options:
12 to 30 VDC
110 to 230VAC (option)

Outputs:
8 x 4 to 20mA channels
Voltage outputs (0 to 10V) (option)

Alarms:
1 alarm indicator for gas/environment alarms
1 fault indicator for communications, calibration and general system faults

Dimensions mm:
Operator Console 260x160x90
Sensor Modules 90x140x55

Data output:
Real time data output on serial port for logging or display on external system

Analox has a policy of continuous improvement and we reserve the right to upgrade or change specifications without prior notice. Full technical specifications are available upon request.

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