



**FEATURE:**  
Fully insulated  
No condensation  
Lower heating and cooling costs  
Very low heat gain from direct sunlight

**PROTECTION:**  
Weatherproof  
Corrosion protection against acid and caustics

**FULLY SEALED AGAINST:**  
Water and moisture  
Dust  
Aggressive industrial  
Purged units also available

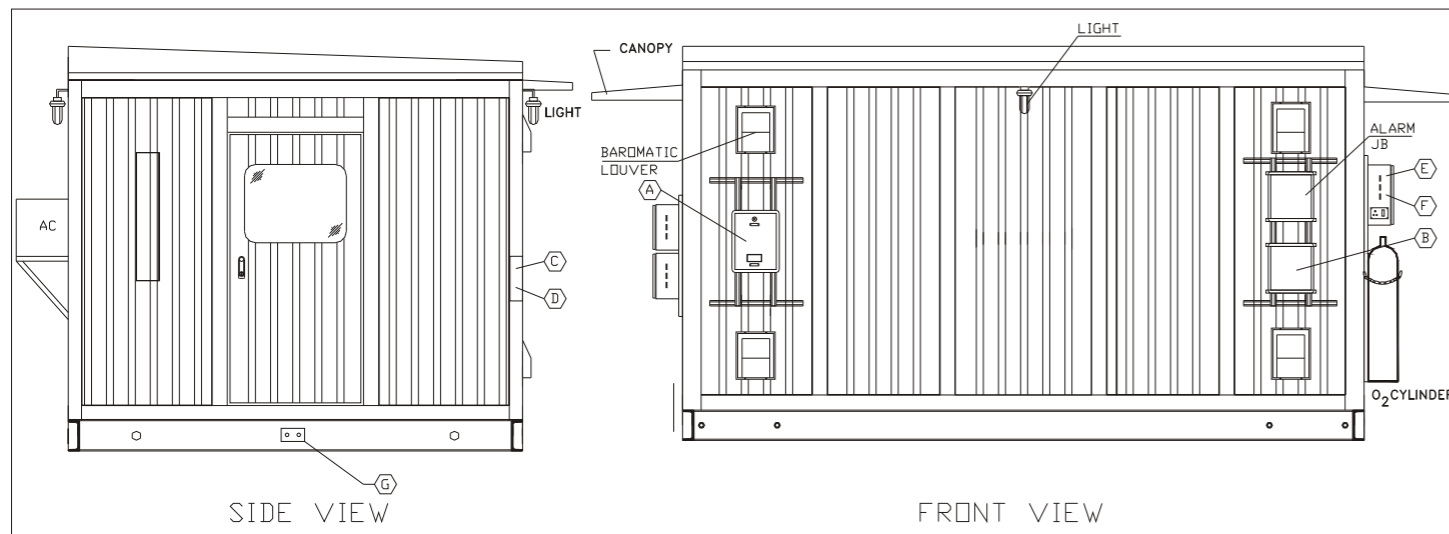
SYMBOL	DESCRIPTION
(A)	AC POWER MAINS
(B)	SIGNAL
(C)	INSTRUMENT AIR, 60 PSIG AT 10SCFM
(D)	LOW PRESSURE RETURN
(E)	SAMPLE IN, HEAT TRACE BUNDLE
(F)	STEAM CONDENSATE RETURN
(G)	EARTH

**OUR PRODUCT RANGE**

- CONTROL DESK
- I/O PROCESSOR PANEL
- INSTRUMENT PANEL
- 19" RACK ENCLOSURE
- MOSAIC MIMIC PANEL
- JUNCTION BOX
- LARGE VIDEO SCREEN
- CALIBRATION BENCH
- METERING ENCLOSURE
- PURGE AND EXPLOSION PROOF PANEL
- ANALYSER SHELTER
- MCC AND PDB
- INDUSTRIAL FURNITURE
- OFFICE FURNITURE
- LIE & LIR
- SHELTER



DET NORSKE VERITAS  
Certificate No. 00023-2003-AQ-BDA-RvA



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**ANALYSER SHELTER PANEL**

**Analyser shelters** are supplied as self contained units suitable for installation on concrete pads or as stand alone units. The shelters are suitable for multilateral use for housing, measuring & controlling equipment in power plants, natural gas, energy, petroleum refinery & petrochemicals. It creates a non hazardous & safe environment in an otherwise hazardous area.

#### **Construction Features:**

##### **Structure:**

The shelter consists of self framing exterior skin assembled on a rigid superstructure. The super structure is made up of 3mm folded sheet of CRCA or Stainless Steel. It consists of main frame members and load bearing members. The construction is such that the weight of the items installed inside the shelters is transferred on the main frame and load bearing members.

##### **Body:**

Depending on specific customer requirement, the external & internal bodies are made up of sheet steel or stainless steel. The two layers are separated by a gap of about 50mm and the space is filled up by using Rockwool/Glasswool (Other specified gap and insulation is also available on request). This layer of insulation provides protection against temperature variations in the atmosphere. The outer sheet is normally corrugated, while the interior is plain. Other patterns can also be made on request.

##### **Mounting:**

Various components inside the shelters like analyzers and power distribution equipment are mounted using standard 'C' channel or 'X' channel arrangement with pre fabricated mounting hardware.

##### **Door:**

Normally, two doors are provided in our shelters - one for normal use and the other for emergency purpose. The standard locking system used is the 3 point heavy duty locking system.

Doors are mounted on sturdy external hinges. Continuous XLPE gasketing is applied along the door periphery to provide dust proofing. The main door is provided with double glass window with automatic spring door closure, is outward opening and has outside padlock holes.

The emergency door allows opening of the door from inside with an emergency panic bar, in case the door is locked from inside.

##### **Base:**

The base of shelters is constructed by Rolled Steel Structure. The selection depends on the size and type of the shelter. The welded base is adequately sized to ensure structural rigidity and to prevent deformation during dragging, lifting, loading and unloading of the shelter.

##### **Hinge:**

The hinges are specially designed, made of SS/MS and passivated with Zinc. These are robust & screwed on the door, thus providing safety against burglary.

##### **Painting:**

In shelters made of stainless steel, the surface is buffed. However if the material of construction is CRCA or GI, the surfaces are coated with epoxy paint & a final coat with polyurethane based paint is given. Our standard colour sheet for the housing is RAL-7032, for exterior surface and brilliant white for internal surface. However, other colour shades as per RAL or IS standard can be provided on request.

##### **Others:**

The shelter roof is adequately strong and sealed to prevent entry of rain and jets of water. Normally, an extension roof is provided along the two longer walls of shelter over the sampling system on both sides for protection of the sampling system and cylinders. The floor of the shelter is made using antislip metal sheet and is sealed continuously to prevent loss of ventilation pressure. The other joints are also made water tight with appropriate sealant.

##### **Electrical accessories:**

The electrical connections inside the shelter are made keeping in mind hazardous area classification. In general, the items used are as per CENELEC standard. Separate Ex-proof junction boxes for power distribution, signals and alarms are provided. Wiring inside the shelter can be done as per customer requirements.



Internal lighting is done by means of fluorescent lamps, mounted flush with the ceiling. In general, the internal lighting is suitable for Zone- 1 area, and is installed near the doorway. Further flameproof external lights are installed on the underside of canopies. This facilitates maintenance of the sampling system.

##### **Heating Ventilation and Air Conditioning System (HVAC):**

The purpose of providing an HVAC system inside a shelter panel is two folds:

1. At all sites having high ambient temperatures, sensitive equipments mounted inside the shelter should be prevented against temperature variations in order to guarantee their proper functioning

2. The shelter should be free from gases which may get accumulated during operation or due to environmental factors.

The factors considered while designing the HVAC are mounting site, ambient conditions, existing and required conditions inside the housing, electrical & electronic components inside, protection degree of housing & hazardous zone classification of the region. Heating of the shelter is done by means of heater placed in the ventilation duct.

A thermal regulation valve controls the operation of the heater. An Ex-proof air conditioner is used to provide proper cooling inside the shelter. The HVAC maintains the temperature inside the shelter at 24+/-3°C as per customer requirement.

Thus an analyzer shelter incorporates an HVAC system to provide a controlled and safe environment for operation and maintenance of the analyzer systems.

Normally, the analyzer houses are forced draft, ventilated type and are pressurized with two air blowers, first under operation and second being standby. Interlocking for the blowers is provided inside an Ex-proof housing. The interlocking circuit switches on the standby blower in case of pressure drop or tripping of the primary blower.

The blowers are suitably sized to normally replace a volume equivalent to ten air changes inside the shelter. An automatic isolating damper is provided in the duct for fresh air path. On loss of air pressure, the damper closes to prevent backflow of air. Ducting for blower discharge is designed to ensure that there is no accumulation and build up of gases and for even distribution of air.

Barometric louvers distributed over the shelter can be provided on request. These louvers are set at 10mm WC and they ensure that excess air is evenly exhausted from the shelter leaving no dead pocket.