



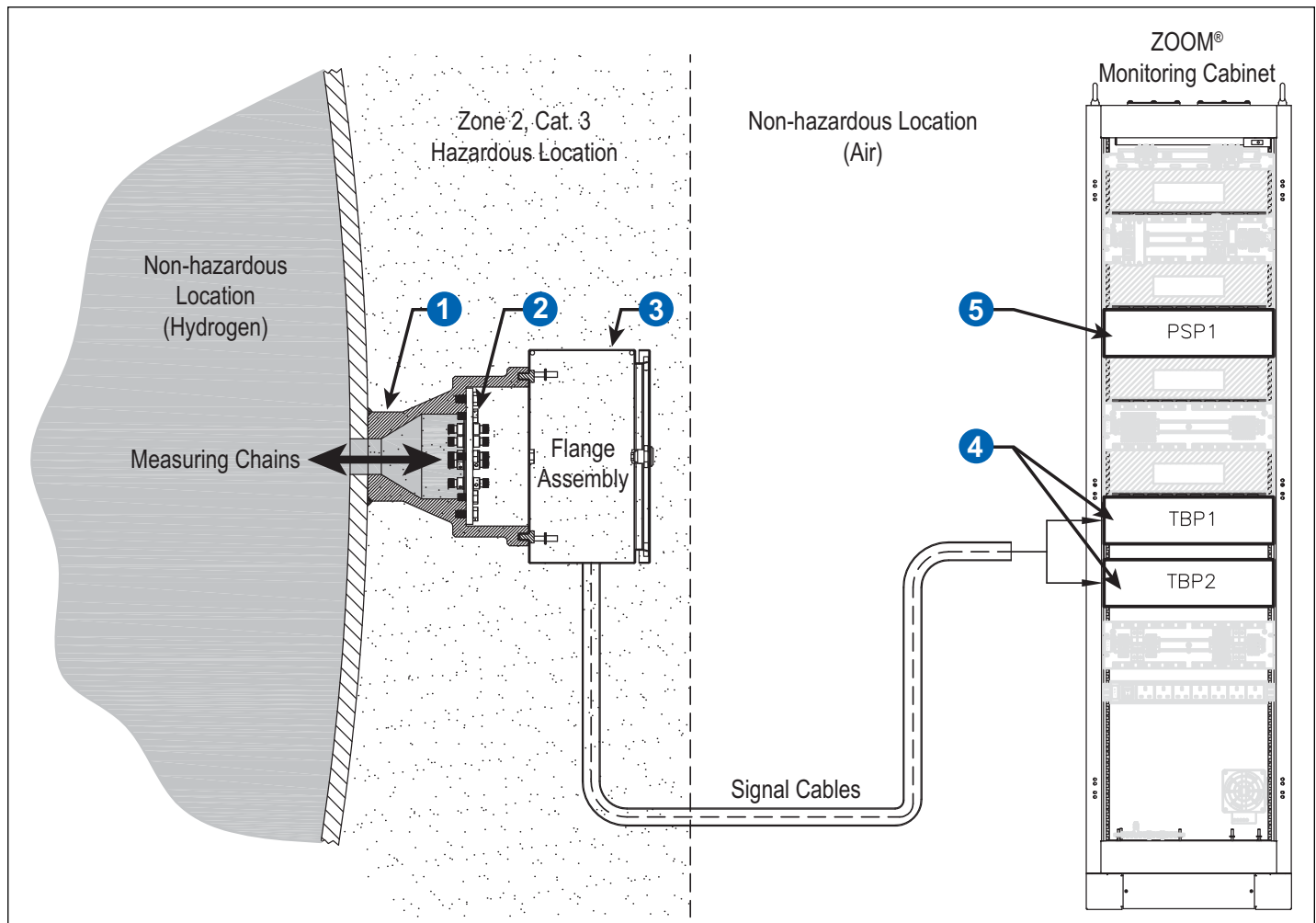
VIBROSYSTM SAFETY SOLUTION FOR HAZARDOUS LOCATIONS

This solution is compliant with the **ATEX Directive**

VibroSystM equipment is generally intended to be installed in non-hazardous locations. However, accessing measuring chains inside hydrogen-cooled generators requires the installation of components that have the potential of creating a dangerous location.

At VibroSystM, we use thoroughly tested components in order to ensure that, under normal operating conditions, these locations remain Zone 2, Category 3 where the risk of explosion is not likely to be present according to the ATEX Directive.

COMPLETE SOLUTION REPRESENTATION



Publication: 2016-02-15



- 1 Penetration flange welded¹ to the turbo-electric generator housing, used to receive the M12x9 Connectorized Internal Flange. A safety cover is provided to replace the protection box in the event of a problem.
- 2 M12x9 Connectorized Internal Flange used to transfer measuring chain² signals from inside the generator to processing instrumentation equipment located outside the generator. Flanges are individually factory tested for leak free³ operation.
- 3 Protection box installed on the penetration flange allowing access to the M12 connectors while providing mechanical protection to the connections.
- 4 Fused terminal blocks (100 mA max.), part of the ZOOM Monitoring Cabinet, used to limit current circulation from the power supplies to the measuring chains through the internal flange connectors. This current limitation is an additional security measure that protects the M12x9 Connectorized Internal Flange's integrity in the event of a major measuring chain malfunction.
- 5 High quality power supplies, part of the ZOOM Monitoring Cabinet, equipped with overvoltage output limitations, used to provide a controlled voltage supply to the measuring chains through the internal flange connectors.

FLANGE AND PROTECTION BOX ASSEMBLY MARKING

Ex II 3G Ex nA IIC T6 Gc
(0°C ≤ T_{ambient} ≤ 70°C)
Ui = +24Vdc
Ii = 100mA (limited by fuse)

Warning: Connecting and disconnecting energized contact plugs is not permitted.

ATEX DECLARATION OF CONFORMITY

An ATEX Declaration of Conformity can be issued when all of the following requirements are met:

- The complete Safety Solution for Hazardous Locations system, including the ZOOM Monitoring Cabinet, must be installed under the supervision of a VibroSystM certified technician.
- The system maintenance must be performed by a VibroSystM certified technician and the inspection of the M12x9 Connectorized Internal Flange must be part of normal maintenance procedures.
- All signal cables from the ZOOM Monitoring Cabinet to the M12x9 Connectorized Internal Flange must be routed in cable trays or protective conduits and secured at each end. Cables must also be terminated with M12 connectors with an Ingress Protection rating of at least IP54.

¹ The welding of the flange is the customer's responsibility.

² Measuring chains do not need to be compliant with the ATEX Directive.

³ Tested underwater for no visible leaks using hydrogen tracer gas @ 100 psi.