

Centralized Confined Space Monitoring System



PERFECT BALANCE BETWEEN MAN & TECHNOLOGY

The Centralized Confined Space Monitoring (CCSM) system offers a technology based monitoring solution for confined spaces.

A single operator can monitor up to 12 confined spaces where the system provides real time gas measurements, access control data, camera streams and a full duplex intercom system.

All the data is securely stored for evaluation and incident investigation purposes.

The CCSM-system has been developed throughout years and has proved its value during many turnarounds.

System features

- Real-time information of the actual gas values.
- Real-time overview of workers present in the confined space, display of name, company and entering time in the confined space.
- Live camera streams of the confined space entrance and confined space interior.
- Full duplex intercom system with integrated noise cancellation. The intercom can be activated by the operator or by the worker in the confined space.
- All the measured values are stored and can be exported.

Central control room

- Visualisation software platform to centralize, analyze and report all incoming data.
- Continuous supervision of the workspots/confined spaces by trained professionals.
- Tick boxes to visualize if work permits have been issued for the confined space in question.
- Clear visualisation of alarm conditions and status (green/ orange/red + sound).
- Visual & acoustic pop-ups in case of incoming call.
- Continuous check of network condition and status.
- Automatic logging of all operator actions.



Added values

- Creation of a safer working environment.
- Cost effective compared to the traditional approach with attendants.
- Less safety personnel to manage.
- Extended reporting possibilities, the system can generate numerous management reports which can be used for future planning purposes, cost price calculations/ analysis, etc.
- Real-time gas values can be displayed in the permit office and can be used for permit issuing.

STANDARD CONFIGURATION PER CONFINED SPACE	
Access control	Active badging system: 1 inside confined space, 1 outside confined space
Gas detection	4 sensors + 1 optional input
Camera monitoring	1 inside camera, 1 outside camera
Antennas	Dependent on site layout
Communication & alarming	1 full duplex intercom inside 1 full duplex intercom outside 2 automatic alarm sirens equipped with flash lights
Central control room	1 video wall + 2 UPS supported system servers

Advantages Total Safety's Centralized Confined Space Monitoring System:

- Increase of safety level
- Optimizing manpower
- Better reaction time in emergency situations
- Real time availability of all safety related data
- Cost-reducing



Centralized Confined Space Monitoring Components



Automatic access control

- Personalized active RFID tokens
- Max reader/tag distance: standard 0,5m
- Rollcall and headcount information generated with just one mouseclick in case of emergency
- Possibility to create different zones, access levels and user profiles up to 10.000 users



Permanent gas detection

- Standard configuration: O₂, LEL, H₂S, CO
- Up to 40 different gases possible (upon request)
- 1 optional sensor possible: PID/dust/temperature/humidity...
- Gas detection through a sampling system, minimising the disturbance by placing sensors outside the confined space
- Continuous flow control in sampling system
- Full event logging
- Stand alone alarming
- CE and UL approved



Camera monitoring

- 1 camera inside the confined space on the workspot
- 1 camera outside the confined space to control the entrance and the environment of the access to this confined space
- Dual lens HiRes cameras
- Day & night vision by IR black light
- Full event and data logging in camera
- PoE (Power over Ethernet) - no power cables needed
- Optional thermographic camera



Antennas

- Wireless data transmission (point to point)
- Fully secured and 128 bit encrypted data transmission
- In accordance with RFI standards and therefore no risk of interference with in-plant control systems
- Uses 5,4 ~ 5,8 GHz band (16 channels)
- Max distance: line of sight: up to 10km



Communication

- Communication system integrated in the cameras
- Activated by push button
- Full duplex system



Alarming

- Visual & acoustic alarm inside & outside the confined space
- Activated locally and automatically by the gas detection system or remotely by the operator
- First alarm level = flash light
- Second alarm level = siren



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