

DESCRIPTION

Central monitoring system for medical gases delivers to technical staff and hospital managers all informations about pipeline system, like pressure of each gas and current consumption of medical gases. Moreover this system delivers all informations about gas sources, like air compressors, vacuum plants, cylinder supply systems, etc. present in the hospital.

All HYDRO-GAZ-MED products come with BMS network modules as standard.

Technical staff is informed immediately about any emergencies right after they occur, no matter where they appear even before the hospital staff will know it. It is also possible to continuously track and record conditions of specified gases.

"PRE-ALARM" INFORMATION SYSTEM

Assuming that nominal gas pressure in pipeline system is 5 bar, default alarm pressure is 4 bar for medical staff. However, technical staff can be informed before alarm activates, for example when pressure will drop to 4,2 bar. This is pre-alarm state, that can help to predict and locate improperly working device(s) and take preventive actions to fix eventual problems.

Hospital managers and ward supervisors can have access to accumulated information about gases conditions. Monitoring system allows to analyze all the informations and sends relevant informations to the right section(s). For example, alarm information in surgery section is send to technical personel and supervisor of that certain section only. Set of information and its destination is configured and adapted to the hospital structure at the stage of designing and installation of monitoring system.

Monitoring system allows to constantly register alarm states and periodically register any gas working parameter, e.g. medical gases pressure in whole hospital. It is possible thanks to BMS class system, designed for computers with Windows OS.

All saved information can be browsed by any kind of spreadsheet programs, such as MS Excel and depending on customers needs it can be easily processed.

CALCULATING USAGE OF MEDICAL GASES

Special gas usage counting boxes can register usage of individual medical gases and BMS system calculates costs of monthly gas usage by certain wards. To calculate costs system reads informations about gas usages registered by gas counter. Monitoring system can also calculate costs according to average usage per minute or total usage depending on customer requests.

MEDICAL GASES CONDITION MONITORING

Based on Hydro-Gaz-Med network system which uses IBPL protocol that main advantage is flexibility and simplicity of configuration to adapt to the infrastucture.

In any place of hospital can be installed remote alarm units (for medical staff) controlled by certain area valve box. Also accumulated alarm units and BMS system software for technical staff members to visualize and register all medical pipeline system data.

IBPL protocol has no limits for location and amount of network connections and number of units connected together.

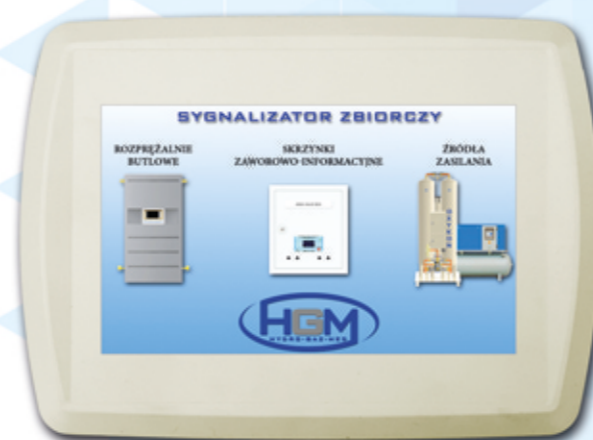
Thanks to advanced technology of Hydro-Gaz-Med BMS system, number of cable connections are minimized therefore costs of monitoring system installation can be reduced.

Moreover, our system allows to control and monitor plenty of other devices or sensors, such as temperature sensors, heating system, lighting system, motion sensors, inundation sensors, windows controlling system, etc. All the information can be received or sent via existing cable connections.

Basic elements of system



Alarm units in valve boxes:
for wards, for specific sections and
central, gas usage counter



Central alarm unit "S9"



Splitters, amplifiers, measuring modules,
connecting FTP cables (RJ-45)



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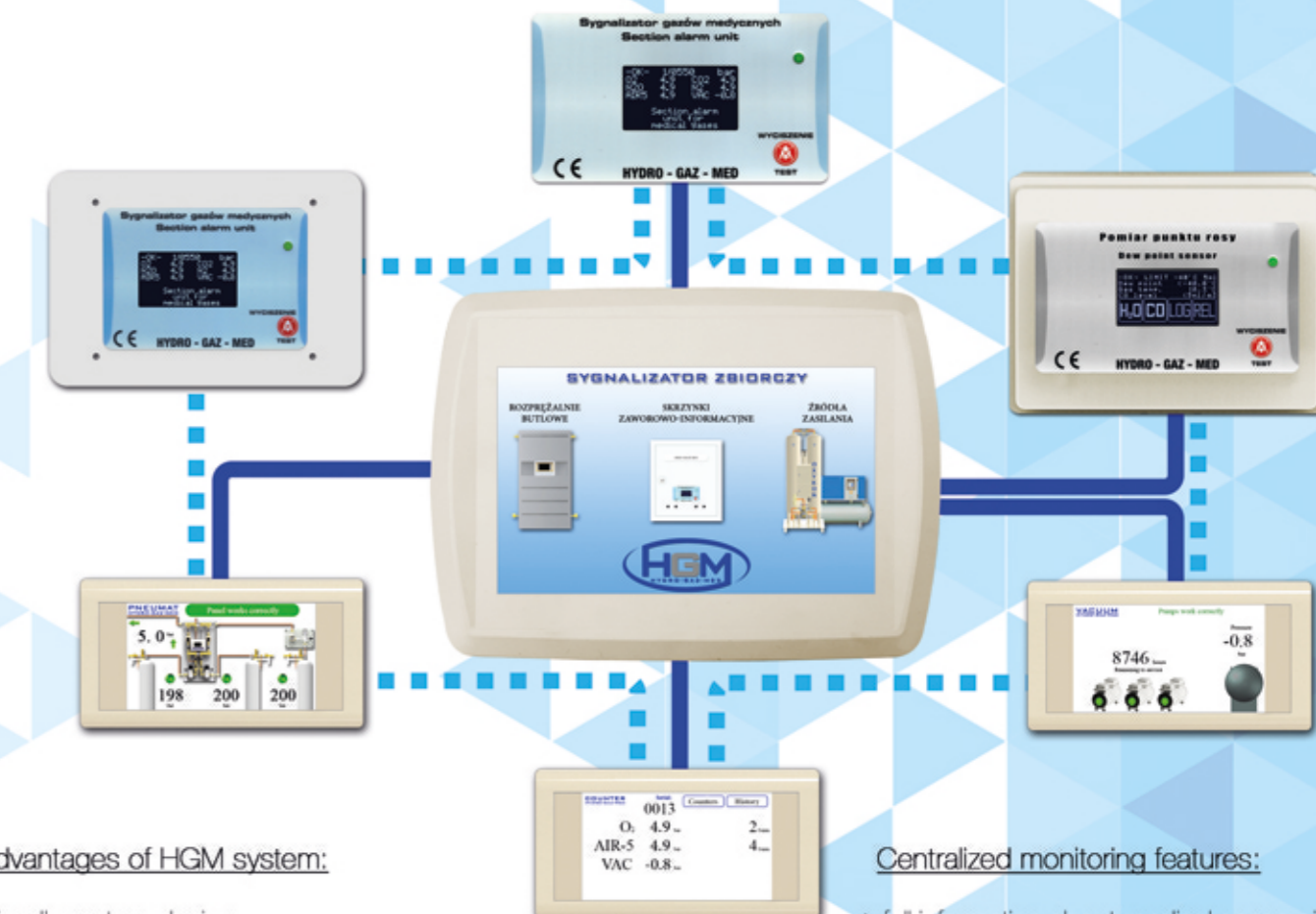
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HGM HYDRO-GAZ-MED

CENTRALIZED MONITORING AND ALARM SYSTEM

DESIGNED ACCORDING TO EN ISO 7396-1 ART. 6



Advantages of HGM system:

- ▶ friendly system design,
- ▶ easy installation,
- ▶ only one type of cable connection FTP 4x2x0,5 with RJ-45 ending,
- ▶ 50% less wiring,
- ▶ unlimited possibility of extension,
- ▶ possibility to adapt to existing medical gases installation,
- ▶ altogether consists of adaptable devices,
- ▶ powered up with 12v dc - no need safety documentation.

Centralized monitoring features:

- ▶ full information about medical gases pipeline system condition,
- ▶ full information about medical gases sources,
- ▶ predicting eventual failures,
- ▶ logs all events,
- ▶ continuous measurement of medical gases consumption,
- ▶ delivering informations where it is necessary,
- ▶ possibility of freely configuration and extension.

ONE SYSTEM

MULTIPLE POSSIBILITIES!

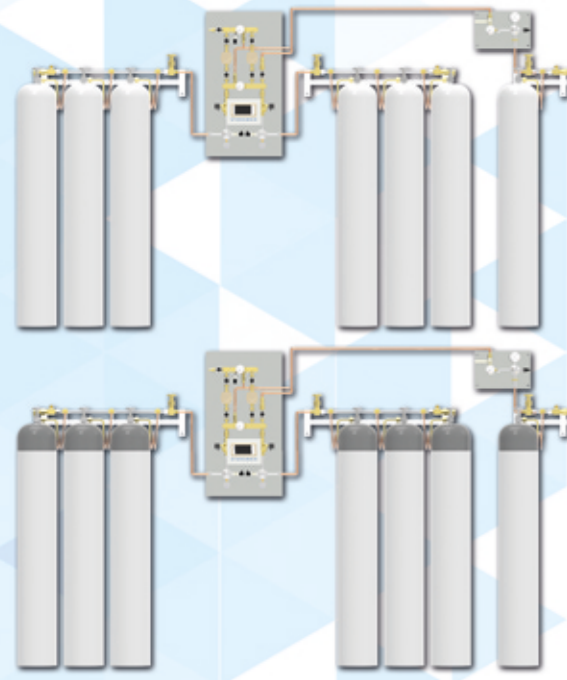


European Union
European Regional
Development Fund



Supply system

Cylinder supply system



Informations from cylinder supply system:

- left side half remaining
- left side empty
- right side half remaining
- right side empty
- reserve half remaining
- reserve empty
- network pressure too high
- network pressure too low

Oxygen concentrator



Informations from concentrator:

- concentrator failure
- too low oxygen concentration
- too low oxygen pressure
- reserve in operation
- module working
- working hours

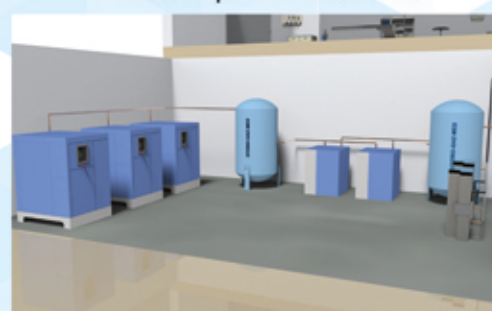
Vacuum plant



Informations from vacuum plant:

- vacuum plant failure
- vacuum too high
- working hours for each pump

Compressed air



Informations from compressed air supply:

- air pressure too low
- air pressure too high
- compressor failure
- working hours of each compressor
- dew point

Hospital wards

BED WARD I



Flow monitor

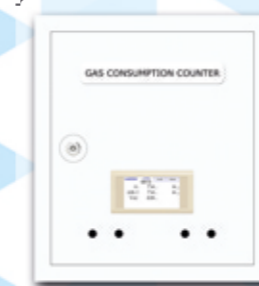
OR



Valve box



Alarm unit



Flow monitor

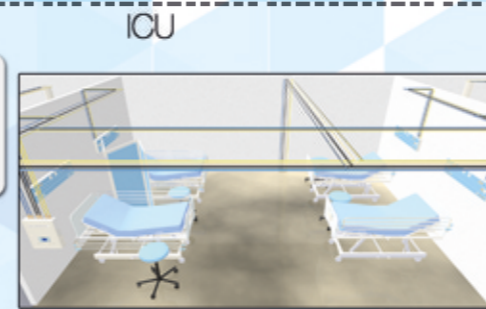
OR



Valve box



Alarm unit



OPERATING THEATRE



Flow monitor

OR



Valve box

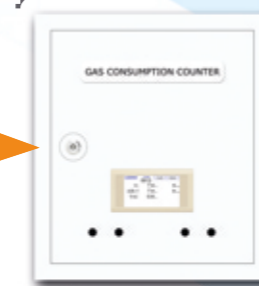
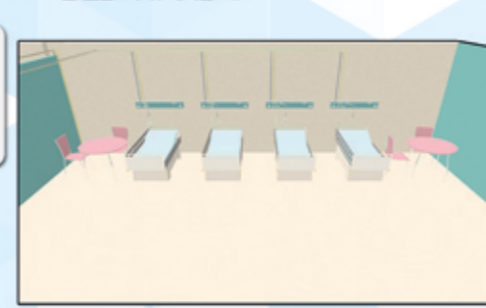


Alarm unit



Splitter

BED WARD II



Flow monitor

OR



Valve box



Alarm unit

Administration

BMS software for Windows OS



Director

BMS software for Windows OS



Technical manager

Central alarm unit "S9"



Technical staff

Communication provided via:



FTP single line



and/or wirelessly



SMS notification

BMS line

local line