



CR-INTELLIGENT ENVIRONMENT REPORTER



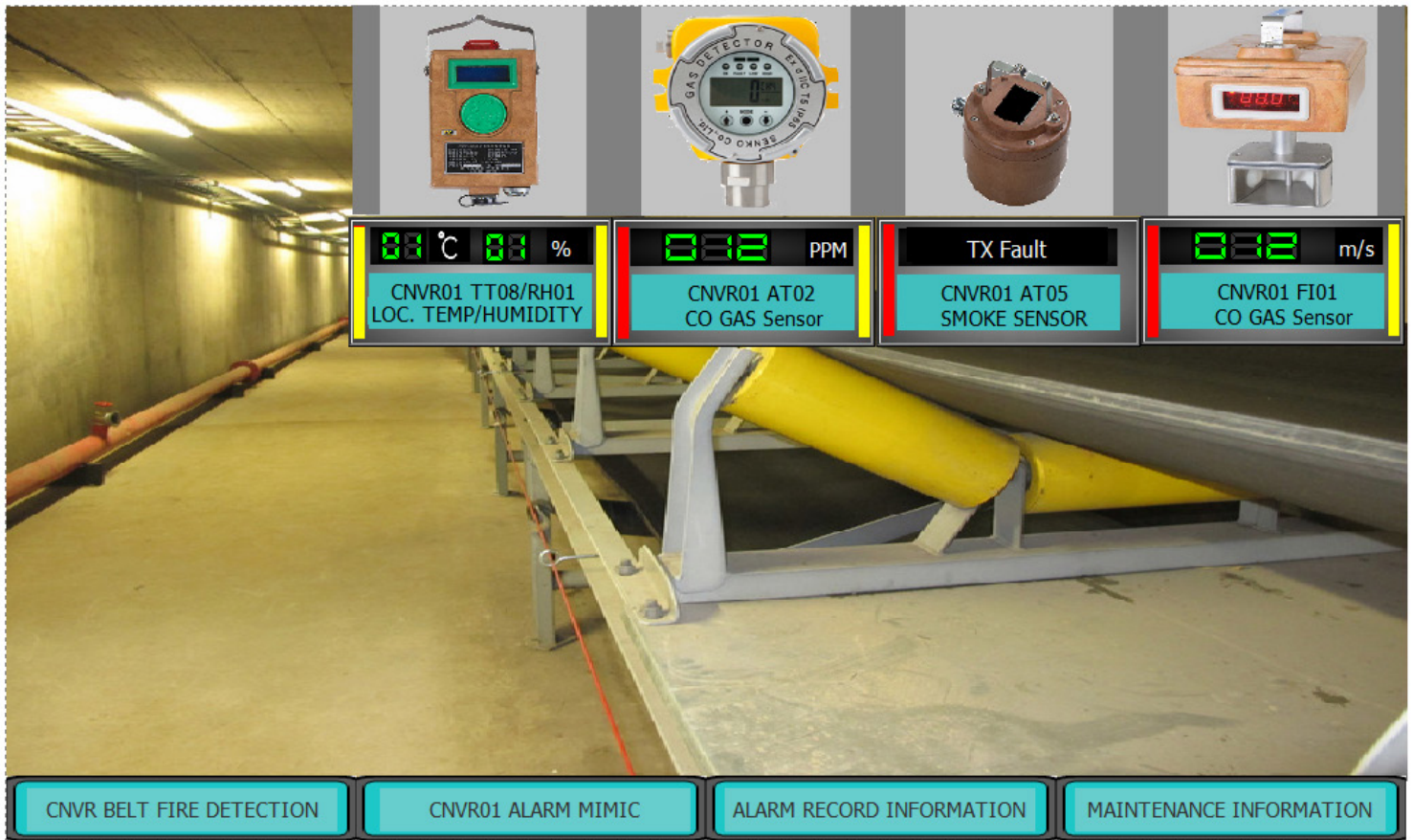
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INTRODUCTION: CR-INTELLIGENCE ENVIRONMENTAL CONTROLLER



The CR-intelligent Environment Reporter is specifically designed for mining applications. It monitors the environment tailor-made to mine requirement. The benefits of this unit is normally to be found with more expensive units.

All parts were carefully selected to comply with industrial standards and in some instances, exceeds the standard. The Screen/PLC is a proven combination since 2005 in the industry, in harsh environments. The Mitsubishi PLC programming that is used, is an industrial standard for more than 30 years (updated).



This unit gives maintenance personnel, accurate, identifiable visual information at point of interest. No need to contact the control room for local information. Sensor information can be identified visually on screen by instrument tag number and location. This unique character of this unit separates it from other systems in a cost-effective way. Normally, maintenance personnel must first establish which sensor/instrument detected a problem. The latter can take hours to identify faulty sensor, etc.

It is important that all sensors connected to this unit are carefully selected. Only approved sensors are to be used in combination with this unit. This will ensure durability and accuracy. The unit will prevent long downtime due to the fact that the problem can be identified in the shortest time. Can be connect to all known It can and is recommended that it is connected to a SCADA system for recording historical data and monitoring purposes.

2 ENVIRONMENT OPTIONS (as required by specific mine)

2.1 CO MONITORING

Approved sensor as per Standard (SANS, SIL, EN. etc). Maintenance must be conducted according to the manufacturer.

2.2 SO2 MONITORING

Approved sensor as per Standard (SANS, SIL, EN. etc). Maintenance must be conducted according to the manufacturer.

2.3 CH4 MONITORING

Approved sensor as per Standard (SANS, SIL, EN. etc). Maintenance must be conducted according to the manufacturer.

2.4 AIR VELOCITY MONITORING

Approved sensor as per Standard (SANS, SIL, EN. etc). Maintenance must be conducted according to the manufacturer.

2.5 TEMPERATURE AND HUMIDITY MONITORING

Approved sensors as per Standard (SANS, SIL, EN. etc). Maintenance must be conducted according to the manufacturer.

2.6 AIR DOOR POSITION SENSOR

Approved sensors as per Standard (SANS, SIL, EN. etc). Maintenance must be conducted according to the manufacturer.

2.7 VENTILATION FAN

Approved sensors as per Standard (SANS, SIL, EN. etc). Maintenance must be conducted according to the manufacturer.

3 POWER

3.1 POWER

The 24V DC supply voltage, for controller and sensors.

3.3 FAULT

A yellow light is used to indicate a fault condition on any of the pre-configured sensors that are installed and active. This indication is used in conjunction with a siren, to make the operator aware that a fault condition has occurred and

3.5 MAINTENANCE – BATTERY TEST

This indication will illuminate once a battery test has been initiated.

3.6 MAINTENANCE – SYSTEM TEST ACTIVE

This indication will illuminate once the 'System Test' key switch is activated. The key can only be removed in normal operation mode, thus ensuring that the operator removes the key after performing system tests. The position of this key switch can be monitored via the SCADA.

4 MAINTENANCE

Due to the harsh environment where the system and sensors are installed, it is of utmost importance that regular maintenance and system tests are conducted on the system. Recommended intervals are once every six weeks. These tests and maintenance should be conducted by a competent and trained person. Maintenance and system tests should include but are not limited to the following:

1. Clean and check operation of Smoke detector / gas sensors
2. Clean and check operation of Temperature and humidity sensor/air velocity sensor
3. Check wiring and operation sensors
4. Conduct a functional test on each area installation
5. Inspect Battery Management system and backup battery condition

An annual check should also be conducted by the manufacturer which will include the regular maintenance that was conducted every six weeks. A certificate will be issued after successful completion of the annual check. Owner/Operator Training will be conducted after installation of a system and will be repeated annually to ensure that all operators remain informed of the system and operation methodology.

ALARM RECORD

The last 30 alarms are reordered and stored in the HMI page#4 and can only be cleared by a supervisor with the relevant log in code.

Alarm Record List		
Alarm Time	No.	Alarm Type
###	###	###
No Alarms		
Clear Alarm Data		

SPECIFICATIONS

1. Support Protocols: Modbus TCP/IP,
2. RS-485 Serial Port for field network
3. Analog 4-20mA/ 0-20mA
4. Digital
5. Audible and Visual local alarm indication
6. Power Reversal Protection

CR-INTELLIGENCE CONTROLLER



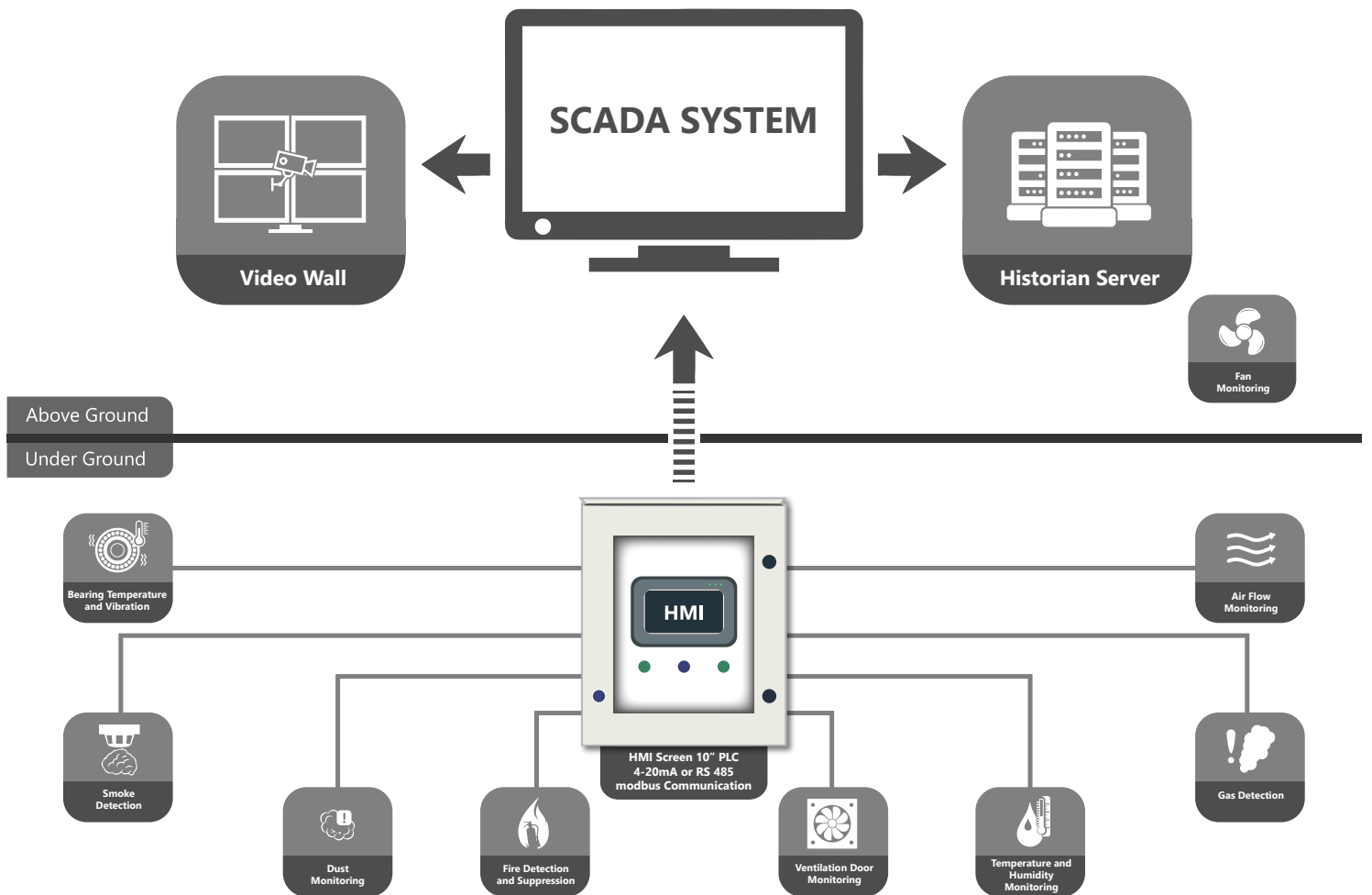
Technical Specifications

Description	Information
Screen Size	10"
Hmi Display	1024X600
Plc	Fx3g /Mitsubishi Program/Rs232
Analog In 4-20Ma	15
Analog In 0-20Ma	1
Analog Out 4-20Ma	8
Digital In	12
Digital Out	8
Serial Rs485 Modbus Plc	2
Polly Fibre Enclosure	600X500X230 / Dubble Door/ Lockable/ See Tru Glass
Polly Fibre Box Rating	Ip 66\lk8
Tower Light	Ip 65 / Led-Green,Red, Yellow
Components	Ce
Power Supply	24V Dc\Process 2.5Amp/1.25Amp Battery Charging

ANNEXURES

ANNEXURE A – WIRING CONNECTIONS

Environmental Monitoring, Fire detection and Condition Monitoring



A photograph of a mining conveyor belt system. The belt is dark and appears to be moving, with some material visible. The system is supported by metal structures, including a yellow-painted metal rail and a chain-link fence. A teal-colored overlay covers the bottom portion of the image, containing contact information.

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