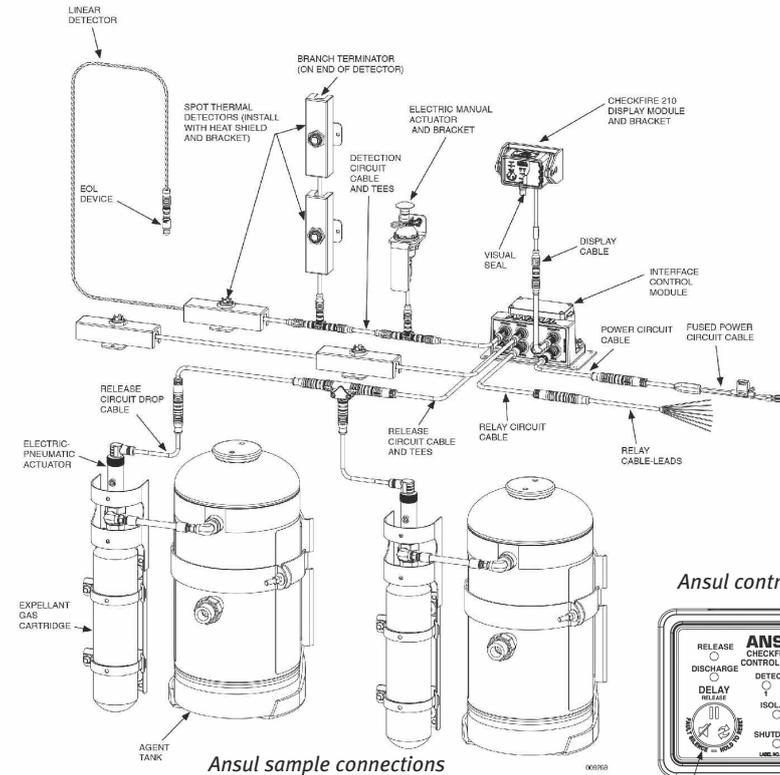


Major new fire detection, alarm and suppression system from Ansul



configurable for various options including single-zone detection, two-zone detection, cross-zone detection, discharge pressure feedback monitoring or alarm only.

Detection is the critical first step in successfully dealing with the threat of fire. The system offers two highly-reliable forms of detection used individually or in combination. Linear Detection Wire consists of spring-steel conductors separated by a heat sensitive insulator. At the temperature rating of the wire, 180°C, the insulator melts and the two conductors make contact, sending a signal to the detection module, which signals the control module to actuate the fire suppression system. With Spot Thermal Detection, the thermal detector contacts close and signal the control module to initiate fire suppression when the temperature reaches either 121°C or 177°C depending on the model selected.

Upon receiving a fire detection signal, the display module activates the release circuit, which is capable of actuating up to 10 agent tanks via electronic actuators mounted directly onto expellant gas cartridges. The system can also be actuated manually by either the manual activation button on the display module itself or electric manual actuators used remotely from various locations on protected equipment.

The display module can be mounted in the dashboard or surface mounted using a swivel bracket. Through communication with the display module, operators receive continuous system updates, and operator input commands go directly to the Interface Control

Module (ICM). System programming may be accomplished using the manual programming button and indicator LEDs or by using a computer with the Ansul CHECKFIRE 210 Programmer software communicating through the micro USB port.

This is a major event for the group because none of Ansul's products get released to the distributors around the world before they are fully trained. IM was in Madrid, Spain in late May where an EMEA (Europe, Middle East, Africa) distributor group was going through the three days of CHECKFIRE instruction, which includes and 'open-book' examination that has to be passed.

Ansul's LVS fire suppression system agent provides both fire suppression and superior cooling of superheated surfaces while blanketing fuel and cutting off oxygen to help prevent reflash. The liquid agent flows readily into hard-to-reach areas where flammable liquids may have travelled. The liquid agent also provides soaking properties that are effective on the Class-A debris common in forestry environments. Additional features include tank capacities of 18.9 to 113.6 litres and an effective operating range of -40°C to 60°C.

The A-101 fire suppression system discharges proven FORAY multipurpose dry chemical agent to quickly knock down Class A, B and C fires. With tank capacities from 4.5 to 113.4 kg, the A-101 fixed nozzle system can be designed to flood entire volumes with dry chemical agent or to discharge directly at specific high-hazard areas. Features include manual and/or automatic detection and actuation, a variety of agent tank options and a low-profile tank option for environments and applications where space is at a premium. Plus, the extreme temperature option ranges from -54°C to 99°C.

However, another goal of the new CHECKFIRES is to avoid erroneous system releases, which are an expensive use of agents and cause damage to equipment. The systems include fault detection aiming to stop fire suppression releases when there is no need for them.

Specifically for underground equipment, there is the CHECKFIRE MP-N system, which carries MSHA approval for use in underground mines (Permissible Applications in Explosive Methane/Air Applications). The rugged control module resists shock and vibration and can be used as a self-contained system with its own internal lithium battery. With the rolling out of the more advanced CHECKFIRE 110 and 210, the underground system will be brought up to the latest technological standards in due course.

www.ansul.com

Ansul, part of Tyco Fire Products, has just started a major roll-out of its new CHECKFIRE 110 and 210 systems, both of compact size. It will be the 210 that is most useful in mining, a supervised electronic detection and actuation system that has been engineered to stand up to extreme operating environments. This versatile system is designed to provide detection, alarm and fire suppression system actuation for mobile applications like hydraulic excavators, haul trucks, wheel loaders, dozers and graders. CHECKFIRE 210 is used with an Ansul LVS, A-101, or twin agent vehicle fire suppression system for 24-hour protection of equipment.

Features include:

- Supervised power, detection, release, and communication circuits
- Display module with LED system status indicators
- Adjustable mounting bracket (display module)
- 85 dB internal sounder
- Automatic and/or manual actuation
- Electric 'DELAY/Reset/Silence' button
- 'PUSH To Activate / Alarm When Lit' electric manual activation button
- Interface control module for all colour-coded 'Plug and Play' cable connections
- Cables provide quick installation and easy replacement
- Internal power source with optional external power
- Auxiliary power output when external power is connected
- Manual programming at interface control module
- Computer programming available through mini USB port
- Two programmable release time delays
- Two analog detection circuits
- Detection circuits are programmable for multiple detection methods
- Detection circuit #2 may be programmed for pressure switch feedback
- Two internal programmable SPDT Form C relays (5 A @ 30 VDC nominal automotive)
- Downloadable 4000+ event history log with real-time stamp
- System isolate feature
- Dust and water tight (IP67 rated)
- Designed for harsh environments.

One of the hallmarks of the CHECKFIRE 210 system is its flexibility in protecting multiple hazard areas. Featuring colour-coded, plug-and-play connectors, the system is equipped with two, independent detection circuits

Ambitious US plans to cut coal power

"At the direction of President Obama and after an unprecedented outreach effort," the US Environmental Protection Agency said as it released the Clean Power Plan proposal, "which for the first time cuts carbon pollution from existing power plants, the single largest source of carbon pollution in the US. Today's proposal will protect public health, move the United States toward a cleaner environment and fight climate change while supplying Americans with reliable and affordable power."

"Climate change, fuelled by carbon pollution, supercharges risks to our health, our economy, and our way of life. EPA is delivering on a vital piece of President Obama's Climate Action Plan by proposing a Clean Power Plan that will cut harmful carbon pollution from our largest source--power plants," said EPA Administrator Gina McCarthy. She talks of "leveraging cleaner energy sources and cutting energy waste."

Power plants account for roughly one-third of all US greenhouse gas (GHG) emissions. While there are limits in place for the level of arsenic, mercury, sulphur dioxide, nitrogen oxides, and particle pollution that power plants can emit, there are currently no national limits on carbon pollution levels.

This new plan proposes guidelines that build on trends already underway in states and the power sector to cut carbon pollution from existing power plants, making them more efficient and less polluting. This proposal follows through on the steps laid out in Obama's

Climate Action Plan and the June 2013 Presidential Memorandum.

By 2030, the EPA aims to:

- Cut carbon emission from the power sector by 30% nationwide below 2005 levels, which is equal to the emissions from powering more than half the homes in the US for one year
- Cut particle pollution, nitrogen oxides, and sulphur dioxide by more than 25% as a co-benefit
- Avoid up to 6,600 premature deaths, up to 150,000 asthma attacks in children, and up to 490,000 missed work or school days—providing up to \$93 billion in climate and public health benefits
- Shrink electricity bills roughly 8% by increasing energy efficiency and reducing demand in the electricity system.

The plan "will be implemented through a state-federal partnership under which states identify a path forward using either current or new electricity production and pollution control policies to meet the goals of the proposed program. The proposal provides guidelines for states to develop plans to meet state-specific goals to reduce carbon pollution and gives them the flexibility to design a program that makes the most sense for their unique situation. States can choose the right mix of generation using diverse fuels, energy efficiency and demand-side management to meet the goals and their own needs. It allows them to work alone to develop individual plans or to work together



EPA scientist conducting bucket test air monitoring

with other states to develop multi-state plans."

The individual states are due to submit their plans to the agency by June 2016. "States that have already invested in energy efficiency programs will be able to build on these programs during the compliance period to help make progress toward meeting their goal."

EPA data gathering has shown that to date, 47 states have utilities that run demand-side energy efficiency programs, 38 have renewable portfolio standards or goals, and 10 have market-based GHG emissions programs. "Together, the agency believes that these programs represent a proven, common-sense approach to cutting carbon pollution—one in which electricity is generated and used as efficiently as possible and which promotes a greater reliance on lower-carbon power sources." www.epa.gov

Great breakthrough in water management turns wastewater into rainwater

A new cost-effective technology to treat mining wastewater and reduce sludge by up to 90% has been used for the first time at a commercial mine. The technology, called Virtual Curtain, was used to remove metal contaminants from wastewater at a Queensland mine and the equivalent of around 20 Olympic swimming pools of rainwater-quality water was safely discharged.

Sludge is a semi-solid by-product of wastewater treatment and reducing the amount produced has huge environmental and economic benefits.

"Our treatment produced only a fraction of the sludge that a conventional lime-based method would have and allowed the mine water to be treated in a more environmentally sound way," CSIRO scientist Dr Grant Douglas said. "Reducing the amount of sludge is beneficial because the costly and timely steps involved to move and dispose it can be reduced."

Given the Australian mining industry is estimated to generate hundreds of millions of tonnes of wastewater each year, the technology opens a significant opportunity for companies to improve water management practices and be more sustainable.

"The technology can produce a material high

in metal value, which can be reprocessed to increase a miner's overall recovery rate and partially offset treatment costs," Douglas said.

Virtual Curtain uses hydrotalcites, which are minerals sometimes found in stomach antacids, to simultaneously trap a variety of contaminants - including arsenic, cadmium, and iron - in one step.

Douglas and his team developed the technology after discovering that hydrotalcites could be formed by adjusting the concentrations of common wastewater contaminants, aluminium and magnesium, to an ideal ratio and then by increasing the pH.

"By using contaminants already present in the wastewater we have avoided the need for expensive infrastructure and complicated chemistry to treat the waste," he said. "If required, the treated water can be purified much more efficiently via reverse osmosis and

either released to the environment or recycled back into the plant, so it has huge benefits for mining operators in arid regions such as Australia and Chile.

"It is a more efficient and economic way to treat wastewater and is enabling the global mining industry to reduce its environmental footprint and extract wealth from waste."

The licensed technology, which can be applied to a range of industrial applications, is available through Australian company Virtual Curtain.

www.csiro.au/people/grant.douglas.html

