

In this edition...



We explore the essential considerations to make about power availability when setting up wireless telemetry systems.



And discuss how we upgraded a series of obsolete MPAS90 alarms for Kongsberg Maritime.

Meet the team

We wanted to help you all put a face to the name and introduce our R&D manager, Tadek Dzwig.

He works on the cutting edge of industrial automation, cathodic protection and remote monitoring technology, based in our R&D department at the factory.



Project complete!



Omniflex has helped wireless data communications systems firm Scan RF implement site-wide monitoring systems at the 17,000 hectare Kolomela iron-ore mine in South Africa.

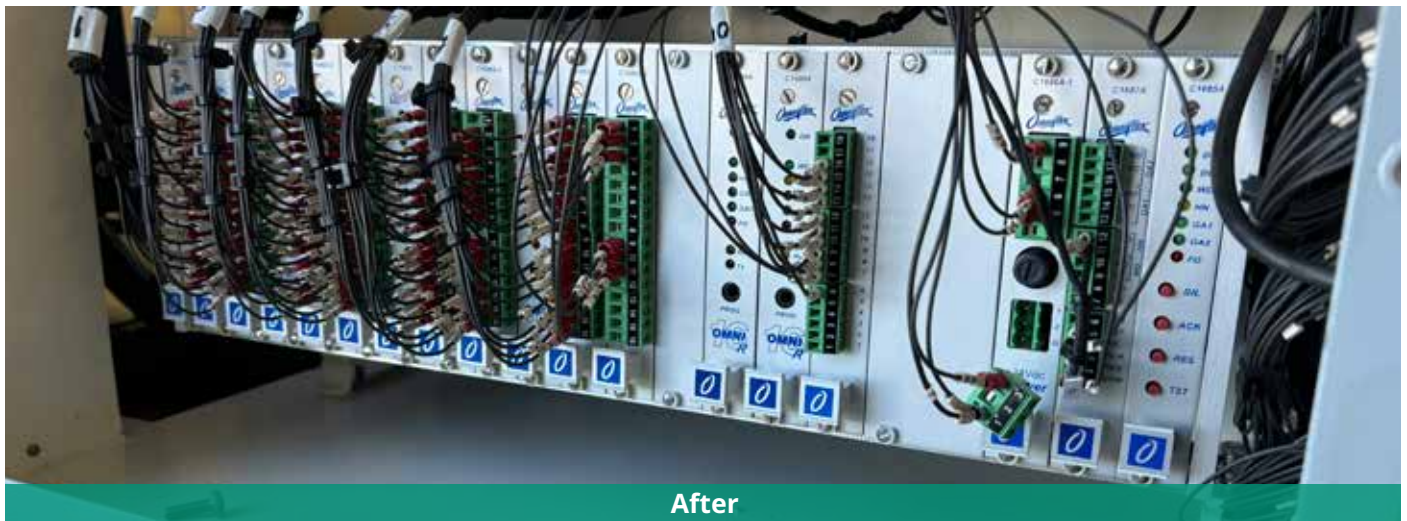
We provided Teleterm M3 modules for each of the mine's outstations to monitor key parameters, including access control, fire alarms, air conditioning, temperature and humidity monitoring and relay data to the mine's central control room.

Omniflex's Teleterm M3 remote terminal units were installed at each of the Kolomela mine's twelve outstations. They collected all key operational data and relayed it to the mine's central control room where it was displayed on a large TV screen so all data was clearly visible. This was duplicated to a smaller display that could be set up to customise the visualised data and provide limited control capabilities. We also integrated our Silent Sentry module into the control room's systems, enabling it to send SMS alerts to key off-site personnel in the event of any critical events.

Providing upgrades for obsolete MPAS90 alarm units



Before



After

Since the 1980s, rack-based alarm annunciator systems have been reliable workhorses in various critical industries, including chemical processing, nuclear, and oil and gas. However, because of their age, many of them do not meet modern safety requirements and are also now beginning to suffer from component failure. For example, when Kongsberg Maritime needed to upgrade some MPAS90 alarm units on a vessel, it could not rely on the original manufacturer so engaged Omniflex to provide replacement systems.

Time waits for no one, and alarm units originally manufactured by companies such as Highland Electronics, Rochester Instruments and Robinsons etc., are reaching the end of their lifespan. This is challenging for facilities relying on them as part of ongoing safety processes.

To add to the problem, most of the units were first installed around 40 years ago, meaning they pre-date the creation of modern safety standards like safety integrity levels (SILs). Furthermore, with many of

the original manufacturers no longer in business, obtaining technical support and spare parts quickly in the event of component failure is virtually impossible.

After decades of service, system failure is becoming increasingly common due to ageing CPUs and PSUs that are now beginning to malfunction or, in many cases, stop working altogether. CPU failure is a particularly challenging issue for many ageing rack-based systems as a single CPU controls the whole rack, meaning, if it fails, you lose every alarm on the rack.

Between these two key problems of increasing compliance requirements with updated safety standards and challenges with obsolescence management, most plant managers of facilities still using older systems are looking to upgrade. However, they often worry that this will involve excessive costs and cause extensive downtime while the new systems are installed and validated. Luckily, by working with the right alarm replacement partner, these issues are easily avoided.

This is exactly what happened with the systems at Kongsberg Maritime, leading the team to source replacements for the original MPAS90 systems. In its hour of need, it turned to Omniflex.

Legacy alarm upgrades

Omniflex's Omni16R rack-based alarm annunciator is an industry-proven upgrade path for some of the original manufacturers' obsolete units, such as Highland Electronics/Rochester Instruments MPAS90 and the PMS rack-based alarm units, which can handle up to 320 alarm points in a single rack and meets IEC61508 SIL-1 standards. It is also Emphasis-certified for use in the nuclear industry, which has its own stringent safety standards that are set by the Health and Safety Executive and Nuclear Decommissioning Authority.

The Omni16R is a direct replacement, engineered on the specifications of the MPAS90 and PMS so it can fit seamlessly into existing panel space and use existing wiring. Furthermore, to add redundancy to the system, each 16-way alarm card on the rack has its own CPU built-in. This reduces single point of failure and means, if a CPU fails, you only lose 16 alarms at most as opposed to hundreds of alarms.



When it comes to displaying alarm conditions, flexibility is key. Sometimes, the requirement can be to have all the alarms displayed on a large screen in a central control room or on other occasions, it is preferable to distribute alarms across multiple displays according to type and priority. This is why the Omni16R can be connected to anything from a single 320-way display to smaller distributed displays. Furthermore, the Omni16R can be interfaced to remote monitoring systems to provide 24/7 oversight of critical alarm conditions in real-time.

To provide customers with peace of mind and to safeguard against future obsolescence issues, Omniflex provides lifetime support for its products and full technical and service support for all products sold over the past 60 years.

To find out more about how Omniflex can help with legacy and obsolete alarm system upgrades, read our [alarm sector industry overview](#).

New project announcements



ThyssenKrupp South Africa has built and supplied a new steam plant to the NATREF plant in Sasolburg. This includes the Omniflex Alarm System which is a standard on the plant. The Maxiflex and Omni16 Systems manage the electrical switchgear tripping and alarms for rapid diagnostics for alarm events during operation.

See our technical artical abstracts below

Omniflex operates across numerous sectors including: radiological monitoring; remote monitoring and control for cathodic protection and industrial tanks; alarm and event management; and more. Read the abstracts below for some of the technical articles and follow the links to find the full version. This month, Gary Bradshaw discusses the importance of alarm annunciators in temperature monitoring applications. Additionally, Ian Loudon outlines the advantages of dual-voltage power supply units in wireless telemetry setups.



Temperature monitoring

The role of alarm annunciators in temperature monitoring

Temperature monitoring is a critical requirement in various industrial settings, from research labs and clinical environments to retail outlets and, even, shipping tankers. In one of our latest articles, Gary Bradshaw explores the importance of alarm annunciators in temperature monitoring applications, drawing on examples from different industrial settings. [**Read it in full on our website.**](#)



Power supply

Simplifying battery management for dual voltage systems

Power supplies are often limited in field environments and some remote telemetry systems need both 24V for the instrumentation and 12V for the radios, which can be a challenge when designing battery backup systems. When instrumentation and radio communication devices run on different voltage supplies, having technology that can adapt to the different voltage requirements is convenient and cost-effective. In a new article, Ian Loudon discusses the key advantages of dual voltage power supply units. **[Read it in full on our website.](#)**



Sequence of events

How SOE monitoring modules cut unplanned downtime

Being able to monitor plant alarms and events in real time, in chronological order, is critical when a plant experiences an avalanche of alarms caused by an abnormal event. Furthermore, an accurate sequence of events (SOE) report allows more effective fault detection and lowers plant maintenance costs. In a new article, Gary Bradshaw explains how specialist SOE modules can be used to cut unplanned plant downtime and reduce operational costs. **Read it in full on our website.**

Last time in Omnifacts

Last edition, we introduced you to our new business development manager, Stuart McIntosh. We previewed our case study of our work to help the Sasol chemical plant in South Africa to upgrade 21,000 critical alarm points at its facility after 30 to 50 years in service.

We also shared abstracts of articles about water monitoring for rhino conservation; increased flexibility for safety-critical alarm annunciators; and signal conditioning in plant environments. We also spotlighted our TXB module, which is the ultimate multitool of signal conditioning.

Product spotlight



A bidirectional contact repeater for reliable long-distance signal delivery

Our FCX module is a fibre optic switch contact signal repeater unit that transmits a switch contact status signal bidirectionally up to 20 km. The first with a SIL-2 rating, the FCX reassures system designers that they can build it into safety critical systems. The unit uses fail-safe 1oo2 architecture and is ideal for the emergency stop function needed for conveyor belts in mining (materials handling) and other safety-critical applications.

The transceiver is compatible with either 850 nm multi-mode or 1310 nm single mode fibre optic cabling; the latter can send switch contact signals up to 20 km of range. The FCX is powered from a 10-30 Vdc power supply and the device can operate in a range of 0-60 degrees Celsius.

The FCX can also figure in nuclear radiological safety warning signals and monitoring and controlled shutdown of electrical substations. The SIL-2 rating is a mark of trust for system designers that the risk associated with transmitting switch contact signals over long distances, or between high voltage circuits, can be limited to appropriate levels.

To find out more, [read the datasheet on our website.](#)

Get in touch with us

 www.omniflex.com

 www.linkedin.com/omniflex

What to expect in edition #24 of Omnifacts



We'll introduce you to Darren Barratt, our UK-based sales manager, so you can put a face to the name. Darren specialises in alarm systems, sequence of events monitoring, radiological protection equipment and remote monitoring systems.



Discuss our project with Kalibra to provide Maxiflex meter provers and pulse integrity devices for calibration and validation at facilities across Africa, including in Angola and Nigeria.



Explore the role of remote monitoring for cathodic protection systems in mining environments.