technical datasheet

9460-ET Series

Intrinsically safe Ethernet products

- Cost effective IS Ethernet equipment for Zone 1, Division 1 hazardous areas
- Connectivity into Zone 0
- Intrinsically safe Power over Ethernet (PoEx™) enables live connection or disconnection in Zone 0 and 1
- Serial-to-Ethernet Gateway
- Copper to Fibre-Optic Media Converter
- IS Ethernet Switch
- IS Ethernet Isolator
- IS Wireless LAN Access Point/Bridge

Today in Process Automation many different methods are used to power and to communicate with end devices. Such methods may include 4-20mA; a variety of different fieldbus standards; serial communications - including RS232, RS422 and RS485; video; telephony and Ethernet.

Where applications require high bandwidth, Ethernet is the ideal solution as it provides open connectivity and can be combined with Ethernet Remote I/O and Linking Devices to connect to low bandwidth 4-20mA and fieldbus systems. But Ethernet has rarely been used in hazardous areas because of the high cost involved and the limitations involved in order to carry out maintenance.

The 9460-ET Series provides cost-effective Intrinsically Safe (IS) Ethernet equipment that can be installed and maintained easily in hazardous areas. The intrinsically safe hazardous area certification permits the components to be mounted in a Zone 1, or Division 1 hazardous area with connectivity into Zone 0 and the associated apparatus certification of the 9468-ET IS Ethernet isolator and 9491-PS IS power supply allow this equipment to be mounted in a Zone 2 hazardous area and connected to intrinsically safe equipment in a Zone 0 or 1, or Division 1 hazardous area.

In Process Automation it is also preferable to use a single cable to provide both power and communications to the end device. The 9460-ET Series can deliver Intrinsically Safe Power over Ethernet (PoEx™) with a single Cat 5e or Cat 6 cable, allowing live connection and disconnection of the end device in Zone 0 and 1 hazardous areas.

The 9461-ET Ethernet Gateway provides existing intrinsically safe equipment with “Ethernet connectivity” by allowing conventional serial communication equipment to be connected to an Ethernet network. Many intrinsically safe devices such as analysers, weighing systems, dust monitors, etc. have RS232, RS422 or RS485 serial connectivity. Providing these devices with Ethernet connectivity offers considerable hardware and integration cost savings.

The 9465-ET Copper to Fibre Optic Media Converter enables an Ethernet network to be extended over a much greater distance. A multi mode fibre optic link running at 100Mbps can go distances of up to 2 km, or an extended distance of 5 km is achievable at 10Mbps. With single mode fibre longer distances are supported.

The 9466-ET Ethernet switch allows the interconnection of intrinsically safe Ethernet networking components via its 5 ports. It also enables a copper Ethernet network to be extended beyond the 100 metre distance limit between Ethernet devices.

The 9468-ET is an intrinsically safe Ethernet isolator enabling Ethernet devices in Zone 2, or a safe area, to communicate with intrinsically safe Ethernet networking components operating in the hazardous area. A further application is the use of a pair of 9468-ET isolators to permit an Ethernet cable to cross a hazardous area.

The 9469-ET Intrinsically safe Wireless LAN product is a multi-functional module that can be used as an 802.11a/b/g/h Access Point, a Wireless Bridge or a Wireless Repeater. Many end users have recognised the benefits of giving mobile operators access to control and maintenance system data.

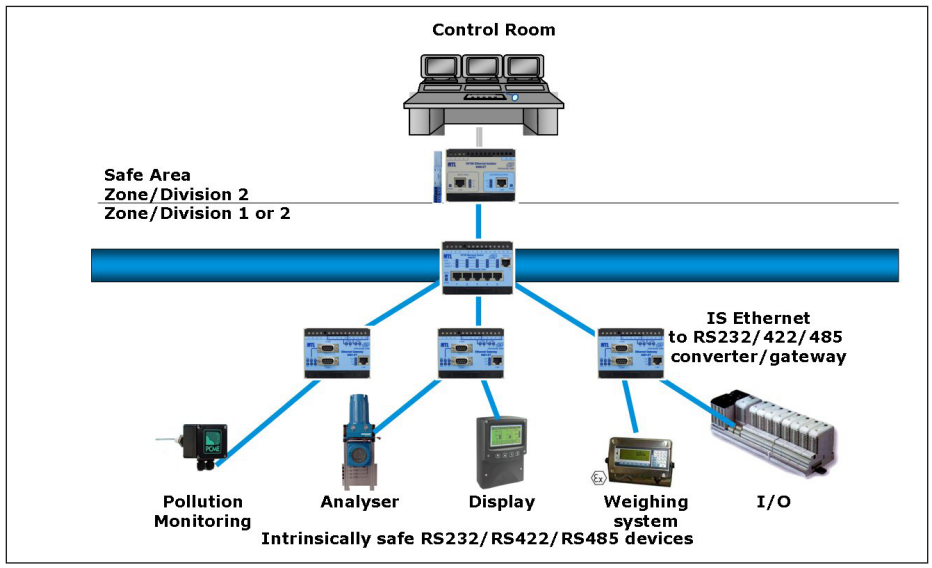
A choice of intrinsically safe PDAs and Zone 2 PCs offering 802.11 wireless connectivity is now available. The 9469-ET offers lower costs and easier maintenance for WLAN equipment installed in hazardous areas, compared to the alternative of large, expensive flameproof enclosures fitted with specialist certified antennas.

The 9491-PS Power Supply is the preferred method for supplying the 9460-ET Series of IS Ethernet Modules as it is based on an isolating power supply. It takes a 24V DC Safe Area/Zone 2 supply and produces an Intrinsically Safe 12V DC nominal output capable of powering the Ethernet modules mounted in a Zone 1/Division 1 hazardous area.

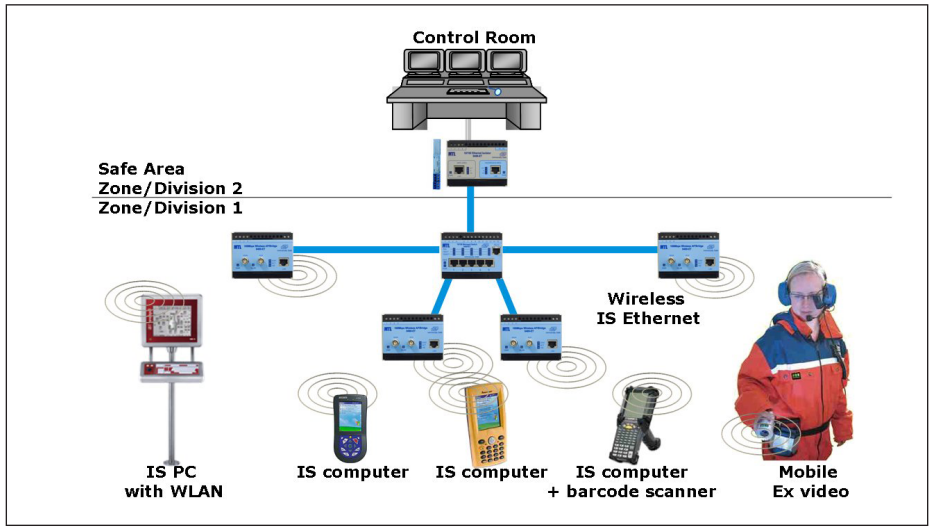
The 9466-ET Ethernet Switch and the 9468-ET IS Ethernet Isolator are capable of distributing power to compatible devices connected to their IS ports providing Power over Intrinsically Safe Ethernet (PoEx™) via the RJ45 Cat5e cables. This method eliminates the need for a separate power supply cable to each Ethernet device; simplifying both installation and maintenance. A 9491-PS power supply is required to power the 9466-ET and an additional 9491-PS is required for each powered Ethernet port. Similarly, one 9491-PS is required to power the IS Ethernet port of the 9468-ET IS Ethernet Isolator. The 9461-ET, 9465-ET and 9469-ET can be powered directly from a 9491-PS intrinsically safe power supply or using Power over IS Ethernet (PoEx™).

The MTL IS Ethernet applications range from immediate needs for Hazardous Area WLAN infrastructure; IS serial device connectivity; and Ethernet connections across hazardous areas to long term opportunities to develop Ethernet field devices.

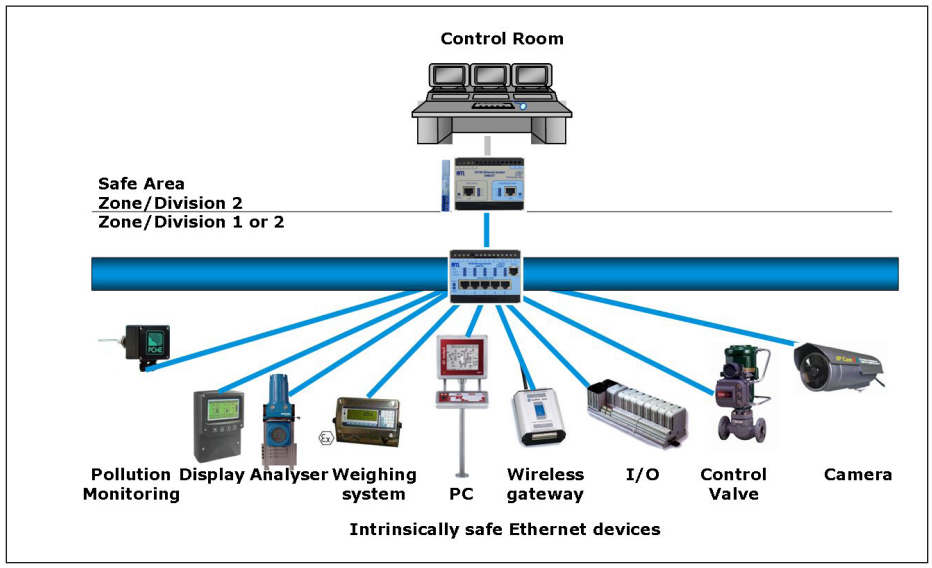
APPLICATIONS



9461-ET Ethernet Gateway connects to instrinsically safe RS232, RS422 and RS485 devices



9469-ET Wireless LAN Access Point connects to a wide choice of IS PDAs and Zone 2 PCs



9466-ET Ethernet Switch connects directly to Intrinsically Safe Ethernet devices