8000
Process I/O

GE

imagination at work

The safe choice for Process I/O

GE Intelligent Platforms, through our acquisition of MTL Open System Technologies (MOST), delivers powerful and comprehensive I/O solutions for the harshest environments.

GE's rugged, reliable 8000 Process I/O, with its optional intrinsic safety, provides a cost-effective and space-saving solution that eliminates the need for external intrinsic safety barriers. We can help you address your most demanding process control applications—all while helping you gain a sustainable advantage for future growth.

8000 Process I/O is recognized around the world as a leading product for use in process environments where extreme temperatures, corrosion, shock and vibration are present. It thrives in the heat of the Arabian Desert and the arctic cold of Siberian oil fields and in atmospheres that are so corrosive that ordinary I/O cannot survive. The world's largest manufacturing companies rely on us to protect their businesses and their personnel because quality and reliability are beyond question.

We're supplying the intrinsically safe version of the I/O to plants around the world where explosive gases are present. The "intrinsic safety" technique reduces the chance of ignition by restricting the energy available in high-risk areas, making it an extremely cost-effective and reliable method of preventing explosions.

For field-mounting I/O in the harsh and hazardous process industry, GE is the safe choice.

Benefits

Designed by experienced process engineers specifically for process applications, 8000 I/O is simple to use—delivering cost savings and value:

Minimum cost field mounting

8000 I/O takes the place of the terminal blocks in field termination cabinets; sensors and actuators connect directly to its terminals. Replacing the multi-core cable to the control room with a single or redundant twisted pair or fiber optic cable reduces the installation cost dramatically. These savings can only be achieved by field mounting, which the rugged 8000 I/O offers.

Scalable

8000 I/O is ideal for any size job from eight I/O points upwards. It is compatible with all controllers, from PLC and PC-based systems right up to large DCS installations.

Low cost of ownership

- Hot swap modules without shutdown
- Automatic addressing – remove and replace I/O without re-programming
- Field wiring terminates directly onto I/O field terminals – no external terminals required

8000 PROCESS I/O
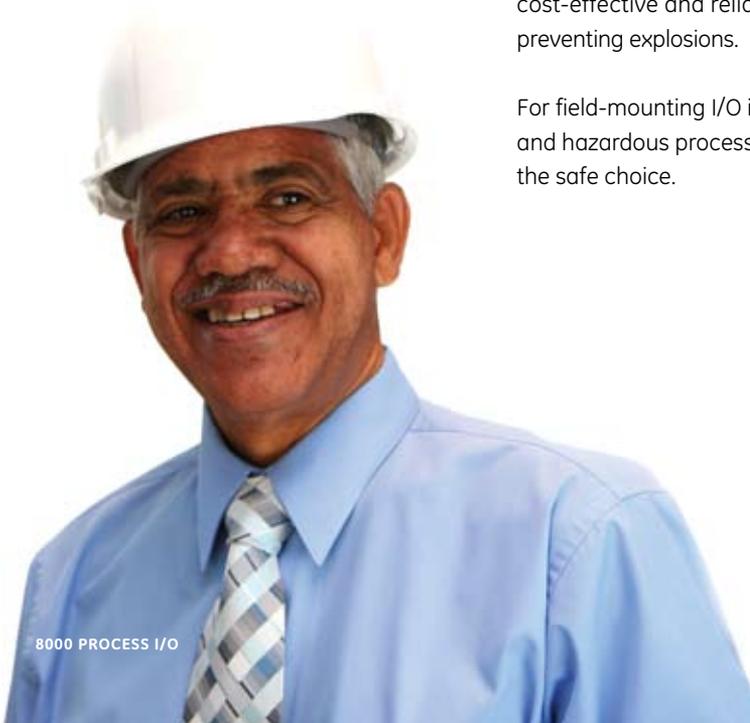
Field mounting I/O

Engineers now have the freedom to mount I/O in the field for increased savings without sacrificing reliability.

Using field mounted I/O and an open network reduces the cabling cost significantly and yet gives access to the diagnostic data you need. The 8000 I/O system solves all of the practical problems so you can install an I/O bus on your plant today.

What is the 8000 I/O system?

It is a field mounting I/O system that replaces field termination cabinets. It allows a group of field devices of any type to be connected to a single network node. The I/O nodes can then be connected together to build a fast, powerful and open I/O system.

Will it be expensive?

No, instead of adding a network bus connection for every switch and thermocouple, groups of I/O devices can be connected to the bus at a single point—sharing the cost of a bus interface across a number of I/O points.

How does field mounting save money?

- Cable and conduit installation costs are cut
- I/O cabinets are not needed in the control room

- Control rooms can be smaller
- Designs are standard so design costs are low
- Fewer cables mean simple commissioning and maintenance

Can't any I/O system be field mounted?

No. Standard PLC or DCS I/O is designed for control room use, not for extreme temperatures, corrosive and explosive gases, shock and vibration that 8000 I/O thrives on. In many applications, it is the only way of field mounting I/O.

Rugged, reliable I/O

The versatility and tough design of 8000 I/O make it ideal for your process I/O needs.

8000 I/O is designed to address your process needs, connecting as few as eight or as many as 1024 I/O points to each node. You can distribute the 8000 I/O nodes to remote locations in large applications, where the size is limited only by the network protocol you choose. It's effective across various industrial process applications, including:

Oil and gas

8000 I/O is designed for the most remote places where oil and gas are found. Its -40°C to +70°C (-40°F to 160°F) operating temperature range means that it can be mounted outdoors on the plant anywhere in the world. System availability in these conditions can be increased further by using redundant communications modules, power supplies and network cables. Also, intrinsic safety provides great cost savings because the protection components are designed into the module, so no external barriers or isolators are needed.

Chemical and petro-chemical processing

Chemical and hydrocarbon processing plants create corrosive flammable gases so field mounted I/O needs to be hazardous-area capable as well as rugged. 8000 I/O is certified for use in hazardous areas all over the world. The modules are tropicalised to meet stringent ISA corrosion resistance requirements.

Natural gas pipelines

When I/O is installed in remote locations, it needs to be reliable and simple to maintain. 8000 I/O modules can be hot-swapped on a live system. The configuration is backed up locally so no re-configuration is necessary, even if several modules are removed and replaced at the same time.

Water and waste

Distributed field mounting makes 8000 I/O ideal for use in the water industry where I/O is needed in groups around each part of the process. Its wide temperature range means that I/O cabinets do not need heating.
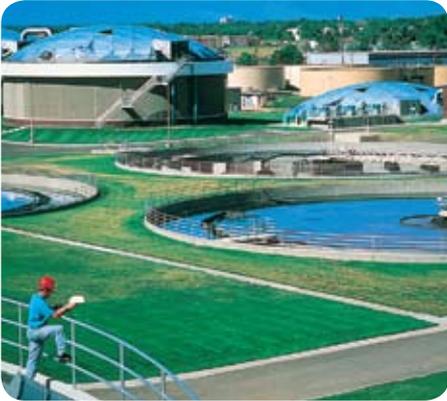
Pulp and paper

High temperature and humidity make paper plants feel like a tropical jungle. 8000 I/O is right at home in this atmosphere and is even immune to the corrosive chemicals.

Hazardous area applications

8000 I/O is designed for use in the harshest environments anywhere, but what about areas where flammable gases are present? As you would expect, 8000 I/O has the widest range of hazardous area options.

Division 2/Zone 2 approvals

8000 I/O is approved by Factory Mutual and CSA for Class I, Division 2 applications in the USA and Canada, respectively, and is ATEX-approved for mounting in Zone 2 locations in Europe. These give the highest possible savings in many field-mounted environments.

Affordable intrinsic safety

Our expertise is built into the front end of IS I/O modules for direct connection to hazardous area field wiring. This means no external barriers or isolators, no additional wiring and no extra cost. All you pay for is the integrated IS I/O module.

De facto standard for Process I/O

8000 Process I/O has become the de facto I/O standard for major automation suppliers. It is the standard platform for several major DCS systems, providing the I/O solution for both safe area and hazardous area I/O needs in their systems. Several programmable controller vendors are using 8000 Process I/O for their applications in harsh process environments. You can be confident with 8000 Process I/O in your application.

A highly trusted I/O supplier

GE Intelligent Platforms is an ISO 9001 company and a leading I/O supplier for safety critical applications—approved by dozens of authorities all over the world—setting the industry standard for quality, reliability and safety. In addition, you can leverage our in-depth process industry experience for your business success.

For more information about how 8000 Process I/O can deliver results for your business, visit www.ge-ip.com/8000

The complete system

The 8000 Process I/O, with its integral intrinsic safety, provides a cost-effective and space-saving solution that eliminates the need for external intrinsic safety barriers.

I/O Modules

- Wide range of I/O for virtually any process signal, including HART® Smart analog, thermocouple, RTD, potentiometer, high-speed counter, frequency and quadrature
- Suitable for safe-area, non-incendive and intrinsically safe applications
- Remote configuration and interrogation of smart devices
- Packing density: 3-6mm per channel
- Live "hot swapping"
- Keying stops modules from being inserted in the wrong position
- Isolation between I/O bus and field wiring
- Diagnostic services for each channel

Bus Interface Modules (BIMs)

- Interfaces with up to 64 sixteen-channel modules
- Modbus TCP, Modbus serial and Profibus communication protocols supported
- Redundant BIMs available for some protocols
- On-line configuration and reconfiguration

Power Supplies (not shown)
- AC power or 24V dc input versions
- Supplies power for I/O and controllers
- Redundant power supply options

Carriers
- Tough polycarbonate base – protects against shock and vibration
- Choice of four module, eight module and Node Services versions
- Cable ground and shield terminals along front edge
- Reliable – no active components – so there is nothing to fail
- Replacement modules are configured automatically, so maintenance is simplicity itself

Field Terminals
- Unique, removable terminals for fast wiring and field replacement
- Optional fuses and disconnects – no interposing terminals required
- Direct termination for field wiring
- Field power routed to terminals – no daisy chaining at the field terminals
- Integral tagging system

GE Intelligent Platforms Contact Information

Americas: **1 800 433 2682** or **1 434 978 5100**
Global regional phone numbers are listed by location on our web site at **www.ge-ip.com/contact**

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