# Industrial Wiring

***Tyco Thermal Controls***

Pyrotenax® BRAND

## A Solutions Company

Tyco Thermal Controls provides complete heat tracing and speciality wiring solutions for the industrial, commercial, and residential markets. Employing 2500 people around the world, Tyco Thermal Controls is the global leader in total solutions.

## Worldwide Approach

With operations in 48 countries and worldwide experience, Tyco Thermal Controls can support your project efforts anywhere, anytime. Whether it is top-notch products or turnkey services, Tyco Thermal Controls has the solution.

## The Pyrotenax® Brand

For over 50 years, Pyrotenax Mineral Insulated products have satisfied the unique requirements of the wiring, heating and temperature measurement industries. Proven products, wide application experience and broad technical expertise make Pyrotenax by Tyco Thermal Controls the logical choice.

## Pyrotenax Industrial Wiring Cable

Loss of capital equipment and production time has prompted the development of equipment designed to withstand the destructive forces of a fire. When exposed to fire risk areas, electrical wiring is in jeopardy of failure. To ensure electrical power is available for critical circuit survival when it is needed, choose Pyrotenax Industrial Wiring.

Pyrotenax® BRAND

***Tyco Thermal Controls***

# Applications

Examples of typical applications in selected industries as well as a product selection table are listed below. For assistance in selecting the right product for your application, please contact your Tyco Thermal Controls representative.

## Petrochemical

The ravages of small fires can rapidly escalate into catastrophic proportions when a refinery shutdown system does not function properly. Conduit and wire can fail in less than 3 minutes at 425°F (250°C) while hydrocarbon flash fires can exceed 2012°F (1100°C). To ensure the integrity of power and control wiring to emergency block valves and emergency equipment during a fire, choose Pyrotenax MI wiring cables.

## Power

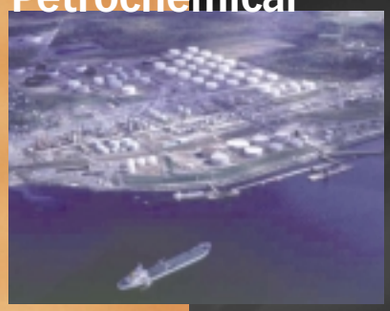
Continuous high temperature environments accelerate the aging characteristics of conventional wiring systems over time resulting in brittle insulation and premature failure. Pyrotenax MI wiring cables are constructed with inorganic, inert materials for greater system integrity.

## Pulp and Paper

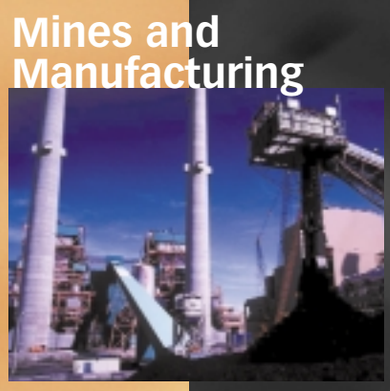
The presence of corrosive environments during routine operation or in an upset condition requires additional measures of equipment protection. Independent laboratory reports demonstrate that Alloy 825 provides superior corrosion resistance from most of the common stainless steels and resists stress corrosion cracking in both chloride or alkaline environments.

## Mines and Manufacturing

The presence of gases or fumes in hazardous environments requires a system to block the passage of explosive vapors. For example, the compressed MgO insulation in Pyrotenax wiring cables stops the passage of helium gas at 2000 psi. Factory fabricated Pyrotenax MI wiring units do not require gas path seals, have a smaller profile than wire and conduit methods and are a cost-effective method to meet NEC Article 501-5 requirements.






# Product Selection

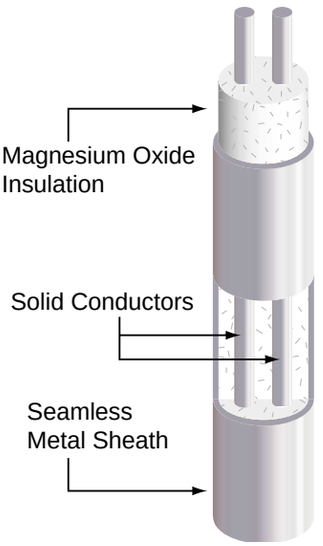
| Environment | Typical Industries | Application Examples | Product |
|---|---|---|---|
| Flash fire | Petrochemical<br>Hydrocarbon processing<br>Manufacturing | Instrumentation & control wiring<br>Power wiring: Motor Operated Valves (MOV's)<br>Power wiring: Emergency Block Valves (EBV's) | System 2000/2200* |
| Continuous high temperature<br>or<br>Corrosive environment | Petrochemical<br>Power utilities<br>Food and beverage<br>Manufacturing<br>Steel mills<br>Chemical processing | Fire protection<br>Alarm annuciations<br>Emergency lighting<br>Instrumentation<br>Flare stack ignitors | System 1850/2000/2200*<br><br>System 2000/2200* |
| Gas path block | Petrochemical<br>Hydrocarbon processing<br>Mines<br>Pulp and paper<br>Grain elevators<br>Tank farms<br>Gas processing | OEMs<br>Fuel pumps<br>Paint shops<br>Hazardous division 1 & 2 locations | System 1850 |

Table

* Product selection based upon maximum exposure temperature. Please contact your local Tyco Thermal Controls representative for assistance in selecting the right product for your application.

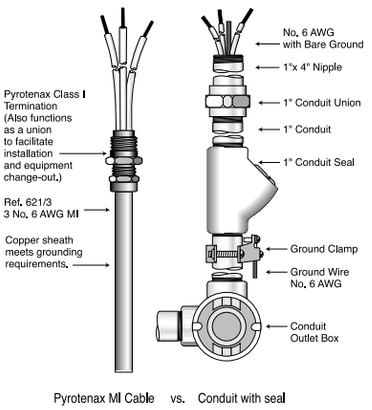
# Industrial Wiring Construction

Using only inorganic materials (copper, Alloy 825, nickel and magnesium oxide) Pyrotenax Mineral Insulated (MI) cables are rugged, durable and made to last. Highly compacted magnesium oxide insulation provides exceptional temperature and electrical performance. Three choices of conductor materials permit a variety of temperature range capabilities for high temperature and fire-rated environments in non-hazardous and hazardous locations.




Pyrotenax Industrial Wiring Cables are produced in voltage ratings of 300 V and 600 V, are factory assembled and enclosed in a liquid and gas-tight seamless sheath. Standard wiring configurations provide up to 10 conductor capabilities. For custom configurations, contact your Tyco Thermal Controls representative.

## Simplified Installation

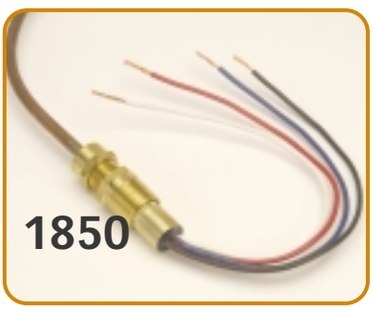



Pre-terminated MI circuits used in hazardous area gas-path-blocked applications eliminate the time and materials used in conventional conduit and wiring methods while a smaller overall profile permits more cable runs in less space.

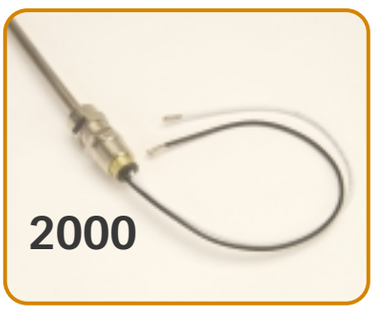
## Wiring for Extreme Environments

Both System 2000 and 2200 will continue to operate for up to 2 hours in hydrocarbon fires. This time allows for an orderly shutdown of facilities to reduce costs, lessen damage and resume plant operations sooner.

# Products




A flexible, copper-sheathed MI cable with solid copper conductors, System 1850 cables operate continuously to 482°F (250°C) with exposure temperatures to 1850°F (1010°C)




An Alloy 825 stainless steel-sheathed MI cable with nickel-clad copper conductors and magnesium oxide insulation, System 2000 cables provide fire protection with exposure temperatures to 1950°F (1065°C)


An Alloy 825 stainless steel-sheathed MI cable with solid nickel conductors and magnesium oxide insulation, System 2200 cables provide fire protection with exposure temperatures to 2200°F (1200°C)

# Why Choose Pyrotenax?

## Pyrotenax Industrial Wiring Features & Benefits

- Operates continually in 482°F (250°C) environment
- Operates for up to 2 hours in hydrocarbon fires
- Provides zero flame spread, zero gas and zero smoke
- Non-aging
- High mechanical strength
- Small overall diameter
- No conduit required
- Competitive installed cost
- High corrosion resistance
- Waterproof and submersible
- Installation-ready
- Tyco Thermal Controls technical field support

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## Partial List of Clients:

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- Arco Alaska
- BP Oil
- Chevron
- Co-op Newgrade
- Ecopetrol
- Esso Resources
- Exxon
- Hess Oil
- Imperial Oil
- Irving Refining
- Lyondell Petro
- Mobil Oil
- Oxychem
- Petro-Canada
- Phillips Petro
- Shell Oil
- Syncrude Canada
- Turbo Resources
- Ultramar Canada
- UnoVen



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