

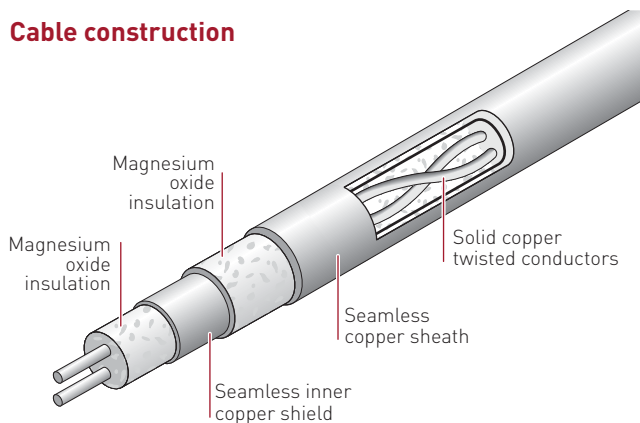


## SYSTEM 1850 TWISTED PAIR

### 2-HOUR FIRE-RATED, MINERAL INSULATED COPPER-SHEATHED FIRE ALARM AND VOICE COMMUNICATION CABLE

For critical and essential circuit protection during a fire

#### Cable construction



Shielded twisted pair cable shown

#### PRODUCT OVERVIEW

Mineral insulated (MI) wiring cable for critical fire alarm circuit protection when survival throughout a fire is essential

Pyrotenax System 1850 fire alarm and voice communication MI cable is a UL Classified/ ULC Listed 2-hour fire-resistive cable tested to the UL 2196/ULC-S139 fire test standards. System 1850 is also Factory Mutual (FM) approved as 2-hour fire-resistive. When installed in accordance with Pentair Thermal Management installation procedures, it meets the survivability requirements of NFPA 72 and Article 760 of the National Electrical Code (NEC).

System 1850 fire alarm and voice communication cables are manufactured using only inorganic materials, copper and magnesium oxide, and arrive on the job site with a UL fire-resistive classification that does not require additional conduit or fireproofing.

System 1850 fire alarm cable is CSA certified as FAS, FAS 90 and FAS 105 cable. Applications include the main trunk or "backbone" of multiplex alarm systems in high-rise buildings and institutions. System 1850 fire alarm and voice communication cable connects between the data-gathering panels throughout the building and the main fire alarm panel.

System 1850 can be found in the following environments.

- High-rise buildings – for fire alarm and voice communication systems
- Hospitals and other institutions where mobility is limited, for emergency communication systems
- Historic buildings where it can be installed unobtrusively, as well as to assure preservation of fire-fighting systems
- Tunnels and subways for the emergency voice communication system, where its zero smoke properties make it unique
- Airports, stadiums, hotels, banks, etc.

System 1850 Twisted Pair MI cable terminations are typically field installed. Factory terminated cable sets are also available. For details on terminated cable sets, contact Pentair Thermal Management.

For additional information, contact your Pentair Thermal Management representative or call (800) 545-6258.

## SYSTEM 1850 TWISTED PAIR

### CABLE CONSTRUCTION

Sheath/shield	Seamless soft-drawn copper
Insulation	Highly compressed magnesium oxide (MgO)
Conductor type	Copper
Insulation voltage rating	300 V
Conductor size	18 AWG and 16 AWG
Jacket (optional)	Polymer – do not use for fire-rated applications
Number of conductors	2

### CABLE TEMPERATURE RATING

Continuous exposure temperature	250°C (482°F) 90°C (194°F) with optional jacket
Maximum exposure temperature	1010°C (1850°F)

### BENDING RADIUS

	NEC	CEC
	5 times cable diameter	6 times cable diameter

### TERMINATION KITS

	Pyropak kit	Pyropak kit
Seal type	Mastic compound	Epoxy resin
Gland fitting	Brass	Brass
Cable seal rating	Nonhazardous and hazardous locations: 105°C (221°F) maximum	Nonhazardous and hazardous locations: 120°C (248°F) maximum <sup>1</sup> Optional epoxy resin available for 200°C (392°F) <sup>1</sup>
Tail sleeving		
Standard sleeve length	12 in (300 mm)	12 in (300 mm)
Maximum exposure temperature	105°C (221°F)	105°C (221°F)
Tail AWG size		
Twisted pair	18 AWG and 16 AWG solid	18 AWG and 16 AWG solid
Shielded twisted pair	18 AWG and 16 AWG solid/18 AWG drain wire	18 AWG and 16 AWG solid/18 AWG drain wire

<sup>1</sup> For entire termination to achieve maximum temperature of epoxy resin seal, silicone fiberglass sleeving must be used (refer to Termination Kits data sheet, H58421)

#### Notes:

- For field-terminated cables, tails are obtained by stripping back the cable sheath; refer to the termination kit installation instructions for details.
- For factory-terminated cables, epoxy resin seal and 12 in (300 mm) PVC insulated tails are standard.

**300 V TWISTED PAIR CABLE SPECIFICATIONS**

Cable Reference Number	Twisted Pair		Shielded Twisted Pair	
	2/18-215T	2/16-246T	2/18-324TS	2/16-364TS
Conductor size (AWG)	18	16	18	16
Nominal coil length (ft)	3060	2084	1404	1107
Nominal coil length (m)	933	635	428	338
Nominal weight (lbs/1000 ft)	77	90	200	254
Gland size (NPT)	1/2"	1/2"	3/4"	3/4"
Twisted frequency (per ft)	4-6	4-6	4-6	4-6
Nominal conductor-to-conductor capacitance (pF/ft) @ 1 kHz	47	53	52	57
Nominal conductor-to-shield capacitance (pF/ft) (one wire to shield)	77	88	82	92
Velocity of propagation (%)	30-35	30-35	30-35	30-35
Nominal conductor resistance (ohms/1000 ft)	6.50	4.09	6.50	4.09
Nominal sheath/shield resistance (ohms/1000 ft)	0.8	0.6	0.3/1.0	0.1/0.8
Nominal diameter of outer sheath (in)	0.215	0.246	0.324	0.364
Nominal diameter of shield (in)	-	-	0.198	0.230

**APPROVALS**

**BULK CABLE**



**Nonhazardous Locations**

**Hazardous Locations**  
 Class I, Div. 1 and 2, Groups A, B, C, D  
 Class II, Div. 1 and 2, Groups E, F, G  
 Class III



**Nonhazardous Locations**



UL Classified, 2-hour fire-resistive cable, tested to UL 2196



ULC Listed, 2-hour fire-resistant cable, tested to ULC-S139

**FM Approvals GP-1**  
 2-hour fire-resistive cable

**TERMINATED CABLE**

PYROPAK KIT (MASTIC COMPOUND SEAL)



**Nonhazardous Locations**

**Hazardous Locations**  
 Class I, Div. 1 and 2, Group A, B, C, D  
 Class II, Div. 1 and 2, Groups E, F, G  
 Class III

PYROPAK KIT (EPOXY RESIN SEAL)



**Nonhazardous Locations**

**Hazardous Locations**  
 Class I, Div. 1 and 2, Groups A, B, C, D  
 Class II, Div. 1 and 2, Groups E, F, G  
 Class III



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