

# SYSTEM 1850Z

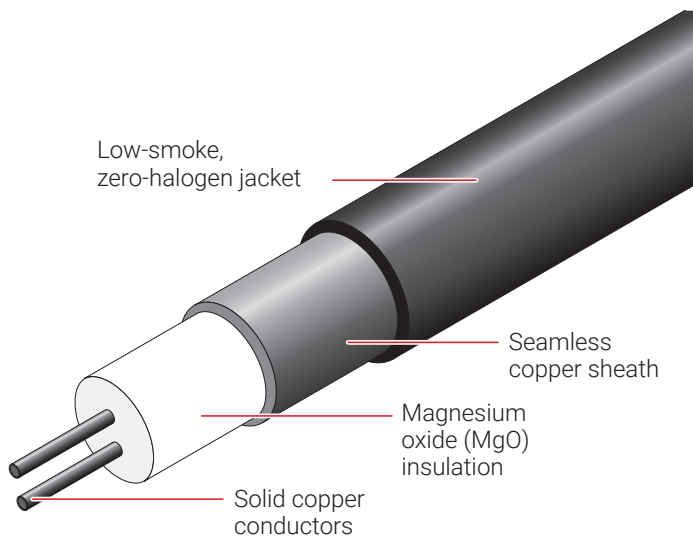


**PYROTENAX**

**CONNECT AND PROTECT**

## Low-Smoke, Zero Halogen jacketed 2-hour fire-rated, mineral insulated copper sheathed wiring cable - for use in damp or corrosive environments

### PRODUCT OVERVIEW



### Cable construction

nVent PYROTENAX System 1850Z MI cable is a UL Classified/ ULC Listed 2-hour fire-resistive cable tested to the UL 2196/ ULC-S139 fire test standards. When installed in accordance with nVent installation procedures, the result is a UL/ULC 2-hour fire-resistive system. This certification meets the requirements of an "Electrical Circuit Protective System" as referred to in Articles 695 and 700 of the National Electrical Code (NEC). The details of this system appear in Electrical Circuit Integrity System (FHIT and FHIT7), System No. 1850, of the UL and ULC Fire Resistance Directory.

System 1850 cables are manufactured using only inorganic materials, copper and magnesium oxide. For more details about System 1850, please refer to nVent data sheet H57442.

System 1850Z cables are manufactured using our rugged 2-hour fire-rated MI cable and is jacketed with a material that complies with wet-location and "low-smoke, zero-halogen" requirements for transit applications as outlined in NFPA 130. Although developed for transit tunnel applications, it may also be used in other areas where corrosion due to moisture may be of concern, such as rooftops, partially-buried, buried or concrete encased runs or crawlspaces. For more details about approvals and standards, please see the Approvals section.

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

## CABLE CONSTRUCTION

Sheath	Seamless soft-drawn copper
Insulation	Highly compressed magnesium oxide (MgO)
Conductor type	Copper
Insulation voltage rating	600 V
Jacket	Low-smoke, zero-halogen polyolefin

## CABLE TEMPERATURE RATING

Continuous exposure temperature	90°C (194°F)
Maximum exposure temperature	1010°C (1850°F), (one time only)

## CABLE PERFORMANCE RATINGS

Description	Test Standard / Markings
Oil & Gasoline Resistance	UL 2556; 4.2.8.3, 4.2.8.4
Vertical Tray Flame Propagation	FT4 / IEEE 1202; UL 1685
Smoke Release in Vertical Tray	ST1 / IEEE 1202; UL 1685
Fire-Resistive; Circuit Integrity	Two Hours with Hose Stream; UL 2196 and ULC S-139

For more detailed information specific to fire, flame and smoke tests, please refer to nVent application document H58073.

## BENDING RADIUS

	NEC	CEC
Cables ≤ 3/4" diameter	5 times cable diameter	6 times cable diameter
Cables > 3/4" diameter	10 times cable diameter	12 times cable diameter

## TERMINATION KITS

	QuickTerm kit	Pyropak kit	Pyropak kit
Seal type	Self-amalgamating tape	Mastic compound	Epoxy resin
Gland fitting	Brass	Brass	Brass
Cable seal rating	Nonhazardous locations: 90°C (194°F) maximum	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>
Cable configurations	For #6 AWG and larger single conductor cables	For all single and multiconductor cables	For all single and multiconductor cables
Tail sleeving (PVC)			
Standard sleeve length	–	12 in (300 mm) or 36 in (900 mm) <sup>2</sup>	12 in (300 mm) or 36 in (900 mm) <sup>2</sup>
Maximum exposure temperature	–	105°C (221°F)	105°C (221°F) <sup>1</sup>
Tail AWG size	Refer to product installation instructions	16 AWG – 500 kcmil solid	16 AWG – 500 kcmil solid

<sup>1</sup> To achieve stated temperature ratings, silicone fiberglass sleeving must be used (refer to Termination Kits Data Sheet H58421). Note that one-time maximum exposure temperature still applies to the System 1850Z MI cable.

<sup>2</sup> If longer tail lengths are required, contact nVent.

## 600 V WIRING CABLE SPECIFICATIONS

Cable reference number	Conductor size (AWG)	Nominal OD [in (mm)]	Nominal coil length <sup>3</sup> [ft (m)]	Nominal weight [lb/1000 ft (kg/km)]	NPT gland size (in)
<b>Single conductor</b>					
1/6-340Z	6	0.430 (11)	1178 (359)	271 (403)	1/2
1/4-402Z	4	0.492 (12)	818 (249)	373 (556)	1/2
1/3-449Z	3	0.539 (14)	667 (203)	454 (677)	3/4
1/2-449Z	2	0.539 (14)	667 (203)	489 (729)	3/4
1/1-496Z	1	0.586 (15)	546 (166)	542 (808)	3/4
1/1/0-512Z	1/0	0.602 (15)	496 (151)	652 (972)	3/4
1/2/0-580Z	2/0	0.67 (17)	387 (118)	828 (1234)	3/4
1/3/0-621Z	3/0	0.711 (18)	553 (168)	1000 (1491)	1
1/4/0-684Z	4/0	0.774 (20)	455 (139)	1195 (1782)	1-1/4
1/250-746Z	250 kcmil	0.836 (21)	383 (117)	1414 (2108)	1-1/4
1/350-834Z	350 kcmil	0.924 (23)	285 (87)	1756 (2618)	1-1/4
1/500-1000Z	500 kcmil	1.090 (28)	197 (60)	2499 (3725)	1-1/4
<b>Two conductor</b>					
2/16-340Z	16	0.430 (11)	1095 (344)	224 (333)	1/2
2/14-371Z	14 <sup>4</sup>	0.461 (12)	957 (292)	274 (409)	1/2
2/12-402Z	12 <sup>4</sup>	0.492 (12)	788 (240)	316 (471)	1/2
2/10-449Z	10 <sup>4</sup>	0.539 (14)	635 (194)	398 (593)	3/4
2/8-512Z	8	0.602 (15)	468/(143)	519/(774)	3/4
2/6-590Z	6	0.680 (17)	355/(108)	716/(1067)	3/4
2/4-684Z	4	0.774 (20)	404/(123)	944/(1407)	1
2/3-768Z	3	0.858 (22)	230/(70)	1142/(1699)	1-1/4
2/2-865Z	2	0.955 (24)	263/(80)	1437/(2138)	1-1/4
2/1-975Z	1	1.065 (27)	199/(61)	1810/(2694)	1-1/4
<b>Three conductor</b>					
3/16-355Z	16	0.445 (11)	1009 (307)	247 (367)	1/2
3/14-387Z	14 <sup>4</sup>	0.477 (12)	852 (260)	297 (443)	1/2
3/12-480Z	12 <sup>4</sup>	0.57 (14)	554 (169)	443 (660)	3/4
3/10-480Z	10 <sup>4</sup>	0.57 (14)	560 (171)	467 (696)	3/4
3/8-590Z	8	0.68 (17)	371 (113)	695 (1036)	3/4
3/6-621Z	6	0.711 (18)	325 (99)	799 (1191)	3/4
3/4-746Z	4	0.836 (21)	225 (69)	1152 (1716)	1-1/4
3/3-834Z	3	0.924 (23)	180 (55)	1420 (2113)	1-1/4
<b>Four conductor</b>					
4/16-387Z	16	0.477 (12)	851 (259)	294 (438)	1/2
4/14-465Z	14 <sup>4</sup>	0.555 (14)	589 (180)	413 (616)	3/4
4/12-465Z	12 <sup>4</sup>	0.555 (14)	568 (173)	423 (631)	3/4
4/10-590Z	10 <sup>4</sup>	0.68 (17)	353 (108)	664 (990)	3/4
4/8-590Z	8	0.68 (17)	358 (109)	716 (1067)	3/4
4/6-730Z	6	0.820 (21)	234 (71)	1080/(1607)	1-1/4
<b>Seven conductor</b>					
7/16-449Z	16	0.539 (14)	605 (184)	383 (571)	3/4
7/14-496Z	14 <sup>4</sup>	0.586 (15)	499 (152)	478 (713)	3/4
7/12-543Z	12 <sup>4</sup>	0.633 (16)	419 (128)	582 (868)	3/4
7/10-621Z	10 <sup>4</sup>	0.711 (18)	335 (102)	777 (1158)	1
7/8-710Z	8	0.800 (20)	287/(88)	1051 (1567)	1-1/4

<sup>3</sup> If longer lengths are required, contact nVent.

<sup>4</sup> For 14 AWG, 12 AWG and 10 AWG, refer to appropriate sections of NEC and CEC governing conductor overcurrent protection limitations.

**Notes:**

- To obtain cable diameter: use last three or four digits in the cable reference number and move decimal point three places to the left; result is cable diameter in inches. Example: cable reference 4/10-590Z is 0.590" diameter without LSZH jacket. Nominal jacket thickness is 0.045", therefore add 0.09" for nominal jacketed OD.
- Unlike bare System 1850, due to the insulating property of the polymeric jacket, "free-air" ratings may not be used when designing circuits with System 1850Z.

**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 UL2196 with hose stream



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

**North America**

Tel +1.800.545.6258  
Fax +1.800.527.5703  
thermal.info@nVent.com

**Europe, Middle East, Africa**

Tel +32.16.213.502  
Fax +32.16.213.604  
thermal.info@nVent.com

**Asia Pacific**

Tel +86.21.2412.1688  
Fax +86.21.5426.3167  
cn.thermal.info@nVent.com

**Latin America**

Tel +1.713.868.4800  
Fax +1.713.868.2333  
thermal.info@nVent.com



Our powerful portfolio of brands:

**CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER**