



Energy Division

# HVT-Z

## High Voltage Termination

The HVT-Z high voltage termination system features a new, co-extruded one-piece termination. The main termination component consists of the proven Raychem non-tracking tube together with a co-extruded stress control grading layer. This stress control layer is based on ceramic semi-conductor technology (ZnO) and provides superior discharge and impulse performance. When the tubing is shrunk down, the coating softens and sticks to irregular surfaces, providing moisture seals as well as electrical stress control.

### Reliable, field proven performance

Independent testing and field experience have repeatedly proven the long-term stability, durability and reliability of Tyco Electronics' HVT system, even in highly polluted environments. The non-tracking, insulating outer jacket can withstand the rigors of long-term electrical stress and surface pollution without loss of performance. The non-tracking material offers the additional benefit of being maintenance free, with no need for periodic cleaning. Extensive load cycle testing verifies the long-term thermo-mechanical compatibility between the termination system and the cable. This long-term HVT experience, together with the co-extruded ZnO stress control system, provides the new, superior HVT-Z termination.

### Flexible and versatile

An HVT-Z termination system may be installed upright or inverted and can bend to the same bending radius as the cable. Slim and lightweight, the system can also be mounted directly to fuse cut outs or other devices, eliminating the cost of additional supporting brackets.

### Optional ShearBolt Terminal

As an option, the HVT-Z can also be ordered with Tyco Electronics' new line of Aluminum ShearBolt Terminals. These are range taking mechanical connectors that will accommodate a conductor range from #2 compact to 1000 kcmil stranded, Class B.

This connector is suited for making aluminum or copper cable connections to flat bar or equipment pads equipped with 2-hole NEMA spacing. The ShearBolt terminal design incorporates shear head bolts, which ensures that the correct torque is applied to each bolt and consequently the optimal contact force is generated to minimize connection resistance.

### Testing

Tyco Electronics' high-voltage terminations are fully qualified per IEEE-48 as Class I terminations to provide a long, trouble-free service life.

Independent testing and field experience have repeatedly proven the long-term durability, reliability, and stability of the HVT-Z termination system.

 **Tyco Electronics**

Our commitment. Your advantage.

## For Copper Tape Shield, Wire Shield, UniShield and Lead Sheath Cables

Selection Information: dimensions in inches (millimeters)

Indoor/Outdoor Kit		Conductor Size (Min. - Max.)		Insulation Diameter (Min. - Max.)	Jacket O.D. (Max.)
<b>5/8 kV</b>		<b>5 kV (0.90")</b>	<b>8 kV (0.115")</b>		
HVT-Z-80-G/SG		#4 - #1 AWG	#6 - #2 AWG	0.35 - 0.60 (9 - 15)	0.95 (24)
HVT-Z-81-G/SG		1/0 AWG - 250 kcmil	#1 - 4/0 AWG	0.60 - 0.95 (15 - 24)	1.20 (30)
HVT-Z-82-G/SG		300 - 500 kcmil	250 - 500 kcmil	0.80 - 1.25 (20 - 32)	1.50 (38)
HVT-Z-83-G/SG		600 - 1750 kcmil	600 - 1750 kcmil	1.10 - 1.75 (28 - 44)	2.10 (53)
HVT-Z-84-G/SG		1500 - 3500 kcmil	1500 - 2500 kcmil	1.60 - 2.45 (41 - 62)	2.75 (70)
<i>Installed Length 11.5" (295)</i>		<i>Can be cut shorter for use with MCK kits</i>		<i>No Skirts for Outdoor Operation</i>	

Indoor	Outdoor Kit	Conductor Size (Min. - Max.)		Insulation Diameter (Min. - Max.)	Jacket O.D. (Max.)
<b>15 kV</b>		<b>15 kV(.175 - .220")</b>			
HVT-Z-151-G	HVT-Z-151-SG	#4 - 1/0 AWG		0.60 - 0.95 (15 - 24)	1.20 (30)
HVT-Z-152-G	HVT-Z-152-SG	2/0 AWG - 350 kcmil		0.80 - 1.25 (20 - 32)	1.50 (38)
HVT-Z-153-G	HVT-Z-153-SG	400 - 1000 kcmil		1.10 - 1.75 (28 - 44)	2.10 (53)
HVT-Z-154-G	HVT-Z-154-SG	1250 - 2500 kcmil		1.60 - 2.45 (41 - 62)	2.75 (70)
<i>Installed Length 11.5" (295)</i>				<i>1 Skirt for Outdoor Operation</i>	

Indoor	Outdoor Kit	Conductor Size (Min. - Max.)		Insulation Diameter (Min. - Max.)	Jacket O.D. (Max.)
<b>25 kV/35 kV</b>		<b>25 kV (0.260")</b>	<b>35 kV (0.345")</b>		
HVT-Z-252/352-G	HVT-Z-252/352-SG	#2 AWG - 250 kcmil	#1 - 1/0 AWG	0.80 - 1.25 (20 - 32)	1.50 (38)
HVT-Z-253/353-G	HVT-Z-253/353-SG	300 - 750 kcmil	2/0 AWG - 500 kcmil	1.10 - 1.75 (28 - 44)	2.10 (53)
HVT-Z-254/354-G	HVT-Z-254/354-SG	1000 - 2000 kcmil	750 - 1750 kcmil	1.60 - 2.45 (41 - 62)	2.75 (70)
<i>Installed Length 19.0" (485)</i>				<i>4 Skirts for Outdoor Operation</i>	

## Kits Includes a Tyco Electronics ShearBolt Terminal

Selection Information: dimensions in inches (millimeters)

Indoor	Conductor Size (Min. - Max.)		Insulation Diameter (Min. - Max.)	Jacket O.D. (Max.)
<b>5/8 kV</b>	<b>5 kV</b>	<b>8 kV</b>		
HVT-Z-81-G/SG-T5	1/0 AWG - 250 kcmil	#1 - 4/0 AWG	0.60 - 0.95 (15 - 24)	1.20 (30)
HVT-Z-82-G/SG-T5	300 - 350 kcmil	250 - 350 kcmil	0.80 - 1.07 (20 - 27)	1.50 (38)
HVT-Z-82-G/SG-T8	350 - 500 kcmil	350 - 500 kcmil	0.85 - 1.25 (22 - 32)	1.50 (38)
HVT-Z-83-G/SG-T9	600 - 1000 kcmil	600 - 1000 kcmil	1.10 - 1.40 (28 - 36)	2.10 (53)
<i>No Skirts for Outdoor Operation</i>				

Indoor	Outdoor Kit	Conductor Size (Min. - Max.)		Insulation Diameter (Min. - Max.)	Jacket O.D. (Max.)
<b>15 kV</b>		<b>15 kV</b>			
HVT-Z-151-G-T5	HVT-Z-151-SG-T5	#2 - 1/0 AWG		0.65 - 0.95 (17 - 24)	1.20 (30)
HVT-Z-152-G-T5	HVT-Z-152-SG-T5	2/0 AWG - 350 kcmil		0.80 - 1.25 (20 - 32)	1.50 (38)
HVT-Z-153-G-T8	HVT-Z-153-SG-T8	400 - 500 kcmil		1.10 - 1.355 (28 - 34)	2.10 (53)
HVT-Z-153-G-T9	HVT-Z-153-SG-T9	600 - 1000 kcmil		1.215 - 1.65 (32 - 42)	2.10 (53)
				<i>1 Skirt for Outdoor Operation</i>	

Indoor	Outdoor Kit	Conductor Size (Min. - Max.)		Insulation Diameter (Min. - Max.)	Jacket O.D. (Max.)
<b>25 kV/35 kV</b>		<b>25 kV (0.260")</b>	<b>35 kV (0.345")</b>		
HVT-Z-252/352-G-T5	HVT-Z-252/352-SG-T5	#2 AWG - 250 kcmil	#1 - 1/0 AWG	0.80 - 1.25 (20 - 32)	1.50 (38)
HVT-Z-253/353-G-T5	HVT-Z-253/353-SG-T5	300 - 350 kcmil	2/0 AWG - 350 kcmil	1.10 - 1.50 (28 - 38)	2.0 (51)
HVT-Z-253/353-G-T8	HVT-Z-253/353-SG-T8	350 - 750 kcmil	350 - 500 kcmil	1.185 - 1.70 (30 - 43)	2.10 (53)
HVT-Z-254/354-G-T9	HVT-Z-254/354-SG-T9	600 - 1000 kcmil	600 - 1000 kcmil	1.60 - 1.79 (41 - 45)	2.75 (70)
				<i>4 Skirts for Outdoor Operation</i>	

## For Jacketed Concentric Neutral and Unjacketed Concentric Neutral Cables

### Selection Information: dimensions in inches (millimeters)

Indoor	Outdoor Kit	Conductor Size (Min. - Max.)		Insulation Diameter (Min. - Max.)	Jacket O.D. (Max.)
<b>15 kV</b>		<b>15 kV (100%)</b>			
			<b>15 kV (133%)</b>		
HVT-Z-151-J	HVT-Z-151-SJ	#2 - #1 AWG		0.60 - 0.95 (15 - 24)	1.05 (27)
HVT-Z-152-J	HVT-Z-152-SJ	#2/0 AWG - 250 kcmil	#2 - 4/0 AWG	0.80 - 1.05 (20 - 27)	1.45 (37)
HVT-Z-153-J	HVT-Z-153-SJ	350 - 500 kcmil	250 - 500 kcmil	1.05 - 1.40 (27 - 36)	1.90 (48)
HVT-Z-154-J	HVT-Z-154-SJ	750 - 1000 kcmil	750 - 1000 kcmil	1.25 - 2.00 (32 - 51)	2.50 (63)

Installed Length 11.5" (295)

1 Skirt for Outdoor Operation

Indoor	Outdoor Kit	Conductor Size (Min. - Max.)		Insulation Diameter (Min. - Max.)	Jacket O.D. (Max.)
<b>25 kV/ 35 kV</b>		<b>25 kV</b>			
			<b>35 kV</b>		
HVT-Z-252/352-J	HVT-Z-/252/352-SJ	#1 - 3/0 AWG		0.80 - 1.05 (20 - 27)	1.45 (37)
HVT-Z-253/353-J	HVT-Z-253/353-SJ	4/0 AWG - 500 kcmil	#1/0 - 4/0 AWG	1.05 - 1.40 (27 - 36)	1.90 (48)
HVT-Z-254/354-J	HVT-Z-254/354-SJ	750 - 1000 kcmil	250 - 1000 kcmil	1.25 - 2.00 (32 - 51)	2.50 (63)

Installed Length 20.0" (500)

4 Skirts for Outdoor Operation

## Kits Includes a Tyco Electronics ShearBolt Terminal

### Selection Information: dimensions in inches (millimeters)

Indoor	Outdoor Kit	Conductor Size (Min. - Max.)		Insulation Diameter (Min. - Max.)	Jacket O.D. (Max.)
<b>15 kV</b>		<b>15 kV</b>			
HVT-Z-151-J-T5	HVT-Z-151-SJ-T5	#2 AWG - 1/0 AWG		0.65 - 0.95 (17 - 24)	1.20 (30)
HVT-Z-152-J-T5	HVT-Z-152-SJ-T5	2/0 AWG - 350 kcmil		0.80 - 1.25 (20 - 32)	1.50 (38)
HVT-Z-153-J-T8	HVT-Z-153-SJ-T8	400 - 500 kcmil		1.10 - 1.355 (28 - 34)	2.10 (53)
HVT-Z-153-J-T9	HVT-Z-153-SJ-T9	600 - 1000 kcmil		1.215 - 1.65 (31 - 42)	2.10 (53)

1 Skirt for Outdoor Operation

Indoor	Outdoor Kit	Conductor Size (Min. - Max.)		Insulation Diameter (Min. - Max.)	Jacket O.D. (Max.)
<b>25 kV/35 kV</b>		<b>25 kV (0.260")</b>			
			<b>35 kV (0.345")</b>		
HVT-Z-252/352-J-T5	HVT-Z-252/352-SJ-T5	#2 AWG - 250 kcmil	#1 AWG - 1/0 kcmil	0.80 - 1.25 (20 - 32)	1.50 (38)
HVT-Z-253/353-J-T5	HVT-Z-253/353-SJ-T5	300 - 350 kcmil	2/0 AWG - 350 kcmil	1.185 - 1.7 (30 - 43)	2.10 (53)
HVT-Z-253/353-J-T8	HVT-Z-253/353-SJ-T8	350 - 750 kcmil	350 - 700 kcmil	1.395 - 1.7 (35 - 43)	2.10 (53)
HVT-Z-254/354-J-T9	HVT-Z-254/354-SJ-T9	600 - 1000 kcmil	600- 1000 kcmil	1.60 - 1.79 (41 - 45)	2.75 (70)

4 Skirts for Outdoor Operation

### Testing Chart:

Product and Voltage Class Test Description	HVT-Z-80 Series (5-8 kV)	HVT-Z-150 Series (15 kV)	HVT-Z-250/350 Series (25 - 35 kV)
AC Withstand, 1 minute, (kV)	35	60	90
DC Withstand, 15 minutes (kV)	65	75	140
Partial Discharge (min. kV) for 3 pc or less	9	15.6	36
Impulse withstand 1.2 X 50 us, crest kV	95	110	200
Continuous current rating	<b>Equal to cable ampacity</b>		
Wet withstand, 10 seconds, kV rms.	30	45	80
Dry withstand, 6 hours, kV rms.	25	35	75

Indoor Kits (-G and -J) do not contain skirts

Outdoor 15 kV and higher voltage kits contain skirts

### Test Reports:

Voltage Class	Indoor	Outdoor
5/8/15 kV	EDR-5322	EDR-5323-A
25/28/35 kV	EDR-5337	EDR-5338

Terminals	
ASBT-2-350, ASBT-350-750	N/A
ASBT-600-1000	502-47363, Rev. O, 502-47370
ASBS-2-350	502-47292 (1) Rev. A, 502-47300 (1) Rev. A, 502-47340 (1) Rev. O
ASBS-350-750	502-47329 (1) Rev. A
ASBS-600-1000	502-47289 (1) Rev. B, 502-47344 (1) Rev. O, 502-47305 (1) Rev. A

All of the above information, including drawings, illustrations and graphic designs, reflects our present understanding and is to the best of our knowledge and belief correct and reliable. Users, however, should independently evaluate the suitability of each product for the desired application. Under no circumstances does this constitute an assurance of any particular quality or performance. Such an assurance is only provided in the context of our product specifications or explicit contractual arrangements. Our liability for these products is set forth in our standard terms and conditions of sale. Raychem, TE (logo) and Tyco Electronics are trademarks of the Tyco Electronics group of companies and its licensors. UniShield is a trademark of General Cable Technologies Corporation.

**Energy Division - a pioneer in the development of economical solutions for the electrical power industry. Our product range includes: Cable accessories, connectors & fittings, electrical equipment, instruments, lighting controls, insulators & insulation enhancement and surge arresters.**

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