

Hi-Amp Grounding Accessory Kit

GSHA-8 QTII • Primary Short Circuit Capacity Rated 15 kA-15 ~

1. Product Description

The GSHA-8 QTII Termination Grounding Accessory Kit was designed to accommodate the grounding of terminations made on longitudinally corrugated (L.C.), heavy duty tape and conventional tape shielded power cables.

The GSHA-8 QTII design provides a fault current capacity of 15,000 amps for 15 cycles on 15, 25, and 35 kV class cables.

Each kit contains sufficient quantities of the following materials to provide shielding and grounding for one termination:

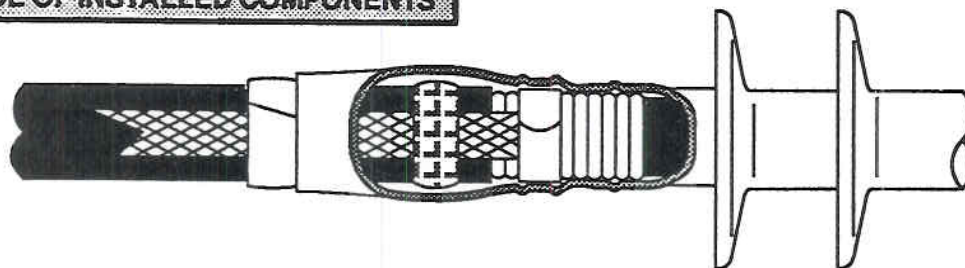
Kit Contents

Mastic Seal Strips
Constant-Force Spring
Preformed Ground Braid
Instruction Sheet

GENERAL APPEARANCE OF INSTALLED COMPONENTS

Designed For Use With:

3M Quick Term II
Termination Kits



2. Product Applications

The GSHA-8 Kit is designed to be used in conjunction with 3M Quick Term II Terminations in applications where high ampacity grounding is desired.

The GSHA-8 product will accommodate cable sizes ranging from 350 kcm through 1000 kcm and voltage classes of 15 kV through 35 kV. For shielded cables not specified in these categories, the product will cover shield diameters from 1.25" (32 mm) through 2.25" (57 mm).

The pre-formed ground braid contained in the GSHA-8 Kit has a fault current capacity of 15,000 amps for 15 cycles. The appropriate Quick Term II Termination Product correspondence can be confirmed by reviewing the accommodation chart below.

Cable and Termination Accommodation Chart

(Final determining factor for ground strap is cable shield diameter)

Product	Insulation Class	Conductor Range (kcm)			
		350	500	750	1000
GSHA-8	15 kV (.175)	5843	5843	5843	5844
	15 kV (.220)	5843	5843	5844	5844
	25 kV (.260)	5853	5853	5854	5854
	25 kV (.280)	5853	5853	5854	5854
	35 kV (.345)	5847	5848	5848	5848

Shield Diameter Accommodation Range: 1.25" (32.0 mm) min. to 2.25" (57.0 mm) max.

3. Electrical Properties

Laboratory Test Data

Six samples were tested on L.C. Shielded Cable with approximately 14 inches between Hi Amp Ground connections. The samples were subjected to approximately 10 kA for 10 cycles, 12 kA for 12 cycles, and 15 kA for 15 cycles. The table below contains the following information:

Sample Number

Current level at first cycle Resistance (at point of contact with source)

Current level at last cycle Temperature (temperature of sample when resistance was measured)

Duration (cycles) Comments

Sample Number	Current Level (kA)		Duration (Cycles)	Resistance ($\mu\Omega$)	Temperature ($^{\circ}\text{C}$)	Comments
	First Cycle	Last Cycle				
1	—	—	—	720.7	21	Initial
2	—	—	—	702.8	21	Initial
3	—	—	—	675.1	21	Initial
4	—	—	—	666.3	21	Initial
5	—	—	—	662.1	21	Initial
6	—	—	—	686.9	21	Initial
1	9.6	8.6	10.5	673.0	21	~ 10 ~ @ 10 kA
2	9.5	8.5	10.5	684.2	21	~ 10 ~ @ 10 kA
3	9.9	8.8	10.5	661.9	21	~ 10 ~ @ 10 kA
4	10.6	9.4	10.5	639.7	21	~ 10 ~ @ 10 kA
5	10.5	9.4	10.5	638.5	21	~ 10 ~ @ 10 kA
6	10.4	9.1	10.5	636.1	21	~ 10 ~ @ 10 kA
1	12.3	9.8	12.5	680.5	22	~ 12 ~ @ 12 kA
2	12.2	9.8	12.5	689.6	22	~ 12 ~ @ 12 kA
3	12.5	9.9	12.5	675.8	22	~ 12 ~ @ 12 kA
4	12.8	10.2	12.5	639.6	22	~ 12 ~ @ 12 kA
5	12.8	10.3	12.5	642.8	22	~ 12 ~ @ 12 kA
6	12.6	9.9	12.5	651.0	22	~ 12 ~ @ 12 kA
1	15.0	9.5	15.5	732.0	23	~ 15 ~ @ 15 kA
2	15.1	9.6	15	741.1	23	~ 15 ~ @ 15 kA
3	15.6	9.4	15.5	736.7	23	~ 15 ~ @ 15 kA
4	15.9	9.7	15	713.6	23	~ 15 ~ @ 15 kA
5	16.0	9.6	15.5	718.5	23	~ 15 ~ @ 15 kA
6	15.7	9.3	15.5	714.0	23	~ 15 ~ @ 15 kA

A condition of stability exists when the level of resistance associated with each sample is constant. The table below is provided for easy comparison of the resistance data associated with each sample as that sample was subjected to the various tests.

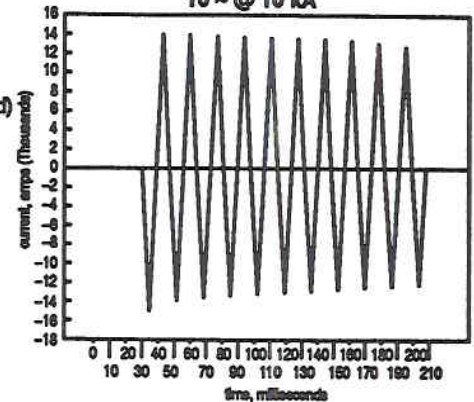
Sample Number	Initial Resistance ($\mu\Omega$)	~ 10 ~ @ 10 kA Resistance ($\mu\Omega$)	~ 12 ~ @ 12 kA Resistance ($\mu\Omega$)	~ 15 ~ @ 15 kA Resistance ($\mu\Omega$)
1	720.7	673.0	680.5	732.0
2	702.8	684.2	689.6	741.1
3	675.1	661.9	675.8	736.7
4	666.3	639.7	639.6	713.6
5	662.1	638.5	642.8	718.5
6	686.9	636.1	651.0	714.0

The following are typical oscillograms for approximately 10 ~ @ 10 kA, 12 ~ @ 12 kA, and 15 ~ @ 15 kA (the specific oscillograms are results of testing sample #1)

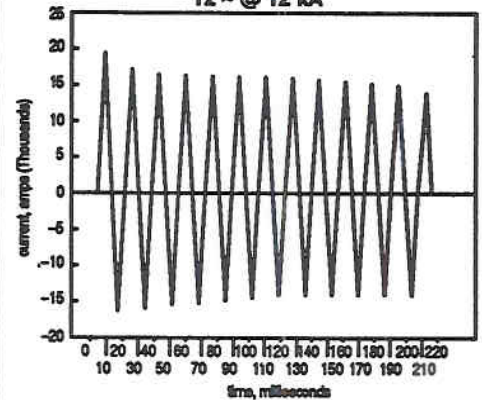
3M SHORT CIRCUIT TESTS

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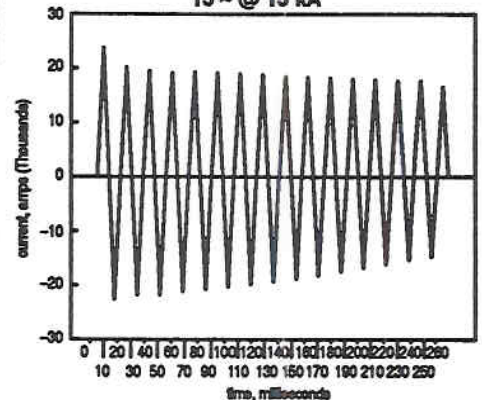
10 ~ @ 10 kA



12 ~ @ 12 kA



15 ~ @ 15 kA



NOTE: CURRENT IS PEAK TO PEAK NOT RMS

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