Scientific Atlanta
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Taps & Passives

Surge-Gap™ Reverse Window Taps
2-Way, 4-Way, 8-Way Standard & Full Profile

Description

The Scientific Atlanta® Surge-Gap™ Reverse Window Taps offer all of the benefits of our existing Surge Gap taps and also allow increased efficiency in system design - via the introduction of reduced reverse path tap losses and tilted forward path tap losses.

Reverse Window taps are designed to provide benefits in the HFC plant at tap locations with high level forward RF signals and significant up-tilt (typically the tap locations closest to nodes and amplifiers). The Reverse Window taps are offered in 3 tap values - 26, 29, and 32 dB.

In the forward path, the tap loss in the Reverse Window tap is deliberately down-tilted, with greater loss at higher frequencies than at lower frequencies. This enables more frequent use of high value taps - increasing system design efficiency, and improves the ability to optimize tap port levels.

In the reverse path, the Reverse Window taps have lower tap losses than traditional high value taps. By using Reverse Window taps, the total range of reverse path tap losses in the HFC plant can be narrowed. This allows the range of RF levels transmitted from closed loop customer premise equipment (CPEs) to also be narrowed – thus improving the reliability of upstream transmissions.

All Surge Gap tap products have IEEE compliant 6kV Surge Protection, providing significantly improved protection against voltage transients in lightning strike areas and locations with unreliable power networks.

The Surge Gap Reverse Window taps continue to offer the make before break capabilities of previous Scientific Atlanta tap products, enabling the tap faceplate to be pulled without interrupting service to downstream customers. The taps pass up to 12 amps of current, enabling operators to access power at locations within the HFC plant where additional power is needed (e.g. for telephony power). The taps are also compatible with our plug-in Power Distribution Unit (PDU), allowing customers to quickly and easily upgrade their networks for telephony deployment with associated tap port powering.

Features

- 3 Cable slope values available
- Available in 2-, 4-, and 8-way capability in standard Surge-Gap Tap Housings
- Also available in 2- and 4-way Full Profile (FP) Housings (not pictured)
- AC/RF bypass switch provides interruption-free service to downstream subscribers during faceplate removal
- 12 amp through current rating to support network powered telephony
- Compatible with Power Distribution Unit (PDU) for economical two-step upgrade to power passing
- AC blocking capacitors on each port to minimize RF signal distortions
- Backwards compatible housing supports economical faceplate upgrades
- Increased Surge Tolerance - Rugged design enables the new products to continue to operate after surges that would typically damage ordinary products and interrupt service
- Improved Return Loss - improved return loss performance to lessen reflected signals for a “cleaner” signal
- AL360T housing with powder coating for superior environmental protection
- Sealed and swaged extended F-ports for maximum resistance to moisture ingress
- Nickel plated brass F-ports to ensure a corrosion-resistant drop interface
- Component covers for additional protection of faceplate circuitry during maintenance
- Versatile housing design permits aerial, pedestal, or MDU mounting schemes

Surge-Gap Reverse Window Taps – 2-Way, 4-Way, 8-Way Standard & Full Profile

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Specifications

General Specifications

	Frequency (MHz)	Units	Specification	Notes
Power Passing	-	amps	12	
Tap-Tap Isolation (minimum)	5-10	dB	22	
	11-750	dB	22	
	751-1000	dB	22	
In-Out Return Loss (minimum)	5-1000	dB	18	
Tap Port Return Loss (minimum)	5-1000	dB	18	
Hum Modulation @ 10 amps (typical)	5-450	dBc	70	
	451-750	dBc	65	
	751-1000	dBc	55	
EMI Shielding (minimum)		dB	-100	*

***Note:** Tested per ANSI / SCTE 48-2 2003

AC/RF Bypass Switch Performance

	Units	Specification	Notes
System Open Circuit Time	ms	0 ms	
Contact Resistance	mOhms	10 max	
Through current capacity	Amps	12	
Voltage capacity	V AC	90	
RF Frequency Range	MHz	5 to 1000	
Insertion Loss & Return Loss		See Loss Table	
Operating Temperature	°C	-40°C to +60°C	

AC/RF Bypass Switch Insertion Loss & Return Loss Table

AC/RF Bypass	5 MHz	500 MHz	750 MHz	870 MHz	1 GHz
Short Circuited Insertion Loss (dB)	0.02 Max <0.01 Mean	0.6 Max 0.4 Mean	0.8 Max 0.5 Mean	0.7 Max 0.4 Mean	0.7 Max 0.5 Mean
Short Circuited Return Loss (dB)	45 Min 50 Mean	16 Min 16.5 Mean	16 Min 16.5 Mean	18 Min 18.5 Mean	21 Min 22 Mean

Mechanical Specifications

Standard Tap	Units	2-Way/4-Way	Notes
Height	in. (mm)	3.6 (91.44)	
Width	in. (mm)	3.6 (91.44)	
Depth	in. (mm)	3.0 (76.2)	
Full Profile Tap	**Units**	**2-Way/4-Way/8-Way**	
Height	in. (mm)	4.25 (107.95)	
Width	in. (mm)	5.25 (133.35)	
Depth	in. (mm)	3.0 (76.2)	
Surge Resistance: – Input / Output ports - (combination wave) – Tap ports (ring wave)	 kV kV	 6 6	
Standards Compliance			
Mechanical	ANSI / SCTE 01 1996 - F-port interface specification SCTE IPS-SP-500 - entry port interface specification		
Emissions	FCC - Part 76, Subpart K EN 50083-2/A1: 1998		
Environmental	ASTM G 53 - weathering specification ASTM B 117 - salt spray specification ASTM D 31 - chip resistance specification EN 60529: 1992 (IP test) Bellcore GR-63-CORE - vibration/transportation ANSI/EEEE C62.41 - lightning		
Electrical Safety	UL Subject 1697 EN 50083-1/A2: 1997 EN 60065: 1998 IEC 60065: 1998		

Surge-Gap Reverse Window Taps – 2-Way, 4-Way, 8-Way Standard & Full Profile

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Specifications, continued

2-Way, 4-Way, 8-Way Surge-Gap Reverse Window Tap – Standard Profile Housing

		2-Way						4-Way						8-Way					
	Tap Value	26 dB		29 dB		32 dB		26 dB		29 dB		32 dB		26 dB		29 dB		32 dB	
		Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.
Insertion Loss (In-Out) (dB)	Frequency																		
	5	0.6	0.3	0.6	0.3	0.6	0.3	0.7	0.4	0.7	0.5	0.7	0.4	1.0	0.6	1.0	0.6	1.0	0.6
	10	0.5	0.2	0.5	0.2	0.5	0.2	0.6	0.3	0.6	0.4	0.6	0.4	0.9	0.6	0.9	0.5	0.9	0.5
	40	0.5	0.2	0.5	0.2	0.5	0.2	0.6	0.3	0.6	0.4	0.6	0.3	0.8	0.5	0.8	0.5	0.8	0.5
	50	0.5	0.2	0.5	0.2	0.5	0.2	0.6	0.3	0.6	0.4	0.6	0.3	0.8	0.5	0.8	0.5	0.8	0.5
	100	0.6	0.3	0.6	0.3	0.6	0.4	0.6	0.4	0.6	0.5	0.6	0.4	0.9	0.6	0.9	0.6	0.9	0.6
	300	0.7	0.5	0.7	0.5	0.7	0.5	0.8	0.6	0.8	0.7	0.8	0.6	1.2	0.9	1.2	0.9	1.2	0.9
	450	1.0	0.8	1.0	0.8	1.0	0.8	1.1	0.8	1.1	0.9	1.1	0.8	1.4	1.2	1.4	1.2	1.4	1.2
	550	1.1	0.9	1.1	0.9	1.1	0.8	1.3	0.8	1.3	1.0	1.3	0.9	1.5	1.2	1.5	1.2	1.5	1.2
	750	1.3	1.1	1.3	1.1	1.3	1.1	1.5	1.0	1.5	1.2	1.5	1.1	1.8	1.4	1.8	1.3	1.8	1.3
	870	1.5	1.3	1.5	1.3	1.5	1.3	1.7	1.2	1.7	1.5	1.7	1.3	2.0	1.6	2.0	1.5	2.0	1.5
	1000	1.9	1.7	1.9	1.8	1.9	1.7	2.0	1.6	2.0	1.9	2.0	1.7	2.3	1.9	2.3	1.8	2.3	1.8

		2-Way			4-Way			8-Way		
	Tap Value	26 dB	29 dB	32 dB	26 dB	29 dB	32 dB	26 dB	29 dB	32 dB
Tap Loss (± 1 dB)	Frequency									
	5	22.0	22.0	22.0	22.4	22.5	22.5	22.1	22.1	22.2
	10	22.7	22.7	22.7	23.2	23.2	23.2	22.7	22.7	22.8
	40	23.2	23.2	23.6	23.7	23.8	24.1	23.0	23.2	23.4
	50	23.3	23.5	23.8	23.7	24.0	24.3	23.1	23.3	23.8
	100	23.7	24.1	24.5	24.2	24.7	25.1	23.4	23.9	24.9
	300	24.0	25.1	26.1	24.9	26.1	26.7	24.2	25.4	27.0
	450	24.1	25.5	27.1	25.4	27.0	28.0	24.9	26.5	28.5
	550	24.2	26.0	27.9	25.8	27.7	29.0	25.1	27.1	29.4
	750	24.9	27.4	29.9	26.3	28.8	30.5	25.1	27.8	30.2
	870	25.7	28.7	31.2	26.4	29.1	30.9	25.2	28.1	30.8
	1000	26.6	30.2	32.1	26.2	28.8	31.0	26.0	29.1	31.9
Out-Tap Isolation (min.) (dB)	5-10	27	27	27	27	27	27	30	30	30
	11-550	27	27	27	27	27	27	30	30	30
	551-750	27	27	27	27	27	27	30	30	30
	751-870	27	27	27	27	27	27	30	30	30
	871-1000	27	27	27	27	27	27	30	30	30

Unless otherwise noted, specifications reflect typical performance and are referenced to 68°F (20°C). Specifications are based upon measurements made in accordance with SCTE/ANSI standards (where applicable), using standard frequency assignments.

Surge-Gap Reverse Window Taps – 2-Way, 4-Way, 8-Way Standard & Full Profile

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Specifications, continued

2-Way, 4-Way, Surge-Gap Reverse Window Tap – Full Profile Housing

		2-Way						4-Way					
	Tap Value	26 dB		29 dB		32 dB		26 dB		29 dB		32 dB	
		Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.
Insertion Loss (In-Out) (dB)	Frequency												
	5	0.6	0.2	0.6	0.2	0.6	0.2	0.7	0.4	0.7	0.4	0.7	0.4
	10	0.5	0.2	0.5	0.2	0.5	0.2	0.6	0.3	0.6	0.3	0.6	0.3
	40	0.5	0.2	0.5	0.2	0.5	0.2	0.6	0.3	0.6	0.3	0.6	0.3
	50	0.5	0.2	0.5	0.2	0.5	0.2	0.6	0.3	0.6	0.3	0.6	0.3
	100	0.6	0.3	0.6	0.3	0.6	0.3	0.6	0.4	0.6	0.4	0.6	0.4
	300	0.9	0.6	0.9	0.6	0.9	0.6	1.0	0.7	1.0	0.7	1.0	0.7
	450	1.2	0.9	1.2	0.9	1.2	0.9	1.2	1.0	1.2	1.0	1.2	1.0
	550	1.3	0.9	1.3	0.9	1.3	0.9	1.3	1.0	1.3	1.0	1.3	1.0
	750	1.5	1.1	1.5	1.1	1.5	1.1	1.5	1.1	1.5	1.1	1.5	1.1
	870	1.7	1.3	1.7	1.3	1.7	1.3	1.7	1.3	1.7	1.3	1.7	1.3
	1000	2.0	1.7	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.7	2.0	1.6

		2-Way			4-Way		
	Tap Value	26 dB	29 dB	32 dB	26 dB	29 dB	32 dB
Tap Loss (± dB)	Frequency						
	5	22.1	22.1	22.1	22.6	22.7	22.6
	10	22.9	22.8	22.8	23.2	23.3	23.3
	40	23.3	23.3	23.6	23.6	23.8	24.5
	50	23.4	23.5	23.8	23.6	24.0	24.8
	100	23.8	24.1	24.5	23.8	24.6	25.7
	300	24.1	25.4	26.1	24.0	26.1	26.7
	450	24.2	26.2	27.2	24.4	27.1	27.9
	550	24.3	26.6	28.0	24.6	27.5	28.7
	750	24.7	27.7	30.0	25.2	28.1	30.1
	870	25.1	28.5	31.5	25.4	28.1	30.6
	1000	25.6	28.9	33.0	25.4	27.8	31.1
Out-Tap Isolation (min.) (dB)	5-10	27	27	27	27	27	27
	11-550	27	27	27	27	27	27
	551-750	27	27	27	27	27	27
	751-870	27	27	27	27	27	27
	871-1000	27	27	27	27	27	27

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Ordering Information

2-Way, 4-Way, 8-Way Surge-Gap Reverse Window Tap – Standard Profile Housing

Model Number	Part Number Complete Unit	Part Number Faceplate Only
2 Way Standard Profile Tap 26 dB Forward 23 dB Reverse	753452	753461
2 Way Standard Profile Tap 29 dB Forward 23 dB Reverse	753453	753462
2 Way Standard Profile Tap 32 dB Forward 23 dB Reverse	753454	753463
4 Way Standard Profile Tap 26 dB Forward 23 dB Reverse	753455	753464
4 Way Standard Profile Tap 29 dB Forward 23 dB Reverse	753456	753465
4 Way Standard Profile Tap 32 dB Forward 23 dB Reverse	753457	753466
8 Way Standard Profile Tap 26 dB Forward 23 dB Reverse	753458	753467
8 Way Standard Profile Tap 29 dB Forward 23 dB Reverse	753459	753468
8 Way Standard Profile Tap 32 dB Forward 23 dB Reverse	753460	753469

2-Way, 4-Way, Surge-Gap Reverse Window Tap – Full Profile Housing

Model Number	Part Number Complete Unit	Part Number Faceplate Only
2 Way Full Profile Tap 26 dB Forward 23 dB Reverse	753470	753476
2 Way Full Profile Tap 29 dB Forward 23 dB Reverse	753471	753477
2 Way Full Profile Tap 32 dB Forward 23 dB Reverse	753472	753478
4 Way Full Profile Tap 26 dB Forward 23 dB Reverse	753473	753479
4 Way Full Profile Tap 29 dB Forward 23 dB Reverse	753474	753480
4 Way Full Profile Tap 32 dB Forward 23 dB Reverse	753475	753481

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