

MODEL 8310

SmartStep™ Programmable Attenuator



RS232\RS422\RS485



A New Concept in Programmable Attenuation!



Features

- /// Provides a flexible, easy to program, low cost solution for your bench test/calibration setups and subsystem applications.
- /// Multi-Channel attenuation paths (up to 4 input/outputs)
- /// Relative vs. Nominal attenuation step function.
- /// Wide choice of Frequency & Attenuation Ranges.
 - dc to 1, 2, 3, 18 & 26.5 GHz
 - up to 127 dB
 - Solid-State (GaAs FET * & PIN)
 - Relay Switched
 - 75 Ω Configurations
- /// High Accuracy & Repeatability.
- /// Designed to interface with Weinschel's new line of **SmartStep** programmable attenuators and other electromechanical devices
- /// Designed to interface with industry standard communication interfaces:
 - GPIB/IEEE-488 (HS-488 ready)
 - RS-232, RS-422, RS-485
- /// **Rack Configurable:** The Model 8310 can be rack mounted either as a single unit using Rack Mounting Kit (P/N 193-8033) or two Model 8310's can be mounted together using Rack Mounting Kit (P/N 193-8033-1). Using these kits allow the Model 8310 to be easily mounted into any rack or cabinet that is designed per EIA RS-310 or MIL-STD-189.

Description

Weinschel's New 8310 Series SmartStep Attenuator Units represent a new concept in programmable attenuation for bench test and subsystem applications. Standard 8310 Series designs house and control various Weinschel Programmable Attenuator Models (3200T, 150T, and 4200 Series) via front panel controls or standard communications interfaces including GPIB (IEEE-488) and RS-232/RS-422 /RS485. The 8310 combines the features of the Weinschel 8210A Device Controller with a front panel user interface to form a flexible, easy to use solution.

Most 8310 Series are single channel configurations where RF signal is routed through either the front or rear mounted Ports A & B but can be configured for up to four channels of attenuation, RF switching, or other functions. Multiple programmable attenuators can be used inconjunction with other coaxial devices such as switches, power combiners, directional couplers, and filters creating single or multichannel subsystems.

Applications

Applications for the 8310 Series range from providing control of a single SmartStep Attenuator in a bench test/lab environment using a PC and a terminal emulator, to complex system applications where the 8310 Series is employed to control many devices to create custom/semi-custom subsystems to reduce overall design cost. Weinschel can provide a variety of custom designed driver interfaces for various devices, such as RF switches, relays, pin attenuators, motorized step attenuators, displays, and other devices, as well as complete subsystem design and integration services. Contact us with your specialized needs.

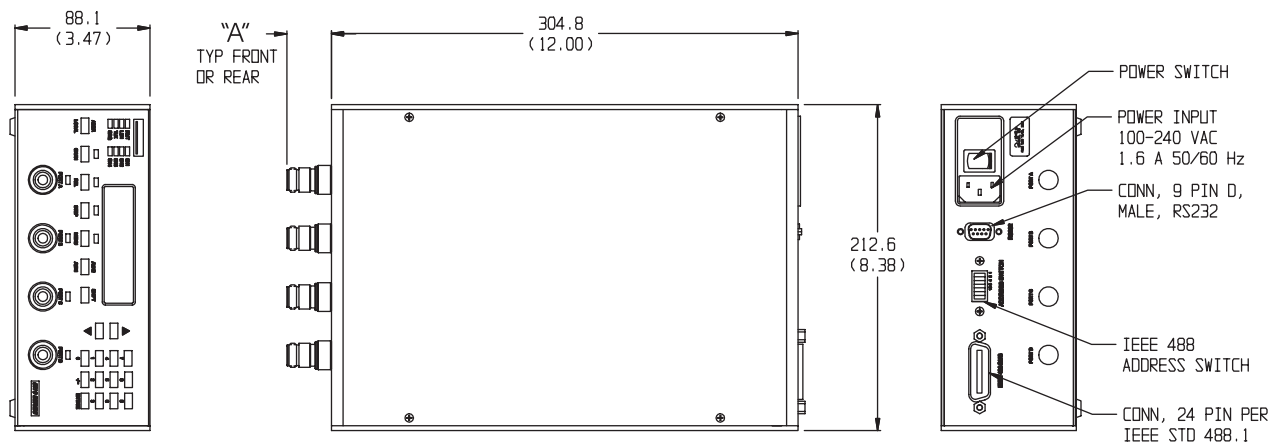
For additional information on the Model 8310, visit our website @ www.weinschel.com/8310.htm

Specifications

SPECIFICATION	DESCRIPTION
Input Power Requirements	ac 100 to 240 Vac, 50/60 Hz, 50 Watts
Environmental	Operating Temperature: 0 to +50°C Storage Temperature: 67° to +167 °F (-55° to +75°C) Humidity: 96% Altitude: 40,000' (12,192M)
IEEE-488 Bus	Connector: 24-pin per IEEE-488.1 Protocols: per IEEE-488.2 Indicators: Remote (RMT), Listen (LSN), Talk (TLK), SRQ (SRQ)
RS-232 Bus	Connector: 9-pin male D Signals: TXD, RXD, RTS, CTS, DTR, GND Baud Rates: 2400, 9600, 19200, and 38400 Data Bits: 8 Handshaking: None, RTS/CTS, XON/XOFF Parity: None, Odd, Even Indicators: Tx (Transmit) and Rx (Receive)
RS-422 BUS⁽³⁾ RS-485 Bus⁽⁴⁾	Connector: 9-pin male D Signals: TXD+, TDX-, RXD+, RTX-, RTS+, RTS-, CTS+, CTS-, and signal GND Baud Rates: 2400, 9600, 19200, and 38400 Data Bits: 8 Handshaking: None, RTS/CTS, XON/XOFF Parity: None, Odd, Even Indicators: Tx (Transmit) and Rx (Receive)
RF Characteristics⁽⁵⁾	See ordering guide (pg177 and 178)

1. GPIB/IEEE-488 model allows user-selectable addresses.
2. RS-232 can be used with standard PC serial port for short and medium distances (up to approximately 50 ft).
3. RS-422, designed for very long distance communications (4000 ft) and & optimized as a single node protocol, typically with one device connected to a single port.
4. RS-485, designed for very long distance communications (4000 ft) & optimized for multi-drop connections that can used to create a low cost network.
5. Refer to Individual data sheet for detailed specifications on internal programmables.

Physical Dimensions



Connector Type	DIM A
N	29.2 (1.15)
SMA	8.6 (0.34)
BNC	18.8 (0.74)

NOTE: All dimensions are given in mm (inches) and are maximum, unless otherwise specified.



Ordering Guide...8310 Series with 3200 Programmables

Model No	Attenuation Value (dB)	Frequency Range (GHz)	Insertion Loss (maximum)	SWR (Maximum)	No of Channels	Attenuator Model No.*	Connector Type	Conn Location
8310-1-F	63/1	dc-1.2 (75Ω)	5.0 dB	1.5	1	3250T-63	BNC/F	Front
8310-1-R	63/1	dc-1.2 (75Ω)	5.0 dB	1.5	1	3250T-63	BNC/F	Rear
8310-1-2-F	63/1	dc-1.2 (75Ω)	5.0 dB	1.5	2	3250T-63	BNC/F	Front
8310-1-2-R	63/1	dc-1.2 (75Ω)	5.0 dB	1.5	2	3250T-63	BNC/F	Rear
8310-35-F	127/1	dc-2.0	6.0 dB	1.4	1	3200T-1	N/F	Front
8310-35-R	127/1	dc-2.0	6.0 dB	1.4	1	3200T-1	N/F	Rear
8310-35-2-F	127/1	dc-2.0	6.0 dB	1.4	2	3200T-1	N/F	Front
8310-35-2-R	127/1	dc-2.0	6.0 dB	1.4	2	3200T-1	N/F	Rear
8310-35-3-T	127/1	dc-2.0	6.0 dB	1.4	3	3200T-1	N/F	Front to Rear
8310-35-4-T	127/1	dc-2.0	6.0 dB	1.4	4	3200T-1	N/F	Front to Rear
8310-36-F	64.5/0.1	dc-2.0	8.0 dB	1.4	1	3209T-1	N/F	Front
8310-36-R	64.5/0.1	dc-2.0	8.0 dB	1.4	1	3209T-1	N/F	Rear
8310-36-2-F	64.5/0.1	dc-2.0	8.0 dB	1.4	2	3209T-1	N/F	Front
8310-36-2-R	64.5/0.1	dc-2.0	8.0 dB	1.4	2	3209T-1	N/F	Rear
8310-36-3-T	64.5/0.1	dc-2.0	8.0 dB	1.4	3	3209T-1	N/F	Front to Rear
8310-37-F	63.75/0.25	dc-2.0	6.0 dB	1.4	1	3200T-2	N/F	Front
8310-37-R	63.75/0.25	dc-2.0	6.0 dB	1.4	1	3200T-2	N/F	Rear
8310-37-2-F	63.75/0.25	dc-2.0	6.0 dB	1.4	2	3200T-2	N/F	Front
8310-37-2-R	63.75/0.25	dc-2.0	6.0 dB	1.4	2	3200T-2	N/F	Rear
8310-37-3-T	63.75/0.25	dc-2.0	6.0 dB	1.4	3	3200T-2	N/F	Front to Rear
8310-37-4-T	63.75/0.25	dc-2.0	6.0 dB	1.4	4	3200T-2	N/F	Front to Rear
8310-38-F	63/1	dc-2.0	5.25 dB	1.4	1	3206T-1	N/F	Front
8310-38-R	63/1	dc-2.0	5.25 dB	1.4	1	3206T-1	N/F	Rear
8310-38-2-F	63/1	dc-2.0	5.25 dB	1.4	2	3206T-1	N/F	Front
8310-38-2-R	63/1	dc-2.0	5.25 dB	1.4	2	3206T-1	N/F	Rear
8310-38-3-T	63/1	dc-2.0	5.25 dB	1.4	3	3206T-1	N/F	Front to Rear



Ordering Guide...8310 Series with 150 Programmables

Model No	Attenuation Value (dB)	Frequency Range (GHz)	Insertion Loss (maximum)	SWR (Maximum)	No of Channels	Attenuator Model No.*	Connector Type	Conn Location
8310-201-F	70/10	dc-18.0	3.25	1.75	1	150T-70	SMA/F	Front
8310-201-R	70/10	dc-18.0	3.25	1.75	1	150T-70	SMA/F	Rear
8310-201-2-F	70/10	dc-18.0	3.25	1.75	2	150T-70	SMA/F	Front
8310-201-2-R	70/10	dc-18.0	3.25	1.75	2	150T-70	SMA/F	Rear
8310-202-F	121/1	dc-18.0	5.25	1.95	1	150T-11+150T-110	SMA/F	Front
8310-202-R	121/1	dc-18.0	5.25	1.95	1	150T-11+150T-110	SMA/F	Rear
8310-204-F	62/2	dc-18.0	3.70	1.95	1	150T-62	SMA/F	Front
8310-204-R	62/2	dc-18.0	3.70	1.95	1	150T-62	SMA/F	Rear
8310-204-2-F	62/2	dc-18.0	3.70	1.95	2	150T-62	SMA/F	Front
8310-204-2-R	62/2	dc-18.0	3.70	1.95	2	150T-62	SMA/F	Rear

Ordering Guide...8310 Series with 4200 Programmables

Model No	Attenuation Value (dB)	Frequency Range (GHz)	Insertion Loss (maximum)	SWR (Maximum)	No of Channels	Attenuator Model No.*	Connector Type	Conn Location
8310-135-F	127/1	0.8-2.3	6.0	1.5	1	4218T-127	N/F	Front
8310-135-R	127/1	0.8-2.3	6.0	1.5	1	4218T-127	N/F	Rear
8310-135-2-F	127/1	0.8-2.3	6.0	1.5	2	4218T-127	N/F	Front
8310-135-2-R	127/1	0.8-2.3	6.0	1.5	2	4218T-127	N/F	Rear
8310-136-F	63.75/0.25	0.8-2.3	6.0	1.5	1	4218T-63.75	N/F	Front
8310-136-R	63.75/0.25	0.8-2.3	6.0	1.5	1	4218T-63.75	N/F	Rear
8310-136-2-F	63.75/0.25	0.8-2.3	6.0	1.5	2	4218T-63.75	N/F	Front
8310-136-2-R	63.75/0.25	0.8-2.3	6.0	1.5	2	4218T-63.75	N/F	Rear
8310-137-F	63/1	0.8-2.3	4.5	1.5	1	4216T-63	N/F	Front
8310-137-R	63/1	0.8-2.3	4.5	1.5	1	4216T-63	N/F	Rear
8310-137-2-F	63/1	0.8-2.3	4.5	1.5	2	4216T-63	N/F	Front
8310-137-2-R	63/1	0.8-2.3	4.5	1.5	2	4216T-63	N/F	Rear

*Refer to Individual data sheet for detailed specifications on internal programmables.