

Attenuator for Waveform Checking

MODEL : 00-00017A, 00-00018A

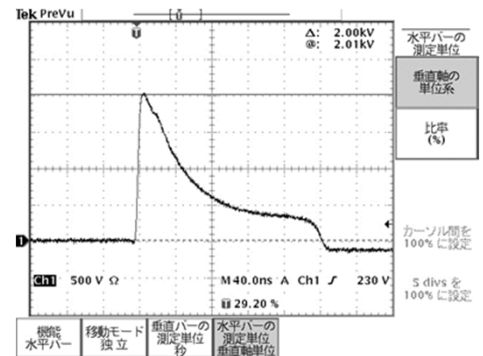
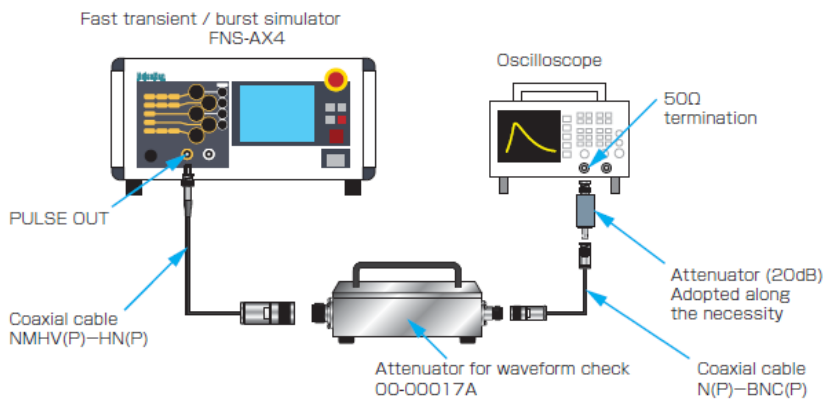
1. Purpose / Application

IEC61000-4-4 Standard specifies the waveform observation with 1kΩ and 50Ω load. These attenuators provide load impedance and attenuation for oscilloscope. 50 Ω load can also be used for INS waveform checking.

2. Connection and waveforms

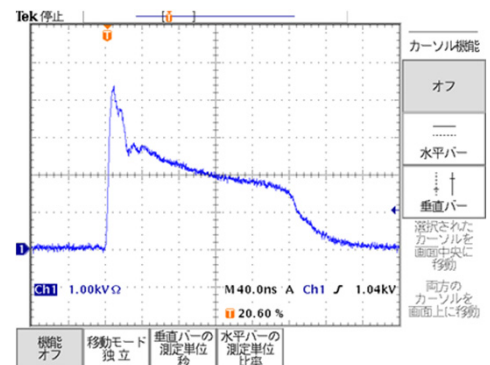
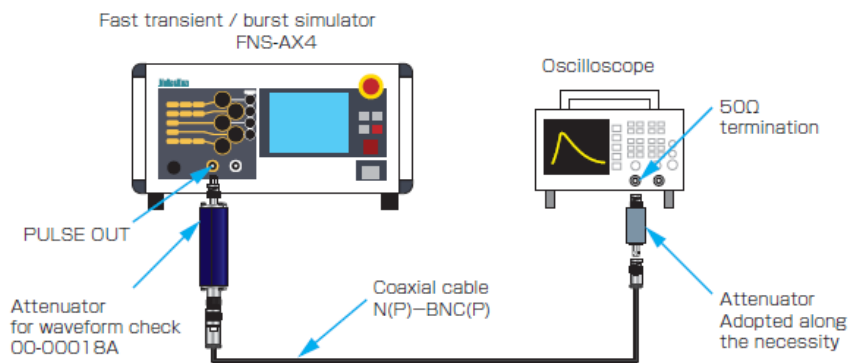
FNS / INS output (PULSE OUT) – Attenuator input (INPUT) – Attenuator output (OUTPUT) - Oscilloscope input connector. 20dB attenuator in the drawing is not supplied and prepared by customer if necessary.

(1) 50Ω (00-00017A) connection



Actual measured waveform
+2kV 500V/div. 40ns/div.

(2) 1k Ω (00-00018A) connection



Actual measured waveform
1000V/div. 40ns/div.

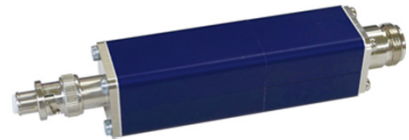
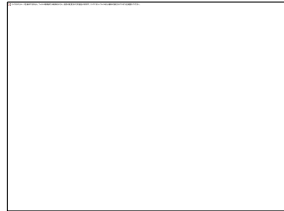
* Using oscilloscope whose bandwidth is more than 500MHz

* NOTE

Input impedance on the oscilloscope must be set at 50Ω. If it does not have the setting, it must be connected with the attenuator by way of external coaxial 50Ω terminator.

The voltage must not be over than maximum input voltage of the oscilloscope. Attenuation of 00-00017A is 40dB (1/100) and 00-00018A is 60dB (1/1000). 50Ω attenuator must be inserted between 00-00017A or 00-00018A and the oscilloscope depending on the measuring voltage.

3. Specifications



Parameters	00-00017A	00-00018A
Attenuation	DC~2GHz: 40dB(1/100) DC~0.1GHz: ±1dB 0.1GHz~1GHz: ±3dB 1GHz~2GHz: ±4dB ※at DC: 1/100±1%	DC~400 MHz : 60 dB DC~100MHz : ±1dB 100MHz~400MHz: ±3dB ※at DC 1/1000 ±5%
Burst input	5000V MAX (2500V MAX at 50Ω termination) Defined in IEC61000-4-4	5000 V MAX Defined in IEC61000-4-4
Pulse Voltage wave condition	Pulse frequency ≤ 5kHz Burst duration ≤ 15ms Burst period ≤ 300ms Rated input power 1.5W	Pulse frequency ≤ 5kHz Burst duration ≤ 15ms Burst period ≥ 300ms Pulse voltage ≤ 5000V
Square wave input	4000V MAX (at 50Ω termination) Impulse noise (Square wave) Width : 10ns~1000ns Repetition : 60Hz max at 4000V 100Hz max at 2000V Rated input power 20W	Not applicable
Pulse Voltage wave condition :		
Input impedance	50 Ω	1000Ω±2%
Output impedance	50 Ω A high input impedance port of a scope (1 MΩ) shall be terminated by a 50 Ω terminator	50 Ω±2% A high input impedance port of a scope (1 MΩ) shall be terminated by a 50 Ω terminator
Operational Environment	Temperature: 15~30°C Humidity : 25~75%RH(No condensation)	
Weight	Approx.1350 g	Approx.150 g
Dimensions	W154.5mm×D105mm×H37mm	W133mm×D24.5mm×H24.5mm
Accessory	Coaxial cable 0.5m (NMHV(P)-HN(P)) x1 Coaxial cable 1m (N(P)-BNC(P)) x1	Coaxial cable 1m (N(P)-BNC(P)) x1