



Isolated Digitizer 6600 Specifications

GEN SERIES ISOLATED DIGITIZER 6600

The Isolated Digitizer 6600 is used in the most demanding test lab applications requiring high voltage isolation and safe and accurate measurements in harsh electrical environments.

It is available in four different configurations. There are two mechanical variants, one for use in medium and one for use in high voltage environments. Each model is available with **25 MS/s** or **100 MS/s** digitizing speed per channel.

The **Medium Voltage** version is single layer shielded and uses AC power with an

isolation voltage of 10 kV. This MV version can be used for isolated measurements up to 10 kV while being powered by AC power. In case AC power is lost, the MV version can securely finish the acquisition by running from internal battery for up to 5 minutes. When it is reconnected to AC power, the internal battery will be recharged.

The **High Voltage** version is also single layer shielded and exclusively battery powered.

The removable batteries run for a minimum of 24 hours, with a software controlled "sleep mode" that extends that time significantly.

Hot-swappable batteries allow for continuous operation: while charging one set, the unit operates on a spare set. Standard Lithium-Ion batteries are used to ensure proper operation in various environments.

A system always consists of one (or more) Isolated Digitizer transmitters and at least one (or more) receiver cards. One receiver card serves up to four transmitters. As these are calibrated independent from a receiver channel, they can easily be switched between receiver boards or even mainframes while maintaining their calibrated status.



Analog input section

# of channels	1 per transmitter, (4 per receiver board)
Input type	single-ended to isolated common (unbalanced differential)
Coupling	AC / DC / GND
Connector	fully isolated BNC
Ranges	± 20 mV to ± 100 V Full Scale in 1, 2, 5 steps
Offset	automatic, equal to span
Impedance	1 MΩ (± 2 %) // 38 pF (± 5 %)
Bandwidth	100 MS/s: 25 MHz @ -3 dB 25 MS/s: 5 MHz @ -3 dB
Risetime	100 MS/s: 14 ns 25 MS/s: 75 ns
CMRR	100 dB @ 80 Hz
MSE	0.1 % FS ± 50 μV RTI
Offset error	0.1 % FS ± 50 μV RTI
Noise (RMS)	± 0.05 % FS ± 0.1 mV RTI
Overload	250 V peak protected for ≥ ± 2 V 125 V peak protected for < ± 2 V 800 V peak transient (impulse spark-over voltage at 1 kV/ms)
Recovery time*	10 ns to 10 % accuracy 30 ns to 1 % accuracy 40 ns to 0.1 % accuracy
Non-Linearity	0.05 % max

* after 200 % overload, 1 kHz, 1 V range, Wideband filter

Fiber optic link

Light source	Class 1 laser product
Dyn. range	+ 9 dB
Connectors	LC-type on receiver, SC-RJ on transmitter
Type	Multimode 50/125 μm
Wavelength	850 nm
Cable length	up to 800 m using a single cable; each patch panel connector will reduce length by 100 m
Correction	automatic cable length correction to prevent cross channel skew

Acquisition

Sample rate	25 MS/s or 100 MS/s per channel
Sampling	synchronous sampling
AD-Resolution	100 MS/s: 14-bit (0.006 %) 25 MS/s: 15-bit (0.003 %) 16-bit enhanced resolution for sample rates ≤ 10 MS/s
AA Filter	6th order Bessel low pass 100 MS/s: 10 MHz 25 MS/s: 5 MHz

Filtering

Digital filters	100 MS/s model: at 100 MS/s no filter; or else user-selectable from 5 MHz to 50 kHz in 12 steps 25 MS/s model: user-selectable from 5 MHz to 50 kHz in 12 steps
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Monitor output (receiver side)

# of outputs	one BNC per channel on receiver front panel
Output level	± 5 V FS uncalibrated
DAC	14-bit @ 100 MS/s
Filter	6-pole Bessel @ 10 MHz
Delay	< 1 μs (WB) to 12 μs (50 kHz)

Transient memory (receiver side)

Standard	400 MegaSample memory per card, shared by enabled channels.
Memory	100 to 400 MS per channel

Triggering

	Each channel has a dual-level trigger detector.
Pre/post Rate	0 to full memory length every 10 ms, up to 100 triggers per second, zero re-arm time
Resolution	16-bit (0.0015%), each level

Acquisition modes

Recorder Scope	for continuous acquisition for repetitive phenomena
Transient	for intermittent events, single or A-B-A timebase

Data storage

Recorder	spooled directly to harddisk of control PC; unlimited file size or duration. Max. transfer rate: 5 MS/ch.
Scope Transient	store in transient memory, single or A-B-A timebase



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Ordering information and options

Single channel transmitters

845-082100	High Voltage 100 MS/s
845-082200	High Voltage 25 MS/s
845-082300	Medium Voltage 100 MS/s
845-082400	Medium Voltage 25 MS/s

Four channel receiver

845-079500	Receiver card for GEN DAQ products. Accepts all Isolated Digitizer models. Includes 400 MS transient memory.
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Notes

- HV versions include battery charger
- MV versions have AC power supply and built-in battery charger
- Receiver card accepts 1 to 4 transmitters
- Transmitter models may be mixed on a single receiver card. Sample rate is set to lowest available sample rate.

Connection cables (sold separately)

Standard cables

IP20 connector on sender side

869-913100	10 meter cable pair, LC-SCRJ
869-9132	20 meter cable pair, LC-SCRJ
869-913300	50 meter cable pair, LC-SCRJ

Industrial grade cables

IP67 connector on sender side

869-913500	10 m cable pair, LC-SCRJ
869-913600	20 m cable pair, LC-SCRJ
869-913700	50 m cable pair, LC-SCRJ
869-913800	100 m cable pair, LC-SCRJ

Physical and environmental specifications

Medium Voltage Models



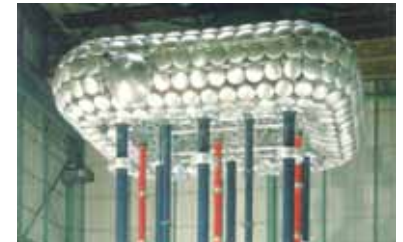
High Voltage Models



	Medium Voltage Models	High Voltage Models
Dimensions (WxDxH) including handles, etc.	175 x 265 x 119 mm (6.86 x 10.44 x 4.68 inch)	175 x 280 x 119 mm (6.86 x 11.3 x 4.68 inch)
Weight (maximum)	3 kg (6.6 lb)	4 kg (8.8 lb) incl. batteries
Shielding	Single metal shielding in plastic housing	Single metal shielding in plastic housing (note 1)
Power supply	115/230 VAC, 47-63 Hz, 12 VA or internal battery	Internal removable batteries
Isolation when AC powered	10 kV	N/A
Operating temperature	0 °C to +40 °C (+32 °F to +104 °F)	-15 °C to +50 °C (note 2) (+5 °F to +122 °F)
Battery	Internal, rechargeable, NiMH, 12 V @ 300 mAh; built-in charger	2x Removable, rechargeable, Lithium-Ion, 11.1 V @ 6600 mAh; SmartBattery 1.1 compliant; external charger
Battery operation time	5 minutes	24 hours
Battery life time in 'sleep'	30 minutes	90 hours
Power switch	standby (charger active)	power on/off
LED indicator	1 x mains/battery status	2 x battery status

Note 1: Correct operation has been verified by placing a front-end cabinet within 1 meter of an EMC field created by a 80 kA current.

Note 2: Minimum temperature may be lower when fully loaded batteries are inserted @ 20 °C prior to performing a measurement.



You can use the Isolated Digitizers 6600 in a variety of applications with complete confidence.



The latest generation of the Isolated Digitizer outperforms previous version (shown left) with 1/2 of the size and 1/4 of the weight.

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