

# HIAS™ 744

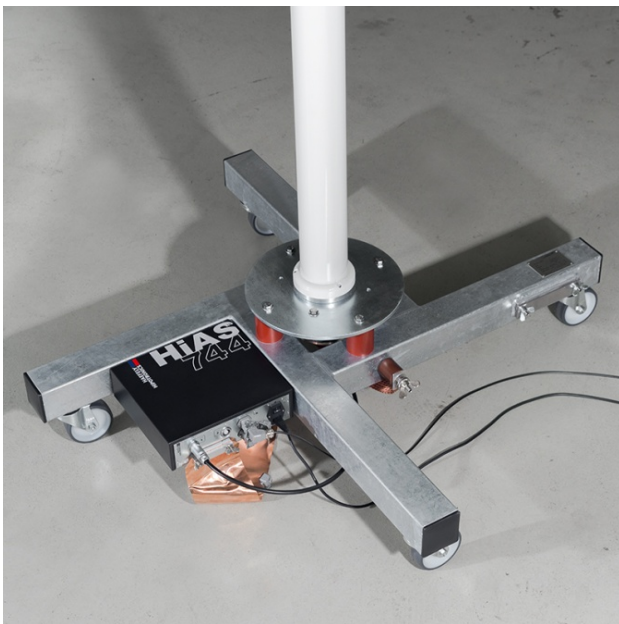
## Highest Resolution Impulse Analyzing System

■ Dielectric tests with impulse voltage are done to confirm the quality of insulation of HV equipment and are mandatory as per international standards. A defined impulse wave shape is applied to the test object and changes in the wave shape caused by the test object are used for detection of insulation faults. Determining the parameters exactly makes it absolutely necessary to have a fast and accurate measuring system. This procedure is commonly used for routine testing of transformers, cables, bushings, etc.

HAEFELY HIPOTRONICS, the pioneer company for impulse testing since 1904, has been continuously developing and upgrading tailor made high-voltage impulse measuring/analyzing solutions over the years. The latest in a long line of distinguished impulse analyzers is the Highest Resolution Impulse Analyzing System HiAS™ 744. HAEFELY HIPOTRONICS has set a new benchmark with unmatched performance. The new front-end solution provides a 16-bit resolution at 250 MS/s with the highest measurement accuracy.

Software, which has been upgraded to suit the new hardware, retains the comfortable interface proven and tested by hundreds of satisfied users. Furthermore, it remains compatible with the former version of data files of the HiAS™, allowing data comparison to older measurements.

The optically decoupled front end provides complete galvanic isolation between control room and test field. It thus affords the personnel the highest safety level. In addition, this minimizes ground loop resulting in a reduced interference coupling.



### FEATURES

- ☑ 16-bit amplitude resolution
- ☑ 250MS/s and 100MHz analog bandwidth
- ☑ Optical decoupled front-end solution
- ☑ ± 2000 Vpk down to ± 5 Vpk analog input range with LEMO 4S connector
- ☑ 2 Channels digitizer unit, can be cascaded
- ☑ Exceeds latest IEC 61083-1, -2, IEC 60060-2, IEEE Std. 4 and related standards
- ☑ 4th Generation digitizer
- ☑ Mains powered

### BENEFITS

- ☑ **Highest measurement** accuracy in the market
- ☑ **Safe** operation and excellent interference immunity
- ☑ **Integrated** solution, no additional divider necessary, compatible with any divider ratio
- ☑ **Synchronous** multi-channel record
- ☑ **Compliant**, advanced state-of-the-art solution
- ☑ Software & solution proven by hundreds of satisfied users
- ☑ No battery pack or recharge needed

Fibre optic link between the HiAS™ 744 and the control PC provides a complete galvanic isolation, with the following benefits:

- ☑ The length of the fiber optic cable does not impact the divider load, its ratio or the calibration.
- ☑ The galvanic isolation fully ensures safety of the personnel. With the HiAS™ 744, there is no electrical connection between the control room and the high voltage test room.
- ☑ Electromagnetic Interference (EMI) is reduced to the barest minimum

## TECHNICAL SPECIFICATIONS

Order No.	HiAS™ 744 4490014	HiAS™ 744 4490014	HiAS™ 744 4490015	HiAS™ 744-REF 4490016
Amplitude Resolution	11 bit (0.05%)	11 bit (0.05%)	16 bit (0.0015%)	16 bit (0.0015%)
Sampling Rate	1..125MS/s	1..125MS/s	1..250MS/s	1..250MS/s
Analog Bandwidth	50MHz	50MHz	100MHz	100MHz
DC Accuracy	±0.25%RD ±0.02%FS	±0.25%RD ±0.02%FS	±0.20%RD ±0.02%FS	±0.15%RD ±0.02%FS
Rise Time	7ns	7ns	3.5ns	3.5ns
Memory Depth	2MS	2MS	2MS	2MS
Measuring Input Channels	1	2	2 (expandable to 4)	2 (expandable to 4)

### Overall System Accuracy *(valid for the full input range up to ±2kVpk and full temperature range)*

Amplitude (full & tailchopped)	± 1.5 % Upk	± 1.5 % Upk	± 1 % Upk	± 0.7 % Upk
Amplitude (frontchopped LIC)	± 2 % Upk	± 2 % Upk	± 1 % Upk	± 1 % Upk
Time parameters	± 3 %	± 3 %	± 2 %	± 1.8 %
Calibration	factory	factory	factory	EN/ISO17025

### Analog Part

Signal Input Connectors	LEMO 4S
Signal Input Ranges	±2000Vpk .. ±5Vpk
Overvoltage Protection	3000Vpk
Overvoltage Tested	6000Vpk (1.2/50, 10/700us)
Input Impedance	2MΩ/10pF, 75Ω settable
Trigger	Slope, Level, Auto
HF Filter	Off, 1, 3, 10, 30 MHz

### Operating Conditions

Supply	90 .. 264V AC, 50/60Hz, 50VA
Temperature Range	5 .. 50°C (Reference cond. 15 .. 35°C)
Humidity	5 .. 90% r.h., non-condensing

### Mechanical

Dimension, Weight	34.2 x 31.5 x 8.6cm, approx. 6kg
Vibration Tests	IEC60068-2-64 Spec A1 Transportation a1
Mediabox	22 x 8.5 x 3.5cm, approx. 400g

### Controller Requirements

Laptop or Industrial PC with CPU i3 or better, 8GB RAM, USB2.0 (power), and Ethernet10/100 (data), Windows 7 or Windows 10

### Standards

Fulfills or exceeds the requirements of latest IEC60060, IEC61083-1, -2, IEEE Std.4 and other related standards referenced to the mentioned

### Parameter Verification

Fully automatic (with optional Reference Impulse Calibrator RIC422, controlled by HiAS™ software)

### Scope of delivery with HiAS™ 744-X

HiASbox, mounting plate, mains cable CH 2.5m + extension CH 10m (to CCU), plugs for custom assembly, LEMO cable 1m, System software Mediabox, Ethernet + USB cable 1m, RS232 cable + USB converter (for remote control by GC223 or GC257), Rugged fibre optic link cable 20m

## OPTIONS

Software	Order No.	LEMO Cables	Order No.
Office Package	4771570	LEMO Cable, 1.6m	2404282
Older IEC Ed. Evaluation	4771574	LEMO Cable, 10m	2404283
Comparison Package	4771575	LEMO Cable, 15m	9713121
Transfer & Coherence Function	4771576	LEMO Cable, 20m	2404284
<b>Fibre Optic Cables</b>		LEMO Cable, 30m	2404286
Fibre Optic Cable, 5m	4844122	LEMO Cable, 60m	2404289
Fibre Optic Cable, 30m	4844027	<b>Controller Sets</b>	
Fibre Optic Cable, 40m	4844028	Fully installed Laptop, 15"	4771577
Fibre Optic Cable, 60m	4844030	Fully installed PCI811b, with	4771578
<b>Warranty Extension</b>		Screen 24", keyboard & mouse	
24 months	4842936		
36 months	4842937		

## OFFICES

### Europe

Haefely Test AG  
Birsstrasse 300  
4052 Basel  
Switzerland  
☎ + 41 61 373 4111  
☎ + 41 61 373 4912  
✉ [sales@haefely.com](mailto:sales@haefely.com)

### China

Haefely Test AG Representative Beijing Office  
8-1-602, Fortune Street  
No. 67, Chaoyang Road, Chaoyang District  
Beijing, China 100025  
☎ + 86 10 8578 8099  
☎ + 86 10 8578 9908  
✉ [sales@haefely.com.cn](mailto:sales@haefely.com.cn)

### North America

Hipotronics, Inc.  
1650 Route 22 N  
Brewster, NY 10509  
United States  
☎ + 1 845 279 3644  
☎ + 1 845 279 2467  
✉ [sales@hipotronics.com](mailto:sales@hipotronics.com)