

WHEN QUALITY IS AN ISSUE, THE CHOICE IS HAEFELY



RIC 422

REFERENCE IMPULSE CALIBRATOR
RIC 422
80-1600 V

HAEFELY 
HIGH VOLTAGE TEST

REFERENCE IMPULSE CALIBRATOR

APPLICATION

The RIC 422 reference impulse calibrator is a precision instrument of the highest performance class. It monitors and calibrates impulse measuring systems. All key impulse waveforms can be generated.

The RIC 422 complies with international standards IEC 1083 and IEEE 1122.

The Haefely impulse calibrator can be integrated into digital impulse measuring system via an IEEE 488/RS-232 interface.

All the ranges of a measuring system can be calibrated with the wide output voltage range. A hard copy of the calibration process can be generated.

FUNCTION

The RIC 422 reference impulse calibrator is micro-processor-controlled. Entries are made via a numeric keypad and 10 function keys. The effortless and reliable setting of the instrument parameters is ensured by a large LCD.

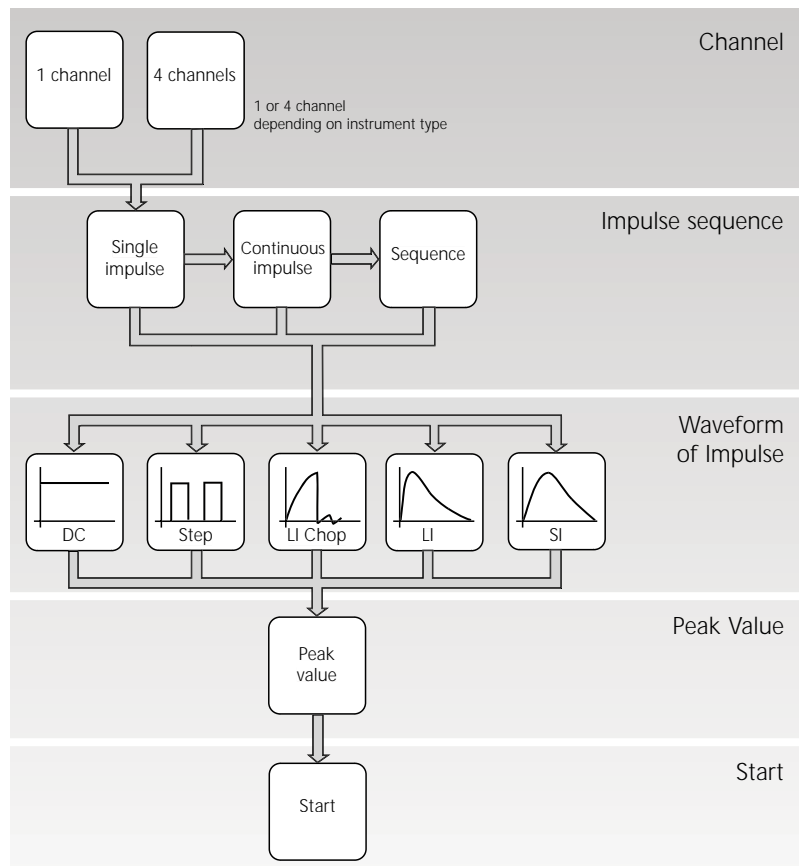
A high-precision impulse circuit with an adjustable charging voltage generates the impulses. A peak value comparator circuit calibrates the output voltage of the impulse circuit. Outstanding output voltage accuracy and stability, which is load-independent, is achieved by gradual approximation to the reference value.

The high precision and stability of the impulse circuit elements guarantee the accuracy and the stability of time parameters.

Remote Control for the RIC 422-4

In the 4-channel version, all settings can be made via the IEEE 488 or RS-232 interface. When installed in a Haefely impulse analysing system, the system's processor selects and initiates the appropriate RIC 422 settings.

Menu-controlled operation of the microprocessor control system



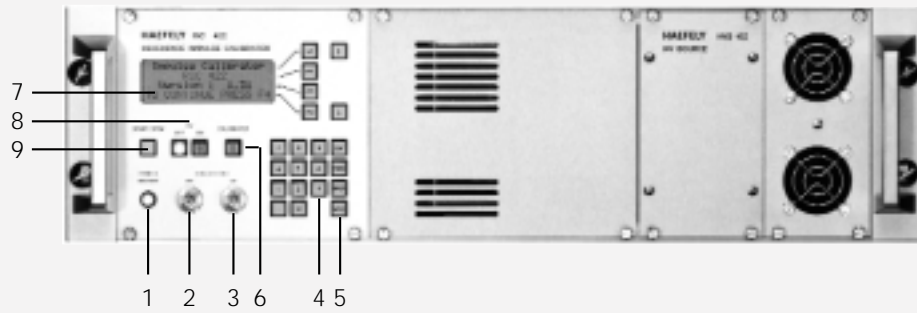
TECHNICAL DATA

Lightning Impulse LI		
Front time T ₁	0.84 μs	adjustable in steps of 1 V
Time to half value T ₂	60 μs	
Peak value \hat{U}	± 80 V to ± 1600 V	
Chopped Lightning Impulse LI Chop		
Chopping time T _c	0.50 μs	adjustable in steps of 1 V
Peak value \hat{U}	± 400 V to 1250 V	
Switching Impulse SI		
Peak time T _p	20 μs	adjustable in steps of 1 V
Time to half value T ₂	4000 μs	
Peak value \hat{U}	± 80 V to ± 1600 V	
Step Function		
Transient time T _r	< 20 ns	adjustable in steps of 1 V
Frequency f	10 Hz	
Voltage U	+ 1000 to + 2000 V	
DC Voltage		
Voltage U	+ 200 V to + 2000 V	adjustable in steps of 1 V
Impulse Sequence		
Repetition interval	1 s - 999 s	adjustable in steps of 1 s
Stability		
Front time T ₁ , time to half value T ₂		long-term/short-term deviation long-term/short-term deviation long-term/short-term deviation long-term/short-term deviation long-term/short-term deviation long-term/short-term deviation
Peak time T _p	± 2.0%/± 0.2%	
Chopping time T _c	± 2.0%/± 1.0%	
Peak value \hat{U} for lightning and switching impulse	± 0.5%/+ 0.1%	
Peak value \hat{U} for chopped lightning impulse	± 1.0%/± 0.2%	
Voltage U, step function	± 1.0%/± 0.2%	
DC voltage	± 0.2%/± 0.1%	
Load Impedance		
Reference operation	> 250 kΩ parallel 100 pF...300 pF	to guarantee maximum deviations
Trigger Outputs		
HV trigger	+ 150 V	
LV trigger	+ 15 V	
Output		
Signal output	LEMO RA 4250	serial RS-232
HV and LV trigger outputs	BNC	
Printer connector	D-SUB 25-Pol	
Operating Conditions		
Temperature range	5 °C...40 °C 20 °C...25 °C	reference mode non-condensing reference mode
Humidity range	35%...80% r.F.	
Warm up time	30 min	
Power Supply		
Voltage	115/230 V	± 15%
Frequency	50/60 Hz	± 5%
Approx. power consumption	ca. 100 VA	
Mechanical Data		
Dimensions (W/H/D)	520 x 165 x 435 mm	with desk-top case with desk-top case
Weight	approx. 10 kg	

Operators Controls

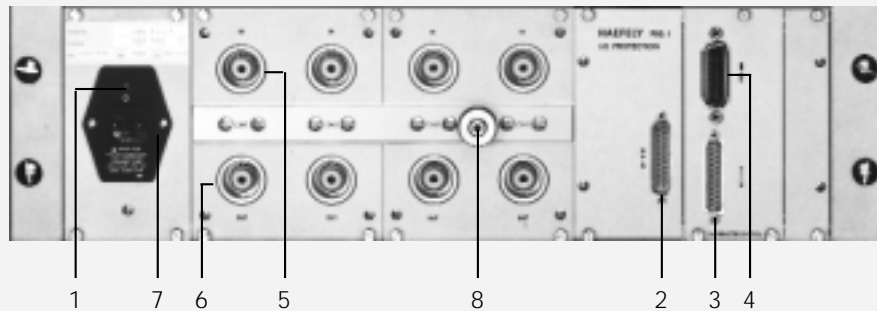
Front

- 1 Power switch
- 2 HV trigger output
- 3 LV trigger output
- 4 Numeric key
- 5 Soft keys
- 6 Calibration indicator
- 7 LCD, 4 lines
20 characters each
- 8 HV ON/OFF indicator
- 9 Start / Stop



Rear

- 1 Fuse
- 2 Printer connector
- 3 Remote control
RS-232 connector (on RIC 422-4)
- 4 Remote control
IEEE-488 connector (on RIC 422-4)
- 5 Signal input
- 6 Signal output
- 7 Power supply
- 8 Earthscrew



Ordering Text	Code	Scope of Delivery
Reference impulse calibrator, single-channel, desk-top model with housing	RIC 422-1 249508.1	RIC 422-1 impulse calibrator, single-channel 1 impulse measuring cable, 2 m long, 75 Ω LEMO 1 power cord, 2 m long, 3-core 1 instruction manual
Reference impulse calibrator 4-channel, desk-top model with housing	RIC 422-4 249509.1	RIC 422-4 impulse calibrator 4-channel 4 impulse measuring cables, 2 m long, 75 Ω LEMO 1 IEEE 488/RS 232 interface 1 power cord, 2 m long, 3-core 1 instruction manual
Reference impulse calibrator, 4-channel, unit for installation in Haefely HIAS 743 impulse analysing system (see publication 147.31)	HS-RIC 2 K: 246834.1 4 K: 246835.1	1 RIC 422-4 impulse calibrator, 2- or 4-channel 1 disk with software 1 IEEE 488/RS 232 interface 1 instruction manual
Accessories Matrix printer	RIC DRG	1 matrix printer 1 data cable 1 box of fanfold paper

RIC 422

Haefely Test AG High Voltage Test Division

Lehenmattstrasse 353. PO Box
CH-4028 Basel/Switzerland
Switzerland

www.haefely.com

Phone: +41.61. 373 41 11
Fax.: +41.61. 373 49 12
e-mail: sales@haefely.com

E 147.22

Subject to change
without prior notice
08.00

HAEFELY 
HIGH VOLTAGE TEST