

Overview

KMBT is a wideband precision complex for up to 100 kV high voltage AC/DC/Impulse measurements.

Areas of application

KMBT is intended for continuous measurements of high voltage signals for laboratory and industrial applications.

Typical areas of application are: HV power electronics, applied physics (particle accelerators, electron microscopy, etc.), electromedical (X-ray) and communication equipment testing and so on.

Features

Digital data format

Complex generates IEC 61850-9-2 data stream of sampled values via Ethernet link (about 100 Mbit/s per stream). Thus no additional loss of accuracy coming from analog data transmission paths is introduced.

High accuracy

DC Voltage measurement accuracy: $\delta = \pm 0.1\%$ in range from 1 to 120% U_{rated} .

AC Voltage measurement accuracy: $\delta = \pm 0.5\%$ in range from 1 to 120% U_{rated} .

Bandwidth (-3dB): 20 kHz

IEC 61850 SV Sample Rate: 100 kHz

Easy deployment and system scaling

Complex can be easily mounted in any place of measurement. Many digital data streams can be handled using Ethernet switches.

Guaranteed insulation

Optical ethernet link ensures reliable galvanic separation of complex from the data receiver.

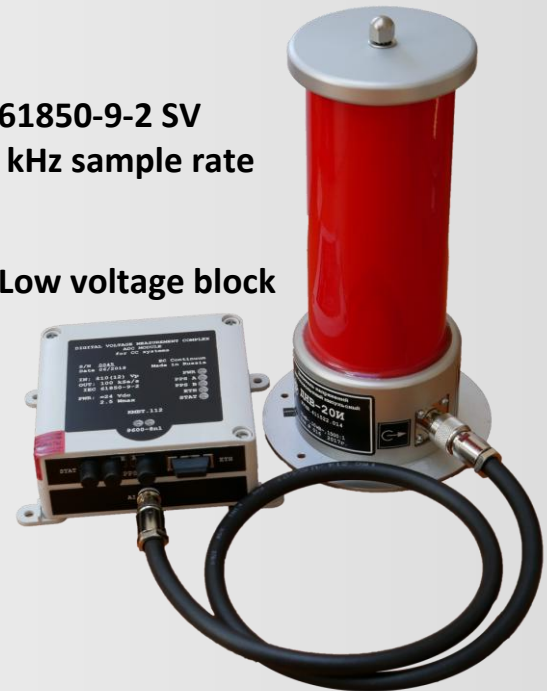
Precise synchronization

Optical 1PPS synchronization channel or PTP IEEE 1588 Ethernet synchronization provides sample timing accuracy up to $\pm 1 \mu s$ (UTC).

High voltage block

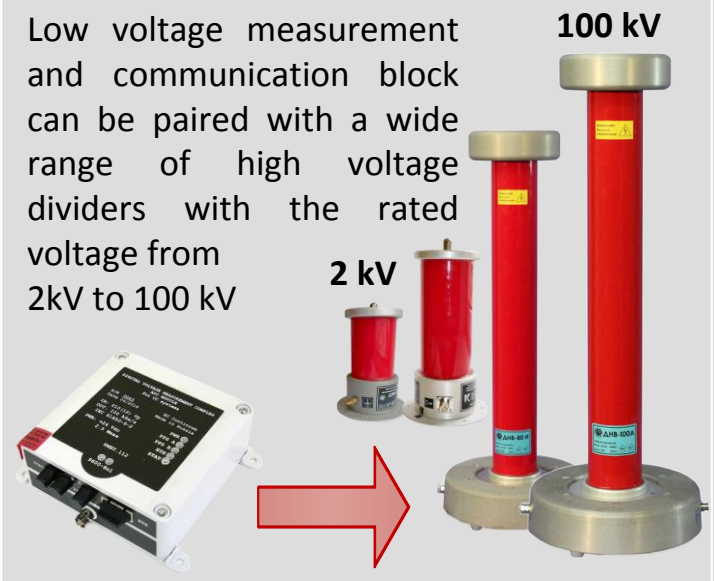
IEC 61850-9-2 SV
100 kHz sample rate

Low voltage block

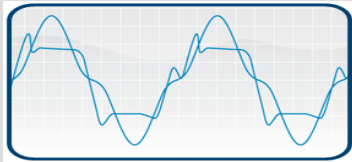


Different rated voltages available

Low voltage measurement and communication block can be paired with a wide range of high voltage dividers with the rated voltage from 2kV to 100 kV



Wave-recorder function



Complex has an option for on-demand recording of the primary voltage signals. Waveform records are available for downloading via the built-in FTP server.

Pre-processor module for data acquisition



Optional IEC 61850 sampled values data acquisition card for PXI chassis is available. Voltage samples can be further analyzed and processed on the PC.

Relay protection function



Complex can be configured to detect voltage changes and turn on/off the contacts of the optional relay module (e.g. for protection).

		KMBT HV Measurement Complex	
Physical	Low Voltage Block Dimensions (W x H x D)	155 x 155 x 55 mm 6.1 x 6.1 x 2.2 "	
	High Voltage Block(min/max) Dimensions (H x D)	280 x 150 mm 11.0 x 5.9 "	1100 x 360 mm 43.1 x 14.2 "
Environmental	Temperature range	+5..+40 °C (+40..+104 °F)	
	Humidity	30 to 80% non-condensing	
	IP class	ANSI/IEC 60529 IP51	
Interfaces	Voltage	1 x DC/AC/Impulse input Rated Voltage U_{rated} : 2 kV 10 kV 15 kV 40 kV 80 kV 100 kV	
	Communication ports	1 x Gigabit Ethernet 1000 BASE-SX 1 x 1PPS Optical Port (IEC 60044-8) 2 x Optical Multi Purpose Ports	
Power Supply	Characteristics	DC: 15...24 VDC Power: < 5W	
Measurements	DC Voltage	$\pm 0.1\%$ (relative accuracy) 1...120 % U_{rated}	
	AC Voltage (50Hz)	$\pm 0.5\%$ (relative accuracy) 1...120 % U_{rated}	
	Bandwidth (-3dB)	20 kHz	
	IEC 61850-9-2 Sample Rate	100 kHz (1 ASDU per PDU)	
	Sampling accuracy	$\pm 1 \mu s$ (with 1PPS or PTP synchronization)	