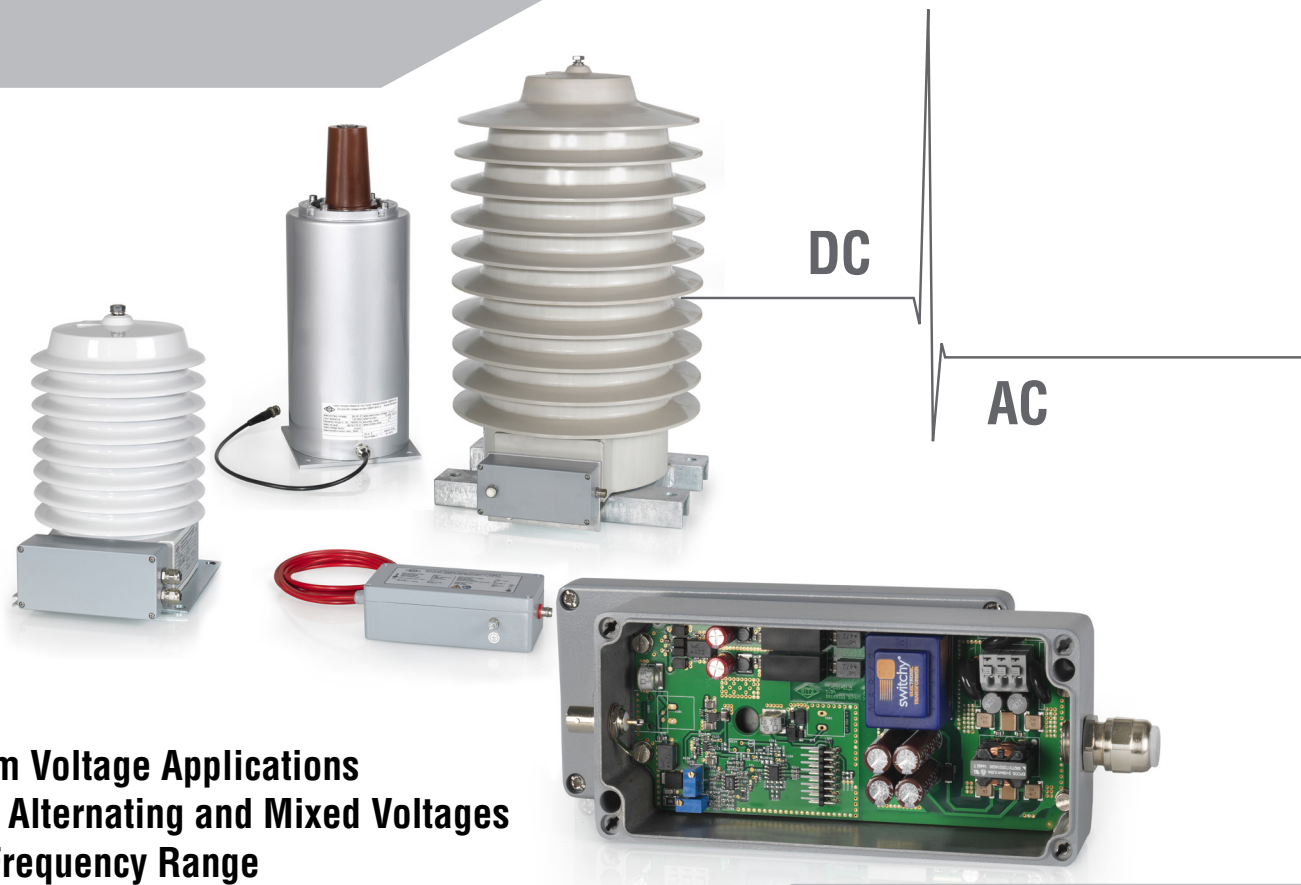
ELECTRONIC VOLTAGE TRANSFORMER

EVBA x06

DC AND AC VOLTAGE DIVIDER WITH BUFFER AMPLIFIER



- **Medium Voltage Applications**
- **Direct, Alternating and Mixed Voltages**
- **Wide Frequency Range**

FEATURES

- High precision electronic voltage transformer
- Decoupling between sensor and burden
- Excellent signal-to-noise ratio (SNR)
- High electromagnetic compatibility (EMC)

APPLICATION

The electronic voltage transformer EVBA x06 measures direct, alternating and mixed voltages with high accuracy for e.g. motor management and power quality analysis. Its area of application are medium voltage installations, which require the voltage divider to be independent of the connected burden.

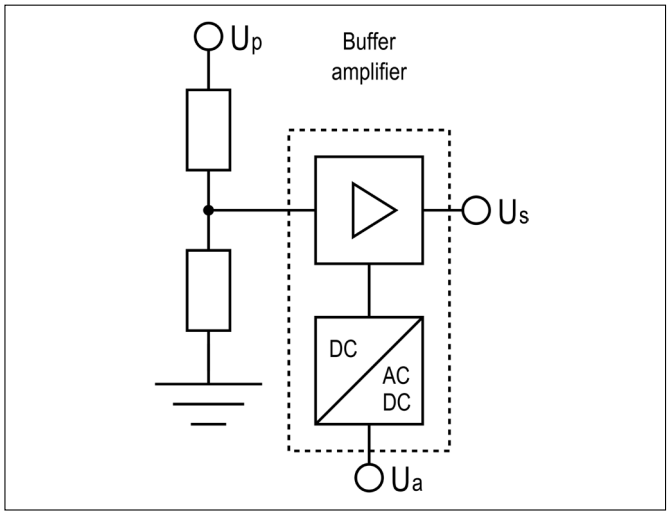
The EVBA x06 is an alternative to conventional voltage transformers once the primary voltage contains DC components and/or higher frequencies.

DESCRIPTION

The EVBA x06 system consists of a low-power passive voltage transformer (passive LPVT) and a buffer amplifier. The voltage divider inside the passive LPVT transforms the primary voltage U_p to a low voltage, which is processed inside the electronics. For this processing, the auxiliary power supply U_a is required. Various protection devices make sure no high voltages can damage the electronics and the secondary equipment, since there is no galvanic isolation between the primary and secondary terminal.

The buffer amplifier makes the passive LPVT independent of the connected burden and allows the output signal to be fed into more than one secondary equipment, thus extending the performance of the passive LPVT.

SCHEMATIC CIRCUIT DIAGRAM EVBA X06



TECHNICAL DATA

General

Type	EVBA x06
Application	High precision measurement purposes
Design	Voltage sensor with active electronics
Functional principle	Voltage divider
Standard	IEC 61869-6 / IEC 60044-7

Versions

EVBA 006	Stand-alone electronics
EVBA 906	with GSER 16, up to 36 kV
EVBA 1006	with GSER 52, up to 72,5 kV
EVBA 1106	with GSER 3, up to 6 kV
EVBA 1206	with GBERA 12…36, up to 36 kV

Electrical Data

Input

Rated primary voltage	U_{pr}	see sensor data
Primary voltage range	U_p	0 – U_m (1)
Highest voltage for equip.	U_m	6 – 72,5 kV
Primary capacitance	C_1	see sensor data
Primary resistance (±5 %)	R_1	see sensor data
Rated frequency	f_r	50 / 60 Hz

Output

Rated secondary voltage	U_{sr}	3,25/√3 V (2)
Secondary voltage range	U_s	0 – 10 V
Rated burden	R_{br}	2 MΩ || 50 pF (2)
Burden range	R_b	100 kΩ – ∞ || 0 – 2 nF
Max. secondary current	I_{smax}	30 mA, short-circuit proof
Max. secondary voltage	U_{smax}	< 20 V, overvoltage protected

Accuracy

Accuracy class		0,2
Accuracy up to 150 kHz		±5 %
Rated phase offset	ϕ_{or}	0’
Signal-to-noise ratio	SNR	86 dB

Auxiliary Power Supply

Aux. supply voltage	U_a	24 / 100 V (DC) 230 V (AC)

Power Supply Terminal

Connector type	Push-in CAGE CLAMP®
Cable type	- LiYCY 2x0,75 mm² (indoor) - ÖLFLEX HEAT® 125 C MC 2x0,75 mm² (outdoor)
Cable length	≤ 10 m (3)

Secondary Terminal

Connector type	Push-in CAGE CLAMP®, BNC/TNC
Cable type	LiYCY-CY, 2x2x0,14 mm²
Cable length	≤ 10 m (3)

Electrical Isolation

U_a vs. all ports incl. GND	1500 V (50 Hz, 1 min)

Insulation level

Lightning impulse withstand	see sensor data
Power frequency withstand	see sensor data

Service conditions

Environment	Indoor/outdoor
Operating temperature	-25–40 °C
Storage temperature	-40–85 °C

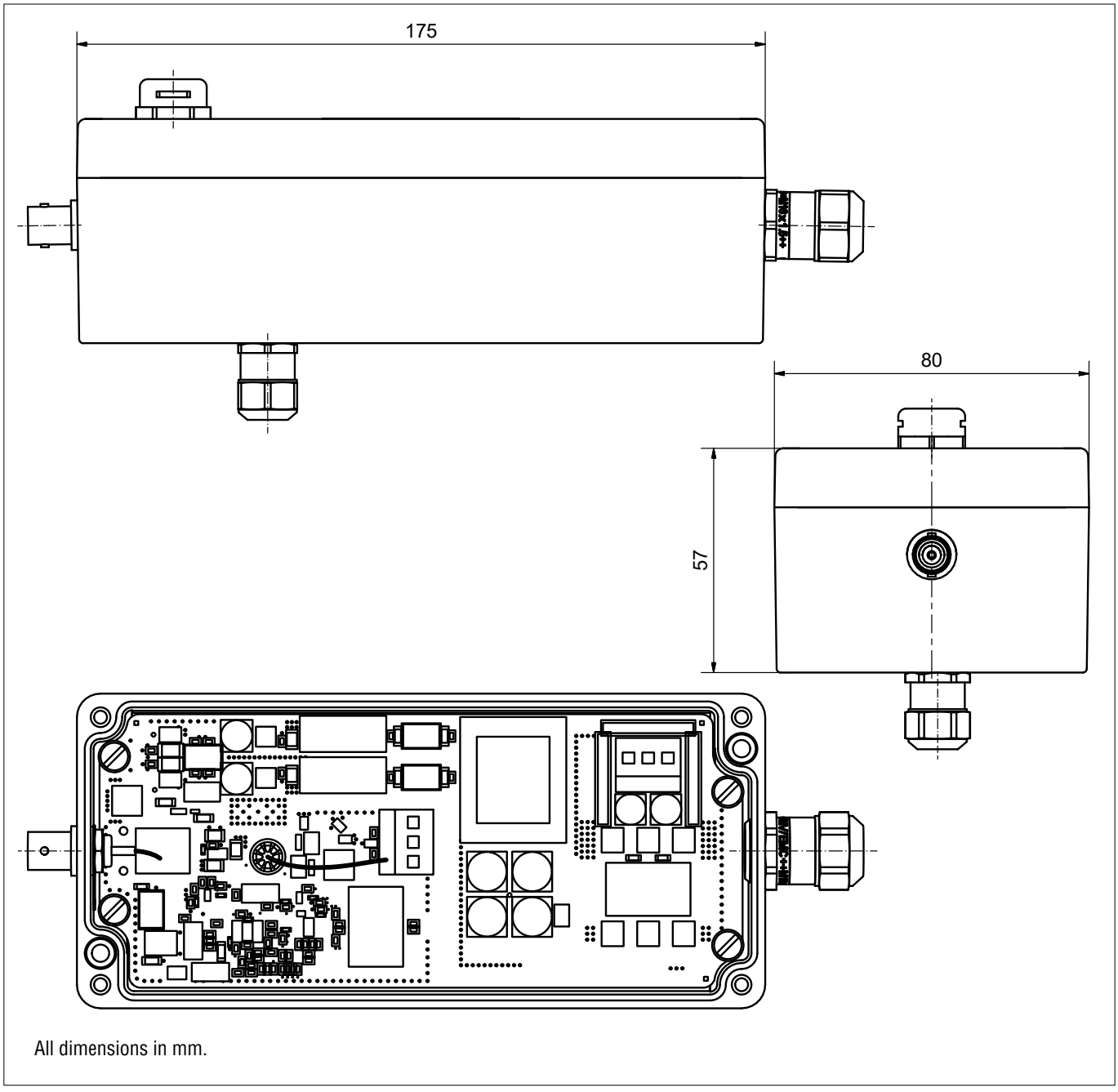
Mechanical Data

Creepage distance	see sensor data
Flashover distance	see sensor data
Insulator color	see sensor data
Size (L x W x H, electronics)	175 x 80 x 57 mm
Weight (electronics)	approx. 750 g

NOTES:

(1) For higher voltages, contact RITZ
(2) Example value, other values on request
(3) The cable is not part of the EVBA x06. If desired, it can be ordered in addition.

OUTLINE DRAWING



All dimensions in mm.

EXPERIENCE AND SOLUTIONS | TOGETHER!

RITZ INSTRUMENT TRANSFORMERS GmbH
Wandsbeker Zollstr. 92-98
22041 Hamburg
Germany
Phone: +49 40 511 23 - 0
Fax: +49 40 511 23 - 111
Email: info@ritz-international.com

We are the leading specialist for instrument transformers, cast resin parts, solid bus bar systems and power transformers.

We develop your standard equipment, but also translate your ideas into customized products. Tell us your requirements, we develop the solution.

For more information visit **www.ritz-international.com** or contact us at **info@ritz-international.com**