Electronic compensated Burdens

The electronic compensated current and voltage burdens are developed for load current and voltage instrument transformers according to IEC 61869-2/3 (IEC 60044-1/2) and ANSI/IEEE C57.13 while testing.
The burdens ESCB100 and ESVB100 are applicable for manual testing of instrument transformers with fix burden steps.
The versions ESCB200 and ESVB200 are applicable for manually and automatically testing of instrument transformers with variable burden steps.

Electronic compensated current burden
ESCB100/200

Electronic compensated voltage burden
ESVB100/200

Features - Design ESCB200 and ESVB200

Current and voltage burden

- Manual and automatic control
- Free adjustable burden steps according to IEC or ANSI up to 200 VA
- Selectable 50 Hz or 60 Hz
- 120 memory spaces for burden steps
- Adjustable external resistance / compensation of resistance possible
- No external calibration required
- Menu guidance using internal function keys or remote control via external PC
- Balancing inside the specifications for a favoured range according IEC or ANSI
- Definition of own standards possible
- 10,4 " LCD display

Technical data ESCB200

General	
Power supply	230 V ±10 %, 47 Hz … 63 Hz
Power consumption typical	425 VA
Temperature range, operation	+5 ° … +40 °C
Relative humidity (not condensing)	max. 95 %
Dimensions (LxWxH)	350 x 483 x 580 mm
Weight	~ 68 kg
Safety	
IP class according to DIN EN 60529	IP 20
Declaration of conformity	CE conform
Protection class according to DIN EN 61140	I
Burden steps	
Setting power 4)	1 … 200 VA
Number of burden steps (max.)	120 per standard
Current range	10 mA … 10 A
Burden steps	5 VA … 90 VA @ 1 A, 2 A, 5 A, cos ß 0.5 ... 1, IEC50, IEC60 1 VA … 5 VA @ 1 A, 2 A, 5 A, cos ß 0.8 … 1, IEC50, IEC60 1 VA … 200 VA @ 5 A, cos ß 0.5 … 1, ANSI, 60Hz
Load range	1 % … 200 % IN
Accuracy 1) 2) 3) 7)	≤ ±3 % ≤ ±3 crad ≤ +5 % ... > -0 %
Test frequency	50 Hz / 60 Hz
Maximum current	10 A
Maximum of voltage	200 V

1: Related to Z 20.12.2017
2: According to PTB test regulations for instrument transformers
3: Within the load range
4: Setting resolution 0.01 VA or cos ß 0.01
7: According to IEEE C57.13-2016

Subjects to alteration.

Technical data ESVB200

General	
Power supply	230 V ±10 %, 47 Hz … 63 Hz
Power consumption typical	110 VA
Temperature range, operation	+5 ° … +40 °C
Relative humidity (not condensing)	max. 95 %
Dimensions (LxWxH)	310 x 483 x 580 mm
Weight	~ 53 kg
Safety	
IP class according to DIN EN 60529	IP 20
Declaration of conformity	CE conform
Protection class according to DIN EN 61140	I
Burden steps	
Setting power 4) 8)	1 VA … 200 VA
Number of burden steps (max.)	120 per standard
Voltage range	600 mV … 400 V
Burden steps	1.25 VA … 200 VA @ cos ß 0.7 ... 1 2.5 VA … 200 VA @ cos ß 0.5 ... < 0.7 5 VA … 120 VA @ cos ß 0.3 … < 0.5 7.5 VA … 120 VA @ cos ß 0.2 ... < 0.3 10 VA … 25 VA cos ß 0.1 ... < 0.2
Load range	80 % … 120 % UN
Accuracy 1) 2) 7)	IEC: ≤ ±3 % ≤ ±3 crad ≤ +5 % ... > -0 %
Test frequency	50 Hz / 60 Hz
Test voltage UN 10)	100 V, 110 V, 115 V, 120 V, 190 V, 200 V 100/3 V, 110/3 V, 115/3 V, 120/3 V, 190/3 V, 200/3 V 100/√3 V, 110/√3 V, 115/√3 V, 120/√3 V, 190/√3 V, 200/√3 V 230/3 V, 230 /√3 V, 230 V
Maximum of voltage	400 V
Maximum current	10 A

1: Related to Z 25.02.2019
2: According to PTB test regulations for instrument
4: Setting resolution 0.01VA or cos ß 0.01
7: According to IEEE C57.13-2016
8: Burden step ≤ 200 V
10: Option

Subjects to alteration.

Features - Design ESCB100 and ESVB100

Current and voltage burden

- Option for conventional burdens
- Menu guidance using internal function keys
- Fix burden steps according to IEC or ANSI
- Selectable 50 Hz or 60 Hz
- Adjustable external resistance/compensation of resistance possible
- No external calibration required
- 10,4 " LCD display
- Cost-efficient model

Technical data ESCB100

General	
Power supply	230 V ±10 %, 47 Hz … 63 Hz
Power consumption typical	425 VA
Temperature range, operation	+5 ° … +40 °C
Relative humidity (not condensing)	max. 95 %
Dimensions (LxWxH)	350 x 483 x 580 mm
Weight	~ 68 kg
Safety	
IP class according to DIN EN 60529	IP 20
Declaration of conformity	CE conform
Protection class according to DIN EN 61140	I
Burden steps	
Setting power 4)	1 … 200 VA
Current range	10 mA … 10 A
Burden steps 5)	a) IEC61869-2, IEC60044-1 @ 50 Hz b) IEC61869-2, IEC60044-1 @ 60 Hz c) ANSI / IEEE C57.13
Load range	1 % … 200 % IN
Accuracy 1) 2) 3)	≤ ±3 % ≤ ±3 crad
Test frequency	50 Hz / 60 Hz
Maximum current	10 A
Maximum of voltage	200 V

1: Related to Z
2: According to PTB test regulations for instrument
3: Within the load range
4: Setting resolution 0.01VA or cos ß 0.01
5: Only one position selectable a), b) or c)

20.12.2017

Subjects to alteration.

Technical data ESVB100

General	
Power supply	230 V ±10 %, 47 Hz … 63 Hz
Power consumption typical	110 VA
Temperature range, operation	+5 ° … +40 °C
Relative humidity (not condensing)	max. 95 %
Dimensions (LxWxH)	310 x 483 x 580 mm
Weight	~ 53 kg
Safety	
IP class according to DIN EN 60529	IP 20
Declaration of conformity	CE conform
Protection class according to DIN EN 61140	I
Burden steps	
Setting power 4) 8)	1 VA … 200 VA
Voltage range	600 mV … 400 V
Burden steps 5)	a) IEC61869-3, IEC60044-2 @ 50 Hz b) IEC61869-3, IEC60044-2 @ 60 Hz c) ANSI / IEEE C57.13
Load range	80 % … 120 % UN
Accuracy 1) 2)	IEC: ≤ ±3 % ≤ ±3 crad
Test frequency 5)	50 Hz / 60 Hz
Test voltage UN 6)	100 V, 110 V, 115 V, 120 V, 190 V, 200 V 100/3 V, 110/3 V, 115/3 V, 120/3 V, 190/3 V, 200/3 V 100/√3 V, 110/√3 V, 115/√3 V, 120/√3 V, 190/√3 V, 200/√3 V
10)	230/3 V, 230 /√3 V, 230 V
Maximum of voltage	400 V
Maximum current	10 A

1: Related to Z 25.02.2019
2: According to PTB test regulations for instrument transformers 80 %…120 % UN
4: Setting resolution 0.01VA or cos ß 0.01
5: Only one position selectable a), b) or c)
6: Max. 6 ranges from 21ranges selectable
8: Burden step ≤ 200 V
10: Option

Subjects to alteration.

Options and loadpoints

All information for options and loadpoints can be found in the product catalogue of each current or voltage burden on our website.

https://www.zera.de/de/produkte/messwandlerprueftechnik/einzelkomponenten/

Tutorials

Helpful tips and information how to create and calibrate new burden steps* can be found on our website.

https://www.zera.de/de/service/tutorials/

*only possible for ESCB200 or ESVB200