

M411

Electronic Voltage Burden



Electronic Voltage Burden M411 is an advanced, programmable load burden designed for the secondary circuits of voltage transformers during testing, verification, and calibration. Featuring a broad programmable power range, it effortlessly accommodates standard burdens defined by national and international regulations, as well as custom user-defined values

FEATURES AND BENEFITS

- Range of burden power values for voltage transformer in accordance with standards: IEC 61869-3, IEC 61869-5, IEC 60044-2, IEC 60044-5, IEEE C57.13
- A wide load range of up to 1200 VA allows the M411 to be used as a single device (monoblock) without additional power range extenders
- Standard and non-standard values of burden power with standard and non-standard rated secondary voltages
- Extended range of rated voltage factor F_v up to 2,5
- 100 % and 25 % rated burden power, $\cos \varphi = 0,8$ at rated frequency 50 and 60 Hz
- 100 % and 0 % rated burden power, $\cos \varphi = 1$ at rated frequency 50 and 60 Hz
- Resistance compensation of the cable used for connect to the secondary winding
- Connection to two taps of a multiple-tapped winding
- The ability for the user to create his own range of frequently used burden values makes operation simple
- Possibility of using with automated voltage transformer calibration systems
- Ensuring safe operation with continuous voltage monitoring
- Protection against user setting errors, overvoltage and overheating
- Simple use by intuitive user interface
- Integrative 5,7" touch screen

COMPLETE TEST SYSTEM

Integrating the **M411** into a computer-controlled test system is enabled by combining it with:

- **M100** Comparator
- **M120** Voltage Transformer Test Set
- **S250** High Voltage Source

APPLICATIONS

Electronic Voltage Burden **M411** is used by:

- Manufacturer of Voltage Transformers
- On-site testing of Voltage Transformers
- Calibration laboratories
- Metrology institutes

TECHNICAL SPECIFICATIONS

Rated burden voltage U_{Sr}, V	Rated voltage factor F_v	Rated burden power S_r, VA	Power factor, $\cos \varphi$	Rated frequency f_R, Hz
100/3...150/3	1,2	1,25...600	0,8	50; 60
	1,9	1,25...500		
	2,5	1,25...100		
		1...10	1	
150/3...200/3 100/√3...120/√3	1,2	1,25...1200	0,8	
	1,9	1,25...500		
	2,5	1,25...100		
		1...10	1	
200/3...240/3 120/√3...415/√3 100...240	1,2	1,25...1200	0,8	
	1,9	1,25...500		
		1...10		
		115/√3; 120/√3; 115; 120	1,5	
35	0,2			
25	0,7			
75; 200; 400	0,85			

Secondary voltage range U_s

$$0,02 \cdot U_{Sr} \cdot F_v \cdot U_{Sr}$$

Active and reactive power errors

$$\pm 0,03 \cdot S^*$$

Power mains

Rated voltage	100...240 V
Rated frequency	50/60 Hz

Operating temperature	0...40 °C
Relative humidity	up to 80 % non-condensing

Size (W × H × D)	460 × 285 × 460 mm
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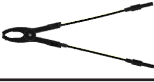
Weight (Main unit)	35 kg
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Standards

Safety	EN 61010-1:2010
EMC	EN 61326-1:2013

* Setted burden power value.

ORDERING INFORMATION

No	Item	Part no.	
	Scope of supply: The following items are supplied with the standard M411 modification :		
1	M411 Electronic Voltage Burden		
2	Measuring Cable MC (three-wire)	M411.010	
3	Measuring Cable MC (two-wire)	M411.020	
4	Mains cable 10 A EU (CEE 7/XVII - C13)	—	
5	Clip Connector, red (2 pcs.)	M411.030	
6	Clip Connector, black (1 pc.)	M411.040	
7	«O» Connector, red (2 pcs.)	LB 4-RKS NI/8.4/RT	
8	«O» Connector, black (1 pc.)	LB 4-RKS NI/8.4/SW	
9	«U» Connector, red (2 pcs.)	ADA3034-R	
10	«U» Connector, black (1 pc.)	ADA3034-N	
11	«U» Connector, red (2 pcs.)	LB 4-KS NI/9/RT	
12	«U» Connector, black (1 pc.)	LB 4-KS NI/9/SW	
13	«I» Connector, red (2 pcs.)	ADA86/F/1.8-RT	
14	«I» Connector, black (1 pc.)	ADA86/F/1.8-SW	
15	Operating manual	M411 OM	
16	Passport	M411 P	
17	Transport case	M411.900	

OLTEST LLC (UKRAINE)

Development and production
of measurement devices

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