

# 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 VT 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 VT 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		1
120/√3 120	1,5	12,5	0,1	
		35	0,2	
		25	0,7	
		75; 200; 400	0,85	

**Secondary voltage range  $U_s$**   $0,02 \cdot U_{Sr} \dots F_v \cdot U_{Sr}$

**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
















Weight (Main unit) 35 kg

**Standards**

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

\* Setted burden power value.

**ORDERING INFORMATION**

No	Item	Part no.	
<p><b>Scope of supply:</b> The following items are supplied with the <b>standard M411 modification:</b></p>			
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

**POSTAL ADDRESS**

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