



## SET OF MODULES FOR THE STUDY OF ELECTRICAL MEASUREMENTS WITH ALTERNATOR



This system studies the topics related with the electric measurements. It has a modular structure and it consists of didactic panels installed on a vertical frame. The system is available in two versions: **DL 2109T** (study of electrical measurements) and **DL 2109TM** (study of electrical measurements with alternator)

The modularity of this didactic system grants to the students a direct and immediate approach to the topic, offering the opportunity to study various subjects performing different experiments as:

**DL 2109T**

**DL 2109TM**

- DC current measurement
- AC current measurement
- DC voltage measurement
- AC voltage measurement
- OHM's law
- Bridge circuit
- Capacity reactance
- Power in DC circuits
- Power in single-phase circuits
- PF measurement in single-phase circuits
- Inductive reactance
- One-wattmeter method
- Two-wattmeter method
- PF measurement in three-phase circuits
- Four-reading method
- Six-pulse bridge circuit
- Synchronizing a three-phase alternator



# ELECTRICAL MEASUREMENTS



This system is composed of the following elements:

EXPERIMENT \ MODULES	DL 2109T												DL 2109TM												
	DL 1013M2	DL 1017R	DL 1017L	DL 1017C	DL 2101T13	DL 2109T02	DL 2109T03	DL 2109T04R	DL 2109T06	DL 2109T10	DL 2109T11	DL 2109T12	DL 2109T14	DL 2109T15	DL 2109T17	DL 2109T18	DL 2109T19	TL 2109TM	DL 2100-3M	DL 2109T01	DL 2109T16	DL 1013A	DL 1023P	DL 1026A	
1 DC current measurement	1	1								1	3							1	1						
2 AC current measurement	1	1								1	3							1	1						
3 DC voltage measurement	1	1							1				1	3				1	1						
4 AC voltage measurement	1	1						1				1	3				1	1							
5 OHM's law	1	1						1		1			1					1	1						
6 Bridge circuit	1	1						1		1			1					1	1						
7 Capacity reactance	1			1						1			1					1	1						
8 Power in DC circuits	1										1		1					1	1						
9 Power in single-phase circuits	1	1	1	1	1						1		1	1				1	1						
10 PF measurement in single-phase circuits	1	1	1	1	1	1					1		1		1			1	1						
11 Inductive reactance	1		1		1							1		1	1				1	1					
12 One-wattmeter method	1	1	1	1	1	1			1			1		1	1				1	1					
13 Two-wattmeter method	1	1	1	1	1	1			1			1		1	2				1	1					
14 PF measurement in three-phase circuits	1	1	1	1	1	1	1					1		1		1			1	1	1				
15 Four-reading method	1	1	1	1	1	1	1		1			1		1	2				1	1					
16 Six-pulse bridge circuit	1	1						1				2		2					1	1					
17 Synchronizing a three-phase alternator	1				1						1	1		3				1	1	1	1	1	1	1	
TOTAL	1	1	1	1	1	1	1	1	1	1	1	3	1	3	2	1	1	1	1	1	1	1	1	1	
	Power supply	Resistive load	Inductive load	Capacitive load	Transformer	Phase sequence indicator	Bridge rectifier	Potentiometer	Double change-over switch	Moving coil microammeter	Moving coil milliammeter	Moving coil ammeter	Moving coil voltmeter	Moving coil voltmeter	Single-phase wattmeter	Single-phase PF meter	Three-phase phasemeter	Connecting leads	Supporting frame	Synchronoscope	Frequencymeter	Base for the machines	Shunt DC motor	Three-phase alternator	