S·T·E·M
Science Technology Engineering Math

ADVANCED ELECTRICAL LABORATORIES

Modular and intuitive design, with real elements used in the industry and technological market.

4.1. ELECTRICAL INSTALLATIONS

Home Electrical Installations

AEL-AD13. **Entry Phone** Application.
AEL-AD14. **Audio and Video** Entry Phone Application.
AEL-AD6A. **Luminosity** Control Application.
AEL-AD6B. Basic Luminosity Control Application.
AEL-AD24. **Position Switches** Application.
AEL-AD5. Lighting Application with **Timer Switch**.
AEL-AI13-E. **Electrotechnics** Application (**Lighting**).
AEL-AE4. Differential **Automatic Switches** Application.
AEL-AD9A. **Heating Control** Application.
AEL-AD9B. Basic Heating Control Application.

Industrial Electrical Installations

AEL-CM1. **Logical Control Operations** Application.
AEL-CM2. Application of **Manual Starters** and **Velocity Commutators** with Asynchronous Motors.
AEL-CM3. **Automatic Control Operations II** Application.
AEL-CM4. Automatic Control Operations with **Contactors and Sensors IV** Application.
AEL-MED. **Industrial Installations Monitoring** Application.
AEL-AI13-A. **Electrotechnics** Application (**RLC** Circuits).
AEL-AD33. **Single-Phase Installations Faults** Application.
AEL-AD33T. **Three-phase Installations Faults** Application.
AEL-AI11. **People safety against indirect electrical contacts in IT neutral regimen.**
AEL-AE5. **Protection Relays** Control Application.
AEL-PMEI. **Protection Measures** in Electrical Installations.
AEL-AE9. **Power Flux Protection** Application.

4.2. HOME AND BUILDING AUTOMATION

Conventional Applications

AEL-AD1A. **Robbery Alarm** Advanced Application.
AEL-AD1B. Robbery Alarm Application.
AEL-AD3A. **Fire Alarm** Advanced Application.
AEL-AD3B. Fire Alarm Application.
AEL-AD15A. **Position Control** Advanced Application.
AEL-AD15B. Position Control Application.
AEL-AD8. **Blinds** activator.
AEL-AD25A. Control Application for **Home Electric Service** through the telephone.
AEL-AD22. **Flooding Control** Application.
AEL-AD30. **Gas** and **Smoke Detection** Application.
AEL-AD31. **Movement and Sound Detection** Application.
AEL-AD40. **Remote Control** Application **Via Telephone**.

Wireless Zigbee and Z-Wave Applications

AEL-AD28A. Complete **Home Automation** Application **with ZigBee Wireless Protocol**.
AEL-AD28B. **Advanced Home Automation** Application with **ZigBee Wireless Protocol**.
AEL-ZWAVE. **Automation Systems** Application with **Z-WAVE Technology**.
ZWAVE-AI. **Z-WAVE Anti Intrusion** System.

ZWAVE-FFG. **Z-WAVE Flooding, Fire and Gas Security** System.
ZWAVE-LC. **Z-WAVE Lighting** Control.
ZWAVE-HC. **Z-WAVE Heating** Control.
ZWAVE-VS. **Z-WAVE Video** Surveillance.
ZWAVE-AC. **Z-WAVE Access** Control.
ZWAVE-SC. **Z-WAVE Shutter** Control.

Knx/Eib Home/Buildings Automation

AEL-KNX1. **KNX/EIB Shutter** Control Application.
AEL-KNX2. **KNX/EIB Heating** Control Application.
AEL-KNX3. **KNX/EIB Security** Control Application.
AEL-KNX4. **KNX/EIB Lighting** Control Application.
AEL-KNX5. **KNX/EIB Energy Management** Application.

Bacnet Buildings Automation

AEL-BCS. **Building Automation** and **Control Networks BACnet** Application.

4.3. ELECTRICAL MACHINES

Transformers Applications

AEL-SPTT. **Single-Phase Transformer** Application.

AEL-TPTT. **Three-Phase Transformer** Application.

AEL-AI13-D. **Electrotechnics** Application (**Transformers**).

AEL-ESAT. **Fault Simulation** Application **in Three Phase Transformers.**

LIMEL. Integrated Laboratory for **Electrical Machines.**

Generators and Motors Applications

AEL-EEEM. **Energy Efficiency** in **Electrical Motors** Application.

AEL-EHVC. Computer Controlled **Hybrid and Electric Vehicles** Application.

AEL-EMCF. **Electrical Machines Control** through Frequency Controller Application.

AEL-AI13-C. **Electrotechnics** Application (**Motors**).

AEL-MMRT. **Motor Management Relays** Application.

AEL-ACEMT. Advanced **AC Electrical Motors** Application.

AEL-ACDHA. Application of **AC Dahlander Three-Phase Induction Motor.**

AEL-ACLA. Application of **AC Linear Motor Operations.**

AEL-ACSPA. Application of **Asynchronous Single-Phase Motor with Split Phase.**

AEL-SCIMS. **Squirrel Cage** Induction Motors Starter Application.

AEL-HPSG. **High Power** Synchronous Generators Application.

AEL-DCEMT. **DC Electrical Motors** Applications.

AEL-DCGEA. Applications of **DC Generators.**

AEL-DCEMA. **DC Electrical Motors** Application.

AEL-DCPMA. Applications of **DC Permanent Magnet Motors.**

AEL-ACWRA. Application of **AC Three-Phase Induction Motor of Wound Rotor.**

AEL-EMT-KIT. Advanced **Dissectible and Configurable Electrical Machines.**

4.4. INSTALLATIONS AND MAINTENANCE

Cutaway Models

EMT1-S. Cutaway **DC Independent Excitation** Motor-Generator.

EMT6-S. Cutaway **Independent Excitation 3PH Synchronous** Motor-Generator.

EMT8-S. Cutaway **3PH Wound Motor**.

EMT10-S. Cutaway **3PH Squirrel-Cage Motor**, 2 speeds.

Detachable Models

AEL-MGTC. **Motors, Generators and Transformers Construction** Application.

AEL-TPTC. **Three-Phase Transformer Construction** Application.

AEL-DMG-KIT. Dissectible **Motors-Generators** Application.

AEL-DIM-KIT. 4 Dissectible **Induction Motors** Application.

Installations And Maintenance Training

WIT-MDRV. Wiring Installation Training for **AC and DC Motor Drives**.

WIT-IEM. Wiring Installation Training for **AC and DC Industrial Electrical Motors**.

WIT-WPS. Wiring Installation Training for **Wind Power Systems**.

WIT-IEP. Wiring Installation Training for Industrial **Electrical Protections**.

WIT-ILI. Wiring Installation Training for Industrial **Lighting Installations**.

WIT-ISG. Wiring Installation Training for Industrial **Signalling Elements**.

WIT-EIB. Wiring Installation Training for Electrical Installations in **Buildings**.

WIT-EPH. Wiring Installation Training for **Entryphones**.

WIT-MCB. Wiring Installation Training for Mains **Connection and Meters in Buildings**.

...and more.