

URM-00

ELECTRONIC & FUNCTIONAL

- Industrial electronic drives (low power) with built-in latest technology
- Main test points and controls available on panel
- LEDs to indicate operating modes
- Short circuit electrical and electronic protection
- Test points on safety bushes
- Supplied complete of motor and speed detectors (see individual module)
- External speed regulation either via PC or PLC (separate inputs)
- Supplied complete with teaching manual containing theory and practical experiences

MECHANICAL

- Anodized aluminium and silk screened panel reproducing the various internal electronic circuits
- Easy mechanical mounting/removal system from the vertical frame
- Shaft lexan protection for any motor
- Plastic protection under the electronic circuits
- Highly reliable bushes for safe connections
- Side ventilation
- Rubber feet
- Dimensions: mm 375 x 303 x 110h



EDUCATIONAL KIT TO STUDY MOTORS CONTROL AND PROTECTION

It is composed of 35 modules with standard electrical control components, vertical frame and accessories to perform a wide range of experiments .

Teaching and experimental series modules have been especially designed to provide a comprehensive, hands-on and complete instruction in the principles and operations of control circuits of the main types of electrical motors (open and closed loop) most widely used in industry today, such as:



- VECTORIAL AC MOTOR CONTROL
- PLC MOTOR CONTROL MODULE
- QUADRANTS DC MOTOR CONTROL
- AC DIGITAL MOTOR CONTROL
- PID/ON-OFF UNIVERSAL CONTROL MODULE

All the modules are completely self-sufficient and do not require any external devices or special equipment other than a common DC power supply and the standard laboratory measuring instruments in order to work. The system modularity allows to programme investments through the complete or partial purchasing of seven modules currently available.

A special computerized device known as "URM-SMC" enables automatic measurements, data acquisition and graphic monitoring of the signals using any PC. Full technical bibliography complete of the theory of the control circuits and many hands-on experiments are provided with each module ensuring a fast and effective learning of the subject. Each module can be used as easily either resting on a flat surface or fitted to a special vertical anodized aluminium frame.

URM-00

- **URM-07/IV**

Vectorial AC motor control

- **URM-08/PLC**

PLC motor control module

- **URM-09/2Q**

2-Quadrant DC motor drive and control

- **URM-10/ID**

AC digital motor control

- **URM-11/PID**

PID/ON-OFF control module



URM-07/IV - VECTORIAL AC MOTOR CONTROL

AC three-phase VECTORIAL motor control module

- Silk screened anodized aluminium panel
- AC three-phase programmable vectorial motor drive (inverter) and related electrical AC motor
- Internal or external controls (PLC and PC interface)
- Dedicated digital Keyboard and LCD panel



URM-08/PLC - PLC MOTOR CONTROL MODULE

The PLC motor control module allows the automatic management of all the "URM-00" series.

- 16 ON/OFF inputs and no.12 ON/OFF outputs
- 4 analog inputs and no. 4 analog outputs (0-10V/12 bit resolution)
- Five language programming



URM-09/2Q -2 - QUADRANTS DC MOTOR CONTROL

The 2-Q DC motor drive and control experimental module has been especially designed to provide a complete instruction in the principles and operations of DC motor control circuits most widely used in industry. Equipped with DC motor (200V/300W) and tachometer dynamo. No external devices required to operate.



URM-10/ID - AC DIGITAL MOTOR CONTROL

- Silk screened anodized aluminium panel
- Digital Variable Frequency drive and related asynchronous three-phase motor on base
- Multifunction operator panel with LCD display
- External speed regulation, via PC or PLC (0-10Vdc)



URM-11/PID - PID/ON-OFF UNIVERSAL CONTROL MODULE

The PID/ON-OFF control module is an universal control that can be employed in any process application. It has been especially designed to provide a suitable PID or ON/OFF control for many applications.

- Microcontroller management
- RS-232 PC connection
- PID parameters freely configurable
- ON/OFF control with hysteresis
- Industrial standard signals compatibility
- Four different feedback input signals
- Differential Output signal ($\pm 10Vdc$)
- Complete of management software



URM-00

- **URM-SMC**
Multifunzionale measuring system
- **URM-PCS**
PC motors control



URM-SMC - COMPUTERIZED MEASURING SYSTEM FOR DATA ACQUISITION AND GRAPHIC MONITORING

Multifunctional measuring system for data acquisition and graphic monitoring. It performs a wide range of measures: as oscilloscope, storage oscilloscope, true RMS voltmeter, spectrum analyzer and transient recorder.

- PC printer port connection
- Resolution: 12 bits 0.025%, Linearity: 10 bits
- Sampling frequency: 100KHz
- Software running in Windows XP environment
- Conversion time: 10 μ S
- Input impedance : 1Mohm/20pF
- Two separate input channels complete with 1:1 and 10:1 probes
- Accuracy: 0.25% \pm 1 LSB
- Measuring Instruments: oscilloscope, storage oscilloscope, true RMS voltmeter, spectrum analyzer and transient recorder



URM-PCS - PC MOTORS CONTROL

- It allows to drive URM series modules using a PC.
- PC serial port connections (RS-232)
- Resolution: 16 bits with oversampling
- Microcontroller (16 bit) control
- Conversion accuracy: 16 bit
- Signals outputs: 0 \div 10VDC or 0 \div \pm 10VDC
- Software for (Win 7/XP)

