

## Rotary Transfer Unit RTU



### Key Features:

- Representation of industrial indexing, manufacturing and assembly processes
- Two speed and two direction motor controller
- Station tagging and identification
- Understanding the industrial rotary transfer operation
- Inputs and Outputs 24v dc and TTL
- D type sub connectors, IDC and 4mm colour coded terminals for easy connection
- LEDs on front control panel for visual indication of operations
- Fault insertion switches

The Rotary Transfer Unit (RTU) represents industrial indexing, manufacturing and assembly processes. A number of programming exercises are possible from simple control operations to fault-tolerant processes.

The RTU consists of a component dispensing mechanism positioned above a turntable. A turntable with metal pegs represents the assembly station that can be rotated in a clockwise or anti-clockwise direction with a two speed control. Using a control signal it is possible to dispense and assemble black and white rings from the clear plastic tubes onto the pegs in various combinations.

Each station is identified using a binary code method with black and white sections on the underside of the turntable; this is also represented on the top of the turntable to help understand binary identification methods. Four infra-red reflective sensors identify the position and station number using a bi-colour identification system. The dispensing mechanism, using, infra-red sensors, identifies if the peg has a ring or rings loaded and the colour of the rings.

The control panel includes an on /off and emergency stop push button and a button to silence the internal buzzer. Four switches are fitted on the rear of the unit for fault insertion. The unit can be controlled by a PLC, having ten digital inputs and six digital outputs, through the D type sub connectors on the rear, or the 4mm colour coded shrouded sockets on the front of the control panel. Connection can also be made to a PC, using a suitable interface card, or Microprocessor training board, through the IDC header with TTL connection. Control is implemented using high or low level programming languages.

### Curriculum Coverage

- |   |                       |
|---|-----------------------|
| • Introduction  | • Rotary table motion |
| • Getting started                                       | • Dispensing station  |
| • The Rotary Transfer Unit signals                      | • Sensor station      |
| • Connecting the RTU to a PC                            | • Control panel       |
| • Connecting the RTU to a Programmable Logic Controller | • Switched faults     |
| • Rotary table  |                       |

### Labworks

- |                            |                            |
|----------------------------|----------------------------|
| • Movement of rotary table | • Dispensing               |
| • Initialisation           | • A production line system |
| • Station counting         | • Follow a set routine     |

## Specification

Inputs	6 x digital inputs
Outputs	10 x digital outputs
Sensors	3 x Infrared reflective (3 x station binary code; 1 x centre position) 4 x through beam (2 x ring detection; 2 x ring colour)
Number of assembly positions	Six
Turntable	1 x 24V d.c. motor (clockwise, anticlockwise and two speed)
Shuttle dispenser	1 x 24V d.c. motor (clockwise, anticlockwise)
Control	1 x Start - Stop switch 1 x Emergency Stop switch Alarm output to operate internal piezo-buzzer.
Switched Faults	Four dual in-line switches
Connection	2 x 15 way D type connector 24v dc 1 x IDC 26 pins TTL 18 x 4mm colour coded shrouded sockets 2 x 4mm power terminals 2.1mm power jack socket
Power supply requirements	24V d.c. @ 1.0A

## Required

A suitable PC with minimum; Pentium processor, 1GB RAM, 20GB HDD, CDROM Drive, and Windows XP or above

## Ordering Information

<b>Model Number:</b>	<b>RTU</b>
<i>Consists of:</i>	1 x Rotary transfer unit 10 x White plastic rings 10 x Black plastic rings 2 x Clear plastic tubes 1 x 24V d.c. power supply unit 1 x Manual 1 x Software CD

## Weights and Dimensions

<b>Un-Packed</b>		<b>Packed</b>	
Approximate Dimensions (mm)	400L x 275W x 321H	Approximate Dimensions (mm)	500L x 400W x 300H
Approximate Weights	6.3Kg	Approximate Weights	8Kg

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