

# CONTROL LOGIC SIMULATOR

▶ PTE-IOLogic



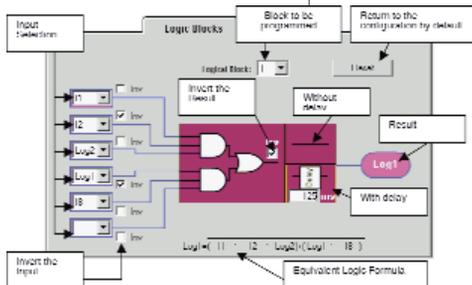
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# PTE-IOLogic

## Control Logic Simulator

### DESCRIPTION

The equipment PTE-IOLogic responds to the need to simulate and analyze, in the field or in electrical installations, a logical control sequences for substations, industrial control systems, remote control SCADA systems, and especially in the field of protection relays. This has become increasingly importance, as all the modern numeric relays incorporate control logic in the actual relay. The PTE-IOLogic monitors input signals and can condition the output response to suit. The main problem of these types of tests is to check that the correct sequences of events are achieved during commissioning tests. This requires that all the devices operate correctly within the control system to produce the required performance. Not only does this need to be checked once, but usually repeated until the adequate adjustments are found and made. This reduces the possibility of an incorrect operation may lead to damage in the installation. For these reasons, an equipment, such as the PTE- IOLogic represents an enormous advantage, in terms of safety and time saved.



### Configuration of Logical Blocks

### Hardware

The equipment has 8 groups of isolated inputs and in each of these groups there are 2 input signals. The Inputs can be configured in 3 ways.

- 1.- Dry contact (voltage free)
- 2.- Low level voltage ( $\pm 1.5V \pm 360V$ )
- 3.- High level voltage ( $\pm 15V \pm 360V$ )

Hardware indications are by illuminated LED's, and the logic processor shows in real time the state of each input, whether they are active or not. When the hardware When the input has been introduce to the equipment, a LED blinks to indicate this, thus making it very easy for the operator to see at a glance the operational state/s.

There are also 8 groups of output relays, which are normally open or normally closed. These have a capacity up to 8 A. The output circuit of these relays are isolated between them.

The equipment has microprocessors, which explore the 8 inputs, and to determine the state of these outputs. These microprocessors also control and generate the state of the protection alarms and maintain the communication of the loading and down loading of the programs configured.

It is also important to note that even though the equipment requires an external PC computer to design and record in memory the programs configured by the operator, once this information is programmed and saved in the memory of the equipment, it can be used without the PC. The program can load up to 10 different configurations in the non-volatile memory. A press key on the front panel can select these configurations and another press key enables to reset all the states recorded in the equipment.

### Software

The associated software program EURO-IOLog is directly related to the capacity of the equipment PTE-IOLogic, and is described below.

#### Input Configuration

There are 8 inputs and each of these 8 inputs can be configured by different functions. These inputs are monitored every 0.25ms and then sequenced to a logical Processed Input. In this process, the inputs can be configured to be activated, with either a high or low level of voltage, by a rise or drop in the signal, or by level if it is delayed. These input groups, serve as signals for the next blocks.

Each of these processed inputs can be direct or connected to one or various Output Blocks.

#### Configuration of Logical Blocks

The Logic Blocks enables, as the name suggests, logic operations between various inputs. These Blocks also admit other input results of other Logic Blocks. Furthermore the blocks can be configured to have a specific delay in milliseconds.

#### Output Configuration

The output blocks are those that control the relays to the monitors of the equipment. Each Output Block admits in the input one of the results of the Logic Block or Processed Inputs. Each Output Block is configured to be Normally Open or Normally Closed. Also they can be configured to delay this output (latch).

### APPLICATION

The use of the PTE-IOLOGIC is extremely wide, as it is capable of simulating any control situation, particularly for the following applications:

- Simulation and analysis of logic controls in protection relays.
- Simulation, analysis, and verification of the control system in substations.
- Simulation of any breaker system.
- Simulation and analysis of traffic control systems.
- Analysis of logical programs in automatic remote systems (SCADA).
- In general, to reproduce and to analyze any sequential programmed logic system.

### STANDARD ACCESSORIES INCLUDED

- Configuration software, PTE-IOLog
- 1 Instruction Manual
- 1 RS-232 cable
- 1 Voltage Supply cable
- Nylon Protective Bag

### TECHNICAL CHARACTERISTICS

<b>Inputs</b>	There are 16 Inputs in 8 groups commutable by the software between Ac/dc Voltage and Dry Contacts that are galvanically isolated between them. Input sampling time is 0.25ms	
Voltage Mode	Low Sensibility	Input Impedance: 220K $\Omega$
		Detection Level: $\pm 1.5V$
		Maximum Voltage: $\pm 360V$
High Sensibility	Input Impedance: 220K $\Omega$	
		Detection Level: $\pm 15V$
		Maximum Voltage: $\pm 360V$
Contact Mode	Open circuit Voltage:	-4,5Vdc
	Current when closed:	-20mAdc
	Resistance detection:	<60 $\Omega$
	Common	Maximum earth voltage: $\pm 360V$
<b>Outputs</b>	8 Relay Outputs isolated between them	
	Maximum Voltage:	250Vac ; 125Vdc
	Maximum current:	8Aac / 8Adc
	Maximum capacity:	2000 VA ; 150W
	Maximum earth voltage:	$\pm 360V$
Voltage supply:	100-240Vac/ 50-60Hz.	
Dimensions (mm)	Height: 150/13" x Width: 340/6" x Depth: 300/12"	
Weight	Equipment: 5.4 Kg./12lbs	
	Complete with nylon case and cables: 7.7Kg / 17lbs	

DISTRIBUTED BY

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