

GLOSSARY OF TERMS

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ADDRESS SELECTOR	A switch on the top of each I/O Housing to establish housing address. Each switch contains four sections, one can be selected to establish address at housing 1 to 4.
ARITHMETIC	A type of logic used to add, subtract, multiply or divide two numerical values. Optional outputs detect addition overflow, comparisons (greater than, equal to, or less than), and illegal division.
BCD (Binary-Coded Decimal)	A system of numbers representing decimal digits (0-9) with four binary (ON/OFF) lines. BCD is a recognized industrial standard; BCD input (e.g., thumbwheels) and output (e.g., numerical displays) are readily available.
BINARY	A numerical system wherein values are represented only by numbers 1 and 0 (ON/OFF). This system is commonly employed in modern electronic hardware since circuits can be economically designed for ON/OFF status.
BIT	A single number whose value can be either a One or a Zero. Commonly represented in hardware by a small magnetic toroid device that can be either magnetized or not magnetized.
CHANNEL	A portion of the total I/O capability of the controller. Each channel represents 50% of the total available I/O.
CHECKSUM	An error detection code that sums all one bits of a group of data storage locations. Summing is done without carries from one column to another. The known result is stored; any variance from this result indicates data has been altered. Checksums can be prepared for any portion of logic memory, coil storage, or register content.

CMOS Advanced semi-conductor memory that requires DC power to retain its content. However, the amount of DC power is very low when compared to other memory techniques, allowing relatively small batteries to maintain this memory for years without application of AC power.

CORE MEMORY An electronic component used to store data magnetically for future utilization that is retentive upon power failure.

COUNTER A type of logic that is used to simulate the operation of external counters.

CPU (Central Processor Unit) See PROCESSOR.

DISABLE The capability to disconnect a logic coil or a discrete input from its normal control, and force it ON or OFF.

DISCRETE References that can be either ON or OFF; can be input, output, or internal references.

DOUBLE PRECISION The technique of storing a single numerical value in two consecutive registers. Since each register can store up to three digits (maximum value 999), double-precision allows magnitudes of up to 999,999 to be stored.

DUMP Recording the entire memory of a Controller onto disk by the Service Center. Generally accomplished by use of a Telephone Interface at the Controller.

ELEMENT The basic building block of the 484 logic. An element can be a relay contact, horizontal shunt or open, fixed numerical value, register reference, or coil representation.

FORCE The pushbutton on the P180 Programming Panel that can be used to change the state of a Disable reference. The reference will be changed OFF to ON or ON to OFF every time this pushbutton is depressed.

HEXADECIMAL	The numbering system that represents all possible statuses of four bits with sixteen unique digits (0-9 then A-F).
INPUT	A signal that provides information to the controller; can be either discrete input (pushbutton, relay contacts, limit switches, etc.) or numerical input (thumbwheel, external solid-state device, etc.).
I/O	Input/Output, the Controller connection to the "real world"; includes both discrete and register signals.
LATCH	The type of coil that is retentive upon power failure. Can be used similar to a latching relay. Normally coils are reset to OFF conditions upon power up; those coils selected by the user as latched (L) will not be altered and thus retain their previous condition (ON/OFF).
MAINFRAME	See PROCESSOR.
MEMORY PROTECT	The hardware capability to prevent a portion of the memory from being altered by an external device. This hardware feature is under keylock control.
MODULE	Hardware sub-assembly that can be easily replaced for maintenance purposes. If a failure occurs, the module is rapidly replaced to restore the control system with minimum downtime. The failed module (Processor, Power Supply, or I/O module) is then repaired at a later time.
NETWORK	A group of connected logic elements used to perform a specific function. A network can be from one element to a complete 10 x 7 matrix of elements (plus coils) as desired by the user.
NODE	Point on a ladder diagram that can receive power from left or provided power flow to right. This can be an input to a logic element (left side) or an output from a logic element (right side).

OUTPUT A signal provided from the Controller to the "real world" can be either discrete output (solenoid valve, relay, motor starter, indicator lamp, etc.), or numerical output (e.g., display of values stored within the Controller).

PRESET The limit established for a counter or timer function. The current count or time available from the register referred to in the lower element cannot exceed this limit. At the preset value, the logic output is energized.

PROCESSOR The "brain" of the Controller system, wherein the customer's logic and executive is stored; all logic solving and decision making is performed by the Processor. Also called the CPU or mainframe.

RAM (Random-Access Memory) A memory where individual bits are stored and accessed, in lieu of groups of bits as used for numerical storage.

REAL TIME The actual time during which physical events take place.

REAL WORLD The actual world within which physical events take place.

REFERENCE Four-digit numbers used in the construction of the customer's logic. References can be either discrete (logic coils, inputs, or sequencer steps) or register (input or holding).

REGISTER A location within the Controller allocated to the storage of numerical values (up to 999). All holding registers are retentive on power failure. There are three types of registers: input whose contents are controlled by the "real world" outside the Controller; holding registers whose contents are controlled from within the Controller; and output registers, which are special holding registers since their contents can also be provided to the "real world".

RELAY ELEMENT A logic symbol used to simulate the effect of relays. Contacts can be normally open, normally closed, or transitional contacts.

REMOTE PRESET The capability for placing the preset for a timer or counter line into a register and referring to that register in the upper element of the logic. The preset is no longer fixed since the contents of the register (and thus the preset) can be altered at any time.

RS-232C Electronic Institute of America (EIA) standard for data communications, RC-232 type C. Data is provided at various rates, eight data bits per character.

RUN LIGHT A LED indicator on the Processor that indicates, when lit, that the logic is being processed.

SCAN The technique of examining or solving logic networks one at a time in their numerical order. After the last network is solved, the next scan begins at network one; logic is always solved in the fixed cyclic process.

SOLID-STATE Circuitry designed using only integrated circuits, transistor, diodes, etc.; no electromechanical devices such as relays are utilized. High reliability is obtained with solid-state logic, which would be degraded by depending upon electromechanical devices.

TIMER A logic element used to measure and record the time of an event or sequence of events. Timers can accumulate time in seconds, tenths of seconds, or hundredths of seconds.

TRAPPED (START/STOP) The ability to stop a controller from scanning; can be exercised only from a computer or the P180 Programmer. The controller can still communicate to the computer but will have all outputs OFF.