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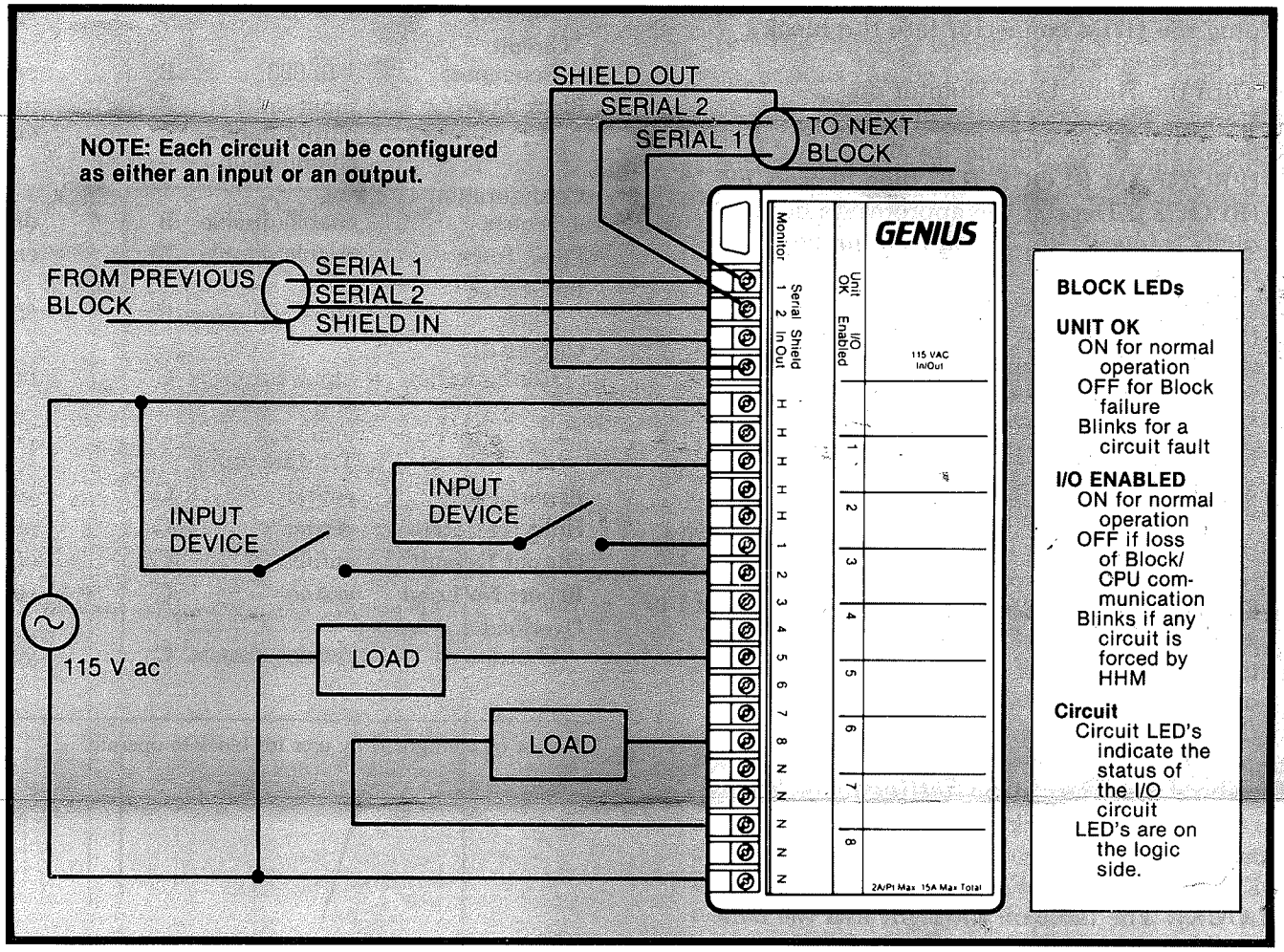
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GENIUS™ I/O System

115VAC In/Out Block



The 115VAC In/Out Block has 8 circuits of discrete inputs/outputs configurable on a per-circuit basis. Each Block consists of the permanently mounted terminal block assembly and the electronics assembly. The electronics assembly is keyed to match its terminal block assembly to prevent mismatching electronics assemblies and terminal blocks. Control power for the Block is tapped off the input/output device voltages already wired to the terminals.

When configured as an input only or output only Block, each Block references one input or one output per circuit, respectively. When configured as a combination Block (inputs and outputs on the same Block), the Block references one input and one output for each circuit.

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115VAC In/Out
Configuration

Configuring I/O References

When the 115VAC Block is initially installed, it must have its Block Number and Circuit References configured by the Hand Held Monitor (HHM). The HHM must be plugged directly into the Block and it must be the only HHM on the GENIUS Bus.

1. With power applied to the 115VAC Block, plug the HHM connector into the Block's HHM receptacle.
2. Turn the Hand Held Monitor on.
3. Depress F3 (CONFIGURATION).
4. Select the Block Number by depressing F1 (PROGRAM BLOCK ID), then depress F2 (BLOCK). Depress the appropriate decimal digits (range 1-30). If you have made a mistake depress F2 twice again and then enter the correct decimal digits. Depress F3 (ENTER). An error message is displayed if there is a Block Number conflict.
5. Select the circuit references and Block type by performing the following sequence. Depress F1 (REFERENCE). Depress the appropriate decimal digits (range 1-993). If you have made a mistake depress F2 (CHANGE) then F1 (REFERENCE) and then enter the correct decimal digits. Depress F3 (ENTER). The cursor will move to the right. Depress F2 (TOGGLE) to select the type of Block: input only, output only, or combination. Depress F3 (ENTER).

Optional Configuration Settings

To change other Block configuration parameters from the factory settings, depress >(up) MENU then depress F2 (CONFIGURE BLOCK). The table on the right lists the configurable options, their ranges, and factory settings. Use the NXT key to skip through the selection menus, the TGL or CHNG key to change the values, and the ENTR key to write the new values to the Block following a change. The bottom display line is used to list the soft function key (F1, F2, F3 and F4) action.

Configuration Options

Configuration Option	Range	Per Circuit (C) Per Block (B)	Factory Settings
*Block Number	1 to 30	B	none
*Circuit References	1 to 993	B	none
Block Type	input only/ output only/ combination	B	input only
Configuration Protect	enable/disable	B	disable
Pulse Test	enable/disable	B	enable
Input Filter Time	10 to 100 msec	B	20 msec
Circuit I/O Configuration	input/output/ output with feedback/ Tri-state input	C	input
Report Fault	yes/no	C	yes
Hold Last State	yes/no	C	no
Output Default	on/off	C	off
Report No Load	yes/no	C	yes
Overload Shutdown	yes/no	C	yes

* Must be configured by user for block to operate.

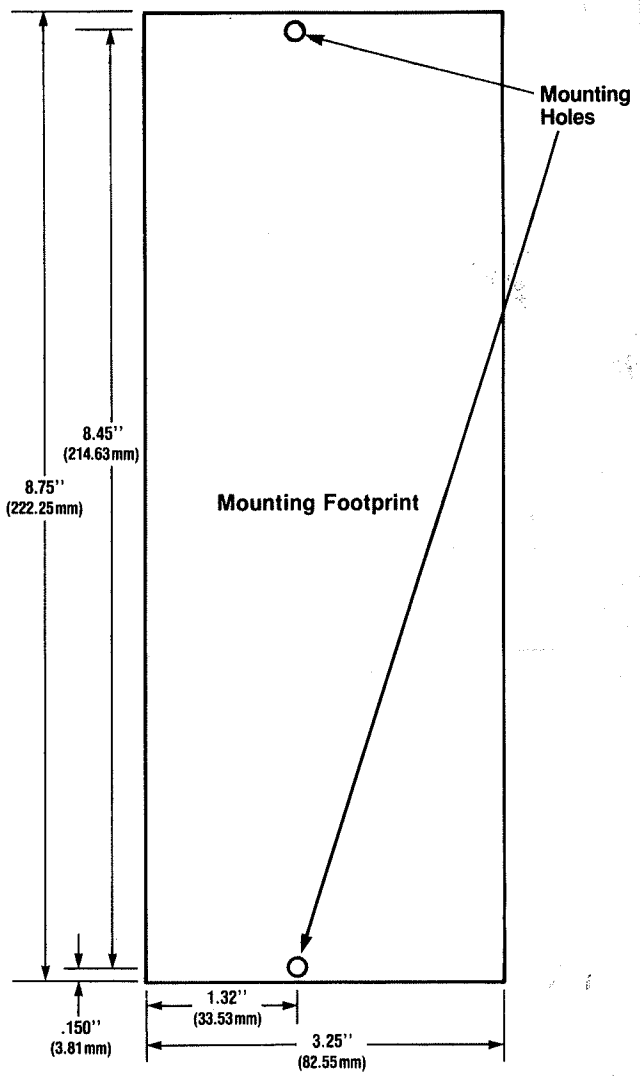
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Mounting

Blocks are mounted by two screws located at the top and bottom of the block. Drill two screw or bolt holes for 8-32 hardware.

Tapped: .136" (#29 drill)
Through Hole: .177" (#16 drill or larger)

A green ground screw is provided on the left side of each block. Connect the ground screw to enclosure ground if the mounting hardware is not making contact to enclosure ground.



Field Wiring

All of the field wiring connections are standard screw, clamp type terminals. Each terminal accepts one AWG #12 or two AWG #14 wires.

A 115VAC source must be connected to an H terminal and the neutral to an N terminal. All H terminals are internally bussed, as are all the N terminals.

The AC power connections need to be made only to one terminal from each of these groupings; the remaining terminals are for use in connecting field devices. Only one wire (signal) need to be run to each field device, depending upon the physical layout and current loads, hot connections can be bussed together and made by one wire back to the I/O block or power source. Similar efficiencies can be made with the neutral connections. These power connections at the I/O blocks are for your convenience; use them if they are convenient.

Any circuit can be used as a discrete input or a discrete output. In the wiring diagram on page 1 circuits 1 and 2 are inputs: the power source (115VAC) is connected through an input device (such as a switch) to a discrete input circuit on the Block. Circuits 5 and 8 are wired as outputs: power is routed through the Block electronics to a discrete circuit and applied to a load. The load return connects to the N terminals.

Serial Bus Wiring

The serial bus is a single shielded twisted pair. If the total serial bus length is <100 feet, Belden #9302 or factory approved equal is recommended; if >100 feet, Belden #9182, Alpha #9823 or equivalent 150 ohm Twinax cable must be used. It is essential that the bus wires are connected to the correct terminals. The wire connected to Serial 1 terminal on the installed Blocks must be connected to the Serial 1 terminal on the newly installed Block. The same is true for the Serial 2 connection.

The shield is connected such that the incoming shield from another GENIUS device is connected to Shield In and the outgoing shield connected to the Shield Out.

The last Block (electrically) on the bus must be terminated with a 150 ohm termination for Belden #9182 or equivalent and a 75 ohm resistor for Belden #9302 or equivalent. Termination is accomplished by installing the resistor across Serial 1 and Serial 2 terminals. Terminator plugs including these resistors are available.

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115 VAC In/Out Block

Specifications

Type:	8 circuit combination discrete input and output
LEDS:	UNIT OK, I/O ENABLED, Individual logic side circuit indicators
Operating voltage:	93-132 VAC
Frequency:	47-63 Hz
Required AC Power: (Block Only)	20 mA typical, 100 mA maximum
Power Supply Dropout time:	1 cycle (16.7 msec at 60 Hz or 20 msec at 50 Hz)
Block-to-Block isolation:	1500 V
Terminal wiring:	one AWG 12 or two AWG 14
Weight:	4 lbs. (1.8 kg)
Operating environment:	0° to 60°C (32° to 140°F) 5% to 95% humidity non-condensing
Input characteristics:	
Input off state:	0-40 VAC
Input on state:	80-132 VAC
Input Impedance:	13 k ohms @ 115 VAC
Selectable Filter Time:	10 to 100 msec
Input Diagnostics:	Open Wire
Output characteristics:	
Output current Steady State:	2 amps rms per circuit, 15 amps maximum per Block @ 115 V ac, 35°C. 7.5 amp maximum per Block @ 115 Vac, 60°C.
Maximum Inrush:	30 amps peak/20 amps rms (2 cycles) AC 20 amps peak/14 amps rms (10 msec) DC
Off state current leakage:	<13 mA @ 115 VAC
Voltage drop:	2.5 V Maximum at 2 amps.
Fusing:	Internal electronic short circuit trip. 100 msec long time trip.
Turn on Delay (Max.):	0.5 cycle plus 1 msec.
Switching characteristics:	Zero crossing turn on & off
Minimum load Resistive:	30 mA
Inductive:	50 to 100 mA
Diagnostics:	Short Circuit, Overload, No Load, Failed Switch, Over Temperature.

Ordering Information

Description	Catalog No.
115VAC Block	IC660CBD100
115VAC Terminal Assembly Only	IC660TSD100
115VAC Electronics Assembly Only	IC660ELD100

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