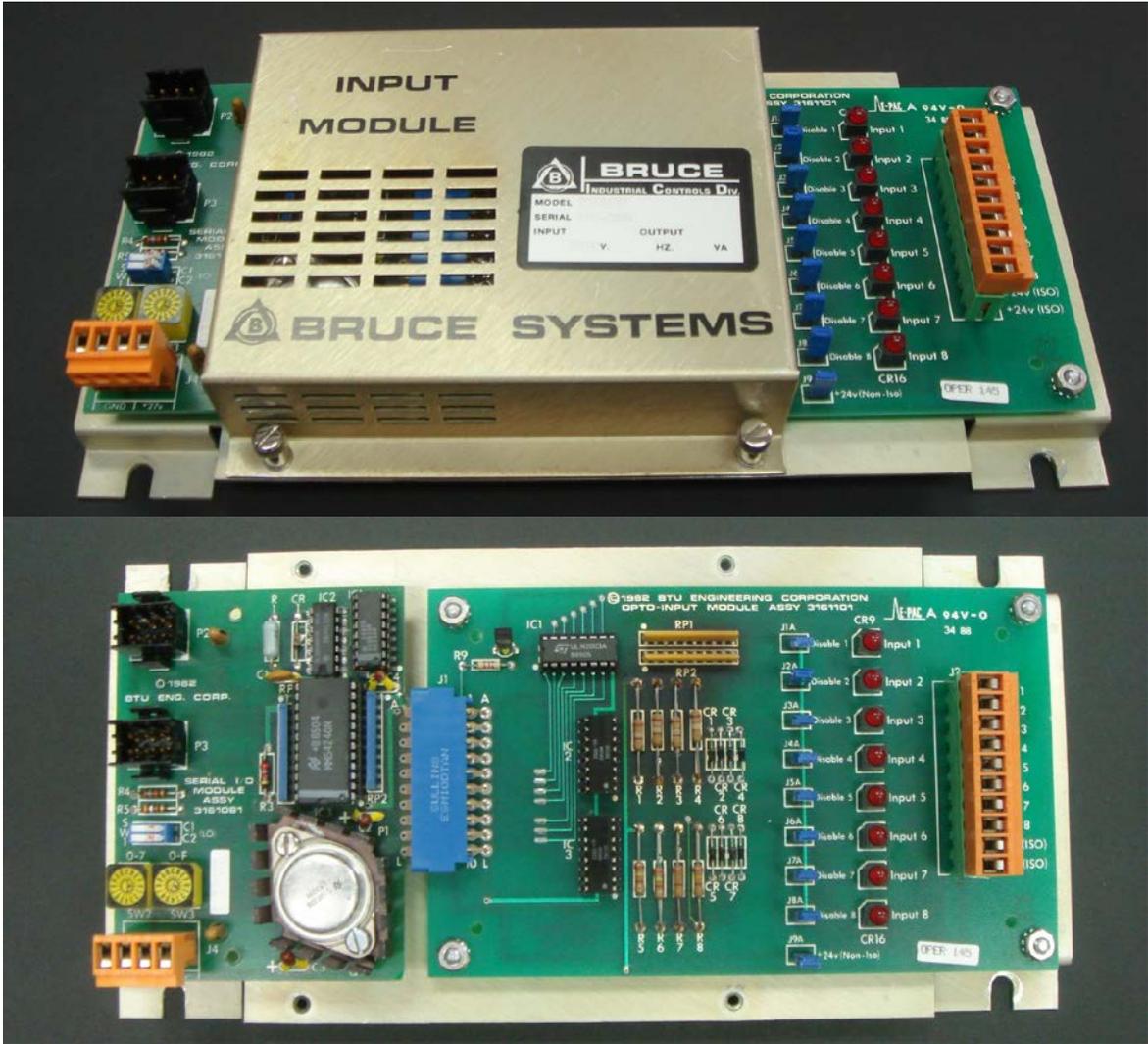# BTI
INPUT MODULES

INVAC SYSTEMS has a large inventory of used 8-channel **INPUT MODULES** used on BTI Horizontal Furnaces.   Each module has been thoroughly tested and certified for functionality. This equipment was OEM on BDF-4, BDF-41, BDF-200, and BDF-2000 Horizontal Furnaces.

These electronics are in great condition and would make an excellent source for spare parts or equipment upgrades. Call now for current inventory and pricing!

Reference Part Numbers:

Kokusai/BTI (Bruce Technologies Inc.)	PN#
8-Channel Input Module	9760132

BTI
INPUT MODULES

MODULE FUNCTIONALITY:

Each input module has 8 input functions that are reported to the DDC via the I/O bus.

Each input function is a High or Low state. These states can be "inverted" at the DDC to allow the user the discretion of how the signal will be used.

The normal state of each input channel is HIGH unless it is "Grounded" to a LOW state through the input wiring connector. The connector is a 10-position Phoenix connector, which allows a stripped wire to be inserted and clamped down using a screw, for easy user interfacing.

> *Note – "Grounded" means being connected to the 24(27) VDC common which is tied to a "common chassis ground".*

There are jumpers for each of the 8 input channels. Each jumper connects the individual input channel to ground causing a "low" state. This is desired on unused channels, because it keeps the input alarm "off" for that channel.

If an input is ungrounded, indicating a High state (or alarm), there is a corresponding LED indicating the High state, easily visible by the user.

> *Note – As indicated above the DDC can be configured to INVERT the alarm, but the ungrounded LED will remain ON at the board level, indicating a High state. The difference on the inverted channel is that a High state will not be considered an ALARM, but the Low state will be the ALARM.*

The board is powered by the stack's 24 (27) VDC power supply. This will typically be the voltage used on each input channel (through a pull-up resistor). However, the user can opt to isolate all inputs by removing the non-isolated jumper from the board and applying another isolated 24 VDC to pins 9 or 10 of J2. Each input is optically isolated from the input module's electronics to prevent any voltage spikes from damaging the input module's electronics. Isolating the 24 VDC will further enhance protection, by not allowing potential high-voltage spikes to get onto the stack's 24 VDC power supply.

Each input module uses 2 boards; one for the inputs and one for communication. Both boards are powered by the same 24(27) VDC power supply connection. Power is connected using a 4-position Phoenix connector on the communication board.

The interchangeable communication board can be programmed for an input module or an output module by the positions the two DIP switches (sw1).

> *Note – FALSE ALARMS have been linked to a substitute "Xilinx" chip installed on IC3. These modules have the older MM54240 device that is more reliable and does not cause this alarm!*

Each input module communicates over the I/O bus, which connects via the 6-pin MR connector. There are two of these connectors so that one can "daisy chain" more modules onto the I/O bus. The address is easily selectable on the PC board using two rotating switches. This way you can configure up to 8 modules with 8 inputs (alarms) to be usable with the 7355 controller.

> *Note – One of the 8 input modules is dedicated to specific "conditional inputs", but the other 7 modules are configurable to user's choice. That means you could program up to (7x8) 56 user input (alarm) functions, if desired.*