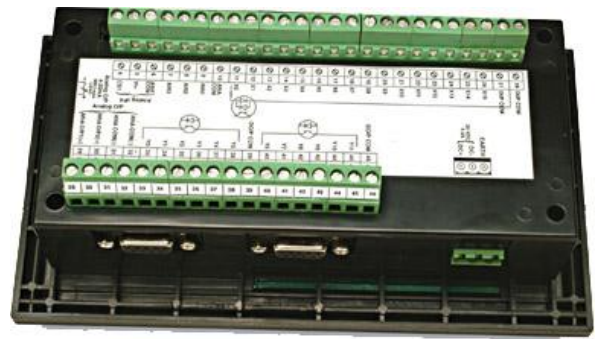


HIO140



Front View



Back View



Back View

HIO005



Front View

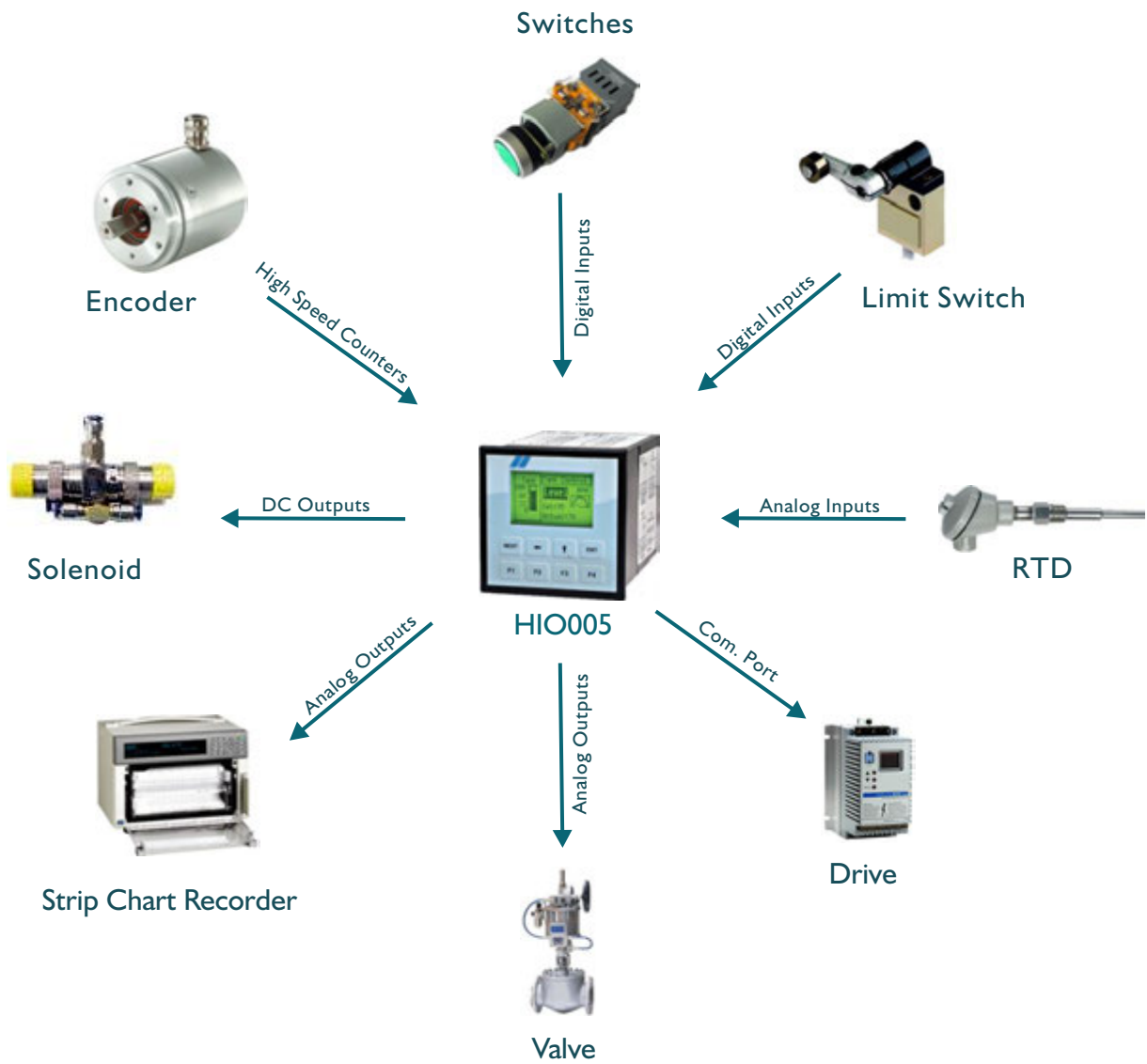
### Full integrated HMIs with I/O featuring :

- All features of Prizm LCD Operator Interfaces
- Integrated Digital Inputs and Outputs with optional Analog I/O
- Digital Inputs and Outputs rated for 24 V DC
- Analog Inputs for RTD, mV and mA. Analog Output is 4-20 mA
- Inputs connectable to PLC or used for internal program
- Support for Ladder Logic and Analog control
- High Speed Counters and Timers
- Dual Port Support for connecting to a PLC / Printer / SCADA / Drive
- Common Programming software for the entire HIO family.....FREE!!
- IP65 design. CE and UL certified



## Possible Applications :

HIO controllers can be used in applications across many industries. Typical configurations include the following :



## Machine Control Application :



HIO140



Packaging Machine

\* Images not to Scale.

# Basic HIO Operations :

The HIO unit has Prizm (Operator interface) as well as programmable logic features. The user can implement logic, specific to application using standard Ladder programming. The HIO unit has four 32-bit High Speed Counters (Normal and Quadrature Mode), Rate measurement capability (max. up to 25kHz), Timers and Counters, Internal Coils, retentive and non-retentive memory and PID functionality. A PLC logic task can be programmed for continuous scanning, or only when a specific screen is showing. The user can also include a Programmable logic task in power on as well as Global task. The HIO operator interface functions revolve around Screens and Tasks that can be assigned to keys, screens and application. The HIO can also display an Alarm conditions.

### Supported Tasks are listed below:

- Go to Screen
- Go to Next Screen
- Go to Previous Screen
- Write value to Tag
- Add a constant value to Tag
- Subtract a constant value form Tag
- Add Tag B to Tag A
- Subtract Tag B to Tag A
- Turn Bit On
- Turn Bit Off
- Toggle Bit
- Copy Tag B to Tag A
- Swap Tag A and Tag B
- Print Data
- Set RTC
- Copy Tag to STR
- Copy Tag to LED
- Delay
- Wait
- Copy Prizm block to Prizm/ PLC block
- Copy Prizm/PLC block to Prizm block
- Copy RTC to PLC block
- Execute PLC Logic block

### Digital I/O

The HIO Keypad series can have up to 16 digital inputs and 12 digital outputs on the unit. Digital inputs are high impedance 24 V DC and outputs are either relay (NO), open collector or a combination of both. The Digital I/O capability of HIO units can be expanded using external add on I/O Modules.

### Analog I/O

The HIO controllers can have up to 4 analog inputs and 2 analog outputs. Analog inputs are mA, mV and RTD. Analog outputs are 4-20 mA. The Analog I/O capability of HIO units can be expanded using external add on I/O Modules.

### PID

The built-in PID controller can process 12 independent inputs in addition to the Analog inputs of the unit. The input to the PID Controller is a data register, which can hold an analog input or any other value.

### Keys Task

Keys in HIO can be assigned Tasks for three instances: when the key is pressed , while the key is pressed and when the key is released. Multiple tasks can be assigned to a key. Also different screens can have different key definitions. In addition to above-mentioned tasks, Key's specific tasks can be defined for keys. These include tasks for data entry, alarm management etc. These definitions allow complete flexibility in cursor control and key operations when changing data.

### Screens

Up to 65535 screens can be defined in HIO. Screen Tasks can be assigned before showing a screen, while showing a screen and after hiding a screen. Various types of objects such as plain text objects, Data display (coil status, register value, register dependent text), Data entry objects and Alarm objects can be defined on screen. Two screens can be associated to avoid duplication of screens and objects.

Data entry objects can have limits and math associated. Various types of data formats are available which help the user to edit data easily.

Floating Point data entry is supported

### Alarms

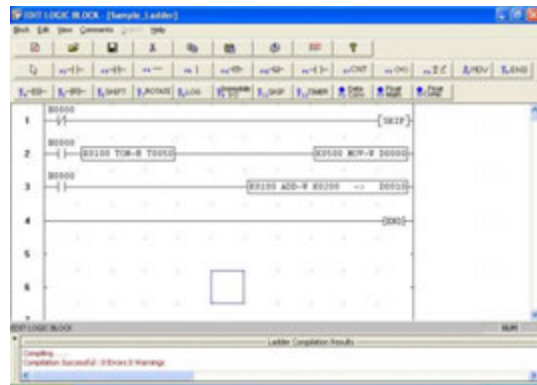
Alarms can be defined in HIO. Alarms can either be consecutive or discrete. User-friendly alarm object can be defined on the display. Alarms can be real time or historical. Keys can be assigned to acknowledge alarm, view and scroll.

### Dual Port Support

HIO units (except HIO010) have two communication ports. Both ports can be configured as RS232, CMOS, RS485 / RS422 programming port or to connect a Printer / PLC / SCADA / Drive etc. Drivers can be downloaded in HIO units for Dual Port application

### Configuration Software

Prizm Setup Software is a compact, Windows® based software to configure the HIO Series Interfaces. Prizm configuration tools and easy approach can help you create your applications quickly and easily. By using Prizm Setup Software features, you can be more effective in presenting your application. Whether you need a small application to monitor data or a bigger application for both monitoring and control, Prizm Setup Software has it all.



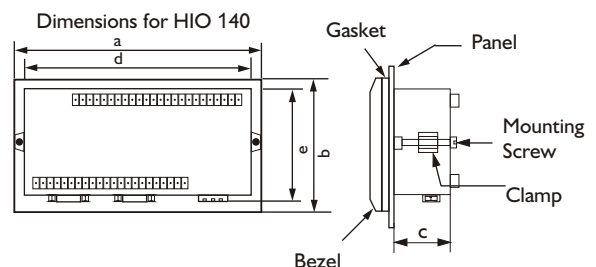
### To get started with HIO you need:

1. HIO unit
  2. Prizm Setup Software
  3. IBM Cable
- (Part codes: IBM 0909-1-00 or IBM 0925-1-00)

### System requirements for Prizm Setup Software are:

- Windows Version : Microsoft Windows® 2000 or above
- Processor : 266 MHz PENTIUM II or higher
- Mouse : Required
- RAM : 64 MB or more
- Display resolution : 800 x 600 (VGA) or better
- Display colors : 256 colors minimum
- Serial Port : 1 serial port for HIO programming
- Keyboard : Required

## Dimensions



## Specifications :

Power	: 24V DC $\pm$ 10%	Immunity to ESD	: as per IEC61000-4-2
Bezel	: IP 65 rated keypad	Immunity to Fast Transients	: as per IEC61000-4-4
Operating Temperature	: 0° to 50°C	Immunity to Radiated electromagnetic field	: as per IEC61000-4-3
Storage Temperature	: -20° to 80°C	Immunity to Conducted disturbances	: as per IEC61000-4-6
Humidity	: 10% to 90% (Non condensing)	Surge	: as per IEC61000-4-5
Communication Ports	: Two communication ports. (User configurable)	Radiated emission	: as per EN61000-6-4

### Digital Inputs

Rated Input Voltage

	For Normal Input	For High Speed
Nominal Rated Voltage	24 VDC (Max is 28 VDC)	
Input Impedance	4.7 k	2.3 k

Logic '0' Voltage : 0 to 5 V

Logic '1' Voltage : 14 to 28 V

Rated Input Current at (24 VDC)

	For Normal Input	For High Speed
Nominal Rated Current	4.89 mA	10 mA

### Digital Outputs (Open Collector)

Maximum Load current : 300 mA (for NPN) and  
500 mA (for PNP)

Voltage drop at ON : 0.4 V or less

### Digital Outputs (Relay)

Relay Rating : 230 V AC, 2 Amp. (max.)

### Analog Inputs

Voltage : 0-100 mV, 0-50 mV

Current : 0-20 mA, 4-20 mA

RTD : 3-wire RTD (Alpha1, Alpha2)

### Analog Outputs

Current : 4-20 mA

## Product Comparison :

Model	Display	Keys/ LED's	Digital Inputs	Digital Outputs	Analog Inputs	Analog Outputs	Numeric Keypad	(a x b x c) mm	(d x e) mm	Part Number
HIO 005	128 x 64 px.(1.25" g*)	8 / 0	8	8	0	0	No	48 x 48 x 76	45 x 45	HIO005-0808-0000-B-C-00
HIO 005	128 x 64 px.(1.25" g*)	8 / 0	6	6	1	1	No	48 x 48 x 76	45 x 45	HIO005-0606-0101-U-B-C-00
HIO 010	16 x 2 (Text)	6 / 2	8	8	0	0	No	108 x 61 x 27	92 x 45	HIO010-0808-0000-B-C-00
HIO 010	16 x 2 (Text)	6 / 2	8	8	2	1	No	108 x 61 x 27	92 x 45	HIO010-0808-0201-U-B-C-00
HIO 050	20 x 4 (Text)	20 / 8	16	12	0	0	Yes	183 x 101 x 37	162 x 79	HIO050-1612-0000-B-C-00
HIO 050	20 x 4 (Text)	20 / 8	16	12	0	0	Yes	183 x 101 x 37	162 x 79	HIO050-1612-0000-B-R-00
HIO 050	20 x 4 (Text)	20 / 8	16	12	4	2	Yes	183 x 101 x 37	162 x 79	HIO050-1612-0402-U-B-C-00
HIO 050	20 x 4 (Text)	20 / 8	16	12	4	2	Yes	183 x 101 x 37	162 x 79	HIO050-1612-0402-U-B-R-00
HIO 140	128 x 64 px.(3" g*)	18 / 4	16	12	0	0	Yes	183 x 101 x 37	162 x 79	HIO140-1612-0000-B-C-00
HIO 140	128 x 64 px.(3" g*)	18 / 4	16	12	0	0	Yes	183 x 101 x 37	162 x 79	HIO140-1612-0000-B-R-00
HIO 140	128 x 64 px.(3" g*)	18 / 4	16	12	4	2	Yes	183 x 101 x 37	162 x 79	HIO140-1612-0402-U-B-C-00
HIO 140	128 x 64 px.(3" g*)	18 / 4	16	12	4	2	Yes	183 x 101 x 37	162 x 79	HIO140-1612-0402-U-B-R-00

g\*: Graphical

**Example: HIOXXX-YYZZ-LLMM-C-B**

**XXX:** Model, **YYZZ:** Digital inputs and outputs

**LLMM:** Analog inputs and outputs

**C:** Transistor NPN o/p (300 mA).

**P:** Transistor PNP o/p (500 mA), replace 'C' by 'P' in product part no.

HIO 50 & 140 are also available with relay o/p (maximum 10 relays and 2 transistor o/p) replace 'C' by 'R' in unit part no. for relay o/p

**R:** Relay Output

**U:** Universal analog inputs (Software selectable)

**B:** Black Case

Units are also available with Gray case. Replace 'B' by 'G' in part no. for Gray case.

\*\*External Relay Module is also available to connect to HIO units with transistor outputs.  
Part Number: HIO00-0010-0000-B-R-00

New PLC drivers are constantly added. Please contact factory for more information. We welcome an opportunity to develop new, custom drivers and customized units.

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