FOXBORO®

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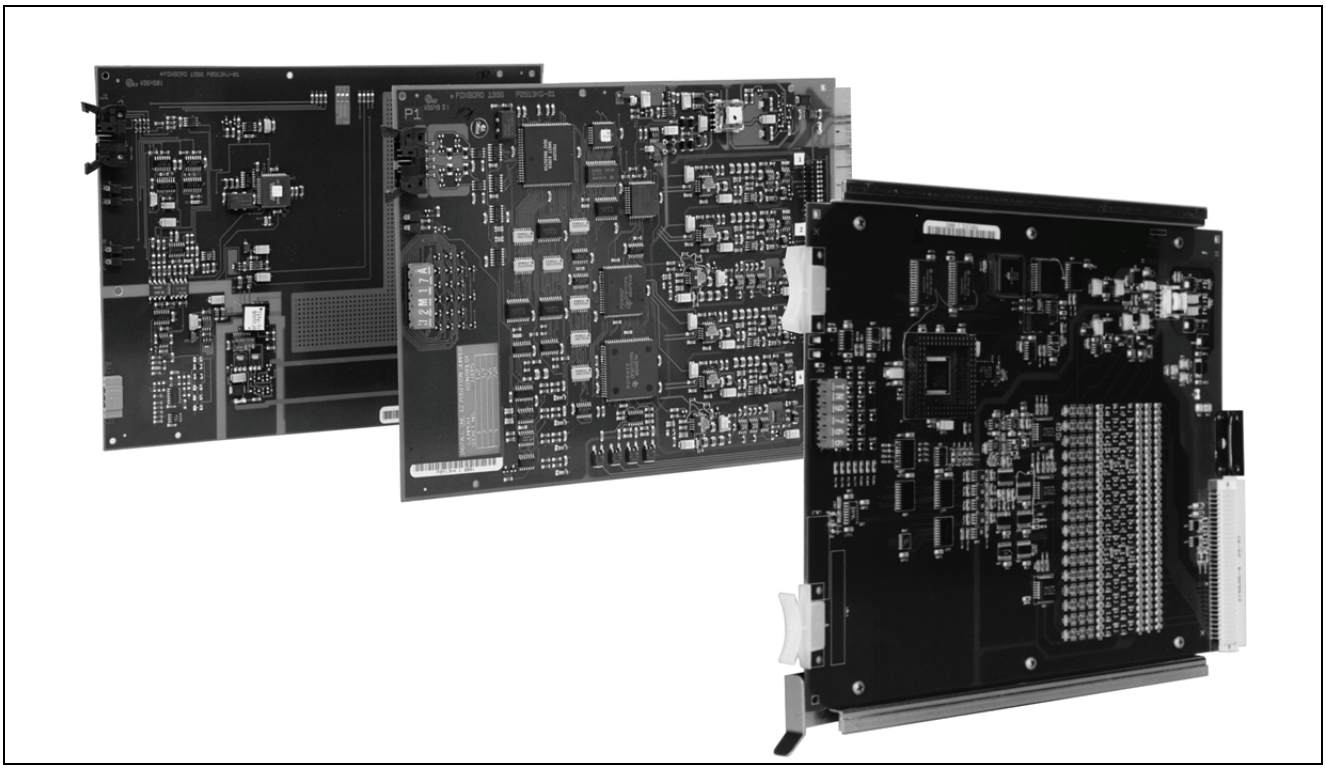
I/A Series® Hardware
DCS Integrator for Honeywell® Systems



The I/A Series DCS Integrator for use with Honeywell systems is a translator that plugs directly into TDC 2000 and TDC 3000 control nests. This achieves significant advantages:

- Migration from Proprietary DCS to a state-of-the-art open I/A Series system.
- Advanced I/A Series control with single point of configuration.
- More direct control performance than any gateway device could offer.
- Single vendor service and supply.

The I/A Series DCS Integrator family provides a migration path from Honeywell process input and output components to I/A Series display and supervisory functions. This can save the significant cost of total system replacement by preserving existing process interface and wiring, reducing installation effort, reducing engineering, and reducing process down time.

No additional communication devices or multi-vendor communication software licensing is required. The I/A Series DCS Integrator family replaces all Honeywell IOP devices. Once integrated, the process is controlled entirely by the advanced I/A Series algorithm set. Honeywell DCS control devices are disconnected upon migration, so there is no undesirable interaction caused by the decommissioned system.

The I/A Series DCS Integrator product includes appropriate connectors to enable integration of original process signals to I/A Series System while keeping the field interface and wiring. It provides access to all process signals connected to the Honeywell system by providing the connection between the field terminations and the I/A Series system. All process signals become fully integrated into the I/A Series system. Process data is used for operator display, history, alarming, and control.

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Product Specifications

Operator functions and engineering configuration are accomplished by the I/A Series system at any I/A Series operator workstation. Because all process values become part of the I/A Series system, all configuration data is maintained by the system as native I/A Series configurations.

This migration path provides plant operations with all the power and flexibility of the I/A Series system. All process values can be used plant wide for control, display, history, alarming, information management from a single vendor source.

FUNDAMENTAL PRINCIPLE

Foxboro believes that it is only acceptable to interface with competing manufacturers' operating systems in two ways:

- through high level published-public gateways
- at the lowest level directly to field devices without communicating with proprietary buses or components.

The Foxboro migration product offerings adhere to this principle.

PRODUCT DESCRIPTIONS

The Honeywell migration consists of new I/A Series DCS Integrators and new Fieldbus Isolators. This allows migration to I/A Series control, display and application products while retaining original termination panels and field I/O wiring. All original process I/O capability of the Honeywell control functions is replaced by direct I/A Series Control Processor scanning and control.

New I/A Series DCS Integrators plug directly into existing Honeywell card files (nests) in place of Honeywell I/O cards. These pass process measurement and output signals to and from an I/A Series Control Processor (CP). The I/A Series CP provides control in place of the Honeywell Controllers.

Fieldbus Isolators (H3SFBI/H3DFBI and H2SFBI/H2DFBI)

I/A Series remote Fieldbus communications signals must be isolated and repeated to a local Fieldbus media for use with the DCS Integrators. The Fieldbus Isolator (H3SFBI and H2SFBI) is a special form factor of the standard I/A Series Fieldbus Isolator. The H3SFBI/H3DFBI units mount in the mounting nest with the other I/A Series DCS Integrators of TDC 3000.

The H2SFBI/ H2DFBI units mount in appropriate cabinet locations for the remaining controller files and interface units of TDC 2000.

Local Fieldbus connections are accomplished using existing backplane wiring or quick disconnect connectors on each unit. The remote Fieldbus connects using an appropriate quick disconnect terminal block on each unit. This allows the remote Fieldbus to be disconnected for servicing while maintaining remote Fieldbus continuity.

Honeywell Process Manager (PM) and Advanced Process Manager (APM) I/O Processor Devices

I/A Series DCS Integrators replace I/O Processor (IOP) card types:

Model	Replaces	Description
H3M01	HLAI	1 to 5 V dc Input (16)
H3M02	LLMUXAI	TC/RTD/mV Input (32)
H3M03	LLAI	TC/mV/RTD Input (8)
H3M06	PI	Pulse Input (8)
H3M07	DI DISOE	Logic Level Input (32) Sequence of Events (32)
H3M09	DO	Logic Level Output (16)
H3M37	AO	4 to 20 mA Output (8)
Choose from 200 plus Foxboro DI30 mounted in separate enclosures	SDI	Serial Device Interface

The Honeywell maximum is 40 IOP modules per PM/APM/HPM. These can be supported directly by Integrator replacement and can be expanded to 64 Integrators per I/A Series CP.

Honeywell Basic Controller (BC)

The BC is structured to support up to eight analog process control loops in the Common Card File Assembly (CCFA). Inputs and outputs are connected to the CCFA from the I/O termination panel.

The I/O termination panel, rack, and power system are reused. All I/O wiring remains connected to the I/O termination panel. The CCFA and all associated processor cards are removed and replaced by a Foxboro nest assembly. This assembly is connected to the I/O termination panel by the original termination panel cable assemblies. The Foxboro nest assembly is designed to house up to four Integrators and a redundant Fieldbus Isolator set. The nest is powered by the original rack 24 V dc power bus.

Migration is accomplished using the BC Migration Kit (P0913RY). This kit replaces the logic cards in the card file assembly. Up to four H2M17 Integrators provide support for up to eight control loops.

Honeywell Extended Controller (EC)

The Extended Controller is structured to support up to eight analog process control loops in the CCFA. Inputs and outputs are connected to the CCFA from the I/O termination panel.

The I/O termination panel, rack, and power system are reused. All I/O wiring remains connected to the I/O termination panel. The CCFA and all associated processor cards are removed and replaced by a Foxboro nest assembly. This assembly is connected to the I/O termination panel by the original termination panel cable assemblies.The Foxboro nest assembly is designed to house up to four Integrators and a redundant Fieldbus Isolator set. The nest is powered by the original rack 24 V dc power bus.

Migration is accomplished using the EC Migration Kit (P0913RZ). This kit replaces the logic cards in the card file assembly. Up to four H2M17 Integrators provide support for up to eight control loops.

Honeywell Multifunction Controller (MFC)

The MFC is structured to support up to eight process control loops and two point card files. Each card file accommodates up to eight point cards to control continuous and discontinuous processes. The MFC performs four main control functions: sequence control, modulating control, logic control and I/O monitoring. Inputs and outputs are directed to the CCFA from an I/O termination panel and to the point card file assemblies from two separate point card termination panels.

Integration reuses the two point card file assemblies termination panels, rack, and power system. All I/O wiring remains connected to the termination panels.

Migration is accomplished using the MFC Migration Kit (P0913SA). This kit replaces the logic cards in the card file assembly. All of the point card file assembly I/O cards are removed and replaced by I/A Series DCS Integrators. Up to four H2M17 Integrators support up to eight loops of control. The following are optional DCS Integrator selections for MFC (16 max. per MFC, any combination):

Model	Replaces	Description
H2M01A	PXIA11,12,41,42	8AI (1 to 5 V)
H2M01B	PXIA21,22	8AI (4 to 20 mA)
H2M01C	PXIA31,32	8AI (4 to 20 mA) plus Transmitter Power
H2M04	PXOA21	4AO (4 to 20 mA)
H2M06	PXIP11,21	4PI
H2M06A	PXIP41	4PI (125 V dc)
H2M07	PXID51	16DI TTL
H2M09	PXOD21,41	8DO (SS)
H2M24	PXID11,21,31,41	16DI (125 V)
H2M26	PXOD11,31	8DO (125 V)

High Level Process Interface Unit (HLPIU)

The HLPIU interfaces high level analog and digital inputs, and analog and digital outputs. Inputs and outputs are connected to the HLPIU from I/O termination panels that are hard wired to each of the four point card file assemblies. The point card file assemblies and termination panels, rack, and power system are reused. All I/O wiring remains connected to the termination panels. The CCFA stays in place, however, all associated processor cards are removed and replaced by a pair of redundant Foxboro Fieldbus Isolators. The Fieldbus Isolators (H2SFBI) are connected to the point card files through the original I/O bus cables and point card file backplanes. All of the point card assembly I/O cards are removed and replaced by I/A Series DCS Integrators.

Migration is accomplished using the HLPIU Migration Kit (P0913SB). Thi*s* kit replaces the logic cards in the card file assembly. I/A Series DCS Integrators replace HLPIU point cards. The following are optional DCS Integrator selections for HLPIU (32 max. per HLPIU, any combination):

Model	Replaces	Description
H2M01A	PXIA11,12,41,42	8AI (1 to 5 V)
H2M01B	PXIA21,22	8AI (4 to 20 mA)
H2M01C	PXIA31,32	8AI (4 to 20 mA) plus Transmitter Power
H2M04	PXOA21	4AO (4 to 20 mA)
H2M06	PXIP11,21	4PI
H2M06A	PXIP41	4PI (125 V dc)
H2M07	PXID51	16DI TTL
H2M09	PXOD21,41	8DO (SS)
H2M24	PXID11,21,31,41	16DI (125 V)
H2M26	PXOD11,31	8DO (125 V)

Low Level Process Interface Unit (LLPIU)

The LLPIU interfaces low level analog and digital inputs. Inputs are connected to the LLPIU from I/O termination panels that are hard wired to each of the four point card file assemblies. The point card file assemblies and termination panels, rack, and power system are reused. All I/O wiring remains connected to the termination panels. The CCFA stays in place, however, all associated processor cards are removed and replaced by a pair of redundant Foxboro Fieldbus Isolators. The Fieldbus Isolators (H2SFBI) are connected to the point card files through the original I/O bus cables and point card file backplanes. All of the point card assembly I/O cards are removed and replaced by I/A Series DCS Integrators.

Migration is accomplished using the LLPIU Migration Kit (P0913SC). This kit replaces the logic cards in the card file assembly. The following I/A Series DCS Integrator module types replace the LLPIU cards (16 max. per LLPIU, any combination):

Model	Replaces	Description
H2M02	PXIA81	8AI (TC, MV)

PXIA91(Analog Input Integrators) may be installed with various signal level combinations and are implemented in groups of four channels.

Model	Channel 1-4	Channel 5-8	Description
H2C02A	PXSC11	PXSV11	4 (4 to 20 mA) 4 (0 to 5 V dc)
H2C02B	PXSC11	PXSV21	4 (4 to 20 mA) 4 (0 to 40 V dc)
H2C02D	PXSC11	PXSC21	4 (4 to 20 mA) 4 (0 to 1 mA)
H2C02E	PXSC11	PXSC32	4 (4 to 20 mA) 4 (0 to 10 mA)
H2C02F	PXSC11	PXSD11	4 (4 to 20 mA) 4 (0 to 100 mV dc)
H2C02G	PXSC11	38000032	4 (4 to 20 mA) 4 (0 to 1 V dc)
H2C02H	PXSC11	PXSR11, 21,31	4 (4 to 20 mA) 4 (RTD)
H2C02J	PXSC21	PXSV11	4 (0 to 1 mA) 4 (0 to 5 V dc)
H2C02K	PXSC21	PXSV21	4 (0 to 1 mA) 4 (0 to 40 V dc)
H2C02L	PXSC21	PXSC11	4 (0 to 1 mA) 4 (4 to 20 mA)
H2C02M	PXSC21	PXSC21	8 (0 to 1 mA)
H2C02N	PXSC21	PXSC32	4 (0 to 1 mA) 4 (0 to 10 mA)
H2C02P	PXSC21	PXSD11	4 (0 to 1 mA) 4 (0 to 100 mV dc)
H2C02Q	PXSC21	38000032	4 (0 to 1 mA) 4 (0 to 1 V dc)
H2C02R	PXSC21	PXSR11,21,31	4 (0 to 1 mA) 4 (RTD)
H2C02S	PXSC32	PXSV11	4 (0 to 10 mA) 4 (0 to 5 V dc)
H2C02T	PXSC32	PXSV21	4 (0 to 10 mA) 4 (0 to 40 V dc)
H2C02U	PXSC32	PXSC11	4 (0 to 10 mA) 4 (4 to 20 mA)
H2C02V	PXSC32	PXSC21	4 (0 to 10 mA) 4 (0 to 1 mA)
H2C02W	PXSC32	PXSC32	8 (0 to 10 mA)
H2C02X	PXSC32	PXSD11	4 (0 to 10 mA) 4 (0 to 100 mV dc)
H2C02Y	PXSC32	38000032	4 (0 to 10 mA) 4 (0 to 1 V dc)
H2C02Z	PXSC32	PXSR11,21,31	4 (0 to 10 mA) 4 (RTD)
H2D02A	PXSD11	PXSV11	4 (0 to 100 mV dc) 4 (0 to 5 V dc)
H2D02B	PXSD11	PXSV21	4 (0 to 100 mV dc) 4 (0 to 40 V dc)
H2D02C	PXSD11	PXSC11	4 (0 to 100 mV dc) 4 (4 to 20 mA)
H2D02D	PXSD11	PXSC21	4 (0 to 100 mV dc) 4 (0 to 1 mA)
H2D02E	PXSD11	PXSC32	4 (0 to 100 mV dc) 4 (0 to 10 mA)
H2D02G	PXSD11	38000032	4 (0 to 100 mV dc) 4 (0 to 1 V dc)
H2D02H	PXSD11	PXSR11,21,31	4 (0 to 100 mV dc) 4 (RTD)
H2J02A	PXSJ11	PXSV11	4 (TC Ref) 4 (0 to 5 V dc)
H2J02B	PXSJ11	PXSV21	4 (TC Ref) 4 (0 to 40 V dc)
H2J02C	PXSJ11	PXSC11	4 (TC Ref) 4 (4 to 20 mA)
H2J02D	PXSJ11	PXSC21	4 (TC Ref) 4 (0 to 1 mA)
H2J02E	PXSJ11	PXSC32	4 (TC Ref) 4 (0 to 10 mA)
H2J02F	PXSJ11	PXSD11	4 (TC Ref) 4 (0 to 100 mV dc)
H2J02G	PXSJ11	38000032	4 (TC Ref) 4 (0 to 1 V dc)
H2J02H	PXSJ11	PXSR11,21,31	4 (TC Ref) 4 (RTD)
H2M01D	PXSC11	PXSC11	8 (4 to 20 mA)
H2M02	PXSD11	PXSD11	8 (0 to 100 mV dc)
H2M02A	PXSV11	PXSV11	8 (0 to 5 V dc)
H2M02B	PXSV21	PXSV21	8 (0 to 40 V dc)
H2M03	PXSR11	PXSR11,21,31	8 (RTD)
H2M03A	PXSR11,21,31	PXSV11	4 (RTD) 4 (0 to 5 V dc)
H2M03B	PXSR11,21,31	PXSV21	4 (RTD) 4 (0 to 40 V dc)
H2M03C	PXSR11,21,31	PXSC11	4 (RTD) 4 (4 to 20 mA)
H2M03D	PXSR11,21,31	PXSC21	4 (RTD) 4 (0 to 1 mA)
H2M03E	PXSR11,21,31	PXSC32	4 (RTD) 4 (0 to 10 mA)
H2M03F	PXSR11,21,31	PXSD11	4 (RTD) 4 (0 to 100 mV dc)
H2M03G	PXSR11,21,31	38000032	4 (RTD) 4 (0 to 1 V dc)
H2V02B	PXSV11	PXSV21	4 (0 to 5 V dc) 4 (0 to 40 V dc)
H2V02C	PXSV11	PXSC11	4 (0 to 5 V dc) 4 (4 to 20 mA)
H2V02D	PXSV11	PXSC21	4 (0 to 5 V dc) 4 (0 to 1 mA)
H2V02E	PXSV11	PXSC32	4 (0 to 5 V dc) 4 (0 to 10 mA)
H2V02F	PXSV11	PXSD11	4 (0 to 5 V dc) 4 (0 to 100 mV dc)
H2V02G	PXSV11	38000032	4 (0 to 5 V dc) 4 (0 to 1 V dc)
H2V02H	PXSV11	PXSR11,21,31	4 (0 to 5 V dc) 4 (RTD)
H2V02J	PXSV21	PXSV11	4 (0 to 40 V dc) 4 (0 to 5 V dc)
H2V02L	PXSV21	PXSC11	4 (0 to 40 V dc) 4 (4 to 20 mA)
H2V02M	PXSV21	PXSC21	4 (0 to 40 V dc) 4 (0 to 1 mA)
H2V02N	PXSV21	PXSC32	4 (0 to 40 V dc) 4 (0 to 10 mA)

Model	Channel 1-4	Channel 5-8	Description
H2V02P	PXSV21	PXSD11	4 (0 to 40 V dc) 4 (0 to 100 mV dc)
H2V02Q	PXSV21	38000032	4 (0 to 40 V dc) 4 (0 to 1 V dc)
H2V02R	PXSV21	PXSR11,21,31	4 (0 to 40 V dc) 4 (RTD)
H2X02A	38000032	PXSV11	4 (0 to 1 V dc) 4 (0 to 5 V dc)
H2X02B	38000032	PXSV21	4 (0 to 1 V dc) 4 (0 to 40 V dc)

Model	Channel 1-4	Channel 5-8	Description
H2X02C	38000032	PXSC11	4 (0 to 1 V dc) 4 (4 to 20 mA)
H2X02D	38000032	PXSC21	4 (0 to 1 V dc) 4 (0 to 1 mA)
H2X02E	38000032	PXSC32	4 (0 to 1 V dc) 4 (0 to 10 mA)
H2X02F	38000032	PXSD11	4 (0 to 1 V dc) 4 (0 to 100 mV dc)
H2X02G	38000032	38000032	8 (0 to 1 V dc)
H2X02H	38000032	PXSR11,21,31	4 (0 to 1 V dc) 4 (RTD)

H2C02 (ANALOG INPUT) FUNCTIONAL SPECIFICATIONS

Power Requirements

INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
5.75 W
HEAT DISSIPATION
4.6 W

Communication

Redundant IEEE P1118 Fieldbus

Input Channel (Signal and Rated Mean Accuracy)

See information below.

Input Channel (Cont.)

RESOLUTION
12 to 15 bits, programmable (see Table 1)
ISOLATION
600 V ac between any channel and earth (ground), or between channels.

NOTE

This does not imply that these channels are intended for connection to hazardous voltage circuits. Connection of these channels to voltages greater than 30 V ac or 60 V dc violates electrical safety code requirements and may expose users to electrical shock.

Model	Signal	
	Channel 1-4	Channel 5-8
H2C02A	4 to 20.4 mA	0 to 5 V dc or ±5 V dc
H2C02B	4 to 20.4 mA	0 to 40 V dc or ±40 V dc
H2C02D	4 to 20.4 mA	0 to 1 mA
H2C02E	4 to 20.4 mA	0 to 10 mA
H2C02F	4 to 20.4 mA	-10.5 to 71.419 mV dc and 0 to 100 mV dc or ±100 V dc
H2C02G	4 to 20.4 mA	0 to 30 Ω Cu, 120 Ω Ni, 0 to 320 Ω Pt
H2C02H	4 to 20.4 mA	0 to 1 V dc or ±1 V dc
H2C02J	0 to 1 mA	0 to 5 V dc or ±5 V dc
H2C02K	0 to 1 mA	0 to 40 V dc or ±40 V dc
H2C02L	0 to 1 mA	4 to 20.4 mA
H2C02M	0 to 1 mA	0 to 1 mA
H2C02N	0 to 1 mA	0 to 10 mA
H2C02P	0 to 1 mA	-10.5 to 71.419 mV dc and 0 to 100 mV dc or ±100 V dc
H2C02Q	0 to 1 mA	0 to 30 Ω Cu, 120 Ω Ni, 0 to 320 Ω Pt
H2C02R	0 to 1 mA	0 to 1 V dc or ±1 V dc
H2C02S	0 to 10 mA	0 to 5 V dc or ±5 V dc
H2C02T	0 to 10 mA	0 to 40 V dc or ±40 V dc
H2C02U	0 to 10 mA	4 to 20.4 mA
H2C02V	0 to 10 mA	0 to 1 mA
H2C02W	0 to 10 mA	0 to 10 mA
H2C02X	0 to 10 mA	-10.5 to 71.419 mV dc and 0 to 100 mV dc or ±100 V dc
H2C02Y	0 to 10 mA	0 to 30 Ω Cu, 120 Ω Ni, 0 to 320 Ω Pt
H2C02Z	0 to 10 mA	0 to 1 V dc or ±1 V dc

Model	Rated Mean Accuracy	
	Channel 1-4	Channel 5-8
H2C02A	±0.05% of span	±0.05% of span
H2C02B	±0.05% of span	±0.05% of span
H2C02D	±0.05% of span	±0.05% of span
H2C02E	±0.05% of span	±0.05% of span
H2C02F	±0.05% of span	±0.035% of span (0.5% for 0 to 100 mV)
H2C02G	±0.05% of span	±0.025% of span (±0.08 Ω)
H2C02H	±0.05% of span	±0.05% of span
H2C02J	±0.05% of span	±0.05% of span
H2C02K	±0.05% of span	±0.05% of span
H2C02L	±0.05% of span	±0.05% of span
H2C02M	±0.05% of span	±0.05% of span
H2C02N	±0.05% of span	±0.05% of span
H2C02P	±0.05% of span	±0.035% of span (0.5% for 0 to 100 mV)
H2C02Q	±0.05% of span	±0.025% of span (±0.08 Ω)
H2C02R	±0.05% of span	±0.05% of span
H2C02S	±0.05% of span	±0.05% of span
H2C02T	±0.05% of span	±0.05% of span
H2C02U	±0.05% of span	±0.05% of span
H2C02V	±0.05% of span	±0.05% of span
H2C02W	±0.05% of span	±0.05% of span
H2C02X	±0.05% of span	±0.035% of span (0.5% for 0 to 100 mV)
H2C02Y	±0.05% of span	±0.025% of span (±0.08 Ω)
H2C02Z	±0.05% of span	±0.05% of span

H2D02 (ANALOG INPUT) FUNCTIONAL SPECIFICATIONS

Power Requirements

INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
5.75 W
HEAT DISSIPATION
4.6 W

Communication

Redundant IEEE P1118 Fieldbus

Input Channel (Signal and Rated Mean Accuracy)

See information below.

Input Channel (Cont.)

RESOLUTION
12 to 15 bits, programmable (see Table 1)
ISOLATION
600 V ac between any channel and earth (ground), or between channels.

NOTE

This does not imply that these channels are intended for connection to hazardous voltage circuits. Connection of these channels to voltages greater than 30 V ac or 60 V dc violates electrical safety code requirements and may expose users to electrical shock.

Model	Signal	
	Channel 1-4	Channel 5-8
H2D02A	-10.5 to 71.419 mV dc and 0 to 100 mV dc or ±100 V dc	0 to 5 V dc or ±5 V dc
H2D02B	-10.5 to 71.419 mV dc and 0 to 100 mV dc or ±100 V dc	0 to 40 V dc or ±40 V dc
H2D02C	-10.5 to 71.419 mV dc and 0 to 100 mV dc or ±100 V dc	4 to 20.4 mA
H2D02D	-10.5 to 71.419 mV dc and 0 to 100 mV dc or ±100 V dc	0 to 1 mA
H2D02E	-10.5 to 71.419 mV dc and 0 to 100 mV dc or ±100 V dc	0 to 10 mA
H2D02G	-10.5 to 71.419 mV dc and 0 to 100 mV dc or ±100 V dc	0 to 30 Ω Cu, 120 Ω Ni, 0 to 320 Ω Pt
H2D02H	-10.5 to 71.419 mV dc and 0 to 100 mV dc or ±100 V dc	0 to 1 V dc or ±1 V dc

Model	Rated Mean Accuracy	
	Channel 1-4	Channel 5-8
H2D02A	±0.035% of span (0.5% for 0 to 100 mV)	±0.05% of span
H2D02B	±0.035% of span (0.5% for 0 to 100 mV)	±0.05% of span
H2D02C	±0.035% of span (0.5% for 0 to 100 mV)	±0.05% of span
H2D02D	±0.035% of span (0.5% for 0 to 100 mV)	±0.05% of span
H2D02E	±0.035% of span (0.5% for 0 to 100 mV)	±0.05% of span
H2D02G	±0.035% of span (0.5% for 0 to 100 mV)	±0.025% of span (±0.08 Ω)
H2D02H	±0.035% of span (0.5% for 0 to 100 mV)	±0.05% of span

H2J02 (ANALOG INPUT) FUNCTIONAL SPECIFICATIONS

Power Requirements
INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
5.75 W
HEAT DISSIPATION
4.6 W

Communication
Redundant IEEE P1118 Fieldbus

Input Channel (Signal and Rated Mean Accuracy)
See information below.

Input Channel (Cont.)
RESOLUTION
12 to 15 bits, programmable (see Table 1)
ISOLATION
600 V ac between any channel and earth (ground), or between channels.

NOTE
This does not imply that these channels are intended for connection to hazardous voltage circuits. Connection of these channels to voltages greater than 30 V ac or 60 V dc violates electrical safety code requirements and may expose users to electrical shock.

Model	Signal	
	Channel 1-4	Channel 5-8
H2J02A	Reference RTD for TC cold junction compensation	0 to 5 V dc or ±5 V dc
H2J02B	Reference RTD for TC cold junction compensation	0 to 40 V dc or ±40 V dc
H2J02C	Reference RTD for TC cold junction compensation	4 to 20.4 mA
H2J02D	Reference RTD for TC cold junction compensation	0 to 1 mA
H2J02E	Reference RTD for TC cold junction compensation	0 to 10 mA
H2J02F	Reference RTD for TC cold junction compensation	-10.5 to 71.419 mV dc and 0 to 100 mV dc or ±100 V dc
H2J02G	Reference RTD for TC cold junction compensation	0 to 30 Ω Cu, 120 Ω Ni, 0 to 320 Ω Pt
H2J02H	Reference RTD for TC cold junction compensation	0 to 1 V dc or ±1 V dc

Model	Rated Mean Accuracy	
	Channel 1-4	Channel 5-8
H2J02A	±0.025% of span (±0.08 Ω)	±0.05% of span
H2J02B	±0.025% of span (±0.08 Ω)	±0.05% of span
H2J02C	±0.025% of span (±0.08 Ω)	±0.05% of span
H2J02D	±0.025% of span (±0.08 Ω)	±0.05% of span
H2J02E	±0.025% of span (±0.08 Ω)	±0.05% of span
H2J02F	±0.025% of span (±0.08 Ω)	±0.035% of span (0.5% for 0 to 100 mV)
H2J02G	±0.025% of span (±0.08 Ω)	±0.025% of span (±0.08 Ω)
H2D02H	±0.025% of span (±0.08 Ω)	±0.05% of span

H2M01A,B,C,D (ANALOG INPUT) FUNCTIONAL SPECIFICATIONS

Power Requirements
INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
5.75 W
HEAT DISSIPATION
4.6 W

Communication
Redundant IEEE P1118 Fieldbus

Input Channel (8 Channels)
H2M01A
0 to 5 V dc, 1 to 5 V dc
H2M01B
4 to 20.4 mA
H2M01C
4 to 20.4 mA (Powered)
H2M01D
4 to 20.4 mA
RATED MEAN ACCURACY
±0.05% of span
RESOLUTION
12 to 15 bits, programmable (see Table 1)

H2M02,A,B (ANALOG INPUT) FUNCTIONAL SPECIFICATIONS

Power Requirements
INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
6.0 W
HEAT DISSIPATION
4.8 W

Communication
Redundant IEEE P1118 Fieldbus

Input Channel (8 Channels)
H2M02
-10.5 to 71.419 mV dc and 0 to 100 mV dc
H2M02A
0 to 5 V dc or ±5 V dc
H2M02B
0 to 40 V dc or ±40 V dc

Input Channel (Cont.)
RATED MEAN ACCURACY
H2M02
±0.035% of span (0.5% for 0 to 100 mV)
H2M02A,B
±0.05% of span
RESOLUTION
12 to 15 bits programmable (see Table 1)
ISOLATION
600 V ac between any channel and earth (ground), or between channels.

NOTE
This does not imply that these channels are intended for connection to hazardous voltage circuits. Connection of these channels to voltages greater than 30 V ac or 60 V dc violates electrical safety code requirements and may expose users to electrical shock.

H2M03 (ANALOG INPUT) FUNCTIONAL SPECIFICATIONS

Power Requirements
INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
6.0 W
HEAT DISSIPATION
4.8 W

Communication
Redundant IEEE P1118 Fieldbus

Input Channel (Signal and Rated Mean Accuracy)
See information below.

Input Channel (Cont.)
RESOLUTION
12 to 15 bits, programmable (see Table 1)
ISOLATION
600 V ac between any channel and earth (ground), or between channels.

NOTE
This does not imply that these channels are intended for connection to hazardous voltage circuits. Connection of these channels to voltages greater than 30 V ac or 60 V dc violates electrical safety code requirements and may expose users to electrical shock.

Model	Signal	
	Channel 1-4	Channel 5-8
H2M03	0 to 30 Ω Cu, 120 Ω Ni, 0 to 320 Ω Pt	0 to 30 Ω Cu, 120 Ω Ni, 0 to 320 Ω Pt
H2M03A	0 to 30 Ω Cu, 120 Ω Ni, 0 to 320 Ω Pt	0 to 5 V dc or ±5 V dc
H2M03B	0 to 30 Ω Cu, 120 Ω Ni, 0 to 320 Ω Pt	0 to 40 V dc or ±0 V dc
H2M03C	0 to 30 Ω Cu, 120 Ω Ni, 0 to 320 Ω Pt	4 to 20.4 mA
H2M03D	0 to 30 Ω Cu, 120 Ω Ni, 0 to 320 Ω Pt	0 to 1 mA
H2M03E	0 to 30 Ω Cu, 120 Ω Ni, 0 to 320 Ω Pt	0 to 10 mA

Model	Signal	
	Channel 1-4	Channel 5-8
H2M03F	0 to 30 Ω Cu, 120 Ω Ni, 0 to 320 Ω Pt	-10.5 to 71.419 mV dc and 0 to 100 mV dc or ±100 V dc
H2M03G	0 to 30 Ω Cu, 120 Ω Ni, 0 to 320 Ω Pt	0 to 1 V dc or ±1 V dc

Model	Rated Mean Accuracy	
	Channel 1-4	Channel 5-8
H2M03	±0.025% of span (±0.08 Ω)	±0.025% of span (±0.08 Ω)
H2M03A	±0.025% of span (±0.08 Ω)	±0.05% of span
H2M03B	±0.025% of span (±0.08 Ω)	±0.05% of span
H2M03C	±0.025% of span (±0.08 Ω)	±0.05% of span
H2M03D	±0.025% of span (±0.08 Ω)	±0.05% of span
H2M03E	±0.025% of span (±0.08 Ω)	±0.05% of span

Model	Rated Mean Accuracy	
	Channel 1-4	Channel 5-8
H2M03F	±0.025% of span (±0.08 Ω)	±0.035% of span (0.5% for 0 to 100 mV)
H2M03G	±0.025% of span (±0.08 Ω)	±0.05% of span

H2M04 (ANALOG OUTPUT) FUNCTIONAL SPECIFICATIONS

Power Requirements
INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
5.75 W
HEAT DISSIPATION
4.6 W

Communication
Redundant IEEE P1118 Fieldbus

Output Channel (4 Channels)
4 to 20.4 mA dc
RATED MEAN ACCURACY
±0.05% of span
LINEARITY ERROR
±0.025% (monotonic)
RESOLUTION
12 bits
OUTPUT LOAD (MAXIMUM)
750 Ω
COMPLIANCE VOLTAGE
18 V dc nominal at 20 mA at I/O field terminals
SETTLING TIME
100 ms to settle within a 1% band of steady state for a 10 to 90% output step change

H2M06, H2M06A (PULSE INPUT) FUNCTIONAL SPECIFICATIONS

Power Requirements
INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
4.5 W
HEAT DISSIPATION
3.6 W

Communication
Redundant IEEE P1118 Fieldbus

Input Channel (4 Channels)
Contact Input
CONTACT RANGE
Open (off) and Closed (on)
OPEN CIRCUIT VOLTAGE
H2M06
24 V dc or 48 V dc (externally supplied)
H2M06A
125 V dc (externally supplied)
SHORT CIRCUIT CURRENT
H2M06
4.5/9 mA (24/48 V dc)
H2M06A
15 mA (125 V dc)

Input Channel (Cont.)
ON-STATE RESISTANCE
1 kΩ (maximum)
OFF-STATE RESISTANCE
100 kΩ (minimum)
ISOLATION [INPUT TO EARTH (GROUND)]
H2M06
500 V ac
H2M06A
600 V ac

NOTE
This does not imply that these channels are intended for connection to hazardous voltage circuits. Connection of these channels to voltages greater than 30 V ac or 60 V dc (for H2M06) or 125 V dc (for H2M06A) violates electrical safety code requirements and may expose users to electrical shock.

COUNTER RANGE
H2M06
0 to 12.5 K counts per second
H2M06A
0 to 100 counts per second

H2M07 (DIGITAL INPUT) FUNCTIONAL SPECIFICATIONS

Power Requirements
INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
2.3 W
HEAT DISSIPATION
2.0 W

Communication
Redundant IEEE P1118 Fieldbus

Input Channel (16 Channels)
Contact Input
CONTACT RANGE
Open (off) and Closed (on)
OPEN CIRCUIT VOLTAGE
5 V dc (jumper select input source or power bus)
SHORT CIRCUIT CURRENT
2.5 mA
ON-STATE RESISTANCE
1 kΩ (maximum)
OFF-STATE RESISTANCE
100 kΩ (minimum)
FILTER TIME
Configurable (4, 8, 16, or 32 ms)

H2M07E (DIGITAL INPUT) FUNCTIONAL SPECIFICATIONS

Power Requirement
INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
2.3 W
HEAT DISSIPATION
2.0 W

Communication
Redundant IEEE P1118 Fieldbus

Input Channel (16 Channels)
Contact Input
CONTACT RANGE
Open (off) and Closed (on)
OPEN CIRCUIT VOLTAGE
24 V dc (supplied at termination panel)
SHORT CIRCUIT CURRENT
2.5 mA

Input Channel (16 Channels) (Cont.)
ON-STATE RESISTANCE
1 kΩ (maximum)
OFF-STATE RESISTANCE
100 kΩ (minimum)
ISOLATION
Input to earth (ground), 500 V ac

NOTE
This does not imply that these channels are intended for connection to hazardous voltage circuits. Connection of these channels to voltages greater than 30 V ac or 60 V dc violates electrical safety code requirements and may expose users to electrical shock.

FILTER TIME
Configurable (4, 8, 16, or 32 ms)

H2M09 (DIGITAL OUTPUT) FUNCTIONAL SPECIFICATIONS

Power Requirements
INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
2.3 W
HEAT DISSIPATION
2.3 W

Communication
Redundant IEEE P1118 Fieldbus

Output Channel (8 Channels)
Contact output, solid state switch
APPLIED VOLTAGE
60 V dc (maximum)
LOAD CURRENT
145 mA (maximum)
OFF-STATE LEAKAGE CURRENT
0.25 mA

H2M17 (AI/AO/DO) FUNCTIONAL SPECIFICATIONS

Power Requirements
INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
5.75 W
HEAT DISSIPATION
4.6 W

Communication
Redundant IEEE P1118 Fieldbus

Analog Input Channels (4 Channels)
RANGE
0 to 5 V dc
RATED MEAN ACCURACY
±0.05% of span
RESOLUTION
12 to 15 bits, programmable (see Table 1)

Analog Output Channel (2 Channels)
0 to 20.4 mA dc
RATED MEAN ACCURACY
±0.05% of span
LINEARITY ERROR
±0.025% of span (monotonic)
RESOLUTION
12 bits
OUTPUT LOAD (MAXIMUM)
750 Ω
COMPLIANCE VOLTAGE
18 V dc nominal at 20 mA at I/O field terminals
SETTLING TIME
100 ms to settle within a 1% band of steady

Contact Output Channels (4 Channels)
APPLIED VOLTAGE
60 V dc (maximum)
LOAD CURRENT
50 mA (maximum)
OFF-STATE LEAKAGE CURRENT
0.25 mA

H2M24 (DIGITAL INPUT) FUNCTIONAL SPECIFICATIONS

Power Requirements
INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
3.0 W
HEAT DISSIPATION
2.4 W

Communication
Redundant IEEE P1118 Fieldbus

Input Channel (16 Channels)
Contact input
CONTACT RANGE
Open (off) and Closed (on)
OPEN CIRCUIT VOLTAGE
125 V dc maximum, externally supplied
SHORT CIRCUIT CURRENT
2.5 mA at 24 V; 5.5 mA at 48 V; 14.2 mA at 125 V
ON-STATE RESISTANCE
10 kΩ at 24 V; 30 kΩ at 48 V; 90 kΩ at 125 V
OFF-STATE RESISTANCE
20 kΩ at 24 V; 40 kΩ at 48 V; 120 kΩ at 125 V
ISOLATION
Input to earth (ground), 600 V ac

NOTE
This does not imply that these channels are intended for connection to hazardous voltage circuits. Connection of these channels to voltages greater than 125 V dc violates electrical safety code requirements and may expose users to electrical shock.

FILTER TIME
Configurable (4, 8, 16, or 32 ms)

H2M26 (DIGITAL OUTPUT) FUNCTIONAL SPECIFICATIONS

Power Requirements
INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
3.0 W
HEAT DISSIPATION
2.4 W

Communication
Redundant IEEE P1118 Fieldbus

Output Channel (8 Channels)
Relay output
APPLIED VOLTAGE
125 V dc (maximum)
LOAD CURRENT
1.0 A (maximum)
OFF-STATE LEAKAGE CURRENT
0 mA
ISOLATION
Input to earth (ground), 600 V ac; input to input 600 V ac

NOTE
This does not imply that these channels are intended for connection to hazardous voltage circuits. Connection of these channels to voltages greater than 125 V dc violates electrical safety code requirements and may expose users to electrical shock.

H2SFBI (FIELDBUS ISOLATOR) FUNCTIONAL SPECIFICATIONS

Maximum Number of DCS Integrators Driven
40

Maximum Length of Local Bus
9 m (30 ft)

Maximum Input Power Voltage (Normal Operation)
+30 V dc

Maximum Operating Current at -5%
100 mA

Maximum Power Dissipation at +5%
2.75 V

Minimum Isolation Voltage
2500 V rms

Holdup Time at 24 V dc
250 ms (as provided by the Honeywell power supply)

Input Signal Voltage, External Bus Side (Normal Operation)

Difference between HI and LO level for signals FBEX or FBEX', as referenced to isolated ground (EXTREF).	0.33 to 3.0 V P-P
Differential across signals FBEX and FBEX'.	0.66 to 6.0 V P-P
Absolute input limits before damage, as referenced to isolated ground (EXTREF) for FBI w/o termination cable assembly.	-7 to +7 V dc
Output common mode range.	-1 to +3 V
External bus output signal voltage (nominal differential, terminated with 55 Ω).	6.0 V P-P

Input Signal Voltage, Local Bus Side (Normal Operation)

Difference between HI and LO level for signals FBEX or FBEX', as referenced to ground (GND).	1.2 to 3.0 V P-P
Differential across signals FBEX and FBEX'.	2.4 to 6.0 V P-P
Absolute input limits before damage, as referenced to GND.	-7 to +12 V dc
Output common mode range.	-1 to +3 V

H3M01 (ANALOG INPUT) FUNCTIONAL SPECIFICATIONS

Power Requirements
INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
4.0 W
HEAT DISSIPATION
4.0 W

Communication
Redundant IEEE P1118 Fieldbus

Input Channel (16 Channels)
0 to 5 V dc, 1 to 5 V dc
RATED MEAN ACCURACY
±0.05% of span
RESOLUTION
12 to 15 bits, programmable (see Table 1)

H3M02A (ANALOG INPUT) FUNCTIONAL SPECIFICATIONS

Power Requirements
INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
4.0 W
HEAT DISSIPATION
4.0 W

Communication
Redundant IEEE P1118 Fieldbus

Input Channel (16 Channels)
-10.5 to 71.4 mV
THERMOCOUPLE TYPES
J, K, E, T, B, S, R, N
RATED MEAN ACCURACY
±0.035% of span (TC, mV Channels)
RESOLUTION
12 to 15 bits, programmable (see Table 1)
ISOLATION
Input to earth (ground), 600 V ac

NOTE
This does not imply that these channels are intended for connection to hazardous voltage circuits. Connection of these channels to voltages greater than 30 V ac or 60 V dc violates electrical safety code requirements and may expose users to electrical shock.

H3M02B (ANALOG INPUT) FUNCTIONAL SPECIFICATIONS

Power Requirements
INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
4.0 W
HEAT DISSIPATION
4.0 W

Communication
Redundant IEEE P1118 Fieldbus

Input Channel (16 Channels)
RTD (3-WIRE)
0 to 320 Ω for Platinum, Nickel and Copper
RATED MEAN ACCURACY
±0.025% of span (Platinum and Nickel)
±0.125% of span (Copper)
RESOLUTION
12 to 15 bits, programmable (see Table 1)
ISOLATION
Input to earth (ground), 600 V ac

NOTE
This does not imply that these channels are intended for connection to hazardous voltage circuits. Connection of these channels to voltages greater than 30 V ac or 60 V dc violates electrical safety code requirements and may expose users to electrical shock.

H3M03 (ANALOG INPUT) FUNCTIONAL SPECIFICATIONS

Power Requirements
INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
8.0 W
HEAT DISSIPATION
8.0 W

Communication
Redundant IEEE P1118 Fieldbus

Input Channel (8 Channels)
-10.5 to 71.4 mV, 0 to 5 V dc, 0 to 100 mV
THERMOCOUPLE TYPES
J, K, E, T, B, S, R, N
RTD (3 WIRE)
Platinum 100 Ω DIN (4376)
Platinum 100 Ω JIS (C-1604)
Nickel 120 Ω Ed #7
Copper 10 Ω
Each channel jumper selectable

Input Channel (Cont.)
RATED MEAN ACCURACY
±0.035% of span (TC)
±0.025% of span (RTD Channels)
±0.05% of span (mV and 0 to 5 V Channels)
RESOLUTION
12 to 15 bits, programmable (see Table 1)
ISOLATION
Input to earth (ground), 600 V ac

NOTE
This does not imply that these channels are intended for connection to hazardous voltage circuits. Connection of these channels to voltages greater than 30 V ac or 60 V dc violates electrical safety code requirements and may expose users to electrical shock.

H3M06 (PULSED INPUT) FUNCTIONAL SPECIFICATIONS

Power Requirements
INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
5.0 W
HEAT DISSIPATION
5.0 W

Communication
Redundant IEEE P1118 Fieldbus

Input Channel (8 Channels)
CONTACT RANGE
Open (off) and Closed (on)

Input Channel (8 Channels) (Cont.)
OPEN CIRCUIT VOLTAGE
24 V dc
SHORT CIRCUIT CURRENT
4.5 mA (24 V dc)
ON-STATE RESISTANCE
1 kΩ (maximum)
OFF-STATE RESISTANCE
100 kΩ (minimum)
RATE
Up to 25 kHz (jumper selectable, transmitter power provided)

H3M07 (DIGITAL INPUT) FUNCTIONAL SPECIFICATIONS

Power Requirements
INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
8.25 W
HEAT DISSIPATION
6.9 W

Communication
Redundant IEEE P1118 Fieldbus

Input Channel (32 Channels)
Contact Input
CONTACT RANGE
Open (off) and Closed (on)
OPEN CIRCUIT VOLTAGE
5 V dc (jumper select input source or power bus)
SHORT CIRCUIT CURRENT
2.5 mA
ON-STATE RESISTANCE
1 kΩ (maximum)
OFF-STATE RESISTANCE
100 kΩ (minimum)
FILTER TIME
Configurable (4, 8, 16, or 32 ms)

H3M09 (DIGITAL OUTPUT) FUNCTIONAL SPECIFICATIONS

Power Requirements
INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
4.0 W
HEAT DISSIPATION
4.0 W

Communication
Redundant IEEE P1118 Fieldbus

Output Channel (16 Channels)
APPLIED VOLTAGE
21 TO 27 V DC
LOAD CURRENT
0.25 A (maximum)
OFF-STATE LEAKAGE CURRENT
0.25 mA

H3M37 (ANALOG OUTPUT) FUNCTIONAL SPECIFICATIONS

Power Requirements
INPUT VOLTAGE
22.5 to 30 V dc
CONSUMPTION
5.0 W
HEAT DISSIPATION
5.0 W

Communication
Redundant IEEE P1118 Fieldbus

Output Channel (8 Channels)
4 to 20.4 mA dc (Designed to be compatible with Honeywell Redundant and Non-Redundant Analog Output FTAs.)
RATED MEAN ACCURACY
±0.05% of span
RESOLUTION
12 bits

H3SFBI (FIELDBUS A/B SWITCH EXTENDER) FUNCTIONAL SPECIFICATIONS

Maximum Number of DCS Integrators Driven
40

Maximum Length of Local Bus
9 m (30 ft)

Maximum Input Power Voltage (Normal Operation)
+30 V dc

Maximum Operating Current at -5%
500 mA

Maximum Power Dissipation at +5%
3.0 W

Minimum Isolation Voltage
2500 V rms

Holdup Time at 24 V dc
250 ms (as provided by the Honeywell power supply)

Table 1. Input Specifications

Conversion Time	Settling Time(a)	Linearity Error(b) (% of Range)	Resolution