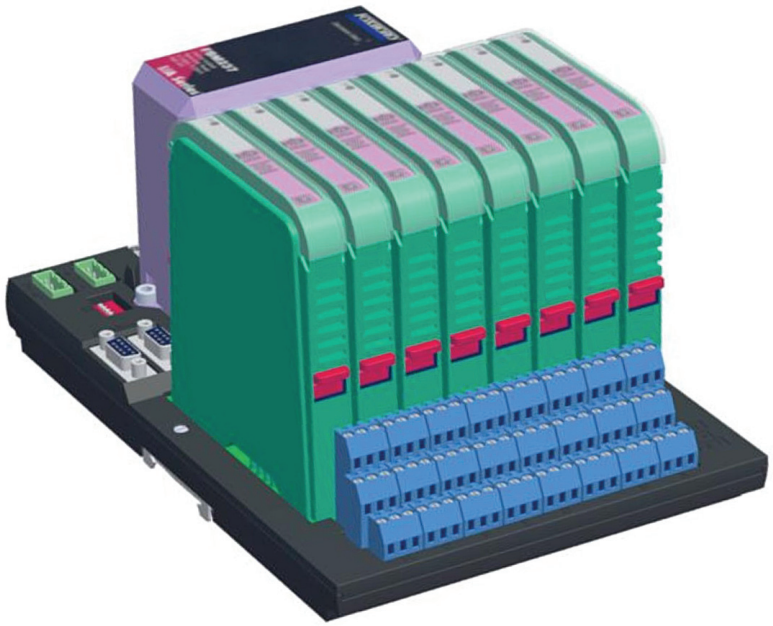
I/A Series® Hardware

PSS 21H-2Y12 B4

Intrinsically Safe Termination Assembly - Base Plate (ISTA-*BP*)



*The ISTA-*BP* combines Invensys Foxboro and Pepperl+Fuchs products. It is a combination of a baseplate with integrated terminals fitted with one or two Fieldbus modules (FBMs) and eight galvanic isolators, resulting in less cabinet space required. This solution consists of a printed circuit board and therefore does not require any additional wiring on the board, offering a reliable interface between the control processor and field I/O sensors and actuators.*

FEATURES

Key features of the ISTA-*BP* are:

- Provides a motherboard for up to two Fieldbus Modules (FBMs)
- Supports simplex, dual or redundant FBM applications
- Offers galvanic isolation to FBM applications; supports applications for Analog Input, Analog Output, Digital Input and Digital Output including HART FBMs
- Intrinsically safe
- Online Baseplate Replacement
- Fault detection - Various types of HiD2000 Modules have a separate fault detection output to identify a fault condition such as lead breakage or short circuit.
- Used in any sites which can include 200 Series FBMs, such as CP60, FCP270 or ZCP270 installations.

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- Electrical connections:
  - All connections on board
  - Two primary and two Secondary power supply connections
  - Fault Output connection
  - Supports daisy-chain connection for power- and HDLC Fieldbus-connection
- HART Multiplexer connection to Pepperl+Fuchs type MUX2700 G using a 37-pin Sub-D-connector
- Baseplate addressing - DIP switch array with five switches on the baseplate. The ISTA-*BP* provides additional DIP switches to indicate the letterbug of a particular FBM slot.

OVERVIEW

The ISTA-*BP* (Intrinsically Safe Termination Assembly - Base Plate) is designed for applications requiring protection of process control signals from or to approved field devices in hazardous (classified) locations. The baseplate offers a specialized interface for I/A Series 200 Series FBMs. Baseplates are available for Simplex FBMs with single baseplate slots, and for further space reductions, dual-slotted baseplates for either redundant FBMs or two Simplex FBMs are available.

Eight galvanic isolators approved as intrinsically safe associated apparatus are mounted on the baseplate and are protective barriers keeping dangerous electrical energy from entering the hazardous areas. These isolators are Pepperl+Fuchs' HiD2000 (High Density) Modules.

The ISTA-*BP*s are available for different FBM types. Please refer also to the documentation listed on page 16 and the respective FBM Product Specification Sheets.

COMPACT DESIGN

Baseplate

The ISTA-*BP* has a compact design with integrated slots fitted for one or two Fieldbus modules (FBMs) and for eight galvanic isolators and terminations for connecting the field devices to the baseplate. This solution consists of a printed circuit board and therefore does not require any additional wiring on the board, offering a reliable interface between the control processor and field I/O sensors and actuators. The resulting compact packaging offers a noticeable space saving in the interface cabinet.

Enclosure

Enclosures specially designed for mounting the FBMs provide various levels of environmental protection, up to harsh environments per ISA Standard S71.04. These enclosures must be installed according to intrinsically safe principles in order to be rated as intrinsically safe.

VISUAL INDICATORS

Light-emitting diodes (LEDs) incorporated onto the top of each HiD module provide visual indication of the module's operational status.

EASY REMOVAL / REPLACEMENT

The FBM and the HiD module can be removed/replaced without removing field device termination cabling, power, or communications cabling. The HiD modules consist of a quick-lock mechanism that allows replacement without any tools.

ONLINE BASEPLATE REPLACEMENT

Each ISTA-*BP* includes a third 9-pin Sub-D plug, to assist in replacing an adjacent ISTA-*BP* without interrupting HDLC communications.

A ISTA-*BP* can bypass its adjacent baseplate by connecting this third plug to another baseplate further downstream from the baseplate to be replaced. The bypassed ISTA-*BP* can then be removed safely. When the replacement procedure is complete, the standard cables can be reattached to the second plug, and the connections between the third plugs are removed. Normal HDLC communications are restored.

FIELDBUS COMMUNICATION

A Fieldbus Communication Module (FCM10 or FCM100 type) or a Control Processor (FCP270) is directly connected to the ISTA-*BP* and interfaces the redundant 2 Mbps module Fieldbus used by the FBMs. The FBM accepts communication from either path (A or B) of the redundant 2 Mbps fieldbus - should one path fail or be switched at the system level, the module continues communication over the active path.

The ISTA-*BP* can be used in series with non-intrinsically safe baseplates if required.

POWER CONNECTIONS

Each ISTA-*BP* contains connections for primary and secondary supplies. It is recommended that ISTA-*BP* modules are connected by applying a daisy-chained connection between each individual baseplate and closing the loop from the other end by applying a ring circuit, as shown in Figure 1.

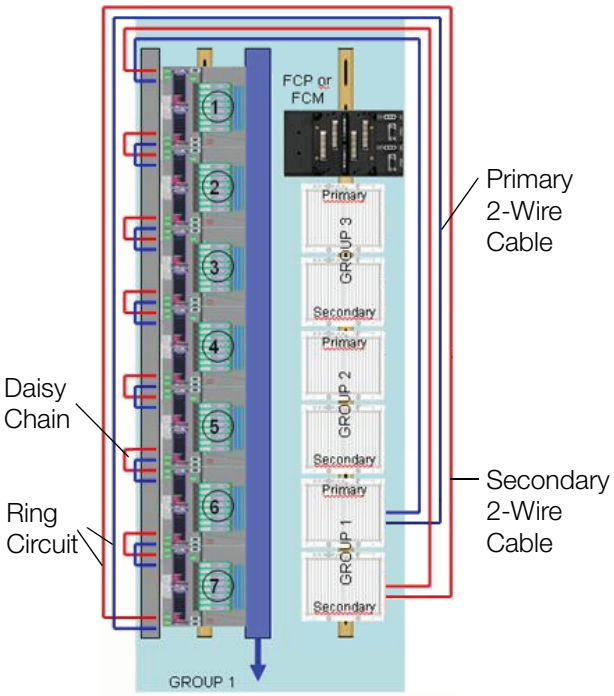

*Figure 1. Power Distribution to ISTA-*BP**

Daisy-chaining provides further levels of redundancy. Each baseplate has four cable paths for sourcing power from the redundant power supplies. In this manner, an individual ISTA-*BP* can withstand up to three individual power cable failures without affecting the operation of the FBMs. If at any time an FBM loses either primary or secondary power, a system alarm will be generated.

As well, this configuration will greatly reduce the amount of power supply cabling by not requiring each ISTA-*BP* to have a dedicated cable to both the primary and secondary power supplies.

ISTA-*BP* MOUNTING

The ISTA-*BP* is DIN rail mounted, as are all termination assemblies for 200 Series FBMs. The FBM and the galvanic isolators mount onto the baseplate.

TERMINATION

The baseplate consist of 9-pin sub-D-connectors for the redundant Fieldbus to the FCM or FCP/CP and screw terminals for the redundant independent dc power, and for the fault detection. Field devices are connected to the screw terminals on the baseplate. No additional terminal blocks are required.

Standard Fieldbus terminators, such as P0916RB, are used on the baseplate at the end of the daisy-chain. Refer to PSS 21H-2W6 B4 *DIN Rail Mounted Modular Baseplates* for more information on these terminators.

CONTENTS OF ISTA-*BP*

- Baseplate
- HiD2000 Modules
- Plug for power supply (4 pieces)
- Plug for fault messages (1 piece)

FBMs are packaged separately.

FUNCTIONAL SPECIFICATIONS

Field Device Channels

INTERFACE
Galvanic isolation is offered in various versions depending on the FBM version and the applied HiD modules:

8 channels with single channel HiD
16 channels with two-channel HiD
32 channels with four-channel HiD

COMMUNICATION TO THE DEVICE
Point-to-point

ERROR CHECKING / INDICATION
One green LED on HiD module to indicate "power on"

POWER SUPPLY
ISTA-*BP*: 24 V dc (20.4 V.... 30 V)
Fault Bus: 30 V with 10 mA
See PSS for FBMs and Table 2 on page 14.

GALVANIC ISOLATION
By using the ISTA-*BP* each channel is galvanically isolated from each other.
The FBMs offer galvanically isolated (both optical and transformer isolation) as a group from ground and module logic.

CAUTION

Please observe the specifications for the respective FBM, HiD module and the ISTA-*BP* Instruction Manual B0700BM for limits.

Fieldbus Communication

Communicates with its associated FCM10 or FCM100 type, or FCP270 via the redundant 2 Mbps module Fieldbus

Power Requirements

INPUT VOLTAGE RANGE (REDUNDANT)
See FBM specification and the Table 2 on page 14

CONSUMPTION
See FBM and HiD specification

HEAT DISSIPATION
See FBM and HiD specification

Regulatory Compliance of ISTA-*BP* without FBMs

COMPLIANCE WITH EUROPEAN DIRECTIVES
European Directive 94/9/EC for equipment and protective systems intended for use in potentially explosive atmospheres
Meets: EN50020

ELECTROMAGNETIC COMPATIBILITY (EMC)
European EMC Directive 89/336/EEC for Electromagnetic Compatibility.
Meets: EN 61326 Annex A (Industrial Levels)

Conformity
Protection degree according to IEC 60529

IEC DIRECTIVES
The baseplate does not fall under this directive.
The FBMs and HiD modules fulfil the following directives

IEC 61000-4-2 ESD Immunity
Contact 4 kV, air 8 kV

IEC 61000-4-3 Radiated Field Immunity
10 V/m at 80 to 1000 MHz

IEC 61000-4-4 Electrical Fast Transient/Burst Immunity
2 kV on I/O, dc power and communication lines

IEC 61000-4-5 Surge Immunity
2kV on ac and dc power lines; 1kV on I/O and communications lines

IEC 61000-4-6 Immunity to Conducted Disturbances Induced by Radio Frequency Fields
10 V (rms) at 150 kHz to 80 MHz on I/O, dc power and communication lines

IEC 61000-4-8 Power Frequency Magnetic Field Immunity
30 A/m at 50 and 60 Hz

FUNCTIONAL SPECIFICATIONS (CONTINUED)

PRODUCT SAFETY

Installation of ISTA-*BP* in a General-Purpose (Unclassified) Area

ISTA-*BP* baseplates are designed for protection class IP20 in accordance with EN 60529 and must accordingly be protected against adverse ambient conditions such as water splashing or dirt.

Regardless of the ignition protection class of the HiD Modules that are fitted, intrinsically safe circuits of mounting plate ISTA-*BP* (light blue marking) can be routed into hazardous areas. Special care must be taken in this case to ensure reliable separation from all non-intrinsically safe circuits. The installation of the intrinsically safe circuits is to be conducted in accordance with the relevant installation regulations.

The corresponding entity parameters for the field devices and the isolated modules associated with it as defined for the purpose of explosion protection must be observed when interconnecting intrinsically safe field devices with the intrinsically safe circuits of ISTA-*BP* mounting plates (proof of intrinsic safety). EN 60079-14/IEC 60079-14 or NEC 500 should be observed in this regard. For the Federal Republic of Germany, the National Foreword of DIN EN 60079-14/VDE 0165 Part 1 must also be observed.

When using intrinsically safe circuits in hazardous dust areas, only field devices certified for this purpose may be used. EC Type Examination Certificate of conformity must be observed. It is especially important to maintain any special conditions that may be indicated.

CE Marking

For further information please refer to www.pepperl-fuchs.com.

Installation of ISTA-*BP* within a Hazardous Classified Location

European Directive

ATEX Examination Certificate number: CESI 02 ATEX 086.

EC-Type Examination Certificate, Declaration of Conformity and instructions have to be observed.

The ATEX Examination Certificate can be found under www.pepperl-fuchs.com.

Classified Locations:
Category 3 (Zone 2)

Directives for U.S. and Canada

CSA Examination Certificate number: 1545160 (LR 66529-18).

CSA Examination Certificate have to be observed for installation of ISTA-*BP* within a Hazardous Classified Location.

Certified according CSA and US standards for the following Hazardous Classified Locations:

- Class I, Division 2, Groups A, B, C and D; T4 @ + 60 °C
- Class I, Zone 2, Ex nA IIC T4; Ta = 60°C
- Class I, Zone 2, AEx nA IIC T4; Ta = 60°C

The CSA Examination Certificate can be found under www.pepperl-fuchs.com.

Calibration Requirements

Calibration of the module or termination assembly is not required.

Additional Regulatory

The ISTA-*BP* and the corresponding FBMs must only be used in Zone 2.

For additional information, please refer to the individual data sheets for the ISTA-*BP* mounting plate and the related HiD2000 Modules (see www.pepperl-fuchs.com) and the FBM Product Specification Sheets.

The devices should be installed in an enclosure to IP54 or better, in accordance with EN 60529. An explanation of the IP code is in the ISA-S71.04-1985 document.

ENVIRONMENTAL SPECIFICATIONS

Operating

TEMPERATURE

HiD Module and Baseplate
0 to 60 °C (-32 to +140°F)

RELATIVE HUMIDITY

HiD Module and Baseplate
5 to 90% (non-condensing)
The modules are intended for Installation Category II, Pollution Degree 2 as defined in IEC 664-1.

VIBRATION

HiD Module and Baseplate
The vibration specification for the DIN rail mounted FBM subsystem modules is 0.75 g (at 5 to 200 Hz) or 1 g (58 to 150 Hz) as defined in IEC 60068-2-x.
The shock resistance of the interface board is 15G, 11 ms (currentless state, sinusoidal half cycle) in acc. with IEC 60068-2-27.

CONTAMINATION

HiD Module and Baseplate
The modules are intended for Installation Category II, Pollution Degree 2 as defined in IEC 664-1.

Storage

TEMPERATURE

HiD Module and Baseplate
-20 to +70°C (-4 to +158°F)

RELATIVE HUMIDITY

HiD Module and Baseplate
5 to 90% (non-condensing)
The modules are intended for Installation Category II, Pollution Degree 2 as defined in IEC 664-1.

VIBRATION

HiD Module and Baseplate
The vibration specification for the DIN rail mounted FBM subsystem modules is 0.75 g (at 5 to 200 Hz) or 1 g (58 to 150 Hz) as defined in IEC 60068-2-x.
The shock resistance of the interface board is 15G, 11 ms (currentless state, sinusoidal half cycle) in acc. with IEC 60068-2-27.

CONTAMINATION

HiD Module and Baseplate
Suitable for use in Class G3 (Harsh) environments as defined in ISA Standard S71.04, based on exposure testing according to EIA Standard 364-65, Class III.

PHYSICAL SPECIFICATIONS

Mounting

ISTA-*BP*
ISTA-*BP* can be mounted on a DIN rail (horizontally or vertically). Refer to B0700BM for details.

Mass

FIELDBUS MODULE
284 g (10 oz) approximate

ISTA-*BP* (WITH 8 MOUNTED HID MODULES AND WITHOUT FBMS)

Single
1860 g (4.1 lb) approximate

Dual or Redundant
2100 g (4.63 lb) approximate

Dimensions

ISTA-*BP* (WITH 8 MOUNTED HID MODULES AND WITHOUT FBMS)

Height
153 mm (6 in)

Width

Single
175 mm (6.9 in)

Dual / Redundant
242 mm (9.5 in)

Depth
254 mm (10 in)

Cable Connection

All required connections to I/A Series Fieldbus and to the field I/O are placed on the baseplate. The ISTA-*BP* also supports daisy-chain for power- and I/A Series Fieldbus-connection.

DCS SIDE
DCS connection using a 9-pin Sub-D connector
Fault Output connection - three pin plug with screw terminals

FIELD SIDE
Three tier terminal connection for field I/O

POWER SUPPLY
Two primary and two Secondary power supply connections - three pin plugs with screw terminals

HART MULTIPLEXER
Connection to Pepperl+Fuchs Multiplexer type MUX2700 G using a 37-pin Sub-D-connector

Terminal Blocks

3 rows, 8 positions

Construction - Termination Assembly

MATERIAL

HiD Module
PC

Baseplate
PC and ABS, inflammability UL94 V0

COLOR

HiD Module
Green

Baseplate
Black

Field Termination Connections

COMPRESSION-TYPE ACCEPTED WIRING SIZES

Solid/Stranded/AWG
0.2 to 4 mm^2 / 0.2 to 2.5 mm^2 / 24 to 12 AWG

ISTA-*BP* VERSIONS

The ISTA*-BP* are fitted with eight HiD2000 Modules matching the respective FBM type.

ISTA-*BP* MARKING

The marking that identifies ISTA-*BP* is broken down as follows:

- *ISTA-2XXx-BPYY-(VV)-Z*

  Where:

  - *2XXx*: FBM number - example FBM207b
  - *YY*: Function - such as:
    AI - Analog Input
    AO - Analog Output
    AIO - Analog Input / Analog Output
    DI - Discrete Input
    DO - Discrete Output
    DIO - Discrete Input / Discrete Output
    HART - HART devices
    TI - Temperature Input
    TIO - Temperature Input / Analog Output
  - *VV*: FD for fault detection (only if HiD2000 Module supports the function)
    3W for 3-wire transmitter
  - *Z*: R for redundant (two FBMs); D for dual (two FBMs)

Table 1. ISTA-*BP* Versions

FBM Type	ISTA-*BP* P/N	ISTA-*BP* Name	ISTA-*BP* Description
FBM201	ISTA-201-BPAI-FD - 124885	4 to 20 mA Input Interface Board, HART-Compatible, Line Fault Detection	ISTA-201-BPAI-FD is fitted with eight 1-channel HiD2029 modules.
	ISTA-201-BPTI - 124886	RTD/Thermocouple/mV Interface Board	ISTA-201-BPTI is fitted with eight 2-channel HiD2082 modules and prepared for mounting a FBM201 module.
	ISTA-201-BPAI - 124884	4 to 20 mA Input Interface Board, HART-Compatible	ISTA-201-BPAI is fitted with eight 1-channel HiD2025 modules.
	ISTA-201-BPAI-D - 130211	4 to 20 mA Input Interface Board, HART-Compatible	ISTA-201-BPAI-D is fitted with eight 2-channel HiD2026 modules and prepared for mounting two FBM201 modules.
	ISTA-201-BPAI-FD-D - 130212	4 to 20 mA Input Interface Board, HART-Compatible, Line Fault Detection	ISTA-201-BPAI-FD-D is fitted with eight 2-channel HiD2030 modules and prepared for mounting two FBM201 modules.

Table 1. ISTA-*BP* Versions (Continued)

FBM Type	ISTA-*BP* P/N	ISTA-*BP* Name	ISTA-*BP* Description
	ISTA-201-BPTI-D - 130213	RTD/Thermocouple/mV Interface Board	ISTA-201-BPTI-D is fitted with eight 2-channel HiD2082 modules and prepared for mounting two FBM201 modules.
FBM204	ISTA-204-BPAIO - 124887	4 to 20 mA I/0 Interface Board, HART-Compatible	ISTA-204-BPAIO is fitted with four 1-channel HiD2025 modules and four 1-channel HiD2031 modules. It is prepared for mounting a FBM204 module.
	ISTA-204-BPAIO-FD - 124888	4 to 20 mA I/0 Interface Board, Line Fault Detection, HART-Compatible	ISTA-204-BPAIO-FD is fitted with four 1-channel HiD2025 modules and four 1-channel HiD2037 modules. It is prepared for mounting a FBM204 module.
	ISTA-204-BPTIO - 124889	RTD/Thermocouple/mV Input, 4 to 20 mA Output Interface Board	ISTA-204-BPTIO is fitted with four 1-channel HiD2031 modules and four 2-channel HiD2082 modules and prepared for mounting a FBM204 module.
	ISTA-204-BPTIO-FD - 124890	RTD/thermocouple/mV Input, 4 to 20 mA Output Interface Board, HART-Compatible, Line Fault Detection	ISTA-204-BPTIO-FD is fitted with four 1-channel HiD2037 modules and four 2-channel HiD2082 modules. It is prepared for mounting a FBM204 module.
	ISTA-204-BPAIO-D - 130214	4 to 20 mA I/O Interface Board, HART-Compatible	ISTA-204-BPAIO-D is fitted with four 2-channel HiD2026 modules and four 2-channel HiD2032 modules. It is prepared for mounting two FBM204 modules.
	ISTA-204-BPAIO-FD-D - 130215	4 to 20 mA I/O Interface Board, HART-Compatible, Line Fault Detection	ISTA-204-BPAIO-FD-D is fitted with four 2-channel HiD2026 modules and four 2-channel HiD2038 modules. It is prepared for mounting two FBM204 modules.

Table 1. ISTA-*BP* Versions (Continued)

FBM Type	ISTA-*BP* P/N	ISTA-*BP* Name	ISTA-*BP* Description
	ISTA-204-BPTIO-D - 130216	RTD/Thermocouple/mV Input, 4 to 20 mA Output Interface Board	ISTA-204-BPTIO-D is fitted with four 2-channel HiD2032 modules and four 2-channel HiD2082 modules. It is prepared for mounting two FBM204 modules.
	ISTA-204-BPTIO-FD-D - 130217	RTD/Thermocouple/mV Input, 4 to 20 mA Output Interface Board, HART-Compatible, Line Fault Detection	ISTA-204-BPTIO-FD-D is fitted with four 2-channel HiD2038 modules and four 2-channel HiD2082 modules. It is prepared for mounting two FBM204 modules.
FBM207b	ISTA-207b-BPDI-FD - 124893	Voltage Monitor/Contact Sense Input Interface Board	ISTA-207b-BPDI-FD is fitted with eight 2-channel HiD2822 modules.
FBM211	ISTA-211-BPAI - 124894	4 to 20 mA Input Interface Board, HART-Compatible	ISTA-211-BPAI is fitted with eight 2-channel HiD2026 modules and prepared for mounting a FBM211 module.
	ISTA-211-BPAI-3W - 124895	4 to 20 mA Input Interface Board, HART-Compatible	ISTA-211-BPAI-3W is fitted with eight 2-channel HiD2030 modules.
	ISTA-211-BPTI - 124896	RTD/Thermocouple/mV Input Interface Board	ISTA-211-BPTI is fitted with eight 2-channel HiD2082 modules and prepared for mounting a FBM211 module.
FBM214	ISTA-214-BPHI - 124897	HART-Communication, 4 to 20 mA Input Interface Board	ISTA-214-BPHI is fitted with eight 1-channel HiD2025 modules and prepared for mounting a FBM214 module.
	ISTA-214-BPHI-FD - 124898	HART-Communication, 4 to 20 mA Input Interface Board, Line Fault Detection	ISTA-214-BPHI-FD is fitted eight 1-channel HiD2029 modules and prepared for mounting a FBM214 module.

Table 1. ISTA-*BP* Versions (Continued)

FBM Type	ISTA-*BP* P/N	ISTA-*BP* Name	ISTA-*BP* Description
	ISTA-214-BPHI-D - 132950	HART-Communication, 4 to 20 mA Input Interface Board	ISTA-214-BPHI-D is fitted with eight 2-channel HiD2026 modules and prepared for mounting two FBM214 modules.
	ISTA-214-BPHI-FD-D - 180257	HART-Communication, 4 to 20 mA Input Interface Board, Line Fault Detection	ISTA-214-BPHI-D is fitted with eight 2-channel HiD2030 modules and prepared for mounting two FBM214 modules.
FBM215	ISTA-215-BPHO-FD - 124899	HART Communication 4 to 20 mA Output Interface Board, Line Fault Detection	ISTA-215-BPHO-FD is fitted with eight 1-channel HiD2037 modules and prepared for mounting a FBM215 module.
	ISTA-215-BPHO-FD-D - 189669	HART-Communication, 4 to 20 mA Output Interface Board, Line Fault Detection	ISTA-215-BPHO-FD-D is fitted with eight 2-channel HiD2038 modules and prepared for mounting two FBM215 modules.
FBM216	ISTA-216-BPHI-R - 124900	Redundant 4 to 20 mA Input Interface Board, HART Communication	ISTA-216-BPHI-R is fitted with eight 1-channel HiD2025 modules and prepared for mounting two FBM216 modules.
	ISTA-216-BPHI-FD-R - 124901	Redundant 4 to 20 mA Input Interface Board, HART Communication, Line Fault Detection	ISTA-216-BPHI-FD-R is fitted with eight 1-channel HiD2029 modules and prepared for mounting two FBM216 modules.
FBM217	ISTA-217-BPDI-FD - 124902	Discrete Input Interface Board, Line Fault Detection	ISTA-217-BPDI-FD is fitted with eight 4-channel HiD2844 modules and prepared for mounting a FBM217 module.
	ISTA-218-BPHO-FD-R - 124903	Redundant 4 to 20 mA Output Interface Board, HART Communication, Line Fault Detection	ISTA-218-BPHO-FD-R is fitted with eight 1-channel HiD2037 modules and prepared for mounting two FBM218 modules.

Table 1. ISTA-*BP* Versions (Continued)

FBM Type	ISTA-*BP* P/N	ISTA-*BP* Name	ISTA-*BP* Description
FBM237	ISTA-237-BPAO - 124904	4 to 20 mA Output Interface Board	ISTA-237-BPAO is fitted with eight 1-channel HiD2031 modules and prepared for mounting a FBM237 module.
	ISTA-237-BPAO-FD - 124905	4 to 20 mA Output Interface Board, HART-Compatible, Line Fault Detection	ISTA-237-BPAO-FD is fitted with eight 1-channel HiD2037 modules and prepared for mounting a FBM237 module.
	ISTA-237-BPAO-R - 124906	Redundant 4 to 20 mA Output Interface Board	ISTA-237-BPAO-R is fitted with eight 1-channel HiD2031 modules and prepared for mounting two FBM237 modules.
	ISTA-237-BPAO-FD-R - 124907	Redundant 4 to 20 mA Output Interface Board, Line Fault Detection, HART-Compatible	ISTA-237-BPAO-FD is fitted with eight 1-channel HiD2037 modules and prepared for mounting two FBM237 modules.
FBM241c	ISTA-241c-BPDIO - 190850	Discrete I/O Interface Board	ISTA-241c-BPDIO is fitted with four 2-channel HiD2822 modules and four 2-channel HiD2872 modules and prepared for mounting a FBM241c module.
	ISTA-241c-BPDIO-FD - 124909	Discrete I/O Interface Board, Line Fault Detection	ISTA-241c-BPDIO-FD is fitted with four 2-channel HiD2822 modules and four 2-channel HiD2874 modules and prepared for mounting a FBM241c module.
FBM242	ISTA-242-BPDO - 180222	Externally Sourced Discrete Output Interface Board	ISTA-242-BPDO is fitted with eight 2-channel HiD2876 modules and prepared for mounting a FBM242 module.
	ISTA-242-BPDO-FD - 124910	Externally Sourced Discrete Output Interface Board, Line Fault Detection	ISTA-242-BPDO-FD is fitted with eight 2-channel HiD2874 modules and prepared for mounting a FBM242 module.

HID PROPERTIES AND ISTA-*BP* APPLICATIONS

The colored background of the following table indicates a circuit, running in a hazardous area.

Table 2. HiD Basic Properties

Signal Inputs	Signal Outputs	HiD Module	Number	ISTA-*BP*
HART transmitter power supply 4 - 20 mA	4 - 20 mA	HiD2025	8 4 4 8 8	ISTA-201-BPAI ISTA-204-BPAIO ISTA-204-BPAIO-FD ISTA-214-BPHI ISTA-216-BPHI-R
HART transmitter power supply 4 - 20 mA	4 - 20 mA	HiD2026 2-channel	8 8 4 4 8	ISTA-211-BPAI ISTA-201-BPAI-D ISTA-204-BPAIO-D ISTA-204-BPAIO-FD-D ISTA-214-BPHI-D
HART transmitter power supply/current repeater 4 - 20 mA	4 - 20 mA	HiD2029	8 8 8	ISTA-201-BPAI-FD ISTA-214-BPHI-FD ISTA-216-BPHI-FD-R
HART transmitter power supply/current repeater 4 - 20 mA	4 - 20 mA	HiD2030 2-channel	8 8 8	ISTA-211-BPAI-3W ISTA-201-BPAI-FD-D ISTA-214-BPHI-FD-D
4 - 20 mA	Isolated output current driver 4 - 20 mA	HiD2031	4 4 8 8	ISTA-204-BPAIO ISTA-204-BPTIO ISTA-237-BPAO ISTA-237-BPAO-R
4 - 20 mA	Isolated output current driver 4 - 20 mA	HiD2032 2-channel	4 4	ISTA-204-BPAIO-D ISTA-204-BPTIO-D

Table 2. HiD Basic Properties (Continued)

Signal Inputs	Signal Outputs	HiD Module	Number	ISTA-*BP*
4 - 20 mA	HART isolated output current driver 4 - 20 mA	HiD2037	4 4 8 8 8 8	ISTA-204-BPAIO-FD ISTA-204-BPTIO-FD ISTA-215-BPHO-FD ISTA-237-BPAO-FD ISTA-218-BPHO-FD-R ISTA-237-BPAO-FD-R
4 - 20 mA	HART isolated output current driver 4 - 20 mA	HiD2038 2-channel	4 4 8	ISTA-204-BPAIO-FD-D ISTA-204-BPTIO-FD-D ISTA-215-BPHO-FD-D
Converter for RTD, potentiometer, thermocouples and mV signals	4 - 20 mA	HiD2082 2-channel	8 4 4 8 8 4 4	ISTA-201-BPTI ISTA-204-BPTIO ISTA-204-BPTIO-FD ISTA-211-BPTI ISTA-201-BPTI-D ISTA-204-BPTIO-D ISTA-204-BPTIO-FD-D
Switch amplifier for proximity switches or mech. contacts	Relay	HiD2822 2-channel	8 4 4	ISTA-207b-BPDI-FD ISTA-241c-BPDIO-FD ISTA-241c-BPDIO
Switch amplifier or proximity switches or mech. contacts	Open collector output	HiD 2844 4-channel	8	ISTA-217-BPDI-FD
Mech. contact or open collector	Solenoid/Alarm Driver	HiD2872 2-channel	4	ISTA-241c-BPDIO
Mech. contact or open collector	Solenoid/Alarm Driver	HiD2874 2-channel	4 8	ISTA-241c-BPDIO-FD ISTA-242-BPDO-FD
Mech. contact or open collector	Solenoid/Alarm Driver	HiD2876 2-channel	8	ISTA-242-BPDO

Dimensions of a Single Version ISTA-*BP*
(H/W/D) 153 mm (6.0 in), 175 mm (6.9 in), 254 mm (10.0 in)

Dimensions of Dual or Redundant Version ISTA-*BP*
(H/W/D) 153 mm (6.0 in), 242 mm (9.5 in), 254 mm (10.0 in)

FOR MORE INFORMATION

For more information, refer to the following documentation:

Document Title	Document Number
DIN Rail Mounted Subsystem Overview	PSS 21H-2W1 B3
DIN Rail Mounted FBM Equipment, Agency Certification	PSS 21H-2W2 B3
DIN Rail Mounted Modular Baseplates	PSS 21H-2W6 B4
Environmental Conditions for Process Measurement and Control Systems: Airborne Contaminants	ISA-S71.04-1985 (not Invensys-supplied)
I/A Series® System ISTA-*BP* Instruction Manual	B0700BM (available from Pepperl+Fuchs and Foxboro)

33 Commercial Street
Foxboro, MA 02035-2099
United States of America
www.foxboro.com
Inside U.S.: 1-866-746-6477
Outside U.S.: 1-508-549-2424
or contact your local Foxboro representative.
Facsimile: 1-508-549-4999

MB 21A Printed in U.S.A. 0807