

18.3 HART High Performance Analog Input module - (HHPAI)

The HART (Highway Addressable Remote Transducer) High Performance Analog Input module is a standard Ovation I/O Module that provides eight galvanically isolated 4-20 mA analog inputs with HART transceivers. Each transceivers provides optically isolated communication to a dedicated UART (Universal Addressable Remote Transducer), thereby Maximizing HART communication throughout. Each channel may be individually configured for field powered or local powered transmitters via user accessible jumpers on the Personality module.

HART is a digital communication protocol designed for industrial process measurement applications. Field measurement devices (transmitters) interface for a process control system via an analog 4-to-20 mA current loop. HART uses a low-level frequency-shift-keyed sine wave signal that is superimposed on the standard 4-to-20 mA process measurement current loop. Since the HART sine wave signal is small and its average value is zero, the current loop analog 4-to-20 mA signal is not significantly affected by the presence of the HART signal. Using HART allows a field device to provide more than one measurement, which is a feature not available when using only the 4-to-20mA analog current signal.

“Smart” field devices may be described as field devices in which the analog 4-to-20 mA signal, digital communication, and sometimes power, co-exist on the same pair of wires. The Ovation HART Fast Analog Input (IAH) module is a standard form factor Ovation I/O module, which permits Ovation to communicate with HART devices.

Note: I/O Module General Information contains environmental, installation, wiring, and fuse information for I/O modules.

18.3.1 Electronics modules (Emod) - (HHPAI)

- **5X00106G01** interfaces to eight current loop signals with an input range of 4-20 mA.
- **5X00106G02** interfaces to eight current loop signals with an input range of 4-20 mA, (Reduced radiated emissions).

18.3.2 Personality modules (Pmod) - (HHPAI)

- **5X00109G01** contains eight fused input and user accessible jumpers that configure the channels for field powered or local powered transmitters on an individual basis.
- **5X00109G02** contains eight fused input and user accessible jumpers that configure the channels for field powered or local powered transmitters on an individual basis. Has the addition of active current limiting in the two-wire mode. Note that this module is available only in the following releases:
 - ☐ Ovation 3.4.0 and later.
 - ☐ Ovation 3.3.1 with patch OVA331063 installed.

18.3.3 Subsystems - (HHPAI)***HART High Performance Analog Input subsystems (14-bit)***

RANGE	CHANNELS	ELECTRONICS MODULE	PERSONALITY MODULE
4-20 mA ¹	8	5X00106G01	5X00109G01 or 5X00109G02 (Note that this module is available only in the following releases: ▪ Ovation 3.4.0 and later. ▪ Ovation 3.3.1 with patch OVA331063 installed.
4-20 mA ² (Reduced radiated emissions).	8	5X00106G02	5X00109G01 or 5X00109G02 (Note that this module is available only in the following releases: ▪ Ovation 3.4.0 and later. ▪ Ovation 3.3.1 with patch OVA331063 installed.
¹ This module configuration is CE Mark Certified. ² This module configuration is CE Mark Certified (Non-EMC Cabinet).			