HART Interface Module

The HART® Interface Module provides communications between a ROC300-Series Remote Operations Controller or FloBoss™ 407 and other devices using the Highway Addressable Remote Transducer (HART) protocol. The module, which has its own microprocessor for reduced loading on the ROC MicroProcessor Unit (MPU), mounts in the I/O module sockets of the ROC312, ROC364 or FloBoss 407.

The HART Interface Module requires the HART Interface Program (see Specification Sheet 8:HIP), which must be downloaded into the ROC or FloBoss. A PC with ROCLINK™ Configuration Software for DOS (Version 2.0 or greater) or ROCLINK for Windows Configuration Software (Version 1.01 or greater) is required for configuration. One of the following is also required:

- ROC312 with FlashPAC (Version 2.10c or greater) or ROCPAC (Version 1.10)
- ROC364 with FlashPAC (Version 2.10c or greater) or ROCPAC (Version 1.63)
- FloBoss 407 with firmware Version 1.04 or greater.

The HART Interface Module should not be installed in a ROC312 with a HART Interface Card.

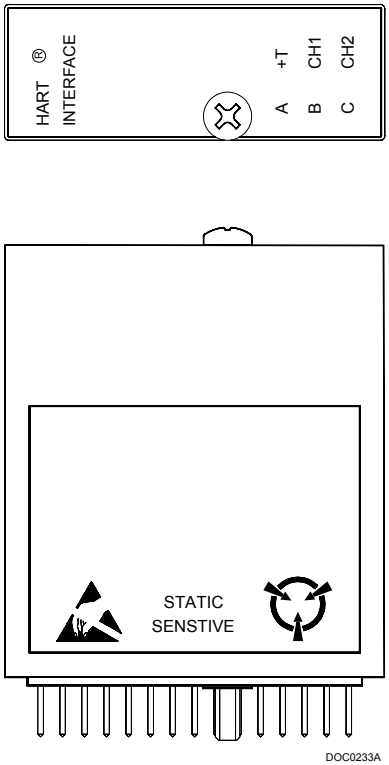
The HART Interface Module communicates digitally to HART devices through the I/O terminations associated with the module position. Each HART module contains two separate channels, used alternately to poll connected HART devices. Each channel can be configured to operate in either the point-to-point mode or the multi-drop mode. As many as 32 HART devices can be supported by a single ROC using up to six HART Interface Modules.

The point-to-point mode allows digital communications with one HART device per module channel. For example, if all channels were used in this mode for a ROC364, up to 6 HART modules could be installed, which would handle 12 HART devices.

In the multi-drop mode, as many as five HART devices can be connected (in parallel) to a single channel of a HART Interface Module. If all HART module channels were used in this mode, three HART modules would allow 30 HART devices to be connected to a ROC.

If the analog signal from a HART device needs to be sensed, a ROC analog input channel (such as an Analog Input Module — see Specification Sheet 2.3:AI) is used. One analog input channel is required for each such analog signal. This analog signal can be used in the point-to-point mode to measure a process variable, or in the multi-drop mode to measure the current consumed by the loop.

A ROC equipped with the HART module and the HART Interface Program is considered to be a HART Host (primary master) interface with a Class 1 Conformance classification. Most Universal and some Common Practice commands are supported. The supported commands conform to HART Universal Command Specification Revision 5.1 and Common Practice Command Specification Revision 7, (HCF SPEC 127 & 151). Refer to www.hartcomm.org for more information on the specifications.



HART Interface Module

D301077X012

Specifications

FIELD WIRING TERMINALS

A: Loop Power (+T)
B: Channel 1 (CH1)
C: Channel 2 (CH2)

CHANNELS

2 HART-compatible channels, which communicate via digital signals only.
Mode: Half-duplex.
Data Rate: 1200 BPS asynchronous.
Parity: Odd.
Format: 8 bit.
Modulation: Phase coherent, frequency shift keyed (FSK) per Bell 202.
Carrier Frequencies: Mark 1200 Hz, Space 2200 Hz, ± 0.1%.

HART MODULES AND DEVICES SUPPORTED

Up to 6 HART Modules and 32 HART devices maximum.
Point-to-Point Mode: 2 HART devices per Module (1 per channel).
Multi-drop Mode: Up to 10 HART devices per Module (5 per channel).

LOOP POWER

Total power supplied through module for HART devices is 20 mA per channel at 10 to 29 Vdc. Each HART device typically uses 4 mA.

POWER REQUIREMENTS

Loop Source: 11 to 30 Vdc, 40 mA maximum from ROC/FloBoss power supply or ROC364 I/O converter card.
Module: 4.9 to 5.1 Vdc, 17 mA maximum.

WEIGHT

48 g (1.7 oz) nominal.

CASE

Solvent-resistant thermoplastic polyester, meets UL94V-0. Dimensions: 15 mm D by 51 mm H by 43 mm W (0.60 in. D by 2.00 in. H by 1.69 in. W), not including pins.

VIBRATION

20 Gs peak or 0.06 in. double amplitude, 10 to 2,000 Hz, per MIL-STD-202 method 204 condition F.

MECHANICAL SHOCK

1500 Gs 0.5 mS half sine per MIL-STD-202, method 213, condition F.

ENVIRONMENTAL

Meets the Environmental specifications of the ROC or FloBoss unit in which the module is installed, including Temperature and Surge specifications.

APPROVALS

Approved by CSA for hazardous locations Class I, Division 2, Groups A, B, C, and D.

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