IP Point HART

Datasheet

A-IP.HART-I

A-IP.HART-O

Document No. D112-016
11/2023
Revision 1.6

CONTENTS

1. Preface 2
1.1. About this document 2
1.2. Features 2
1.3. Installation 2
2. Technical Specifications 4
2.1. Ethernet 4
2.2. Analog Input Channel (A-IP.HART-I) 4
2.3. Analog Output ChanneL (A-IP.HART-O) 4
2.4. Electrical 5
2.5. Certifications 6
2.6. Dimensions 6

aparian

1. PREFACE

1.1. ABOUT THIS DOCUMENT

This document contains the technical data for the IP Point HART In and IP Point HART Out modules. The IP-Point-HART module can convert any analog device into either EtherNet/IP, Modbus-TCP, or DNP3 TCP/UDP protocols. This includes 4 to 20 mA input and output devices with or without HART communications as well as 0 to 20 ma devices without HART.

1.2. FEATURES

The IP-Point-Hart is available in Input or Output variations:

1) **A-IP.HART-I** for HART input devices like process instruments.
2) **A-IP.HART-O** for HART output devices like valve positioners.

The conversion to EtherNet/IP enables a HART device to be added directly into a Rockwell Automation Logix IO tree. The Modbus-TCP option enables a HART field device to be viewed as a Modbus Slave. The DNP3 option converts a HART field device into a DNP3 Outstation. The DNP3 option, also supports Secure Authentication, ensuring secure communications across the Ethernet network.

In addition, a rich collection of process and diagnostic information is provided directly into Logix, without the use of any explicit messaging. HART commands can also be relayed to the device using an EtherNet/IP message relay object. A DTM (Device Type Manager) is available further simplifying device configuration and management using an FDT frame. A built-in webserver provides detailed diagnostics of system configuration and operation as well as field device specific diagnostics.

The IP-Point-Hart module is configured using the Aparian Slate application. This program can be downloaded from www.aparian.com free of charge.

1.3. INSTALLATION

The figure below provides an example of the typical installation.

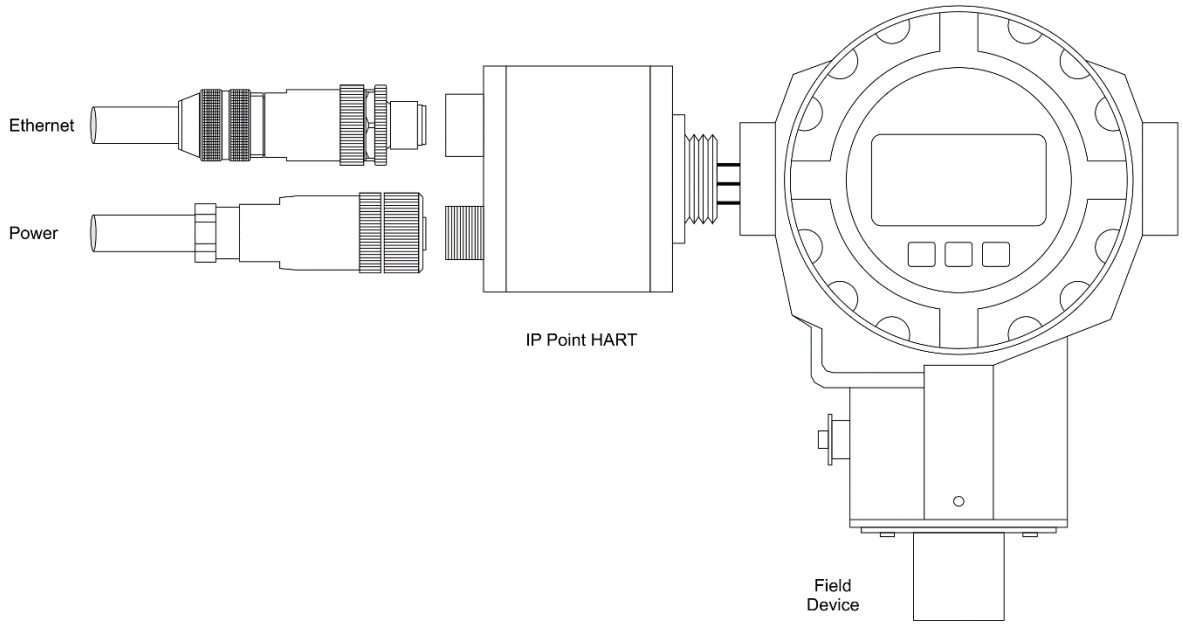

Figure 1 - Example of a typical installation

The waterproof module is designed to screw directly into the HART field device simplifying installation.

Power (24V) and Ethernet is connected to the device through the use of industry standard M12 connectors. The M12 connectors are supplied with the device and can be connected in the field.

The module provides two diagnostic LEDs as shown in the front view figure above. These LEDs are used to provide information on the system and HART operation and the Ethernet interface.

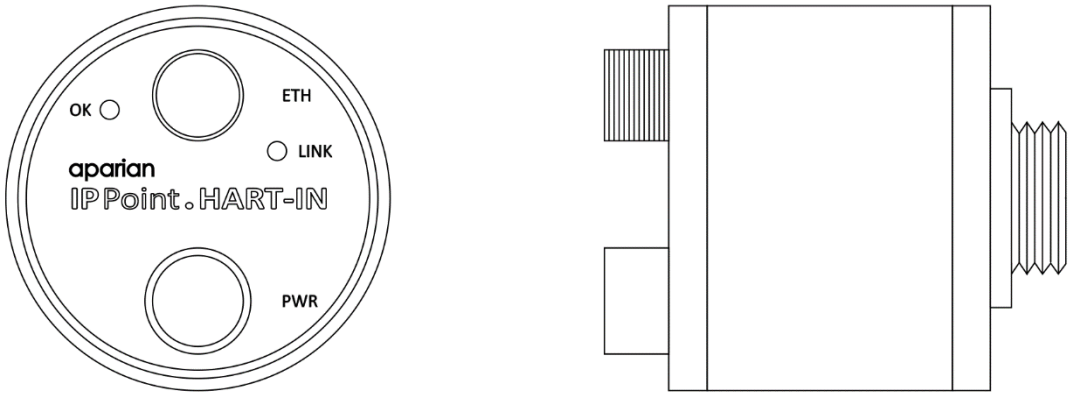

Figure 2 - IP Point HART module side and front view

2. TECHNICAL SPECIFICATIONS

2.1. ETHERNET

Specification	Rating
Connector	M12-D
Conductors	CAT5 STP/UTP
ARP connections	Max 20
TCP connections	Max 20
CIP connections	Max 10
Communication rate	10/100Mbps
Duplex mode	Full / Half
Auto-MDIX support	Yes

Table 1 - Ethernet specification

2.2. ANALOG INPUT CHANNEL (A-IP.HART-I)

Specification	Rating
Number of channels	1
ADC resolution	12 bit
Input impedance	247.5 Ω
Accuracy (calibrated 25°C)	< 0.15 %
Accuracy (uncalibrated)	< 0.30 %
Range	0 – 22 mA
Current limit	34 mA

Table 2 - Analog Input channel specification

2.3. ANALOG OUTPUT CHANNEL (A-IP.HART-O)

Specification	Rating
Number of channels	1

DAC resolution	16 bit
Drive	50 – 1170 Ω Resistive < 50 mH Inductive
Accuracy (calibrated 25°C)	< 0.15 %
Accuracy (uncalibrated)	< 0.30 %
Range	0 – 22 mA

Table 3 - Analog Output channel specification

2.4. ELECTRICAL

Specification	**Rating**
Power requirements	Input: 12 – 28V DC, 30mA @ 24 VDC – With no field device attached. 52mA @ 24 VDC - With a field device at 22mA each. 50mA @12 VDC - With no field device attached. 72mA @ 12 VDC - With a field device at 22mA each.
Power consumption	0.8 W – With no field device attached. 1.4 W – With a field device at 22mA each. 1.7 W – With input channel shorted. (IP Point HART In)
Connector (Power)	Binder M12-A, 5 contact, cable outlet: 4-6 mm, female cable connector, plastic lock, screw terminal connection. (Part Number: 99 0436 10 05)
Connector (Ethernet)	Binder M12-D, 4 contact, cable outlet: 6 - 8 mm, shieldable, CAT 5 screw terminal connection, static ring version (Part number : 99 3729 810 04)
Conductors (field device)	20 AWG (Red, Black, Green)
Enclosure rating	IP66
Temperature	-20 – 70 °C
Emissions	IEC61000-6-4
ESD Immunity	EN 61000-4-2
Radiated RF Immunity	IEC 61000-4-3
EFT/B Immunity	EFT: IEC 61000-4-4
Surge Immunity	Surge: IEC 61000-4-5
Conducted RF Immunity	IEC 61000-4-6

Table 1 - Electrical specification

2.5. CERTIFICATIONS

Certification	Mark
CE Mark	CE
RoHS2 Compliant	RoHS2
ODVA Conformance	EtherNet/IP™ * F/W 1.005
UL Mark File: E494895	c UL us LISTED CLASS 1, DIV 2, GROUPS A, B, C, D
UKCA	UK CA

Table 5 – Certifications

2.6. DIMENSIONS

The figure below shows the IP Point HART dimensions.

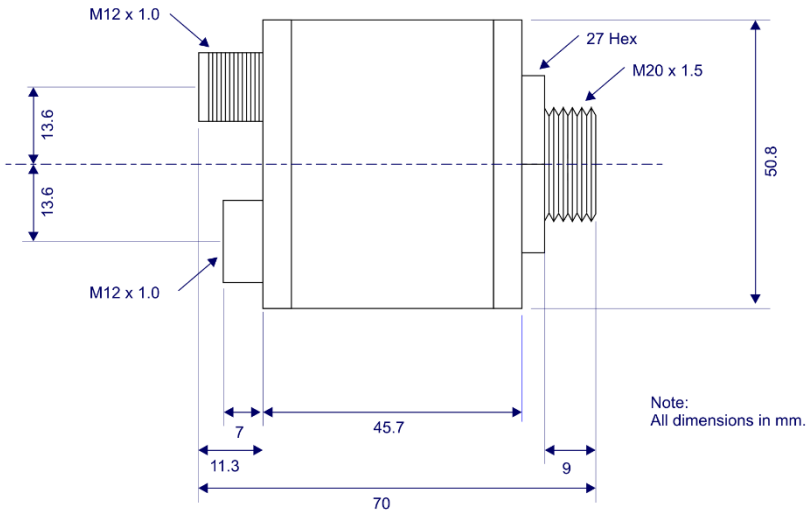

Figure 3 – IP Point HART module enclosure dimensions

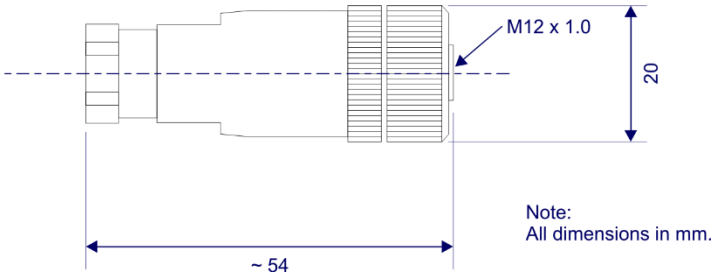

Figure 4 – Power connector dimensions

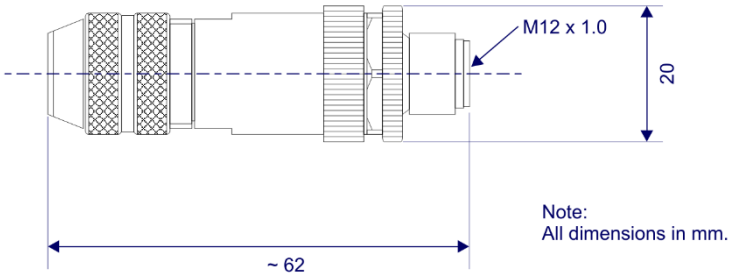

Figure 5 – Ethernet connector dimensions