

HART® Interface Programs

The HART® Interface Programs are designed to allow a properly equipped ROC300-Series Remote Operations Controller or FloBoss™ 407 unit to communicate with devices that use Highway Addressable Remote Transducer (HART) protocol. The HART programs can be used either with a HART Interface Module or with a HART Interface Card. The HART programs are supplied on a CD-ROM.

When loaded into ROC user memory, a HART Interface Program allows HART points and devices to be configured and monitored by means of ROCLINK™ 800 Configuration Software.

The HART program for a HART Interface Module or a HART Interface Card requires the module/card and the configuration software to support HART communications. Variations of this program can be used in a ROC312, a ROC364, or a FloBoss 407.

HART Compatibility

A ROC equipped with a HART module or card and the HART Interface Program is considered to be a HART Host (primary master) interface with a Class 1 Conformance classification. The supported commands are listed in Table 1. Most Universal and some Common Practice commands are supported. The commands numbered from 0 to 18 in the table are Universal Commands; the rest are Common Practice commands. 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 these specifications.

The ROC uses these commands to request and write parameters to a HART device. Commands 1, 2, 3, and 33 are applied to provide four different polling methods for gathering data. When the ROC is used to change a parameter in a HART device, the change is recorded in the ROC event log, showing the description, time of change, the old value, the new value, and who initiated the change.

The HART parameters are referenced in the ROC in the same way as standard point type parameters (Type, Logical Number, and Parameter or TLP). This allows parameters, such as a HART Primary Variable, to be assigned as an input to an American Gas Association (AGA) Flow Calculation: a process variable for a Proportional, Integral, and Derivative (PID) loop: a variable for local display: or a variable for any other ROC function.

Two point types are added to the ROC protocol by the HART Interface Program: one for HART Point Configuration Parameters, and the other for HART Device Configuration Parameters.

Table 1. Supported HART Commands

Number	Description
0	Read unique identifier
1	Read primary variable or primary value
2	Read PV current and percent of range
3	Read dynamic variables and PV current
6	Write polling address
11	Read unique ID associated with device tag
12	Read message
13	Read device tag, descriptor, and date
14	Read PV sensor information
15	Read PV output information
17	Write message
18	Write device tag, descriptor, and date
33	Read transmitter (Slot) variables
35	Write primary variable range values
36	Set PV upper range value
37	Set PV lower range value
38	Reset configuration-changed flag

HART Configuration

The HART points are configured from the Configure HART Point display screen, which is accessed from a menu of the ROCLINK 800 software.

The HART devices are configured from the Config HART Device screen (shown in Figure 1), which is also accessed from a menu of the configuration software.

Once the HART points and devices are configured, higher-level functions (such as AGA flow calculations) can be set up using HART parameters.

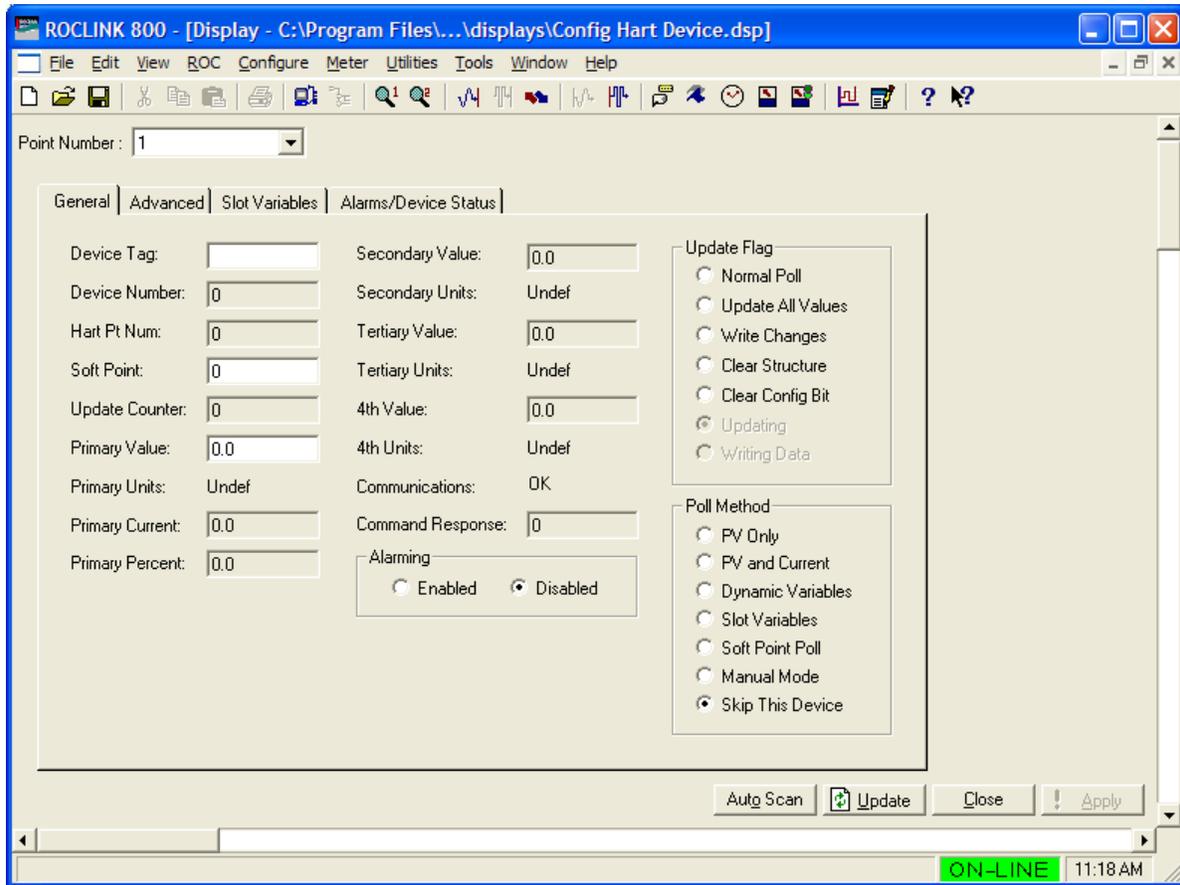


Figure 1. Configuring HART Device Screen

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