Remote Operation
Instructions
HART Communicator 275
Asset Management Solutions (AMS)
Process Device Manager (PDM)

IFC040
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1 General Information

The IFC040 is a two-wire transmitter with 4...20mA current output and HART® capability.

General Characteristics of the IFC040 HART® interface:

- Multidrop Mode is supported
- Burst Mode is not supported

Electrical connection: Refer to sections 2.1, 2.2 of the “Installation and Operating Instructions. ALTOFLUX 2W IFM 4042 K. Electromagnetic flowmeters”, Feb. 2001.

2 IDs and Revision numbers

The HART Device Descriptions described in this document have the following IDs and revision numbers:

- Manufacturer ID: 69 (0x45)
- Device Type: 233 (0xE9)
- HART module : 3.18748.0400
- Device Revision: 2
- DD Revision: 1
- HART Universal Revision: 5
- HC 275 OS Revision: ≥ 4.9
- AMS Version: ≥ 5.0
- PDM Version: ≥ 5.1+SP2

3 Implementation Peculiarities

Transmitter

- Only subsets of device configuration parameters and dynamic data are involved in HART transactions, i.e. can be handled from remote hosts. For details refer to the “Transmitter-Specific Command Specification”.
- Write protection is not applicable to device.

4 HART Communicator 275 (HC275)

4.1 Installation

The HC275 has to be programmed with the IFC040 HART Device Description. Otherwise the HC275 user will work with the instrument as a generic one thus loosing opportunity for entire instrument control.

4.2 Operating

Refer to the IFC040 Menu Tree HC275 (Attachment A).

The IFC040 operation via HC275 is made quite close to the manual instrument control via keypad.

The online help of each parameter contains its function number as a reference to the device’s local display and the “Installation and Operating Instructions”.

While storing data in HC275 from connected instrument, the difference between "standard configuration" of HC275 and its “full configuration” consists in some read-only parameters (sensor limits, device modules’ IDs, etc.) that are either transferred to AMS (“full configuration”) or are shown on AMS tabs as empty fields (“standard configuration”). Clear the latter corresponds to situation when HC275 ⇒ AMS configurations’ transfer is undertaken.
5 Asset Management Solutions (AMS)

5.1 Installation
If the IFC040 Device Description is not already installed on the AMS System a so called Installation Kit IFC040 HART AMS is needed (available on floppy disk from KROHNE or as download from KROHNE Internet page). For installing the DD with the Installation Kit refer to the “AMS User's Guide” section 3: “Managing HART Devices” / “Adding new Device Types to AMS” / “Install Device Types Manually”.

5.2 Operating
Refer to the IFC040 Menu Tree AMS (Attachment B). Due to AMS requirements and conventions the IFC040 operation differs a little from operation with HC275 and via local keypad. The online help of each parameter contains its function number as a reference to the device’s local display and the “Installation and Operating Instructions”. Due to implementation peculiarities (refer to section 3, DDL) after the “Configuration Properties...” view is open, its ‘Process Input’ tab has empty fields for format specifiers (also local DDL variables). That is normal: AMS does not initialize the local variables, their default values are used after downloading.

6 Process Device Management (PDM)

6.1 Installation
If the IFC040 Device Description is not already installed on the PDM System a so called Device Install is needed (available on floppy disk from KROHNE or as download from KROHNE Internet page). Before installing the DD with the Installation Kit, please read the “readme.txt”, which is also contained in the Device Install.

6.2 Operating
Refer to the IFC040 Menu Tree PDM (Attachment C-E). Due to PDM requirements and conventions the IFC040 operation differs a little from operation with HC275 and via local keypad. The online help of each parameter contains its function number as a reference to the device’s local display and the “Installation and Operating Instructions”.

Remote Operation Instructions IFC040 HART

Attachment A

IFC040 Menu Tree HC275

1 Process Variables
- 1 Raw Flow
- 2 Smoothed Flow
- 3 Positive Totalizer
- 4 Negative Totalizer
- 5 Current Output Value
- 6 PV %Range

2 Operation
- 1 Full Scale
- 2 Time Constant
- 3 Cutoff `On` value
- 4 Cutoff `Off` value
- 5 Display

3 Test
- 1 Loop Test (M)
- 2 Hardware Info
- 3 Sensor Limits

4 Installation
- 1 Apply values (M)
- 2 Zero trim (M)
- 3 HART

5 Quit/Reset
- 1 Counter reset (M)
- 2 Error reset (M)
- 3 Master reset (M)

6 HART Variables
- 1 Tag
- 2 Device Id
- 3 Field Device Rev
- 4 Software Rev
- 5 Hardware Rev
- 6 Message
- 7 Descriptor
- 8 Date
- 9 Final assembly num
- 10 PV Sensor serial num
- 11 Polling address

Designations:
- loc – Local HC275 variable, that is not read/written to instrument;
- (M) – Method is invoked to retrieve/change data.
IFC040 Menu Tree AMS

Designations:

→ refer to the next page.
Remote Operation Instructions IFC040 HART

Attachment B

IFC040 Menu Tree AMS

Designations:

\( ^{rd} \) – Read-only variable;

\( ^{loc} \) – Local AMS variable, affects only AMS faceplates and configuration tabs and is not read/written from/to instrument.

Process Variables
Status
Scan Device

Diagnostics and Test
Calibrate

Error reset
Counter reset
Master reset

Assign
Unassign
Rename

Audit Trail
Drawing Notes ...
Help ...

Clear Offline Configuration
Compare Configurations
Configuration Properties

Loop test

Zero trim
Apply values

D/A low trim
D/A high trim

Calibration Management

Basic Setup
• PV Sensor serial num
• Upper Sensor Limit\(^{rd}\)
• Sensor Minimum Span\(^{rd}\)
• Time Constant
• Cutoff ‘On’ value
• Cutoff ‘Off’ value
• Full Scale Value
• Flow Min\(^{rd}\)

• ADC firmware Id\(^{rd}\)
• I/O firmware Id\(^{rd}\)
• Display firmware Id\(^{rd}\)
• HART firmware Id\(^{rd}\)

Process Input
Data units
• Flow Units
• Totalizer Units

Time Constant

Data formats
• Flow format\(^{loc}\)
• Totalizers’ format\(^{loc}\)

Device/HART
• Model\(^{rd}\)
• Manufacturer\(^{rd}\)
• Field device revision\(^{rd}\)
• Hardware revision\(^{rd}\)
• Software revision\(^{rd}\)
• Universal revision\(^{rd}\)
• Num request preams\(^{rd}\)
• Polling address

• Tag
• Device Id\(^{rd}\)
• Final assembly num
• Date
• Descriptor
• Message
Remote Operation Instructions IFC040 HART

Attachment C

IFC040 Menu Tree PDM

Identification

Operation Unit
-------------------------
Device

Input

• Tag
• Descriptor
• Message

• Manufacturer ID
• Devicetype
• Device ID
• Universal revision
• Transmitter revision
• Software revision
• Hardware revision
• Sensor serial number
• Final assembly number
• Date

• Time Constant
• Cut On Value
• Cut Off Value
-------------------------
Mesuring Limits
-------------------------
Process Value Scale

• Upper Sensor Limit
• Sensor min span

• Full Scale

Human Interface

• Flow units
• Flow format<sub>loc</sub>
• Totalizer units
• Totals format<sub>loc</sub>

• Flow

Loc
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Attachment D

IFC040 Menu Device

<table>
<thead>
<tr>
<th>Communication Way</th>
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<tbody>
<tr>
<td>Set Address</td>
</tr>
<tr>
<td>Load to Device</td>
</tr>
<tr>
<td>Load to PG/PC</td>
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<table>
<thead>
<tr>
<th>Test</th>
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<tbody>
<tr>
<td>Reset / Quit</td>
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<table>
<thead>
<tr>
<th>Sensor calibration</th>
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<tbody>
<tr>
<td>Analog Output</td>
</tr>
</tbody>
</table>

| Hart Communication |

- Loop Test
- Counter reset
- Error reset
- Configuration flag reset
- Master reset
- Apply Values
- Zero Trim Primary Value
- I 4 mA Trim
- I 20 mA Trim
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Attachment E

IFC040 Menu View

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<thead>
<tr>
<th>Display</th>
<th>Measured Value</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Flow</td>
</tr>
<tr>
<td></td>
<td>Flow, scaled by URV/LRV</td>
</tr>
<tr>
<td></td>
<td>Positive Totalizer</td>
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<tr>
<td></td>
<td>Negative Totalizer</td>
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<table>
<thead>
<tr>
<th>Output</th>
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<tbody>
<tr>
<td>Current Output</td>
</tr>
<tr>
<td>Flow, Percent Range</td>
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<table>
<thead>
<tr>
<th>Yt – Diagramm</th>
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<table>
<thead>
<tr>
<th>Device Status</th>
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<tbody>
<tr>
<td>Device</td>
</tr>
<tr>
<td>Device ID</td>
</tr>
<tr>
<td>Universal revision</td>
</tr>
<tr>
<td>Transmitter revision</td>
</tr>
<tr>
<td>Software revision</td>
</tr>
<tr>
<td>Hardware revision</td>
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<tr>
<td>Sensor serial number</td>
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<tr>
<td>Final assembly number</td>
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<tr>
<td>Date</td>
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<table>
<thead>
<tr>
<th>Device Diagnosis</th>
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<tr>
<td>Device Status</td>
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<td>Status Group 1</td>
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<td>Status Group 6</td>
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<table>
<thead>
<tr>
<th>Hardware Info</th>
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<tbody>
<tr>
<td>ADC module dynamic status</td>
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<td>I/O module dynamic status</td>
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<tr>
<td>Display module dynamic status</td>
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<td>HART module dynamic status</td>
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<table>
<thead>
<tr>
<th>Toolbar</th>
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<table>
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<th>Statusbar</th>
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