

## Communication and Software

### Communication

#### HART protocol

##### Overview

HART is a widely used communication standard for field devices. Specification of HART devices takes place through the HCF (HART Communication Foundation).

The HART standard expands the analog 4 to 20 mA signal for modulated, industry-proven, digital signal transmission.

##### Benefits

- Service-proven analog measured value transmission
- Simultaneous digital communication with bidirectional data transmission
- Possibility of transmitting several measured variables from one field device (e.g. diagnosis, maintenance and process data)
- Connection to higher-level systems such as PROFIBUS DP
- Easy installation and startup

Use in conjunction with SIMATIC PDM

- Cross-vendor operation of all HART devices by means of standardized parameter records
- HART field devices that are described by HART DD are integrated in SIMATIC PDM through the HCF catalog. HART DD (Device Description) is standardized in SIMATIC PDM, multi-vendor and very widely used. Other HART field devices are integrated in SIMATIC PDM through EDD (Electronic Device Description)
- Easy operation and startup of field devices, also in hard-to-reach locations
- Expanded diagnosis, evaluation and logging functions

##### Application

These devices can be connected in different ways:

- Using the distributed I/O system
  - SIMATIC ET 200M with the HART modules
  - SIMATIC ET 200iSP with the HART modules or with analog modules 4 to 20 mA and a HART handheld communicator
- Using a HART modem, with which a point-to-point connection is established between the PC or engineering station and the HART device
- Using HART multiplexers, which are contained in the HART server of the HCF

##### Integration

Siemens field devices for process automation which are listed in this catalog and can be controlled using HART:

##### Measuring instruments for pressure

SITRANS P300  
SITRANS P310  
SITRANS P320  
SITRANS P DS III  
SITRANS P410  
SITRANS P420  
SITRANS P500

##### Measuring instruments for temperature

SITRANS TF  
SITRANS TH300  
SITRANS TH320  
SITRANS TH420  
SITRANS TR320  
SITRANS TR420  
SITRANS TR300  
SITRANS TW

##### Flowmeters

SITRANS F M MAG 5000  
SITRANS F M MAG 6000 19" / IP67  
SITRANS F M MAG 6000 I / I Ex  
SITRANS F M Transmag 2  
SITRANS F C MASS 6000 19" / IP67 / Ex d  
SITRANS F C FCT030  
SITRANS F S FST030  
SITRANS FUS060  
SITRANS FX300  
SITRANS FX330

##### Measuring instruments for level

SITRANS Probe LR  
SITRANS Probe LU  
SITRANS LUT400  
SITRANS LR200  
SITRANS LR250  
SITRANS LR260  
SITRANS LR460  
SITRANS LR560  
SITRANS LG240 / LG 250 / LG 260 / LG 270

##### Positioners

SIPART PS2

##### Power supply units and isolation amplifiers

SITRANS I

##### Selection and Ordering data

Article No.

##### HART modem

With USB connection

**7MF4997-1DB**