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SKE-660 HART COMMUNICATOR

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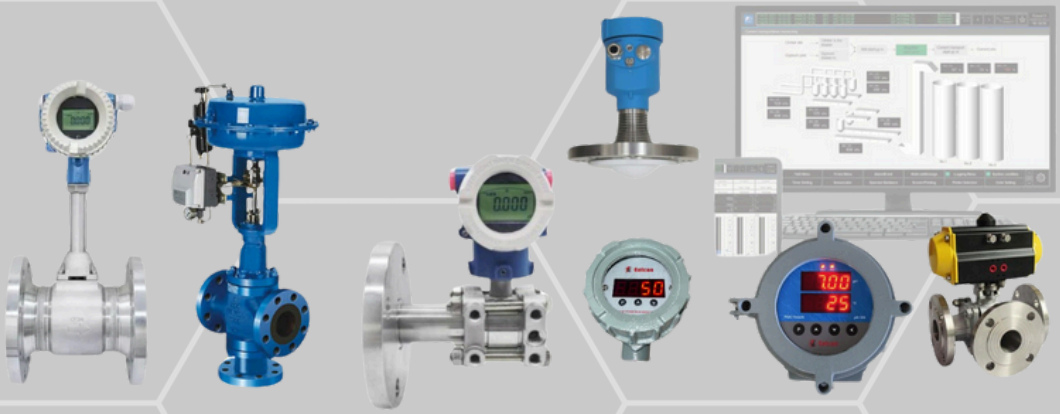
ISO 9001:2015

IP67

NABL



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01.
HART protocol Introduction

HART Protocol Introduction and Application

Basic Concepts of HART Protocol

01

The HART protocol, Highway Addressable Remote Transducer, is a hybrid communication protocol widely used in the field of industrial automation. By superimposing digital signals on 4-20mA analog signals, the HART protocol can realize the configuration, calibration and diagnosis of remote devices.

Convenience and compatibility

02

Instruments based on the HART protocol can be seamlessly integrated into existing control systems without the need for large-scale hardware upgrades or process modifications. This feature makes HART instruments widely applicable in various industrial environments.

Combining digital and analog signals

03

The HART protocol is unique in that it combines analog and digital signals. The analog signal is used to transmit process variables, such as pressure or temperature, while the digital signal transmits device configuration information and diagnostic data.

Application scenarios of Hart instrument

Pressure measurement

HART instruments are widely used in pressure measurement, providing accurate measurement of process variables and transmitting data via the HART protocol. This allows users to remotely adjust parameters away from the device.

Temperature measurement

HART instruments are also commonly used for temperature measurement. They can accurately measure and transmit temperature data to ensure the stability and reliability of the production process.

Valve Positioner

The valve positioner needs to control the valve opening according to the input 4-20mA signal, which is particularly suitable for the HART protocol.

Flow measurement

Using the measurable parameters of the HART protocol, the flow meter can transmit key parameters such as flow rate and flow rate in real time, making it easier for users to monitor and control the process.

Remote diagnosis

The HART protocol supports remote diagnosis and data collection of equipment, allowing operators to check and maintain instruments without being restricted by the physical location of the equipment. This data is crucial for optimizing production processes and improving equipment maintenance levels.

02. DD Analysis

What is the DD file

File Format

DD files usually follow specific formats and standards to ensure that instrument devices from different manufacturers can be correctly identified and compatible with standard HART handheld communicators, providing a unified basis for communication between devices and tools.

DD file definition

DD（Device Description file is the device description file of each HART instrument, which specifies the instrument's functions, menu structure, and parameter configuration methods in detail, so that the handheld operator can correctly identify and interact with the device.

Importance of Documents

Only with the correct DD file can the hart communicator recognize all function menus of the device, including advanced settings, private menus and special configuration options, thereby achieving comprehensive control and debugging of the instrument.

Advantages of supporting DD Analysis

Hart communicator support DD analysis

HART communicator that supports DD analysis can recognize and load the complete function menu of the HART instrument, including advanced settings, private menus and special configuration options, and can realize all debugging functions of the instrument.

Does not support DD analysis

HART communicator that do not support DD analysis can only perform basic process variable reading and simple configuration, and cannot access all functions of the instrument, limiting its applicability and practicality.

03. SKE-660 HART COMMUNICATOR Product Introduction

Product Overview

SKE-660 full-function HART COMMUNICATOR is an integrated full-function HART COMMUNICATOR based on DD analysis. It supports private menus and detailed settings of all HART instruments, has a built-in 24V/250 ohm resistor, a built-in current signal generator, and supports DD menu translation.

Features

- Industrial triple-proof design, protection level IP67
- Intrinsically safe explosion-proof design, can be operated in hazardous area 1
- Two-color injection molding process, the housing comes with an outer layer of silicone, which has better anti-fall performance
- Based on DD analysis, it supports private menus and detailed settings of all HART instruments
- DD comes with the latest DD library;
- DD library is updated for free
- Support manual import of DD files;
- Built-in 24V/250 ohm, software can choose to turn off the built-in power supply resistance/only turn on the 250 ohm resistance/turn on the 250 ohm resistance and 24V power supply
- Built-in 0-22mA current signal generator; current can be set by software or switched to voltage mode
- Support remote debugging of the instrument via the Internet.
- Support DD menu translation

Hardware and operating system

Processor Cortex-A53 Octa-core 64-bit 2.0GHz

RAM+ROM 4GB+64GB

Operating system Android 9.0

Physical properties

Weight 300 g

Dimensions 168mm x 84mm x 17.5mm

Display 5.5-inch capacitive touch screen, 1280*720 pixels

Button 1 power button, 2 custom buttons

Batteries, adapters

4200mAH polymer battery
Standby time 300 hours

Battery Continuous use time (without 24V power output) >12 hours
Continuous use time (24V, 4mA) > 10 hours
Continuous use time (24V, 20mA) > 8 hours
Charging time 4 hours

Battery Charger Input voltage 100-240V, output 5V/2A

connect USB, charging port TYPE-C interface

Wireless connectivity Bluetooth BT5.0, range 10 meters

Wi-Fi 2.4G/5G dual-band, support 802.11a/b/g/n/ac/,IPV4,IPV6

HART Communication Physical layer standards
FSK Physical Layer Specification, HCF_SPEC-054

HARR Debugging Supports DD analysis and can realize all debugging functions of HART instruments

Localization Features Support DD menu translation, real-time translation of menus for instruments that do not support Chinese in DD files

Communication terminal Test hook or alligator clip

Instrument connection Dual 4mm banana plugs

Output Function Internal 25002/24V voltage + 25002/0-22mA current generator can be set

Explosion-proof protection

Explosion proof signs Ex ib II CT4 Gb

Protection level environment IP67

Operating temperature -20°C +50 °C

Ambient humidity 0%~95%, no condensation

item	SKE-660	TREXCH	TREXLH
operating system	Android	Win CE	Win CE
CPU	2000M/8 cores	800M	800M
RAM+ROM	4GB+64GB	0.5GB+2GB	0.5GB+2GB
Display	5.5"/1280x720	5.7"/64x480	5.7"/64x480
weight	300g	1330g	1330g
size	168 x 84mm	197x 140mm	197 x 140mm
Full-featured HART	✓	✓	✓
Built-in power supply	24V/30mA	—	22.9V/22.5mA
Built-in current signal generator	✓	—	✓
Current resolution	0.01mA	—	0.1mA
DD Menu Translation	✓	—	—
Remote debugging	✓	—	—
HART Interface	A pair	一对	Multiple pairs
Intrinsically safe explosion-proof	Ex ib II CT4 Gb	Ex ia[ia Ga][ia Da IIIC] IIC T4 GB	