

Field display for current loops with HART® communication Models DIH50, DIH52, DIH62

WIKA data sheet AC 80.10



for further approvals
see page 7



Applications

- Process engineering
- Plant construction
- General industrial applications
- Oil and gas industry

Special features

- Automatic measuring range configuration via HART® communication between HART® master and transmitter
- Indication range -9999 99999 / bar graph
- Display for units and various status messages
- Ex versions
 - Model DIHxx-B: intrinsically safe
 - Model DIH5x-F: flameproof enclosure
- HART®: Secondary master function and multidrop capability (models DIH52, DIH62)



Fig. left: field display models DIH50, DIH52
Fig. right: field display model DIH62

Description

The DIH series field displays are 4 ... 20 mA current loop indicators which can, in addition, offer a superimposed HART® communication between the connected transmitter and the control room. Thus the indication range and units are automatically adopted dependent on the settings of the connected HART® transmitter.

Common units for temperature and pressure are factory-set. An additional "user unit" is freely programmable.

With this field display it is possible to display range alarms as well as MIN and MAX values. Error-current signals from the connected transmitters are also detected and displayed. The display can be used in conjunction with any 4 ... 20 mA transmitter.



The field displays are powered directly from the 4 ... 20 mA current loop, with a resultant voltage drop of less than 3 V.

The field displays can be mounted directly onto a wall. An optional pipe mounting kit is available for fitting to pipes with a diameter of 1 ... 2".

The model DIHxx-B, DIHxx-Z basic modules are also available separately for mounting into other suitable enclosures.

The model DIH5x field displays consist of an aluminium field case with a built-in basic module.

The model DIH62 digital displays are available with various case materials, such as plastic, stainless steel and aluminium.

Specifications	Model DIH50	Models DIH52, DIH62
Display		
■ Principle	LCD, rotatable in 10° steps	
■ Measured value	7-segment LCD, 5-digits, character size 9 mm	
■ Bar graph	20-segment LCD	
■ Information line	14-segment LCD, 6-digit, character size 5.5 mm	
■ Status indicators	♥ : HART® mode (signalling of HART® parameter adoption)  : Unit lock  : Warnings or error messages	
■ Indication range	-9999 ... 99999	
Measuring rate	4/s	
Accuracy	±0.1 % of the measuring span	±0.05 % of the measuring span
Temperature coefficient	±0.1 % of the measuring span / 10 K	
Input signal	4 ... 20 mA	
Output signal	analogue current signal is connected through directly	
Permissible current load	100 mA	
Voltage drop	< DC 3 V (< DC 2 V at 20 mA); supply via current loop	
HART® functionality		
■ Access control	-	Secondary master
■ Automatically set parameters	Unit, measuring range	
■ Available commands	-	Unit, measuring range start/end, format, zero point, span, damping, polling address
■ Identified commands	Generic mode: 1, 15, 35, 44	Generic mode: 0, 1, 6, 15, 34, 35, 36, 37, 44
■ Multidrop	not supported	Measured values are automatically taken from the HART® digital data and displayed
Electrical connection		
■ Signal input	Model DIH5x-B, DIHxx-Z: flying leads, 0.5 mm ² (basic module) Models DIHxx-I, DIHxx-F, DIHxx-S: internal spring-clip terminals, connection cross section max. 2.5 mm ² (field display)	
■ Signal output	captive screw terminals, connection cross section max. 2.5 mm ²	
Permissible		
■ Ambient temperature	-20 ... +85 °C	-20 ... +70 °C
■ Storage temperature	-40 ... +85 °C	
■ Humidity	35 ... 85 % r. h. (non-condensing)	
■ Vibration resistance	3 g, per DIN EN 60068-2-6	
■ Shock resistance	30 g, per DIN EN 60068-2-27	
CE conformity		
■ EMC directive	2004/108/EC, EN 61326 Emission (Group 1, Class B) and Immunity (industrial locations)	

Field case	Models DIH50, DIH52	Model DIH62
Material	Aluminium, stainless steel; Window from polycarbonate	Aluminium, plastic, stainless steel; Window from polycarbonate
Colour	Aluminium: Night blue, RAL 5022 Stainless steel: Silver	Aluminium, plastic: Night blue, RAL 5022 Stainless steel: Silver
Cable glands	3 x M20 x 1.5 or 3 x ½ NPT	2 x M20 x 1.5 or 2 x ½ NPT
Ingress protection	IP 66	
Weight	Aluminium: approx. 1.5 kg Stainless steel: approx. 3.7 kg	
Dimensions	see drawing	

Basic module, HART® loop module	Models DIHxx-B, DIHxx-Z
Material	Polycarbonate
Ingress protection	IP 20
Weight	approx. 80 g
Dimensions	see drawing

Model overview and their approvals - Explosion protection / supply voltage

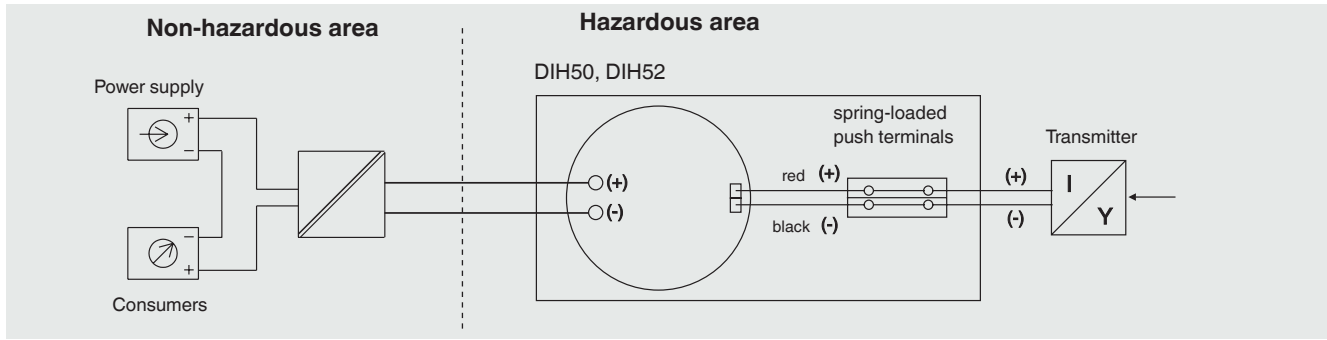
Model	Approvals	Ambient/storage temperature (in accordance with the relevant temperature classes) ¹⁾	Safety-related maximum values for current loop (± connections)	Power supply U _B (DC)
DIH50-S, DIH52-S, DIH62-S (field display)	without	-20 ... +85 °C	-	14.5 ... 42 V
DIH50-Z, DIH52-Z, DIH62-Z (HART® loop module)	without	-20 ... +85 °C	-	14,5 ... 42 V
DIH50-B (HART® loop module)	II 1G Ex ia IIC T4/T5/T6 Ga II (1) 2G Ex ia IIC T4/T5/T6 (Ga) Gb BVS 10 ATEX E 016 X IECEx BVS 10.0037X II 1D Ex ia IIIC T120 °C Da II (1) 2D Ex ia IIIC T120 °C (Da) Db BVS 10 ATEX E 016 X IECEx BVS 10.0037X	-40 ... +85 °C at T4 -40 ... +75 °C at T5 -40 ... +55 °C at T6 -40 ... +40 °C (P _i = 660 mW) -40 ... +70 °C (P _i = 630 mW)	U _i < 29 V I _i < 100 mA P _i < 660 mW C _i = 12 nF L _i = 2.2 µH	14.5 ... 29 V
DIH50-B (HART® loop module)	CSA (1946893 (LR 66027) Class I, Division 1 + 2, Groups A, B, C, D FM (3031500) Class I, Division 1, Groups A, B, C, D (IS/II/1/ABCD/T* + IS/II/0AEx ia/IIC/T*) Class I, Division 2, Groups A, B, C, D NI/II/2/ABCD/T* + NI/II/2/IIC/T*	-40 ... +85 °C at T4 -40 ... +75 °C at T5 -40 ... +55 °C at T6	U _i = 29 V (V _{max} < 29 V) I _i = 100 mA (I _{max} < 100 mA) P _i = 660 mW (P _{max} < 660 mW) C _i = 12 nF L _i = 2.2 µH	
DIH52-B, DIH62-B (HART® loop module)	II 1G Ex ia IIC T4/T5/T6 Ga II (1) 2G Ex ia IIC T4/T5/T6 (Ga) Gb BVS 10 ATEX E 016 X IECEx BVS 10.0037X II 1D Ex ia IIIC T120 °C Da II (1) 2D Ex ia IIIC T120 °C (Da) Db BVS 10 ATEX E 016 X IECEx BVS 10.0037X	-40 ... +85 °C at T4 -40 ... +75 °C at T5 -40 ... +55 °C at T6 -40 ... +40 °C (P _i = 680 mW) -40 ... +70 °C (P _i = 650 mW)	U _i < 29 V (27.5 V/26 V) I _i < 100 mA (115 mA/131 mA) P _i < 680 mW C _i = 12 nF L _i = 2.2 µH	
DIH50-F, DIH52-F (field display)	Flameproof enclosure BVS 10 ATEX E 158 IECEx BVS 10.0103 II 2G Ex d IIC T6/T5/T4 Gb II 2G Ex db IIC T6/T5/T4 Ex d IIC T6/T5/T4 Gb Ex db IIC T6/T5/T4	-40 ... +85 °C at T4 -40 ... +75 °C at T5 -40 ... +60 °C at T6	U _M = 30 V P _M = 2 W	14.5 ... 30 V
DIH50-I, DIH52-I, DIH62-I (field display)	Intrinsically safe equipment ²⁾ BVS 10 ATEX E 016 X IECEx BVS 10.0037X Ex ia [ia Ga] II (1) 2G IIC T4/T5/T6 Gb II (1) 2D Ex ia [ia Da] IIIC T120 °C Db II 2G Ex ia IIC T4/T5/T6 Gb II 2D Ex ia IIIC T120 °C Db	-40 ... +85 °C at T4 -40 ... +75 °C at T5 -40 ... +60 °C at T6 -40 ... +40 °C (P _i = 680 mW) -40 ... +70 °C (P _i = 650 mW)	U _i ≤ 29 V I _i ≤ 100 mA P _i ≤ 680 mW C _i = 12 nF L _i = 2.2 µH	14.5 ... 29 V

1) Limited display function within ambient temperature range -40 ... -20 °C

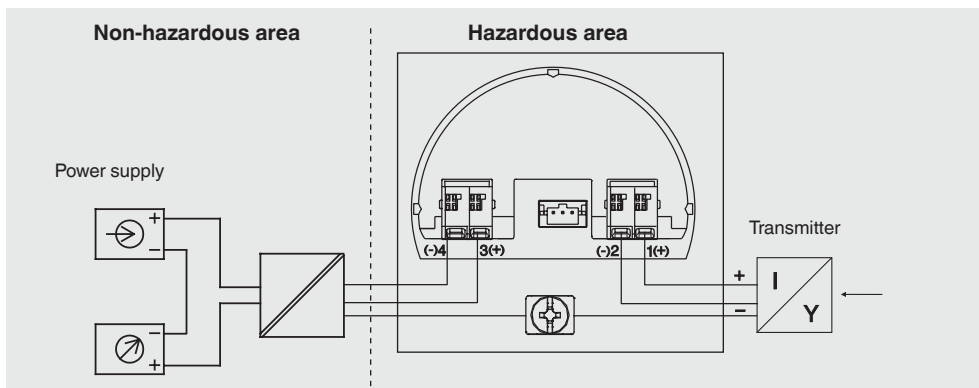
2) The installation conditions for the display must be considered for the final application.

Electrical connection

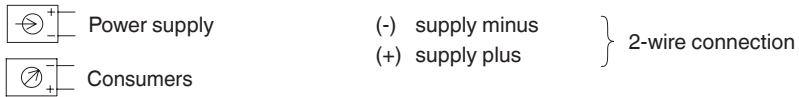
Models DIH50, DIH52



Model DIH62



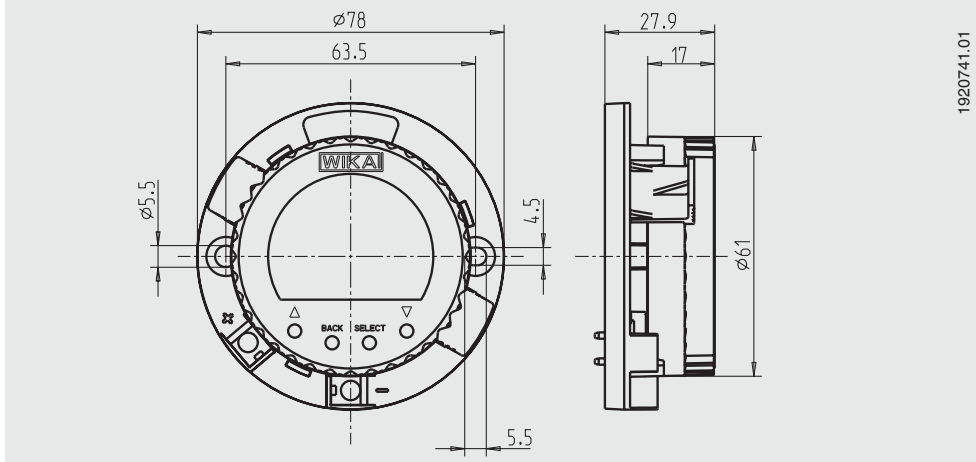
Legend:



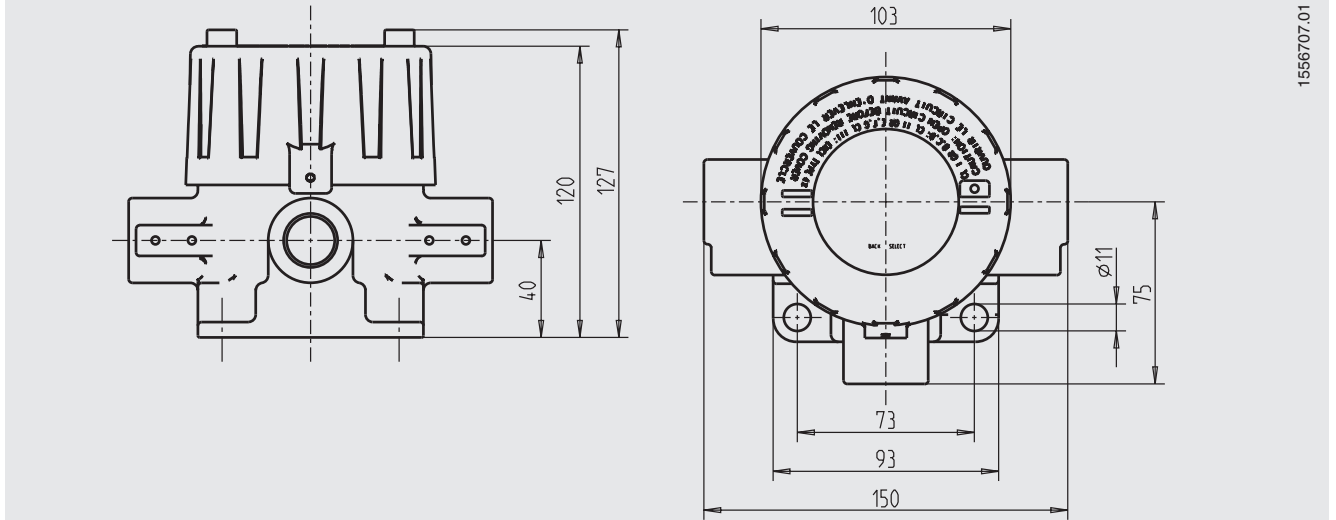
Dimensions in mm

Field display, models DIH50, DIH52

Basic module, models DIH50-B, DIH50-Z, DIH52-B, DIH52-Z

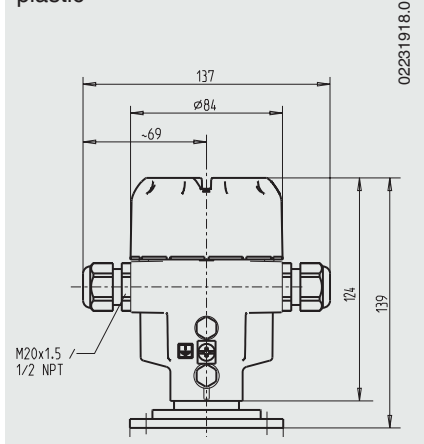


Field display, models DIH50, DIH52 Aluminium/stainless steel

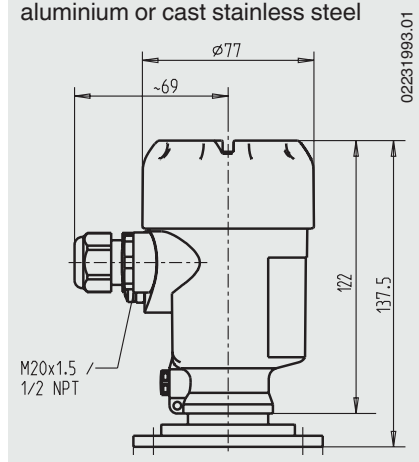


Field display, model DIH62

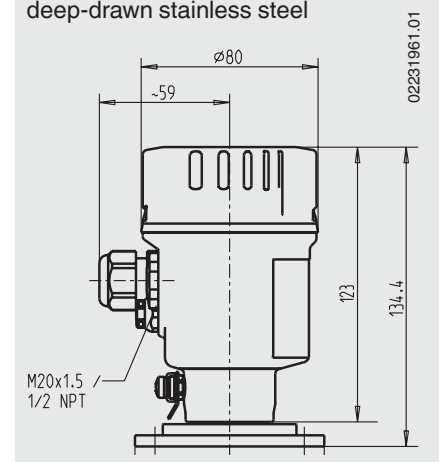
Single chamber housing,
plastic



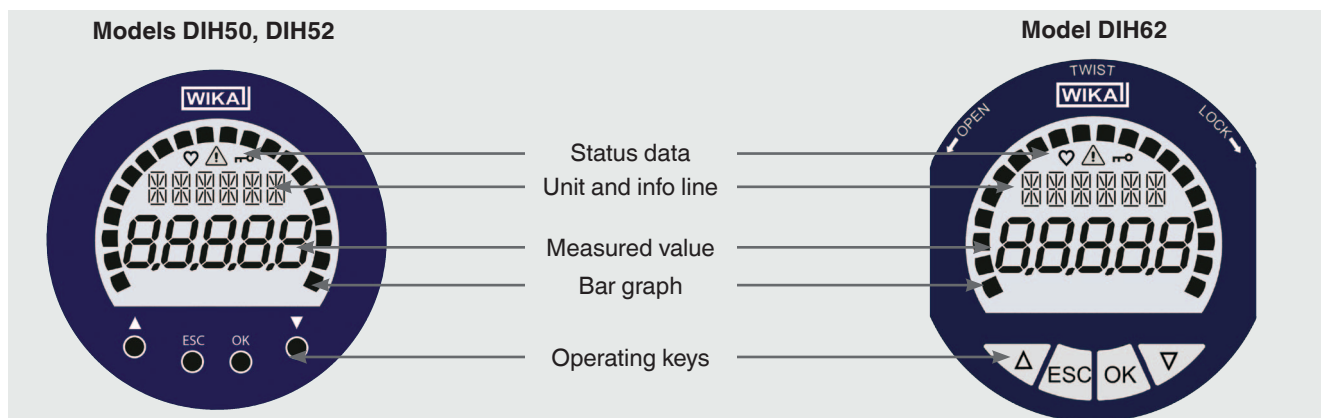
Single chamber housing,
aluminium or cast stainless steel



Single chamber housing,
deep-drawn stainless steel



User interface



Accessories

Model	Special features	Order No.
Surface mounting bracket for model DIH62	Mounting bracket for wall or pipe mounting, stainless steel	11495210
Model 010031	HART® modem for USB-interface, specifically designed for use with modern notebooks	11025166
Model 010001	HART® modem for RS-232 interface	7957522
Model 010041	HART® modem for Bluetooth interface [EEx ia] IIC	11364254
FC475HP1EKLUGMT	HART® protocol, Li-Ion battery, power supply AC 90 ... 240 V, without EASY UPGRADE, ATEX, FM and CSA (intrinsically safe)	on request
FC475FP1EKLUGMT	HART® protocol, FOUNDATION™ Fieldbus, Li-Ion-battery, power supply AC 90 ... 240 V, with EASY UPGRADE, ATEX, FM and CSA (intrinsically safe)	on request
MFC4150	HART® protocol, universal power supply, cable set with 250 Ω resistance, with DOF upgrade, with Ex-protection	11405333
Magnetic quick connector magWIK	<ul style="list-style-type: none"> ■ Replacement for crocodile clips and HART® terminals ■ Fast, safe and tight electrical connection ■ For all configuration and calibration processes 	11604328

CE conformity

EMC directive

2004/108/EC, EN 61326 emission (group 1, class B) and interference immunity (industrial application)

ATEX directive

94/9/EG

Approvals

- **IECEX**, international certification for the Ex area
- **FM**, ignition protection type „i“ - intrinsic safety, USA
- **CSA**, ignition protection type „i“ - intrinsic safety, Canada
- **GOST-R**, import certificate, Russia
- **GOST**, metrology/measurement technology, Russia

Certificates (option)

- 2.2 test report
- 3.1 inspection certificate
- DKD/DakkS calibration certificate

Approvals and certificates, see website

Ordering information

Model / Display module / Explosion protection / Housing material / Cable glands / Thread for cable glands / Certificates / Options

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