

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

WIKA data sheet AC 80.10



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
- Scale 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 scale 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 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	
■ Scale 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: 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 % relative humidity (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, window from polycarbonate	Aluminium, plastic, stainless steel, window from polycarbonate
Colour	Night blue, RAL 5022	Night blue, RAL 5022 (aluminium, plastic)/silver (stainless steel)
Cable glands	3 x M20 x 1.5 or 3 x ½ NPT	
Ingress protection	IP 66	
Weight	approx. 1.5 kg	
Dimensions	see drawing	

Basic module	Models DIH50-B, DIH52-B, DIH62-B
Material	Polycarbonate
Ingress protection	IP 20
Weight	approx. 80 g
Dimensions	see drawing

Explosion protection / power supply

Model	Approvals	Ambient/storage temperature (in accordance with the relevant temperature classes) ¹⁾	Safety-related maximum values for current loop (\pm connections)	Power supply U_B (DC)
DIH50-S, DIH52-S, DIH62-S	without	-20 ... +85 °C	-	14.5 ... 42 V
DIH50-B	<p>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</p> <p>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</p>	<p>-40 ... +85 °C at T4 -40 ... +75 °C at T5 -40 ... +55 °C at T6</p> <p>-40 ... +40 °C ($P_i = 660\text{mW}$) -40 ... +70 °C ($P_i = 630\text{mW}$)</p>	<p>$U_j < 29\text{ V}$ $I_j < 100\text{ mA}$ $P_j < 660\text{ mW}$ $C_j = 12\text{ nF}$ $L_j = 2.2\text{ }\mu\text{H}$</p>	14.5 ... 29 V
DIH50-B	<p>CSA (1946893 (LR 66027) Class I, Division 1 + 2, Groups A, B, C, D</p> <p>FM (3031500) Class I, Division 1, Groups A, B, C, D (IS/II/1/ABCD/T* + IS/II/0AEx ia/IIC/T*)</p> <p>Class I, Division 2, Groups A, B, C, D NI/II/2/ABCD/T* + NI/II/2/IIC/T*</p>	<p>-40 ... +85 °C at T4 -40 ... +75 °C at T5 -40 ... +55 °C at T6</p>	<p>$U_j = 29\text{ V}$ ($V_{\text{max}} < 29\text{ V}$) $I_j = 100\text{ mA}$ ($I_{\text{max}} < 100\text{ mA}$) $P_j = 660\text{ mW}$ ($P_{\text{max}} < 660\text{ mW}$) $C_j = 12\text{ nF}$ $L_j = 2.2\text{ }\mu\text{H}$</p>	
DIH52-B, DIH62-B,	<p>II 1 G 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</p> <p>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</p>	<p>-40 ... +85 °C at T4 -40 ... +75 °C at T5 -40 ... +55 °C at T6</p> <p>-40 ... +40 °C ($P_i = 680\text{mW}$) -40 ... +70 °C ($P_i = 650\text{mW}$)</p>	<p>$U_j < 29\text{ V}$ (27.5 V/26 V) $I_j < 100\text{ mA}$ (115 mA/131 mA) $P_j < 680\text{ mW}$ $C_j = 12\text{ nF}$ $L_j = 2.2\text{ }\mu\text{H}$</p>	
DIH50-F, DIH52-F	<p>Flameproof enclosure ²⁾ II 2G Ex d IIC T6/T5/T4 Gb II 2G Ex db IIC T6/T5/T4 BVS 10 ATEX E 158</p> <p>Ex d IIC T6/T5/T4 Gb Ex db IIC T6/T5/T4 IECEX BVS 10.0103</p>	<p>-40 ... +85 °C at T4 -40 ... +75 °C at T5 -40 ... +60 °C at T6</p>	<p>$U_M = 30\text{ V}$ $P_M = 2\text{ W}$</p>	14.5 ... 30 V
DIH50-I, DIH52-I, DIH62-I	Approval pending			

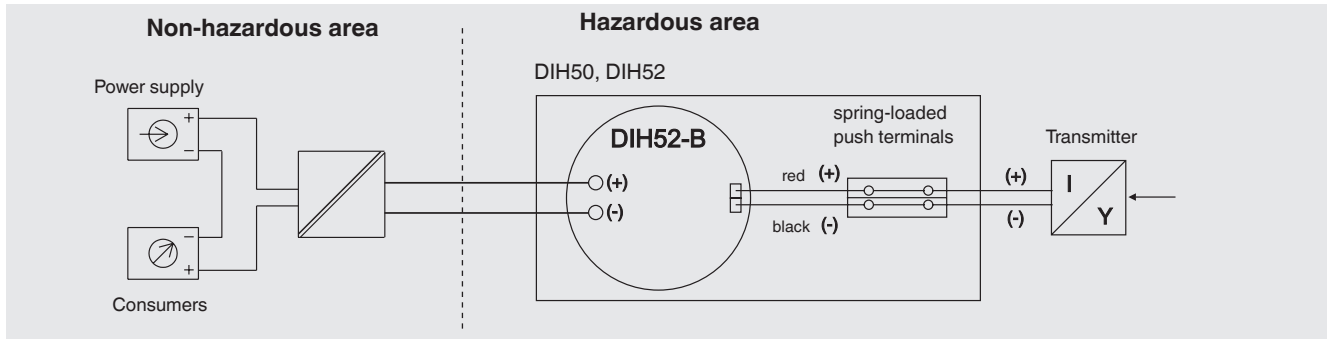
1) Limited display function within ambient temperature range -40 ... -20 °C

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

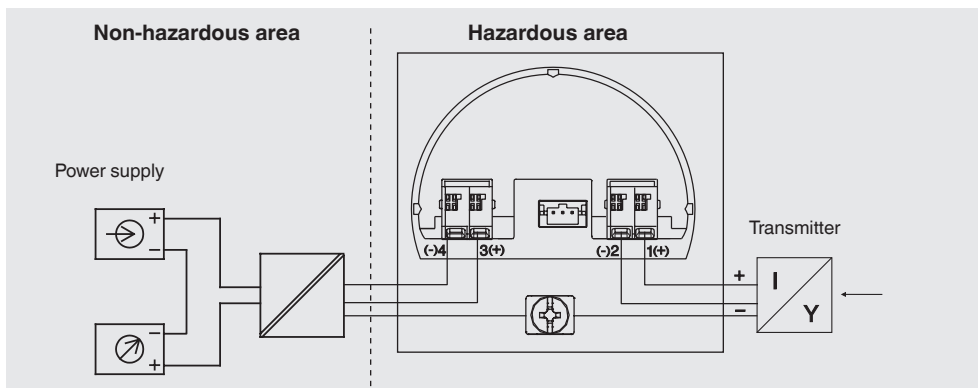
Electrical connection



Models DIH50, DIH52



Model DIH62



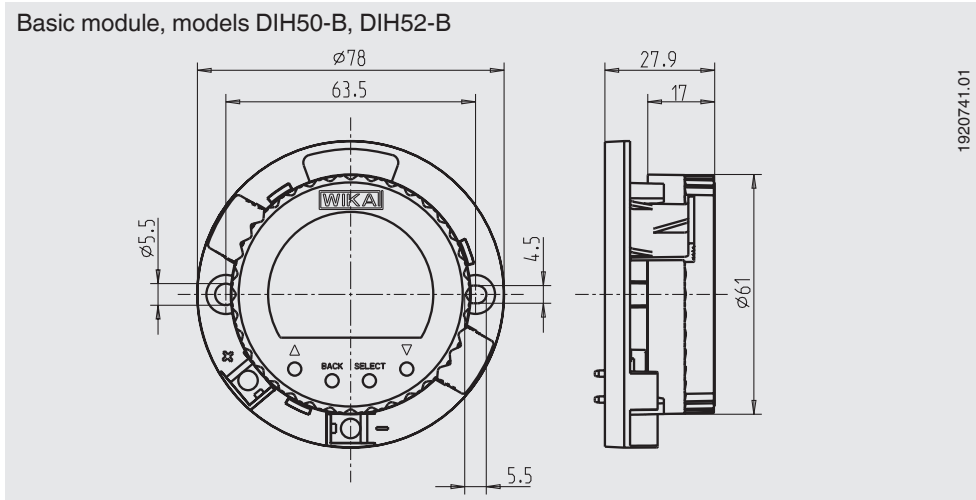
Legend:

- | | | | |
|--|--------------|------------------|---------------------|
| | Power supply | (-) supply minus | } 2-wire connection |
| | Consumers | (+) supply plus | |

Dimensions in mm

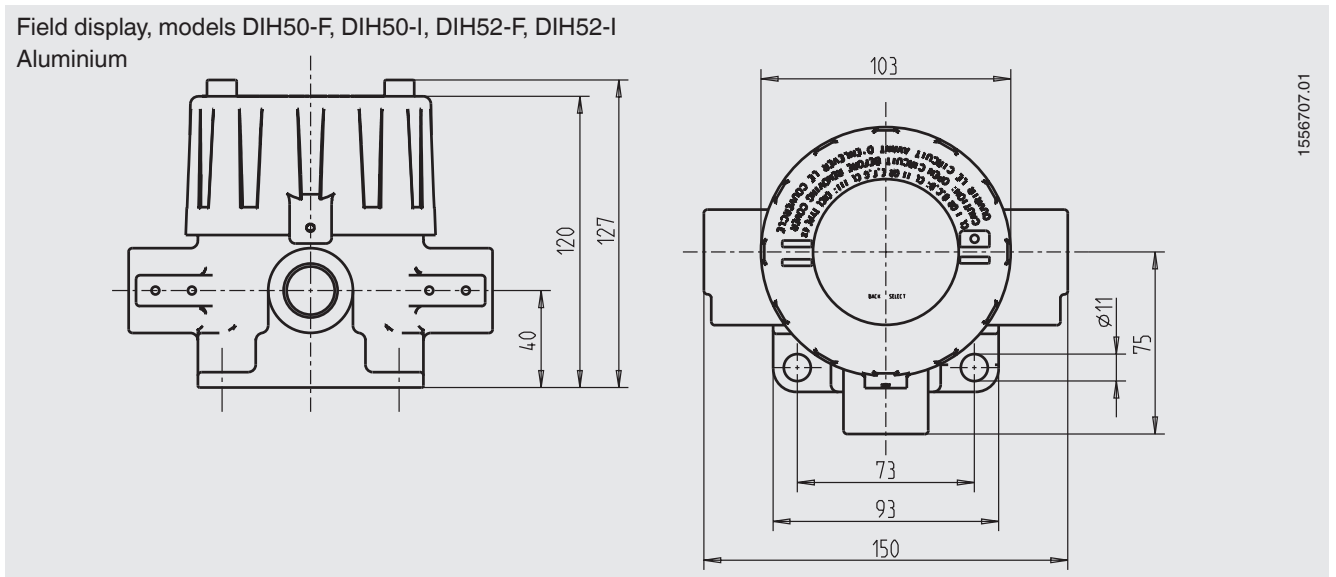
Field display, models DIH50, DIH52

Basic module, models DIH50-B, DIH52-B



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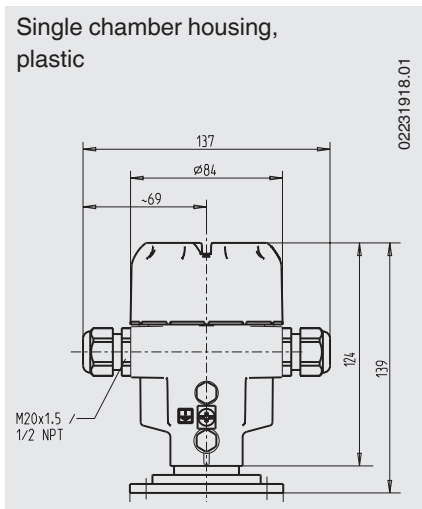
Field display, models DIH50-F, DIH50-I, DIH52-F, DIH52-I
Aluminium



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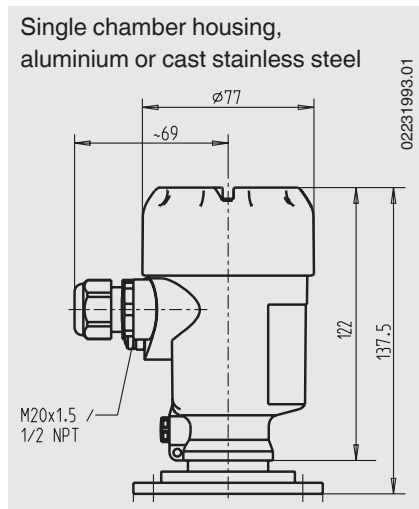
Field display, model DIH62-I

Single chamber housing,
plastic



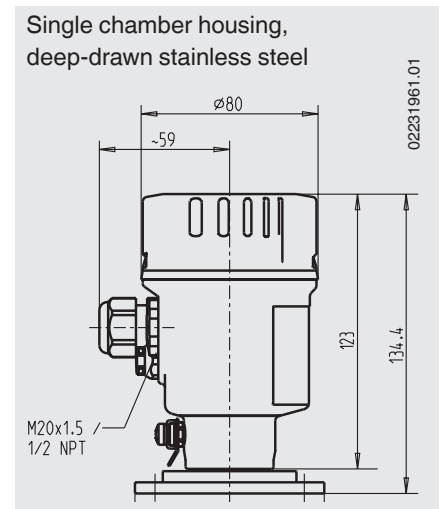
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Single chamber housing,
aluminium or cast stainless steel



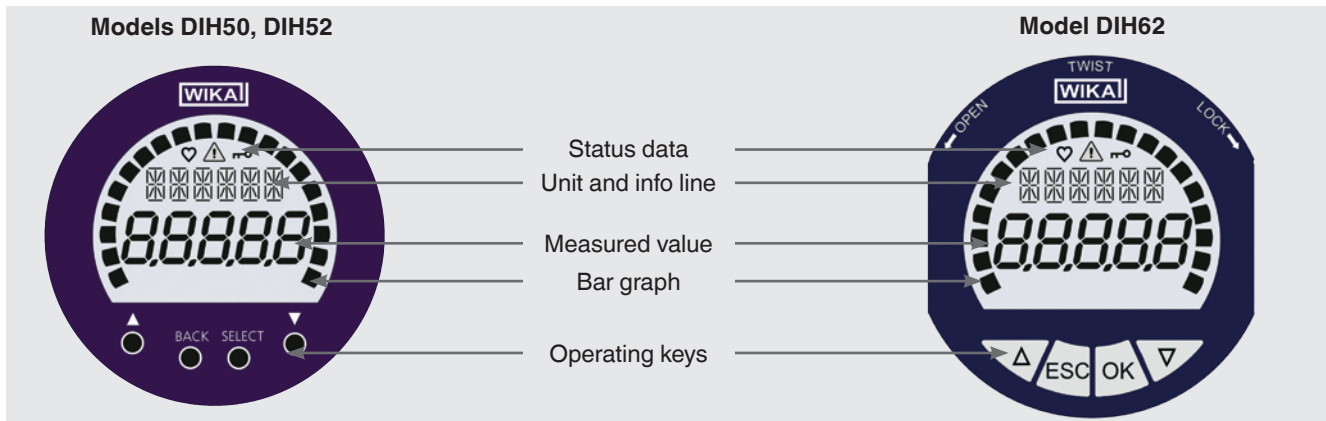
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Single chamber housing,
deep-drawn stainless steel



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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

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