

HYDRA-Gauges

Ultra High Purity Pressure Gauge

Model HG

WIKA Data Sheet SP 99.20

Applications

- Semiconductor industry
- UHP-liquid chemicals distribution

Special features

- Patented double diaphragm
- Perfluoroalkoxy (PFA) wetted parts
- Stainless steel pressure measurement devices
- Gauge is 360° rotatable even after installation
- Optional: electrical alarm contacts

Description

HYDRA-line

Our pressure measuring instruments of the HYDRA-line product family have been developed in co-operation with well-known customers in the semiconductor industry. The complete product concept has been adapted to the special requirements of the process equipment and UHP chemicals distribution system sectors.

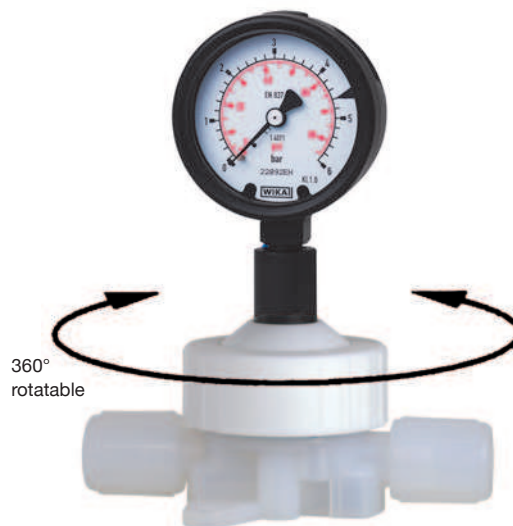
The HYDRA-Gauge pressure gauge offers high accuracy and reliability, ultra clean wetted parts and surfaces.

Furthermore, the production of all wetted parts, cleaning assembly, calibration and packaging takes place in a class 100 cleanroom.

Double safety

The patented HYDRA double diaphragm system enables a safe and reliable separation of the pressure sensor from the process medium. Simultaneously diffusing process media such as HF or HCl vapours are given off to the environment to avoid any falsification of the measuring result or the destruction of the sensor element.

The offer for sale of this product does not infer or imply chemical compatibility with specific applications. Some applications of this product can and will cause diffusion of chemicals through the diaphragm materials.



HYDRA-line Model HG, 63 mm gauge stainless steel series with black Teflon® coating and in-line 1/2" flare process connection



HYDRA-line Model HG, 63 mm gauge stainless steel series with black Teflon® coating and dead-end 1/2" flare process connection

Specifications

Model HG, HYDRA-Gauge

Pressure ranges	bar	0 ... 2.5	0 ... 4	0 ... 6
	psi	0 ... 30	0 ... 60	0 ... 100
	kPa	0 ... 250	0 ... 400	0 ... 600
Overpressure safety	bar	40 ¹⁾		
Process connection		in-line 3/8" flare, 1/2" flare, 3/4" flare, 1" flare, 1 1/4" flare dead-end 1/4" flare, 3/8" flare, 1/2" flare dead-end 1/4" NPT female		
Pressure measurement device		Design according to EN 837-1 Nominal size 63 mm (lower mounting / center back mounting)		
Accuracy	% of span	± 1.6		
Material				
■ Wetted parts		PFA or TFM (modified PTFE)		
■ Other non-wetted parts		PVDF, EPDM, FPM/FKM		
■ Gauge		Stainless steel, black Teflon [®] coating		
System fill fluid		KN 75 50/50 mix semiconductor grade IPA (Isopropyl Alcohol/DI Water) precision filled and not field refillable		
Permissible temperature range				
■ Process	°C	+5 ... +60 (+41 ... +140 °F)		
■ Ambient	°C	+5 ... +60 (+41 ... +140 °F)		
■ Storage	°C	-20 ... +60 (-4 ... +140 °F)		
Working range ¹⁾				
■ Steady		3/4 of full scale value		
■ Fluctuating		2/3 of full scale value		
■ Short time		full scale value		
Ingress protection per IEC 60 529 / EN 60 529		IP 54		

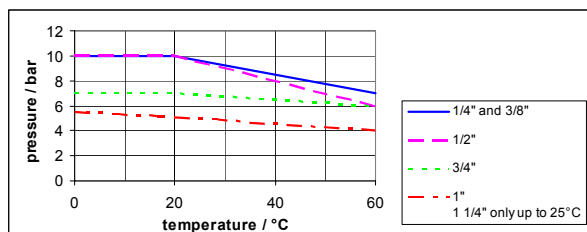
1) Limited by maximum pressure rating of the process connection see diagram below

Considerations for use:

This transmitter can be rotated a full 360° by hand. No tools required.

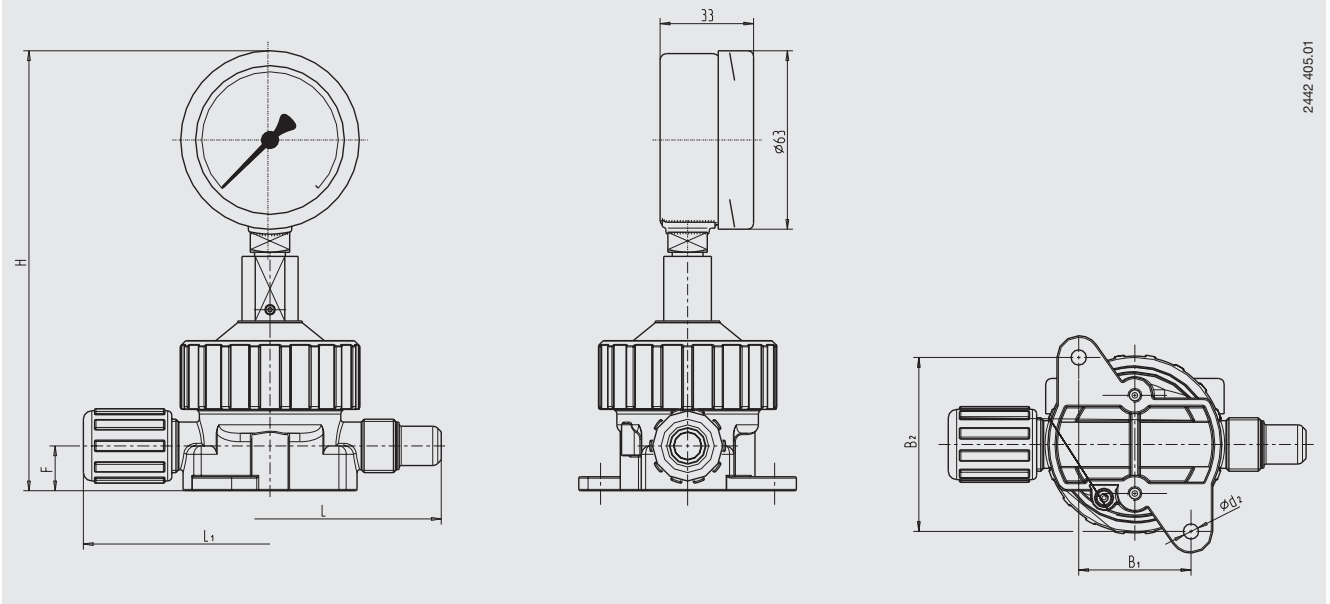
The transmitter can not be removed or the central PVDF nut loosened from the housing as this may cause the fill fluid to leak destroying the measuring unit.

Pressure-temperature rating



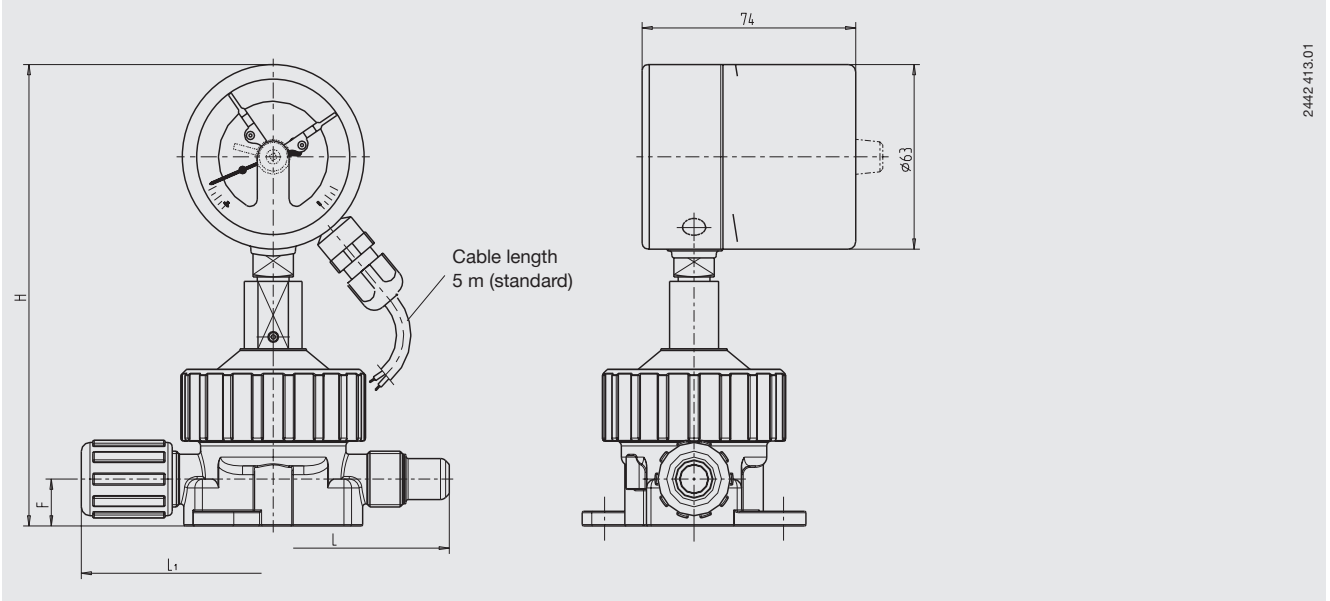
Dimensions in mm

HYDRA-line, Model HG, in-line flare process connection



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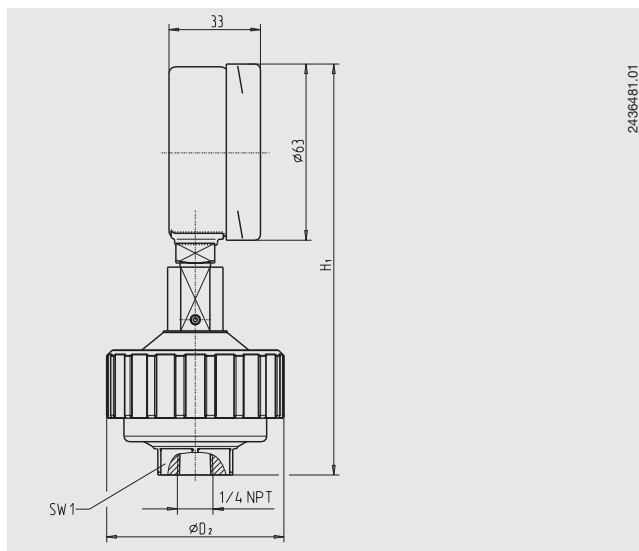
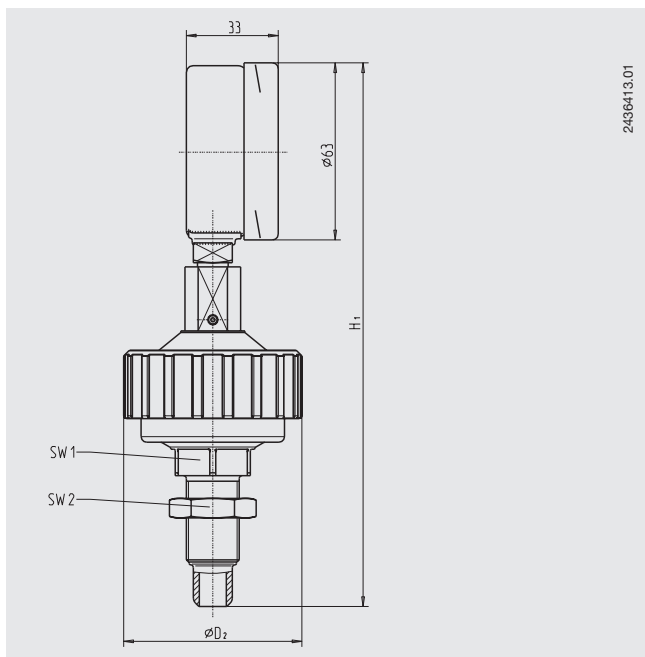
HYDRA-line, Model HG, in-line flare process connection, with alarm contacts



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Process connection	Dimensions in mm						
	H	L	L ₁	F	B ₁	B ₂	Ød ₂
In-line 3/8" flare	156	118	127	16	40	62	5.5
In-line 1/2" flare	156	122	133	16	40	62	5.5
In-line 3/4" flare	162	122	133	19	40	62	5.5
In-line 1" flare	186.5	165	179	25	56	78	6.5
In-line 1 1/4" flare	186.5	224	238	25	56	78	6.5

HYDRA-line, Model HG, dead-end process connection



Process connection	Dimensions in mm			
	H ₁	SW1	SW2	Ø _{d2}
Dead-end 1/4" flare	194 ± 2	27	11/16"	64
Dead-end 3/8" flare	194 ± 2	27	15/16"	64
Dead-end 1/2" flare	197 ± 2	27	17/16"	64
Dead-end 1/4 NPT female	150 ± 2	27	-	64

Electrical Alarm Contacts

Electrical alarm contacts make or break an electric control circuit depending on the position of the instrument's pointer. Points of contact actuation are adjustable over the full extension of the scale graduation. The gauges feature a hub in the window for an adjustment key. Contact actuation is made when there is an upper or lower deviation of the set desired value by the instrument pointer.

Electronic contact Model 830 E

The electronic contact is intended to be connected to a PLC control unit (SPS) or for direct switching of small loads. The switch outputs have a PNP characteristic.

Specifications

Range of operating voltage: DC 10 ... 30 V
Switching current: ≤ 100 mA

Make contact (function index 1)

This contact makes, when the rising pressure approaches the set-point.

Example:

Set-point at 2 bar, pressure at 1 bar ⇒ contact is open

Set-point at 2 bar, pressure at 3 bar ⇒ contact is closed

Break contact (function index 2)

This contact breaks, when the rising pressure approaches the set-point.

Example:

Set-point at 2 bar, pressure at 1 bar ⇒ contact is closed

Set-point at 2 bar, pressure at 3 bar ⇒ contact is open



HYDRA-line Model HG, 63 mm gauge stainless steel series with electrical contacts and in-line 1/2" flare process connection

For further information on electrical alarm contacts see data sheet AC 08.01.

Ordering information code for pressure system HYDRA-line, Model HG

Field No.	Code	Features
		Unit
	E	dual scale bar / psi
	D	dual scale psi / bar
	G	dual scale kPa / bar
	H	dual scale kPa / psi
1	<input type="checkbox"/>	? other <i>please state as additional text</i>
		Range
	BF	0 bar ... 2.5 bar 0 psi ... 30 psi 0 kPa ... 250 kPa ¹⁾
	BG	0 bar ... 4 bar 0 psi ... 60 psi 0 kPa ... 400 kPa
	BH	0 bar ... 6 bar 0 psi ... 100 psi 0 kPa ... 600 kPa
2	<input type="checkbox"/>	?? other <i>please state as additional text</i>
		Connector position
	U	lower mount
3	<input type="checkbox"/>	B center back mount ¹⁾
		Window
4	<input type="checkbox"/>	A acrylic
		Electrical contacts
	Z	without
	S	electronic contact PNP, 1. makes / 2. breaks model 830.12 E
5	<input type="checkbox"/>	? other <i>please state as additional text</i>
		Process connection
	06	in-line 3/8 " flare
	08	in-line 1/2 " flare
	12	in-line 3/4 " flare
	16	in-line 1 " flare
	20	in-line 1 1/4 " flare
	38	dead-end 1/4 " flare
	40	dead-end 3/8 " flare
	42	dead-end 1/2 " flare
6	<input type="checkbox"/>	50 dead-end 1/4 NPT female
		Flare nut
	77	PFA <i>only for flare connections, not for NPT</i>
	75	PVDF <i>only for flare connections, not for NPT</i>
7	<input type="checkbox"/>	ZZ without <i>only with NPT connections</i>
		System fill fluid
8	<input type="checkbox"/>	L1 KN 75 iso-propyl-alcohol (IPA) / DI-water 50:50
		Additional order info
	YES	NO
9	<input type="checkbox"/>	1 Z additional text <i>Please state as clearly understandable text!</i>

1) Not available with electrical contacts

Order code:

	1	2	3	4	5	6	7	8	9	
HG	-	<input style="width: 20px; height: 20px;" type="text"/>	<input style="width: 20px; height: 20px;" type="text"/>	<input style="width: 20px; height: 20px;" type="text"/>	A	<input style="width: 20px; height: 20px;" type="text"/>	<input style="width: 20px; height: 20px;" type="text"/>	L1	-	<input style="width: 20px; height: 20px;" type="text"/>

Additional text: _____

Optional designs on request

Modifications may take place and materials specified may be replaced by others without prior notice.
Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing.



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