Pressure / Level transmitters in a Ball valve

Retractable without shutting down the process!

Series 8000-VALVE
"Conventional"

Series 2000-VALVE
"Intelligent" HART COMMUNICATION PROTOCOL

- **Removeable during process!**
- All Stainless Steel design
- Strong Flush diaphragms
- Rugged and Compact
- Accuracy 0.2%

Additional Features on Series 2000:

- Accuracy 0.1%
- Easy calibration without testpressure
- 3 push buttons + display
- 4-20 mA + HART Protocol

DESCRIPTION

The Klay VALVE transmitters are compact and robust "**All Stainless steel**" pressure and level transmitters. They are a unique combination of a special ball valve and a pressure transmitter with a flush diaphragm. **The design permits 'flush' installation with the process while the transmitter can be removed (for maintenance, cleaning or calibration) without shutting down the process.**

The 8000-VALVE and 2000-VALVE transmitters are specially designed for the pulp and paper industry and similar industries where clogging is a problem.

Series 8000 is internally adjustable on zero and span and the 'intelligent' series 2000 is **very easy adjustable without test pressure by 3 pushbuttons and a display**, or by HART® (option).

Various process connections are available (see page 2 and 3).

Manufactured by:

KLAY-INSTRUMENTS B.V.

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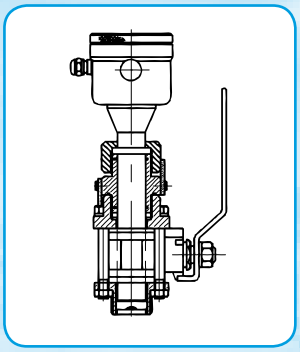
Specifications Series 8000-VALVE

Accuracy	:	0.2% of adjusted span
Measuring ranges	:	0 - 100 mbar to 0 - 10 bar
Output signal	:	4-20 mA / 2-wire
Adjustment	:	Zero and span internally
Power supply	:	12 to 36 Vdc
Electrical connection	:	PG9, M20 x 1.5 or 1/2" NPT
Protection grade	:	IP66 (Option IP68)
Process temperature	:	-20°C to +85°C
Wetted parts	:	AISI 316L (standard), other materials on request
Electronic housing	:	AISI 304 (option: AISI 316)
Process connections	:	See ordering code.

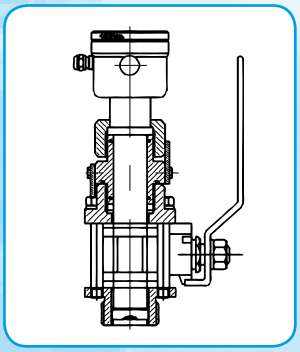
Specifications can change without notice

KLAY FlushDiaphragmTechnology

All Klay VALVE transmitters have a strong flush mounted diaphragm using the Klay Flush Diaphragm technology.
(Detailed brochure available)



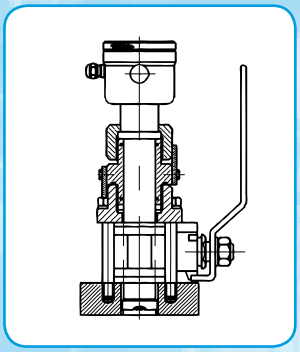
Code S



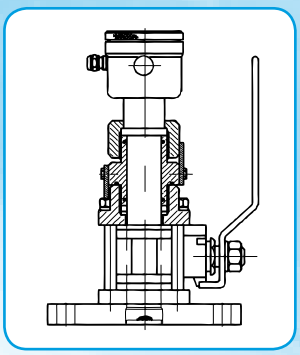
Code X3

Ordering Code Series 8000-VALVE

Order code:	**8000-VALVE**	(...")					
VALVE SIZE:		↑	↑	↑	↑	↑	↑
- Valve 1" (only ranges D,E or F)		1"					
- Valve 1½" (All ranges)		1½"					
Adjustable span range **Min. Span ... Max. span**	Max. overpressure						
0 - 0.1 to 0 - 0.4 bar	6.4 bar	B					
0 - 0.4 to 0 - 0.7 bar	6.4 bar	C					
0 - 0.7 to 0 - 1.5 bar	10.5 bar	D					
0 - 1 to 0 - 4 bar	16 bar	E					
0 - 2.5 to 0 - 10 bar	30 bar	F					
PROCESSCONNECTIONS:			↑	↑	↑	↑	↑
- Transmitter for 1" Valve, without valve							
- Transmitter for 1 ½" Valve, without valve							
- Threaded 1"BSP			S				
- Threaded 1½" BSP			X3				
- Weld on nipple, Diameter 110 mm			W110				
- Flange with 1" Valve: DN50, 80 or 100 (DIN), 1½", 2" or 3" (ANSI) (specify size)			F(...)				
- Flange with 1½" Valve: DN80 or 100 (DIN), 3" or 4" (ANSI) (specify size)			F(...)				
OPTIONS:				↑	↑	↑	↑
- Digital local indicator 3 ½" digit, programmable				I			
- Vacuum ranges (Specify Relative or Absolute) Compound range available (example: -1 to + 1 bar)					V		
- Special versions: Example Hastelloy C diaphragm (G7)						G	



Code W110



Code F(..)

Specifications Series 2000-VALVE

Easy to Program

Accuracy	:	0.1% of adjusted span
Measuring ranges	:	0 - 100 mbar to 0 - 10 bar
Output signal	:	4-20 mA / 2-wire HART® protocol (option)
Adjustment	:	by 3 pushbuttons or H.H.T.
Power supply	:	12 - 36 Vdc
Electrical connection	:	PG9, M20 x 1.5 or 1/2" NPT
Protection grade	:	IP66 (Option IP68)
Process temperature	:	-20°C to +85°C
Wetted parts	:	AISI 316L (standard)
Electronic housing	:	AISI 304 (option: AISI 316)
Process connections	:	See ordering code.

Specifications can change without notice

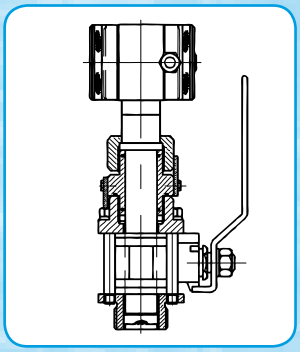
2000-VALVE, Code W110 in tank bottom

Adjustable points

P101	Zero adjustment (4 mA)
P102	Span adjustment (20 mA)
P103	Cancel mounting position effect
P104	Adjustment pressure unit (see conversion table)
P105	4 - 20 mA * 20 - 4 mA (reverse output)
P106	Damping adjustment (0 to 25 sec)
P107	Indication of process temperature (visible on display)
P108	0 = CELC °C * 1 = FAHR °F
P109	Read out on display: 0 = current (4 - 20 mA) * 1 = pressure unit 2 = percent %
P110	Current simulation (4 - 20 mA)
P111	Linearisation (Various tankshapes)

* = factory settings

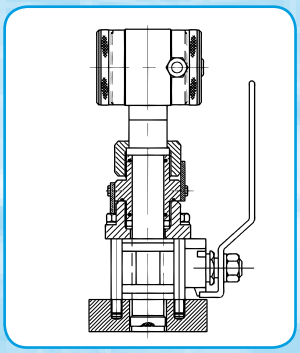
Display with 3 push buttons (Standard)



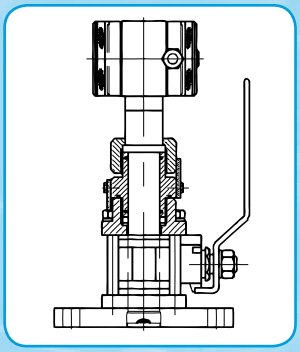
Code X3

Ordering Code Series 2000-VALVE

Order code: 2000-VALVE		(...")
VALVE SIZE:		
- Valve 1" (only ranges 2 or 3)		1"
- Valve 1½" (All ranges)		1½"
Adjustable span range **Min. Span ... Max. span**	Max. overpressure	
0 - 0.1 to 0 - 0.4 bar	6.4 bar	1
0 - 0.3 to 0 - 1.2 bar	10.5 bar	2
0 - 1 to 0 - 10 bar	30 bar	3
PROCESSCONNECTIONS:		
- Transmitter for 1" Valve, without valve		
- Transmitter for 1 ½" Valve, without valve		
- Threaded 1"BSP		S
- Threaded 1½" BSP		X3
- Weld on nipple, Diameter 110 mm		W110
- Flange with 1" Valve: DN50, 80 or 100 DIN, 1½", 2" or 3" (ANSI) (specify size)		F(...)
- Flange with 1½" Valve: DN80 or 100 (DIN) , 3" or 4" (ANSI) (specify size)		F(...)
OPTIONS:		
- Transparent cover, display functions as a local indicator		I
- Vacuum ranges (Specify Relative or Absolute) Compound range available (example: -1 to + 1 bar)		V
- HART® Protocol		H
- Special versions: Example Hastelloy C diaphragm (G7)		G



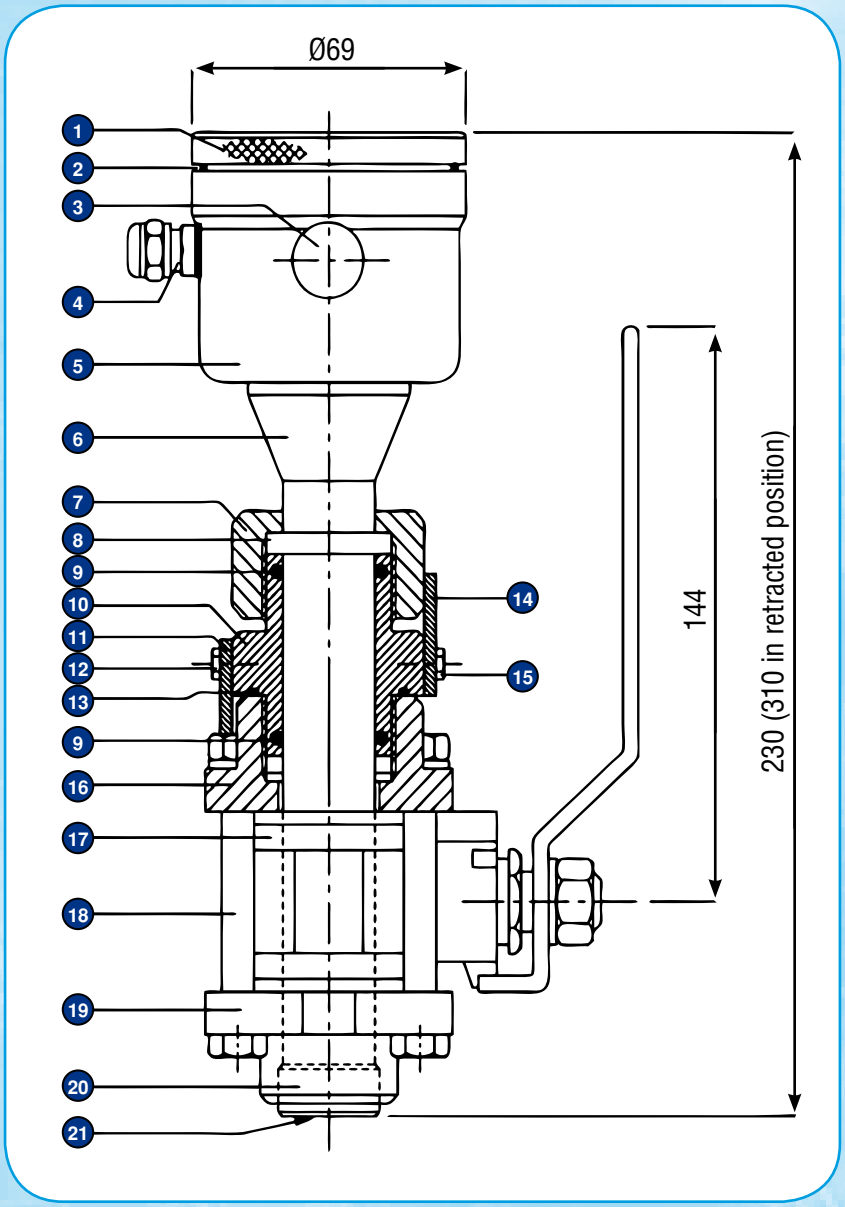
Code W110



Code F(..)

Local Indicator
The series 2000 as standard is delivered with 2 closed covers, so the 3 push buttons and the standard display are protected behind the cover.
A transparent cover is an option (I). Using a transparent cover allows you to use the display as a local indicator.

Dimensional drawing (mm):



PARTS DESCRIPTION (1" Valve)	MATERIAL
1. Cover	SS 304
2. O-Ring	EPDM
3. Venting	
4. PG9 Cable gland	
5. Electronic Housing	SS 304
6. Extension	SS 316
7. Hexagon, nut SW 41	SS 304
8. Stop	SS 316
9. O-Ring (2x)	VITON
10. Nipple, SW 41 (1" BSP M 2x)	SS 316
11. Safety lock	SS 304
12. M4 Bolt (2x)	
13. O-Ring	VITON
14. Safety lock	SS 304
15. M4 Bolt(2x)	
16. Threaded valve joint(1"BSP F)	SS 316
17. Valve body	SS 316
18. M8 Bolt (4x)	SS 316
19. Valve body	SS 316
20. Process connection valve	SS 316
21. Diaphragm	SS 316

PARTS DESCRIPTION (1 ½" Valve)	MATERIAL
7. Hexagon nut, SW 60	SS 304
10. Nipple, SW 57 (1½" BSP M 2x)	SS 316
16. Threaded valve joint (1½" BSP F)	SS 316
18. M 10 Valve bolt (4x)	SS 316

Working Principle:

Dismounting transmitter out of the valve: Unlock the safety lock (14) and unscrew nut (7). Retract transmitter until the sensor foot reaches the end of the nipple (10). Close the Valve. Unlock second safety lock (11) and unscrew transmitter.
Mounting transmitter into the valve: in opposite sequence.

The diaphragm (Pos. 21) is flush with the pipe or tank wall when the transmitter is pushed through the valve and screwed / locked into its final measuring position.

Level measurement in a large storage tank

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D/E/VALVE/05-14/00