INDUSTRIEARMATUREN

Longitudinal sight glass fitting type 330 PN 16/40

For welding in or on

Type 330

EDELSTAHL Rostfrei INOX STAINLESS STEEL

USAGE

Observation of the liquid level inside closed containers (kettles, tanks, silos, etc.). Type 330 sight glass fittings are rectangular longitudinal sight glass fittings for welding in or on, completed with a sight glass plate inserted and tightly screwed between the seals.

Operating Condition		
Temperature: (depending on glass and gasket)	≤ 243 °C	Borosilicate glass reflex and transparent DIN 7081 (Saturated steam or hot water pressure)
	≤ 280 °C	Borosilicate glass reflex and transparent DIN 7081 (without technically significant glass attack)
	≤ 320 °C	Borosilicate glass transparent DIN 7081 (with mica protection)
	≤ 400 °C	Borosilicate glass transparent unhardened
Pressure:	- 0.9[1] barg to 16/40[2] barg	

1) Depending on environmental variables
2) See pressure note on the next page

Materials	
Base frame:	1.4571, 1.4404
Glass:	Borosilicate glass (DIN 7081) reflex or transparent glass
Seal[1]:	PTFE; FKM; NBR; C4400; silicone; EPDM; graphite
Screws:	A2-70 / A4-70
Special materials on request	

1) See „INFO Seals“

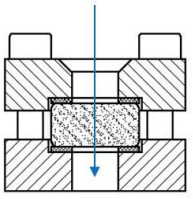
INSTALLATION NOTE

After welding the base frame, it must be checked whether the sealing surface has distorted. If necessary, reworking is required! Also, pay attention to the specified torque values for the bolting according to the operating and maintenance manual! The working pressure does not apply to the base frame; this must be checked together with the pressure device according to AD2000 Leaflet B9!

REFLECTIVE AND TRANSPARENT GLASS

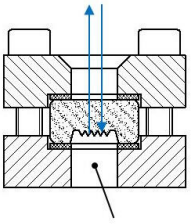
For clear media, dark or unlit containers, or a closed level indicator, it is advisable to use a reflex sight glass (see adjacent image). The refraction of light in the integrated prisms can make the level more distinguishable. However, if the container is illuminated, the medium is very clear, or if the color of the medium should be visible, a transparent glass should be used. Reflective glass cannot be protected with mica discs, as this prevents reflection. We are happy to assist you in selecting the suitable version 1) depending on ambient variables.

Light rays



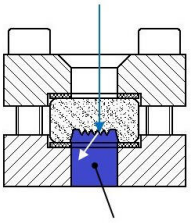
Transparent glass

Light rays



Reflection glass without liquid

Light rays



Reflection glass with liquid

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BL [mm]	140	170	220	250	300	310	350	370	400	500	600	620	700	740	800	930	1000
SL [mm]	79	124	174	204	264	264	304	324	354	454	564	564	654	694	754	884	954
Concealed view [mm]	0	0	0	0	0	0	0	0	0	1x46	1x36	1x46	1x46	1x46	1x46	2x46	3x46
h1/h2 [mm] (PN 16)	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Weight [kg] (PN 16)	2,8	3,2	4,0	4,6	5,3	5,6	6,3	6,6	7,1	9,1	10,7	11,1	12,5	13,2	14,2	16,7	18,2
h1/h2 [mm] (PN 40)	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Weight [kg] (PN 40)	3,4	4,0	5,0	5,7	6,6	6,9	7,8	8,2	8,8	11,3	13,3	13,8	15,6	16,4	17,7	20,8	22,6

PRESSURE NOTE

The operating pressure of 40 barg is only achievable with transparent glasses, with liquid media, without significant technical glass impact. For transparent and reflective glasses subjected to steam or aggressive media, the maximum operating pressure PS = 35 barg at a maximum of 243 °C.

Our information sheet DIN 7081 provides more detailed information.

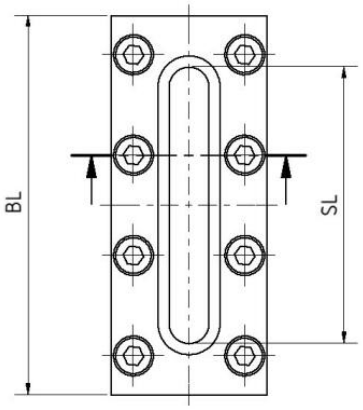


Image with transparent glass

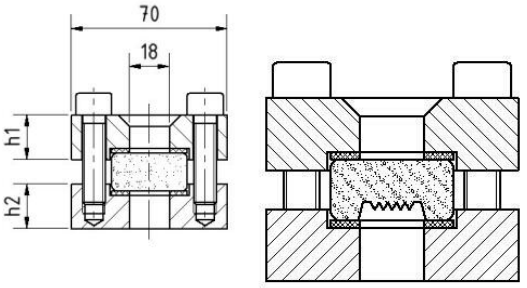


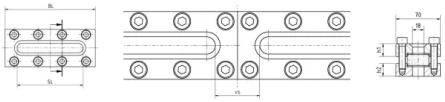
Image with reflective glass

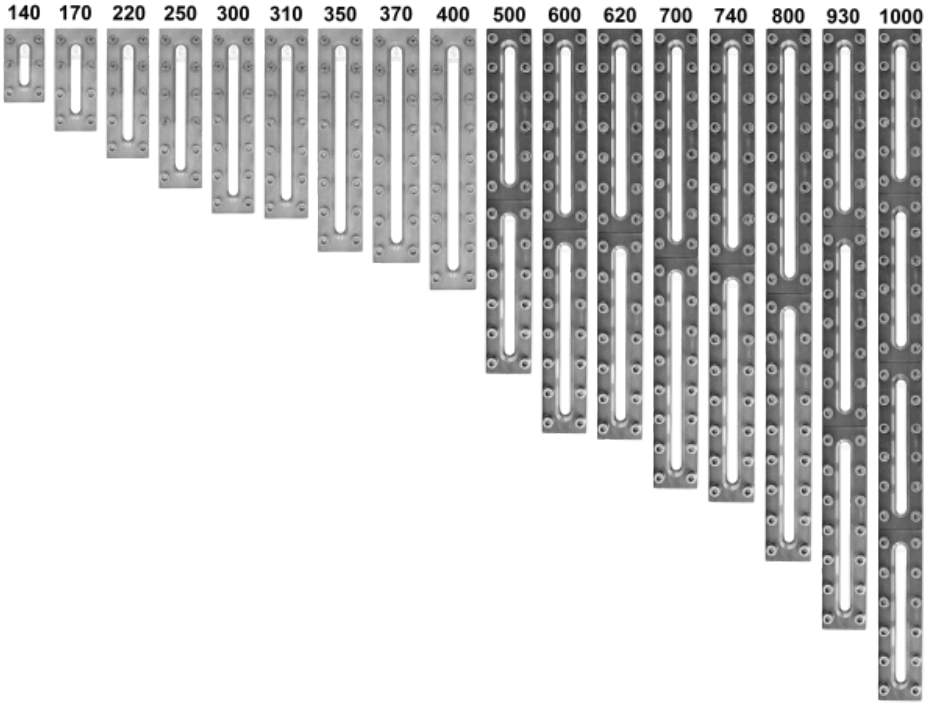
HIDDEN VIEW (HV)

For level indicators, there is a concealed view in the area between the individual longitudinal sight glasses due to large total lengths. This is due to the manufacturing length of the longitudinal sight glasses according to DIN 7081. From a total length of 500 mm, a concealed view is therefore unavoidable.

The configuration of sizes from 140 mm to 1000 mm can be taken from the adjacent representations.

Special sizes available on request.





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PRODUCT CODE

Example for Explaining the Code Composition

11 - 330 - 500 - 2 - 1 - 4 - 1 - 0

GROUP	TYPE	LENGTH	BASE FRAME[1]	GLASS	GASKET	PN	VARIANT
11	330	140	2) 1.4571	1) Borosilicate glass (DIN 7081) transparent glass	1) PTFE	1) 16	0) Standard
		170	3) 1.4404	2) Borosilicate glass (DIN 7081) + Mica protective glass transparent glass	2) FKM	2) 40	
		220	8) Special	3) Borosilicate glass (DIN 7081) reflective glass	3) NBR		
		250		4) Borosilicate glass untempered transparent glass	4) C4400		
		300			5) Silicone		
		310			6) EPDM		
		350			7) Graphite		
		370			8) Special		
		400					
		500					
		600					
		620					
		700					
		740					
		800					
		930					
		1000					

1) Cover frame according to the offer / order confirmation

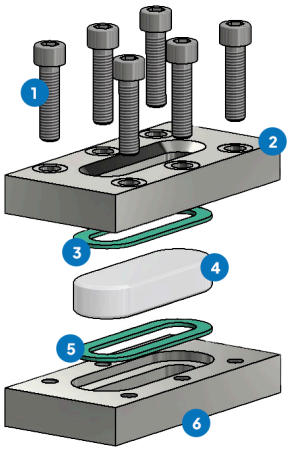
Unless otherwise specified, the highlighted factory standard will be delivered.

EXAMPLE

The product code 11-330-500-2-1-4-1-0 corresponds to the standard design:
ACI type 330
500 mm long
PN 16
Base frame made of 1.4571
Cover frame made of 1.4571
Borosilicate glass transparent DIN 7081
Gasket KlingerSil® C4400

STRUCTURE

1. Screws
2. Cover frame
3. Glass cushion
4. Sight glass
5. Gasket
6. Base frame



For aggressive media, FEP or Halar® coated sight glass plates can be used. In case of steam, mica discs should be used to protect the glasses.

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QUICK OVERVIEW

- max. 40 barg
- heat resistant up to 400 °C
- for liquid media
- for gaseous media
- Total length 140 - 1000 mm
- Custom manufacturing possible
- >50 sealing materials
- Accessories available

OPERATING CONDITIONS

Operating conditions depend on the choice of glass and gaskets:

		VIEW GLASS				GASKETS						
		Borosilicate glass (DIN 7081) transparent glass	Borosilicate glass (DIN 7081) transparent glass + Mica discs	Borosilicate glass (DIN 7081) reflective glass	Borosilicate glass untempered transparent glass	PTFE max. 200 °C	FKM max. 200 °C	NBR max. 80 °C	C4400 max. 175 °C	Silicone max. 180 °C	EPDM max. 130 °C	Graphite > 400 °C
TEMPERATURE	up to 80 °C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	up to 130 °C	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓
	up to 175 °C	✓	✓	✓	✓	✓	✓	✗	✓	✓	✗	✓
	up to 200 °C	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✓
	up to 243 °C	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✓
	up to 280 °C	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✓
	up to 320 °C	✗	✓	✗	✓	✗	✗	✗	✗	✗	✗	✓
	up to 400 °C	✗	✗	✗	✓	✗	✗	✗	✗	✗	✗	✓
PRESSURE	-0.9[1] to 16/40[2] barg	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

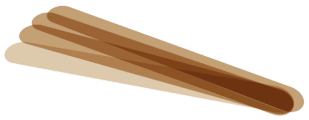
1) Dependent on environmental variables
2) See pressure note

✓ suitable ✗ unsuitable

OPTIONAL ACCESSORIES

FEP protective screen / coating

> for high pH values



Mica discs in longitudinal form with round ends

> up to 320 °C with Borosilicate glass DIN 7081 transparent

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