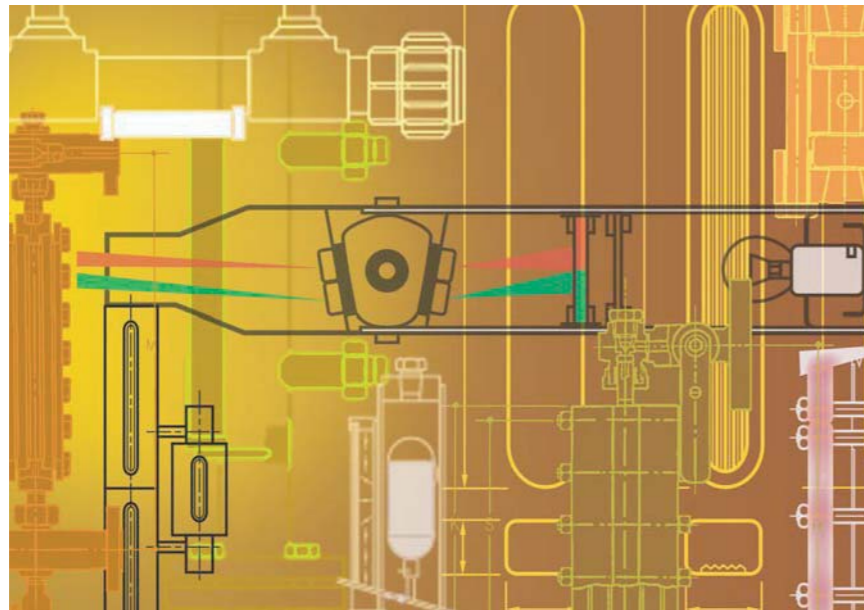


# Steam Level Gauges



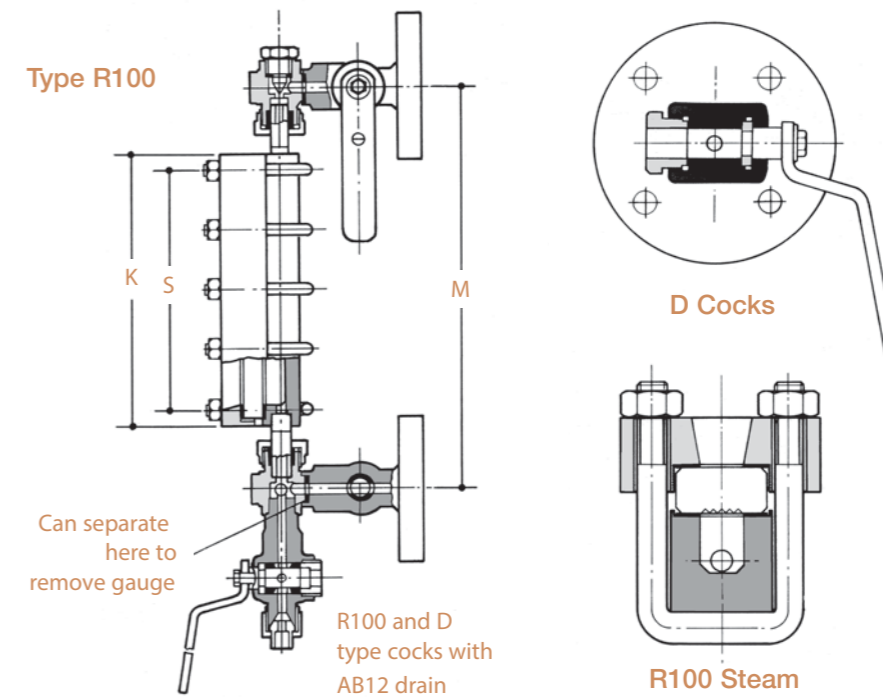
The Klinger range of steam level gauges comprises three main types:- **Reflex** (22 bar), **Transparent** (21-120bar) and **Bi-Colour** (70-210 bar). Generally, all steam level gauges are single section only, with end connected D type cocks or valves to suit the pressure rating required; so selection is simply achieved by referring to the relevant pages.

The **Reflex gauge**, with solid metal body and armoured reflex glass, provides maximum operator protection and a distinct level indication for low pressure applications.

Above 22bar, **Transparent level gauges** are used, fitted with extra thick micas to protect the glass against the action of steam and water. These gauges can be fitted with illuminators, a useful option particularly in dark areas.

Finally, high pressure **Bi-Colour gauges** are available with illuminators to give either a red and green or black and white indication, particularly useful for remote viewing.

## Reflex R100 with Gauge Cocks (steam up to 22bar)



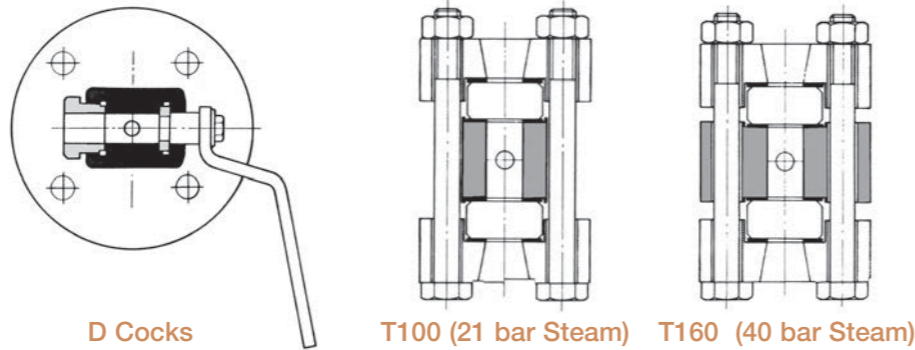
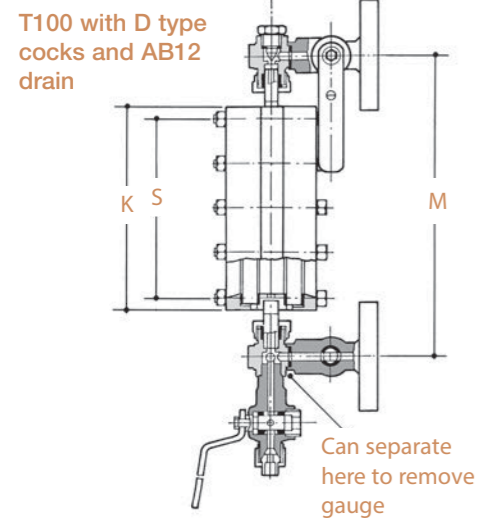
Dimensions (mm)					
Gauge Size	Visible S	Body Length K	Centre to Centre (min) M		Assembled weights (Kg)
			R100	R100	
I	93	128	230		12
II	118	153	255		13
III	143	178	280		13
IV	168	203	305		14
V	198	233	335		15
VI	228	263	365		15
VII	258	293	495		16
VIII	298	333	435		17
IX	318	353	455		17

**Maximum Flange Size**  
127mm dia.x 22mm thick  
**Screwed Connections**  
Available on request

- Notes**
1. Suitable for right or left hand operation.
  2. A ball check is fitted to the top and bottom arm as standard.
  3. Fitted with 'B' Reflex Gauge Glass.
  4. Combined Gauges available
  5. R100 available with side gauges for continuous sight.



## Transparent T100 and T160 with Gauge Cocks (steam up to 21 and 40 bar)

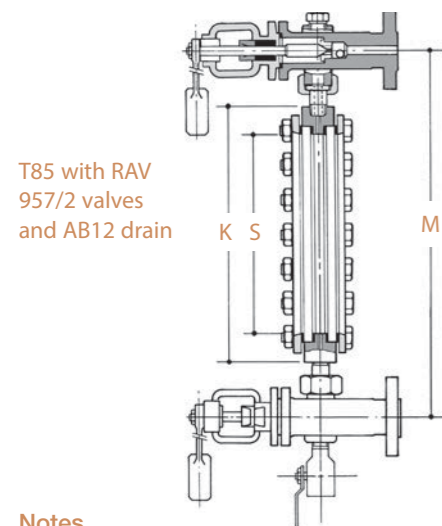


Dimensions (mm)					
Gauge Size	Visible S	Body Length K	Centre to Centre (min) M	Assembled weights (Kg)	
				T100	T160
I	93	128	230	14	14.5
II	118	153	255	15	15.5
III	143	178	280	16	17
IV	168	203	305	17	18
V	198	233	335	18.5	19.5
VI	228	263	365	19.5	20.5
VII	258	293	395	20.5	22.5
VIII	298	333	435	22	23.5
IX	318	353	455	23	24.5

**Notes**

1. Maximum flange size: 127mm dia. x 22mm thick.
2. Suitable for right or left hand operation.
3. Fitted with 'B' type plate glasses and extra thick
4. A ball check is fitted to the top and bottom arm as standard.
5. Illuminators are available if required.
6. Combined section gauges are available if required.
7. T100 and T160 available with side gauges for continuous sight. Mica glass protectors fitted as standard.

## Transparent T85 with 957/2 Valves (steam up to 85 bar)



Dimensions (mm)					
Gauge Size	Visible S	Body Length K	Centre to Centre (min) M	Assembled weights (Kg)	
				T85/957	
I	143	215	355	26.8	
IV	168	240	380	28	
V	198	270	410	30	
VI	228	300	440	31.5	
VII	258	330	470	33	
VIII	298	370	505	35.5	
IX	318	390	530	37.5	
2-IV	375	447	587	46.5	
2-V	435	507	647	50.5	
2-VI	495	567	707	53.5	
2-VII	555	627	767	56.5	
2-VIII	635	707	847	61.5	
2-IX	675	747	887	65.5	
2-VI	762	834	974	75.5	
2-VII	852	924	1044	80	
2-VIII	972	1044	1184	87.5	
2-IX	1032	1104	1244	93.5	

**Notes**

1. Maximum flange size: RAV957/2, 124mm dia. x 20mm thick.
2. Available for right or left hand operation.
3. Fitted with 'B' type plate glasses and extra thick micas as standard.
4. Ball checks both top and bottom, fitted as standard on RAV957/2.
5. Illuminators are available if required.
6. It is recommended that side arm gauges be fitted where continuous sight is required.
7. Longer gauges available on request.

## Bi-Colour Porthole Steam Level Gauge Type SPH120 and SPH210

**General**

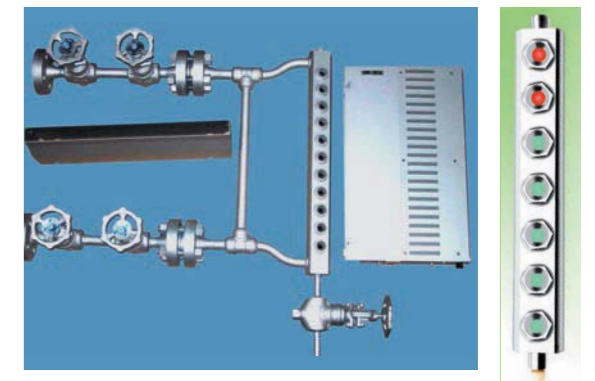
Suitable for high pressure boilers up to 210 bar saturated steam. Bi-colour red/green reading of the level. Easy maintenance. Wide range of assemblies and C to C dimensions.

**Chamber Construction:**

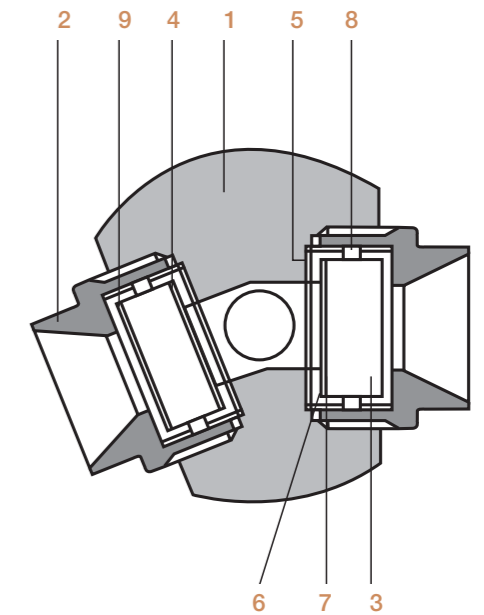
Forged ASTM A 182 F11 Cl.2 body (1 1/4Cr-1/2Mo). Rated to ANSI 1500 (PN250). Designed to BS1113:1998. PED Category - S.E.P./Cat.1.

**Versions:**

Model SPH 120 for saturated steam up to 120 bar equipped with Borosilicate glasses. Model SPH 210 for saturated steam up to 210 bar equipped with Aluminosilicate glasses.



	Number of Sections	Visibility (mm)	Body (mm)
One piece body	3	139	247
	4	199	307
	5	259	367
	6	319	427
	7	379	487
	8	439	547
	9	499	607
	10	559	667
	11	619	727
	12	679	787
Two piece body	13	739	847
	14	799	907
	15	926	1034
	16	986	1094
	17	1046	1154
	18	1106	1214
	19	1166	1274
	20	1226	1334
	21	1286	1394
	22	1346	1454



- 1 Chamber body
- 2 Port cover nut
- 3 Glass
- 4 Glass carrier
- 5 Chamber gasket
- 6 Carrier gasket
- 7 Mica protector
- 8 Gland ring
- 9 Cushion gasket

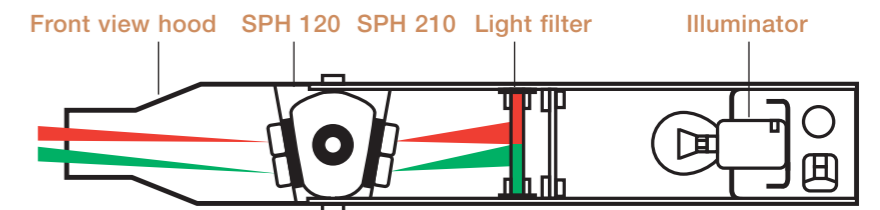
On a two piece body, the non visible area between the two glasses of each body is 127mm (instead of 60mm)

## Bi-Colour Porthole Gauge Illuminator

Light entering the gauge is refracted through the water and steam areas giving a bright green or red image of its level respectively.

**Options:** (IP Rating: IP30 & IP65)

**Voltage:** 24V DC. 110-120V AC 50/60Hz. 230-240V AC 50/60 Hz.



## Accessories

### Level Gauge Illuminator for hazardous areas

Ex rating according to type of bulb used

Type of E 27 bulb	Ex rating	Bulb ref.
15W incandescent (1)	Ex d Ilc T6	E27/15WI
60W incandescent (1)	Ex d Ilc T5	E27/60WI
75W incandescent (1)	Ex d Ilc T4	E27/75WI
15W fluocompact (2) (60W equivalent)	Ex d Ilc T6	E27/15WF

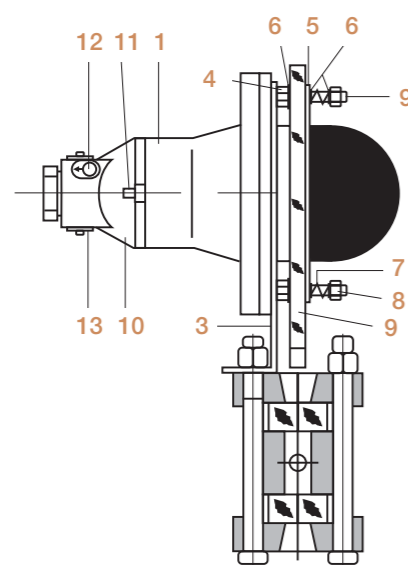
Electrical specification

**Voltage:** 110 - 230V AC (max 380V) -  
50/60Hz, 6 to 48V DC

**Cable entry:** 3/4" NPT

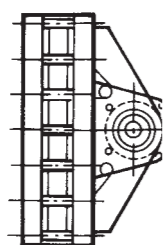
**IP rating:** IP 65

**Ex approval:** ISSeP No. 98D. 103. 1283/970.  
103.124

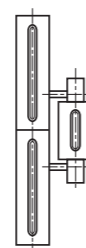


**Key**

- 1 Illuminator body
- 2 Diffuser (Plexiglas or glass)
- 3 Support bracket
- 4 Nut
- 5 Gasket
- 6 Washer
- 7 Spring
- 8 Nut
- 9 Bolt
- 10 Bonnet
- 11 Security pin
- 12 Earth screw
- 13 Name plate



Fluorescent and LED illuminators are available on request.



Uninterrupted sight where blind spots are not permitted

### Gauge Glasses, Miccas, Shields and Gaskets

TC Fluid Control Glasses are high grade toughened Borosilicate "extra hard" with a low coefficient of thermal expansion. They have exceptionally high mechanical strength with excellent resistance against thermal shocks and temperature differentials in the glass. Type B reflex gauge glasses are used in all reflex level gauges. Type B transparent gauge glasses are used in all transparent level gauges, except TA120 and KTA gauges where TA28 glasses are used. Mica or Kel-F shields (max. temp 120oC) can be fitted on request.

Type B (mm)

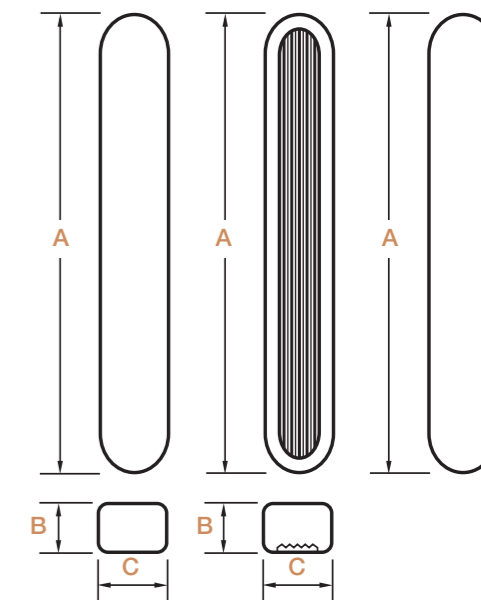
	I	II	III	IV	V	VI	VII	VIII	IX
A	115	140	165	190	220	250	280	320	340
B	17	17	17	17	17	17	17	17	17
C	34	34	34	34	34	34	34	34	34

Type B (mm)

	I	II	III	IV	V	VI	VII	VIII	IX
A	113	138	163	188	218	248	278	318	338
B	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8
C	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6

**Micas**

The miccas fitted to thru-vision level gauges conform to: ISO 2185V.5.1 Stained A1 quality. Miccas should always be specified when a thru-vision level gauge is being used on steam service above 20 bar.



TC Fluid Control glasses comply with DN 7081, JIS 88211, BS 3463, SOD Spec. 123MIL-G-184988

### Other Accessories

**Scales**

Engraved scales, calibrated to customer requirements can be supplied for all TC Fluid Control level gauges.

