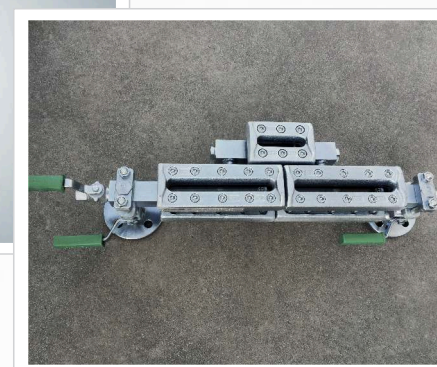
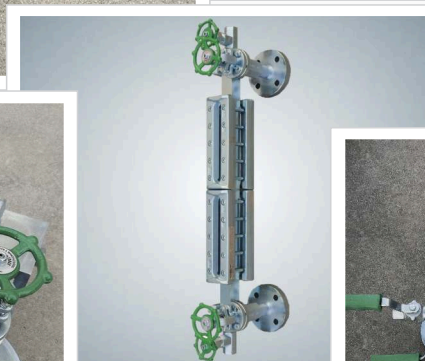
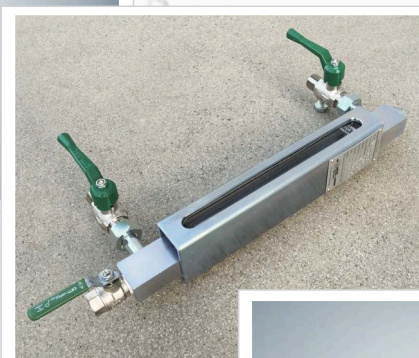
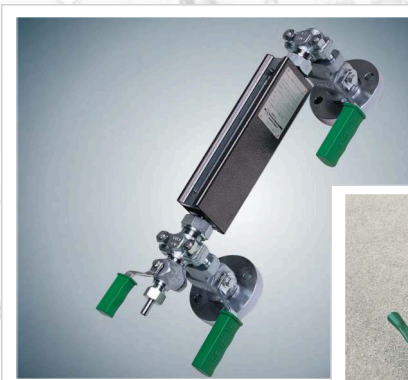
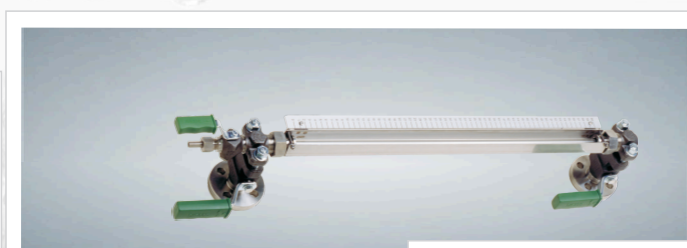


## GLASS level gauges

- WITH REFLEX GLASSES
- WITH TRANSPARENT GLASSES
- WELD-ON TYPE
- WITH GLASS TUBE

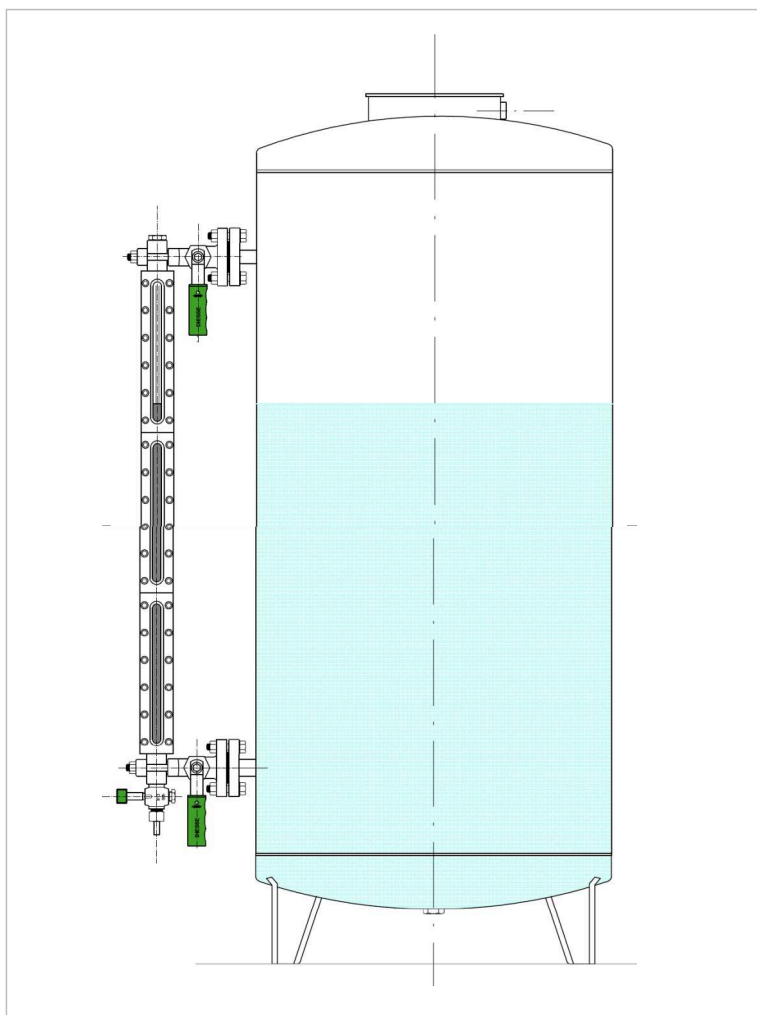


TO RECOMMEND THE MOST SUITABLE LEVEL GAUGE FOR A PARTICULAR PURPOSE, PLEASE PROVIDE THE FOLLOWING DATA WHEN ASKING FOR ADVICE OR A QUOTATION.

► essential data

- ► **CENTRE-TO-CENTRE DISTANCE (distance between process connections)**
- MINIMUM VISIBLE LENGTH REQUIRED
- ► **TYPE OF CONNECTIONS (flanged-threaded-weld-on) and related STANDARDS (UNI-ANSI-DIN...)**
- POSITION OF PROCESS CONNECTIONS
- POSITION OF THE VALVE HANDLING
- ► **REQUIRED MATERIAL (wetted and non-wetted parts)**
- ► **TYPE OF FLUID**
- ► **DESIGN AND MAXIMUM OPERATING PRESSURES**
- ► **DESIGN AND MAXIMUM OPERATING TEMPERATURES**
- ANY ADDITIONAL ACCESSORIES

Glass level gauges give very accurate level readings, making them the ideal product for calibrating other instruments as well. They play a crucial role during system start-up.

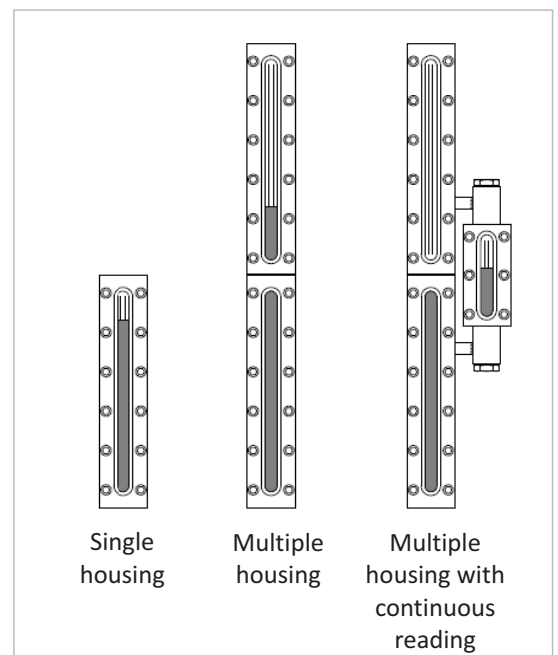


## READING TYPE

The required visible length depends on the type of fluid and the shape of the tank.

The visible length with a single glass varies from 95 mm to 320 mm. If the required visible length exceeds these measurements, additional glasses of the same length are joined together and mounted on a single bar.

To ensure continuous reading along a housing consisting of numerous glasses, one or more housings can be placed on the side at the points where the reading is interrupted.



## GLASS LEVEL GAUGES

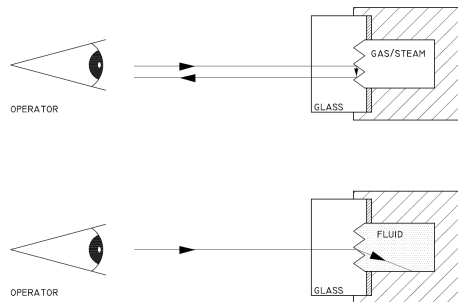
### Code

<b>1</b>	<b>Basic Type</b>							
	DS LG	DIESSE Glass level gauge						
<b>2</b>	<b>Level Gauge Model</b>							
	<b>Pos. 1: Level Gauge type</b>		<b>Pos. 2: No. of sections</b>			<b>Pos. 3: Glass size / type</b>		
	RTR	Reflex - rotating execution with tubular cover				<b>Options Pos. 3</b> Standard    Type A /B            Type B /RV          Right View /LV          Left View /MS          Glass protection with MICA shield /KFS         Glass protection with ECTFE shield		
	RTF	Reflex - fixed distance execution with tubular cover						
	RBR	Reflex - rotating execution with lateral covers						
	RBF	Reflex - fixed distance execution with lateral covers						
	RCR	Reflex - rotating execution with light cover						
	RDR	Reflex - rotating execution with light cover - flat body						
	RCF	Reflex - fixed distance execution with light cover						
	RPF	Reflex - fixed distance execution with heavy cover						
	RXF	Reflex - fixed distance execution with heavy cover - flat body						
	REF	Reflex - fixed distance execution with heavy cover - flat body - flanged connections						
	TCR	Transparent - rotating execution with light cover						
	TMR	Transparent - rotating execution with light cover - flat body						
	TCF	Transparent - fixed distance execution with light cover						
	TMF	Transparent - fixed distance execution with light cover - flat body						
	TPF	Transparent - fixed distance execution with heavy cover						
	TXF	Transparent - fixed distance execution with heavy cover - flat body						
	TEF	Transparent - fixed distance execution with heavy cover - flat body - flanged connections						
	RCW	Reflex - weld-on type with light cover						
	TCW	Transparent - weld on type with light cover						
	TVR	Tubular glass type						
<b>3</b>	<b>Process connections</b>							
	<b>Pos. 1: Nominal dimension</b>		<b>Pos. 2: Nominal pressure</b>		<b>Pos. 3: Type / Finish</b>		<b>Pos. 4: Position</b>	
							Standard    Side / Side /SB          Side / Bottom /TS          Top / Side /TB          Top / Bottom	
<b>4</b>	<b>Gauge Valves model</b>							
	<b>Pos. 1: Type of valves</b>				<b>Pos. 2: Drain and Vent connection</b>			
	0	None		0	Blind			
	GR18	Cylindrical plug cocks		PB	Plug BSP			
				PT	Plug NPT			
	MT18	Cylindrical plug cocks - Monolithic body		FL	Flange			
				D12	Cylindrical plug cock (Standard)			
	NPV	Push button valves		D18	Cylindrical plug cock			
	SHV	Globe valves		PM18	Three way cylindrical plug manometer setting valve with control flange			
	SBB	Ball valves		DHV	Globe valve			
				DBB	Ball valve			
<b>5</b>	<b>Distance Centre-to-centre</b>							
	M...	Distance between connections centres in mm						
	M [SL...HL]	Standard distance: see table in each level gauge type data-sheet						
<b>6</b>	<b>Materials</b>							
	<b>Pos. 1: Wetted parts</b>			<b>Pos. 2: Non-wetted parts</b>			<b>Pos. 3: Gaskets</b>	
	CS	Carbon steel ASTM A105 galvanized		CS	Carbon steel galvanized		Standard	Graphite / Copper
	LF2	Carbon steel A105 LF2 galvanized		SS	Stainless steel AISI 316		GF	Graphite / AISI 316
	SS	Stainless steel AISI 316L					PC	PTFE / Copper
	BRS	Brass					PF	PTFE / 316
							GG	EPDM (For glass tube)
<b>7</b>	<b>Accessories</b>							
	LC	Lower check ball		UC	Upper check ball		LUC	Check balls (lower + upper)
	LPH	Lower pusher		UPH	Upper pusher		LUPH	Pusher (lower + upper)
	VSG	Calibrated scale		NFE	Non-frosting extension		CR...	Continuous reading
	MLA	Minimum level arrow		EVA50	Bulb type illuminator		TDR	Microwave transmitter
	GPU	Glass tube protection		MJT	Middle terminal for glass tube		CPTV	Union nut for "U" shaped protection
	LFC	Weight closing for lower handle		UFC	Weight closing for upper handle		LUFC	Weight closing for all handles (lower + upper)
	SMHD	Cocks handles lock (all )		LU-SMHD	Shut-off cocks handles lock		D/V-SSH	Vent and drain handles lock
	IFS	Interface connection		OP	Painting		SB	Support bracket
	ELC	Remote control		VP	Vent pipe			
<b>8</b>	<b>Approvals</b>							
	EEx	ATEX			SHP...	Marine		
<b>Code</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
e.g.	DS LG	- RBF17	- 20/40/RF	- GR18/D12/PB	- M 420	- CS/CS	- LC/VSG	- EEx



# REFLEX level gauges

The level is ascertained using a glass which has a smooth side and a wetted prismatic side. The level of the fluid inside the level gauge is shown by using the optical principles of refraction: the wetted part fully absorbs light and so the fluid appears to be black. The part in contact with the gas, on the other hand, fully reflects light and so the gas appears to be of a very light colour.



The product line includes level gauges suitable for pressure ratings from PN10 to PN250 and a huge number of industrial process applications.

**This type of gauge is recommended:**

- for taking clear and simple readings (see counter-indications below)
- if you are looking for an inexpensive gauge which will also save you money on maintenance costs

**Operating limits / Conditions:**

Process:

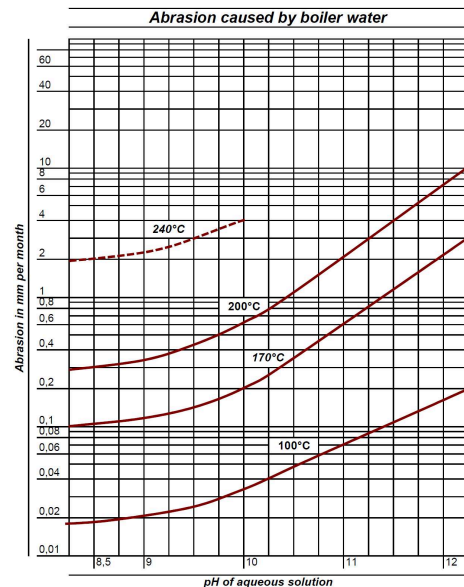
- Max. pressure: 255,5 bar @ 38°C (rating class 1500)
- Max. temperature: 300°C (max. temperature allowed by borosilicate glasses as per the DIN 7081 standard - see page 1.69)

Steam: (see page 1.59)

- Max. pressure: 22 bar
- Max. temperature: 216°C (saturated steam @ 22 bar)

**For saturated steam values > 20 bar, a low-maintenance transparent level gauge with mica shield protection should be used (see graph "Abrasion caused by boiler water" for the estimated glass life).**

**Not only does the glass life depend on the temperature, it depends on the pH of the water (the higher the value, the shorter the glass life).**



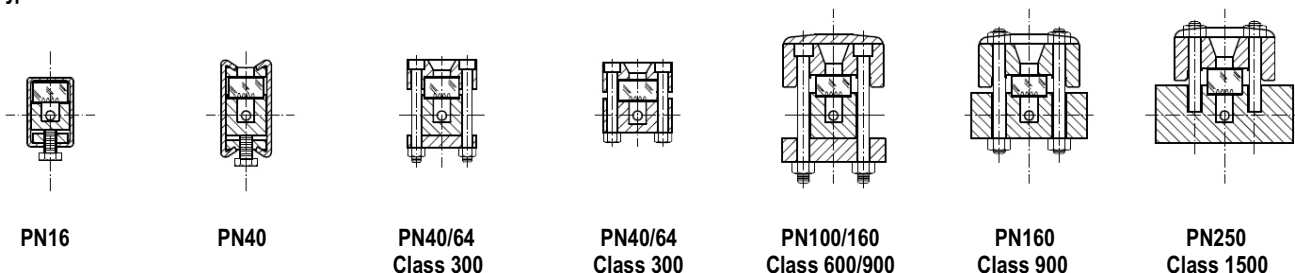
**The product is NOT suitable for use in the following instances:**

- if exposed to corrosive fluid (e.g. caustic soda, hydrofluoric acid, citric acid ...)
- if exposed to high pressure steam
- if subjected to repeated thermal shocks

**In the scenarios listed above, the glass must be protected with MICA or PCTFE shields, so a transparent level gauge is necessary**

- for checking the level of separation between two immiscible fluids (interface)
- for checking the colour of a fluid (all fluids look very dark)
- in cases where the fluid is particularly viscous (a film may form on the glass which prevents you from taking an accurate reading)
- in cases where the fluid is particularly dark (the reflex principle is rendered ineffective)

**Types:**



PN16

PN40

PN40/64  
Class 300

PN40/64  
Class 300

PN100/160  
Class 600/900

PN160  
Class 900

PN250  
Class 1500



## REFLEX level gauges

### Materials / Specifications:

#### Connections between housing and cocks:

- with grinded pipes and stuffing box (View can be turned by the customer during installation)
- fixed centre-to-centre distance with metal seal (View can be turned during manufacture)

#### Wetted parts:

- standard: galvanized ASTM A105 or A105 LF2 carbon steel, ASTM A182 F316L stainless steel
- additional options: on request

#### Non-wetted parts:

- standard: galvanized carbon steel, AISI 316/316L stainless steel
- additional options: on request

#### Gaskets: (See page 1.71)

- standard: graphite/copper (ASTM A105), graphite/AISI 316 (A105 LF2 and ASTM A182 F316L)
- additional options: PTFE/AISI 316; other extras on request

#### Glasses: (See page 1.69)

- reflex borosilicate glasses, thermally pre-stressed and extra hard as per the DIN 7081 standard

#### Shut-off: (See page 1.49)

- standard: upper valve and lower valve (side/side)
- additional options: on request

#### Drain: (See page 1.50)

- standard: threaded valve
- additional options: on request

#### Vent: (See page 1.50)

- standard: blind (For grinded pipes version)
- threaded with plug (For fixed distance version)
- additional options: on request

### Tank connections:

#### Flanged:

- UNI standard: PN40 DN15 / DN20 / DN25
- ANSI standard: #150 / #300 / #600 DN 1/2" / 3/4" / 1"
- additional options: on request

#### Threaded:

- BSP (GAS) standard: 1/2"-M / 3/4"-M
- NPT standard: 1/2"-M / 3/4"-M

#### Weld-on: from 1/2" to 1" BW or SW

Option: further connections type or direct connections to the process without shut-off cocks (see page 1.49 for more details)

### Shut-off cocks, drain cock and vent cock:

- Cylindrical plug cocks (GR18 or DS MT18 - see page 1.47)
- Globe valves (DS SHV - see page 1.48)
- Push-button valves (DS NPV - see page 1.48)
- Ball valves (DS SBB)

### Spare parts:

***Our spare parts are interchangeable with those of major international manufacturers.***

For the full range of complete sets, turn to the spares section on page 1.69.

### Accessories:

Lower and/or upper safety ball, pusher for safety ball, calibrated scale, non-frosting extension, minimum level arrow, continuous reading, cocks handles lock (See page 1.55 for details)

### Certifications (On request):

- ATEX
- Tests and inspection by Notified Bodies
- NACE MR0175
- Others on request

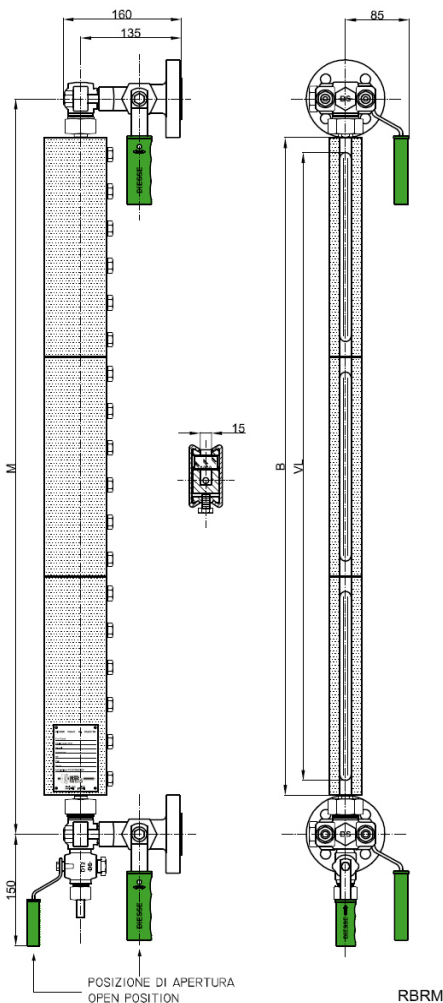
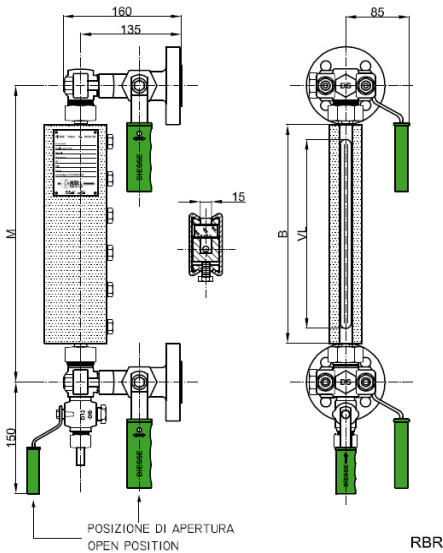
**All DIESSE products are individually checked and tested in accordance with company quality procedures and the industry regulations currently in effect.**

**Certificates can be issued on request.**

## GLASS LEVEL GAUGE REFLEX TYPE PN40

### DS LG - RBR GR18

Code: DS LG-RBR... /40/RF-GR18/...-M...-CS/CS



#### Technical data

##### Service conditions

Max Pressure: PN40

Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

##### View

Standard: adjustable on 360° in the installation phase

##### Distance (Centre-to-centre)

Standard: see below table (**Distance adjustable - 0 mm / + 10 mm**)

Option: On request intermediate distances and over 3.000 mm

##### Materials (Standard)

Execution:

Gauge body & cocks body:

Cocks trim:

Non-wetted parts:

CS/CS

ASTM A105

AISI 303

Carbon steel galvanized

SS/CS

AISI 316L

AISI 316

Carbon steel galvanized

##### Gaskets

Standard: graphite/copper

Option: graphite/AISI 316 or PTFE/AISI316

##### Shut-off cocks

DS GR18: cylindrical plug type - Straight type - Quick 90° closing

DS MT18: cylindrical plug type with monolithic body - Straight type - Quick 90° closing

(see page 1.47)

**Centre-to-centre distance  $M = B + 115 \text{ mm or } 140 \text{ mm}$**

Handling: lever operated with PP handle (Standard: right; Option: left)

##### Process connections:

Standard flanges: UNI PN40 DN15-20-25

ANSI #150-300/RF DN ½" - ¾" - 1"

Standard threaded unions: BSP-M ½" - ¾"

NPT-M ½" - ¾"

Options: further connections types or direct connections to the process without shut-off cocks

(See page 1.49)

**Vent:** Standard: blind

Option: see page 1.50

**Drain:** Standard: cock DS D12 threaded ½"

Option: see page 1.50

##### Glasses

Reflex - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081

Standard: fitted with type A (See page 1.69)

Option: type B (See page 1.69)

##### Accessories

See from page 1.55

##### Weights

Housing DS RBR: see below table

Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)

##### Tightening torque of housing screws

Standard: 40 Nm

##### Spare parts

Housing DS RBR: see from page 1.69 (Drawing with components and parts list see page 1.61)

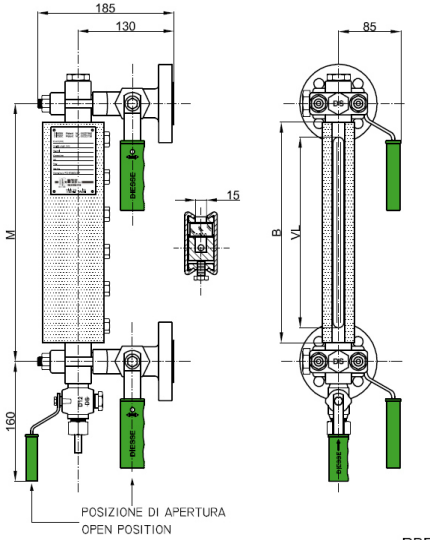
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

CODE	TYPE	BODY Length [mm]	DISTANCE SL Pipes L = 57 M [-0/+10 mm]	DISTANCE HL Pipes L = 70 M [-0/+10 mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+105	M = B+130	VL	x No. elements	
11	1x1	130	235	260	95	115x1	2,4
12	2x1	155	260	285	120	140x1	2,8
13	3x1	180	285	310	145	165x1	3,3
14	4x1	205	310	335	170	190x1	3,8
15	5x1	235	340	365	200	220x1	4,3
16	6x1	265	370	395	230	250x1	4,9
17	7x1	295	400	425	260	280x1	5,4
18	8x1	335	440	465	300	320x1	6,1
19	9x1	360	465	490	320	340x1	6,6
24	4x2	410	515	540	375	190x2	7,5
25	5x2	470	575	600	435	220x2	8,5
26	6x2	530	635	660	495	250x2	9,7
27	7x2	590	695	720	555	280x2	10,7
28	8x2	670	775	800	635	320x2	12,1
29	9x2	720	825	850	680	340x2	13,1
36	6x3	795	900	925	760	250x3	14,4
37	7x3	885	990	1015	850	280x3	15,9
38	8x3	1005	1110	1145	970	320x3	18,0
39	9x3	1080	1185	1210	1040	340x3	19,5
47	7x4	1180	1285	1310	1145	280x4	21,2
48	8x4	1340	1445	1470	1305	320x4	24,0
49	9x4	1440	1545	1570	1400	340x4	26,0
57	7x5	1475	1580	1605	1440	280x5	26,5
58	8x5	1675	1780	1805	1640	320x5	30,0
59	9x5	1800	1905	1930	1760	340x5	32,5
68	8x6	2010	2115	2140	1975	320x6	35,9
69	9x6	2160	2265	2290	2120	340x6	38,9
78	8x7	2345	2450	2475	2310	320x7	41,9
79	9x7	2520	2625	2650	2480	340x7	45,4
88	8x8	2680	2785	2810	2645	320x8	47,9
89	9x8	2880	2985	3010	2840	340x8	51,9

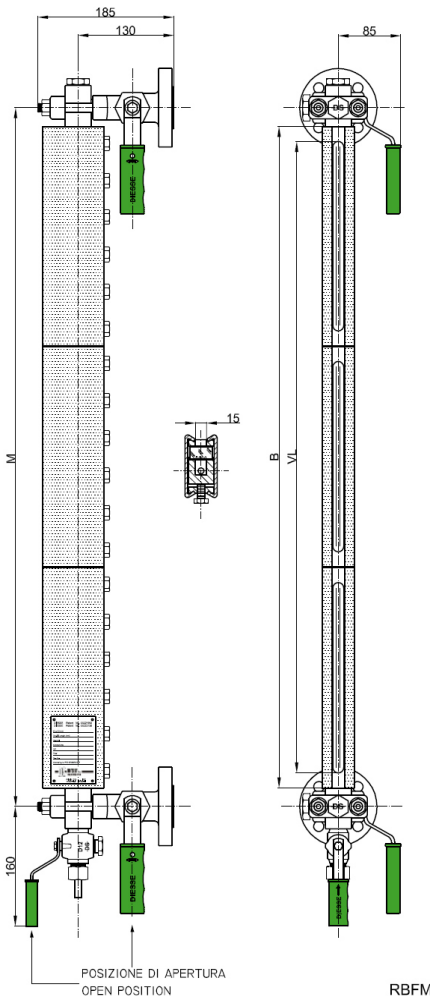
Tab. RBR

## GLASS LEVEL GAUGE REFLEX TYPE PN40 DS LG - RBF GR18

Code: DS LG-RBF-... /40/RF-GR18/...-M...-CS/CS



RBF



RBFM

### Technical data

#### Service conditions

Max Pressure: PN40

Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

#### View

Standard: front, on request lateral (right or left) adjustable in the production phase

#### Distance (Centre-to-centre)

Standard: see below table for minimum distance (Fixed distance, not adjustable)

Option: On request intermediate distances and over 3.000 mm

#### Materials (Standard)

Execution:

Gauge body & cocks body:

Cocks trim:

Non-wetted parts:

CS/CS

ASTM A105

AISI 303

Carbon steel galvanized

SS/CS

AISI 316L

AISI 316

Carbon steel galvanized

#### Gaskets

Standard: graphite/copper

Option: graphite/AISI 316 or PTFE/AISI316

#### Shut-off cocks

DS GR18: cylindrical plug type - Straight type - Quick 90° closing

Handling: lever operated with PP handle (Standard: right; Option: left)

#### Process connections:

Standard flanges: UNI PN40 DN15-20-25

Standard threaded unions: BSP-M 1/2" - 3/4"

Options: further connections types or direct connections to the process without shut-off cocks

(See page 1.51)

ANSI #150-300/RF DN 1/2" - 3/4" - 1"

NPT-M 1/2" - 3/4"

Vent: Standard: threaded 1/2" with plug

Option: see page 1.52

Drain: Standard: cock DS D12 threaded 1/2"

Option: see page 1.52

#### Glasses

Reflex - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081

Standard: fitted with type A (See page 1.69)

Option: type B (See page 1.69)

#### Accessories

See from page 1.55

#### Weights

Housing DS RBF: see below table

Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)

#### Tightening torque of housing screws

Standard: 40 Nm

#### Spare parts

Housing DS RBR: see from page 1.69 (Drawing with components and parts list see page 1.61)

Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

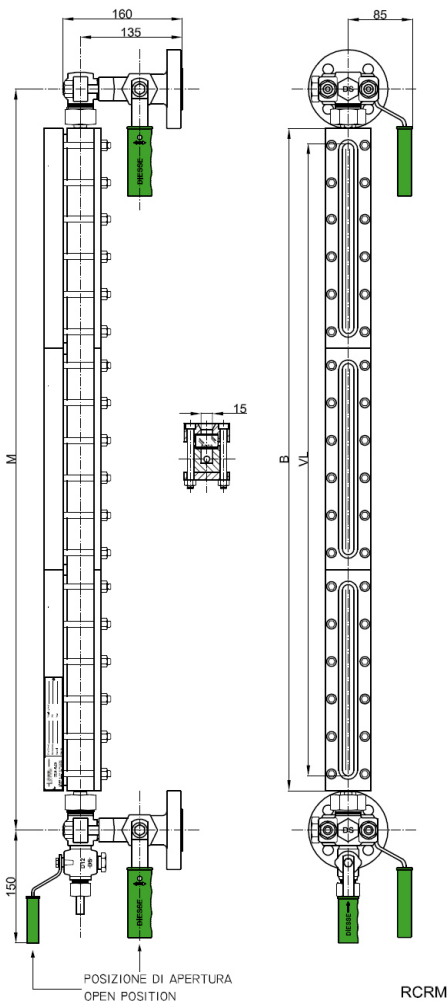
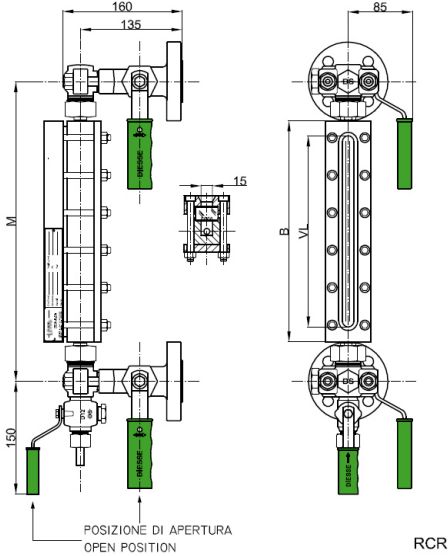
CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+40	VL	x No. elements	
11	1x1	130	170	95	115x1	3,7
12	2x1	155	195	120	140x1	4,1
13	3x1	180	220	145	165x1	4,6
14	4x1	205	245	170	190x1	5,1
15	5x1	235	275	200	220x1	5,6
16	6x1	265	305	230	250x1	6,2
17	7x1	295	335	260	280x1	6,7
18	8x1	335	375	300	320x1	7,4
19	9x1	360	400	320	340x1	7,9
24	4x2	410	450	375	190x2	8,8
25	5x2	470	510	435	220x2	9,8
26	6x2	530	570	495	250x2	11,0
27	7x2	590	630	555	280x2	12,0
28	8x2	670	710	635	320x2	13,4
29	9x2	720	760	680	340x2	14,4
36	6x3	795	835	760	250x3	15,7
37	7x3	885	925	850	280x3	17,2
38	8x3	1005	1045	970	320x3	19,3
39	9x3	1080	1120	1040	340x3	20,8
47	7x4	1180	1220	1145	280x4	22,5
48	8x4	1340	1380	1305	320x4	25,3
49	9x4	1440	1480	1400	340x4	27,3
57	7x5	1475	1515	1440	280x5	27,8
58	8x5	1675	1715	1640	320x5	31,3
59	9x5	1800	1840	1760	340x5	33,8
68	8x6	2010	2050	1975	320x6	37,2
69	9x6	2160	2200	2120	340x6	40,2
78	8x7	2345	2385	2310	320x7	43,2
79	9x7	2520	2560	2480	340x7	46,7
88	8x8	2680	2720	2645	320x8	49,3
89	9x8	2880	2920	2840	340x8	53,2

Tab. RBF



## GLASS LEVEL GAUGE REFLEX TYPE PN40 DS LG - RCR GR18

Code: DS LG-RCR...-... /40/RF-GR18/...-...-M...-CS/CS



### Technical data

#### Service conditions

Max Pressure: PN40

Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

#### View

Standard: adjustable on 360° in the installation phase

#### Distance (Centre-to-centre)

Standard: see below table (**Distance adjustable - 0 mm / + 10 mm**)

Option: On request intermediate distances and over 3.000 mm

#### Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body & cocks body:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

#### Gaskets

Standard: graphite/copper

Option: graphite/AISI 316 or PTFE/AISI316

#### Shut-off cocks

DS GR18: cylindrical plug type - Straight type - Quick 90° closing

Handling: lever operated with PP handle (Standard: right; Option: left)

#### Process connections:

Standard flanges: UNI PN40 DN15-20-25 ANSI #150-300/RF DN ½" - ¾" - 1"

Standard threaded unions: BSP-M ½" - ¾" NPT-M ½" - ¾"

Options: further connections types or direct connections to the process without shut-off cocks

(See page 1.49)

#### Vent:

Standard: blind

Option: see page 1.50

#### Drain:

Standard: cock DS D12 threaded ½"

Option: see page 1.50

#### Glasses

Reflex - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081

Standard: fitted with type A (See page 1.69)

#### Accessories

See from page 1.55

#### Weights

Housing DS RCR: see below table

Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)

#### Tightening torque of housing screws

Standard: 35 Nm

#### Spare parts

Housing DS RCR: see from page 1.69 (Drawing with components and parts list see page 1.62)

Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

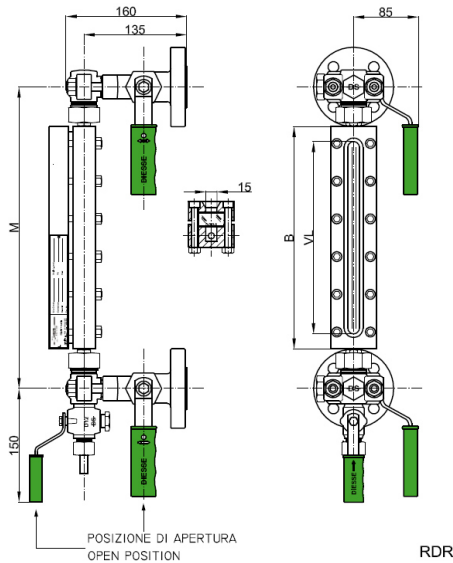
CODE	TYPE	BODY Length [mm]	DISTANCE SL Pipes L = 57 M [-0/+10 mm]	DISTANCE HL Pipes L = 70 M [-0/+10 mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+105	M = B+130	VL	x No. elements	
11	1x1	130	235	260	95	115x1	3,0
12	2x1	155	260	285	120	140x1	3,5
13	3x1	180	285	310	145	165x1	4,0
14	4x1	205	310	335	170	190x1	4,4
15	5x1	235	340	365	200	220x1	5,2
16	6x1	265	370	395	230	250x1	5,6
17	7x1	295	400	425	260	280x1	6,3
18	8x1	335	440	465	300	320x1	7,0
19	9x1	360	465	490	320	340x1	7,6
24	4x2	410	515	540	375	190x2	8,6
25	5x2	470	575	600	435	220x2	10,2
26	6x2	530	635	660	495	250x2	11,0
27	7x2	590	695	720	555	280x2	12,5
28	8x2	670	775	800	635	320x2	13,8
29	9x2	720	825	850	680	340x2	15,0
36	6x3	795	900	925	760	250x3	16,5
37	7x3	885	990	1015	850	280x3	18,6
38	8x3	1005	1110	1145	970	320x3	20,7
39	9x3	1080	1185	1210	1040	340x3	22,5
47	7x4	1180	1285	1310	1145	280x4	24,7
48	8x4	1340	1445	1470	1305	320x4	27,5
49	9x4	1440	1545	1570	1400	340x4	29,9
57	7x5	1475	1580	1605	1440	280x5	30,8
58	8x5	1675	1780	1805	1640	320x5	34,3
59	9x5	1800	1905	1930	1760	340x5	37,3
68	8x6	2010	2115	2140	1975	320x6	41,3
69	9x6	2160	2265	2290	2120	340x6	44,8
78	8x7	2345	2450	2475	2310	320x7	48,0
79	9x7	2520	2625	2650	2480	340x7	52,2
88	8x8	2680	2785	2810	2645	320x8	54,8
89	9x8	2880	2985	3010	2840	340x8	59,6

Tab. RCR

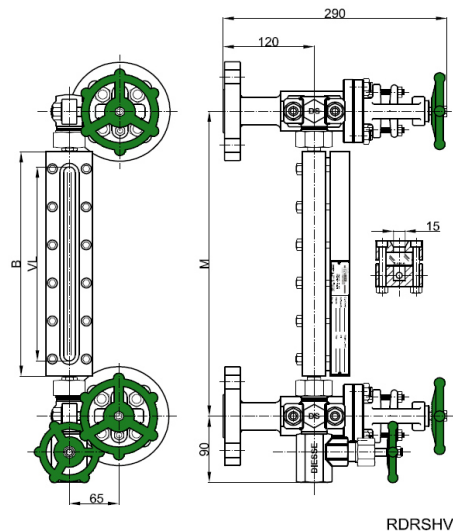
## GLASS LEVEL GAUGE REFLEX TYPE PN40

### DS LG - RDR GR18 / SHV

Code: DS LG-RDR... /40/RF-GR18/...-M...-CS/CS



Code: DS LG-RDR... /40/RF-SHV/...-M...-CS/CS



#### Technical data

##### Service conditions

Max Pressure: PN40

Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

##### View

Standard: adjustable on 360° in the installation phase

##### Distance (Centre-to-centre)

Standard: see below table (**Distance adjustable - 0 mm / + 10 mm**)

Option: On request intermediate distances and over 500 mm

##### Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105	AISI 316L	AISI 316L
Cocks body DS GR18:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Valves body DS SHV:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

##### Gaskets

Standard: graphite/copper

Option: graphite/AISI 316 or PTFE/AISI316

##### Shut-off cocks

DS GR18: cylindrical plug type - Straight type - Quick 90° closing

Handling: lever operated with PP handle (Standard: right; Option: left)

Valves DS SHV: globe type - Opening/Closing by handwheel

##### Process connections:

Standard flanges: UNI PN40 DN15-20-25 ANSI #150-300/RF DN ½" - ¾" - 1"

Standard threaded unions: BSP-M ½" - ¾" NPT-M ½" - ¾"

Options: further connections types or direct connections to the process without shut-off cocks

(See page 1.49)

**Vent:** Standard: blind

Option: see page 1.50

**Drain:** Standard: cock DS D12 threaded ½"

Option: see page 1.50

##### Shut-off valves

DS SHV: globe type

Handling: by handwheel

##### Process connections:

Standard flanges: UNI PN40-64 DN15-20-25 ANSI #150-300/RF DN ½" - ¾" - 1"

Standard threaded unions: BSP-M ½" - ¾" NPT-M ½" - ¾"

Options: further connections types or direct connections to the process without shut-off valves

(See page 1.53)

**Vent:** Standard: threaded ½" with plug

Option: see page 1.54

**Drain:** Standard: valve DS DHV threaded ¾"

Option: see page 1.54

##### Glasses

Reflex - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081

Standard: fitted with type B (See page 1.69)

Option: type A (See page 1.69)

##### Accessories

See from page 1.55

##### Weights

Housing DS RDR: see below table

Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)

Valves DS SHV: Kg. 11,8 approx. (With flanges UNI DN20 PN40)

##### Tightening torque of housing screws

Standard: 35 Nm

##### Spare parts

Housing DS RDR: see from page 1.69 (Drawing with components and parts list see page 1.62)

Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

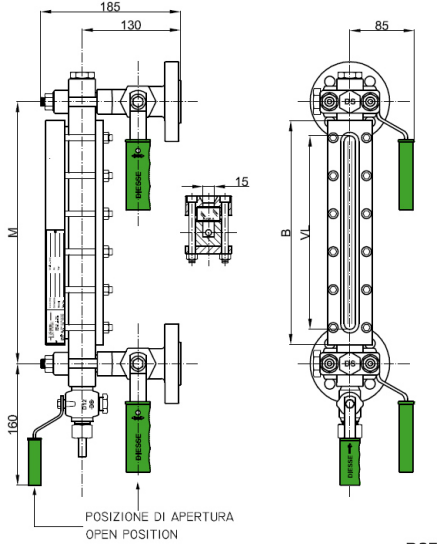
Valves DS SHV: see from page 1.74 (Drawing with components and parts list see page 1.68)

CODE	TYPE	BODY Length [mm]	DISTANCE SL Pipes L = 57 M [-0/+10 mm]	DISTANCE HL Pipes L = 70 M [-0/+10 mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el	B	M = B+105	M = B+130	VL		
11	1x1	130	235	260	95	115	2,9
12	2x1	155	260	285	120	140	3,4
13	3x1	180	285	310	145	165	3,8
14	4x1	205	310	335	170	190	4,4
15	5x1	235	340	365	200	220	5,2
16	6x1	265	370	395	230	250	5,6
17	7x1	295	400	425	260	280	6,0
18	8x1	335	440	465	300	320	6,5
19	9x1	360	465	490	320	340	7,5

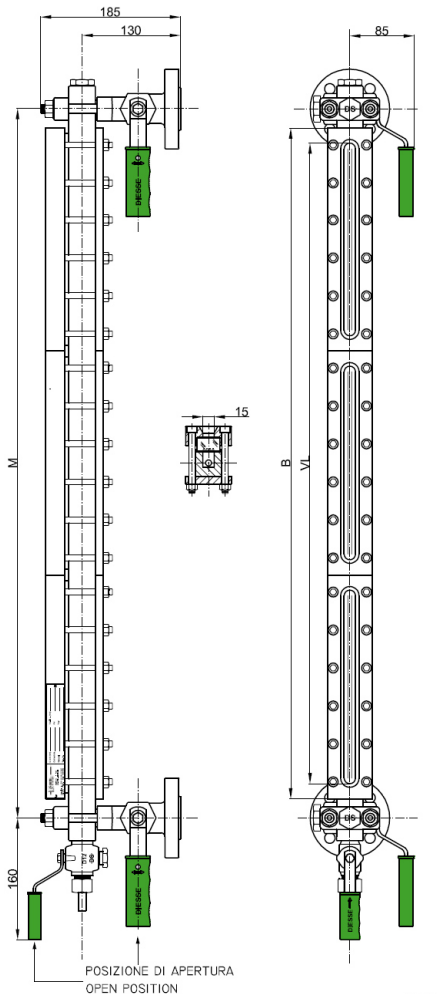
Tab. RDR

## GLASS LEVEL GAUGE REFLEX TYPE PN40 and PN64 / Class 300 DS LG - RCF GR18

Code: DS LG-RCF...-... /40/RF-GR18/.../...-M...-CS/CS



RCF



RCFM

### Technical data

#### Service conditions

Max Pressure: PN40 and PN64; Class 300 (A105: 51 bar @ 38°C; AISI 316L: 49,6 bar @ 38°C)  
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

#### View

Standard: front, on request lateral (right or left) adjustable in the production phase

#### Distance (Centre-to-centre)

Standard: see below table for minimum distance (Fixed distance, not adjustable)  
Option: On request intermediate distances and over 3.000 mm

#### Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body & cocks body:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

#### Gaskets

Standard: graphite/copper      Option: graphite/AISI 316 or PTFE/AISI316

#### Shut-off cocks

DS GR18: cylindrical plug type - Straight type - Quick 90° closing  
Handling: lever operated with PP handle (Standard: right; Option: left)

#### Process connections:

Standard flanges:      UNI PN40-64 DN15-20-25      ANSI #150-300-600/RF DN ½" - ¾" - 1"  
Standard threaded unions:      BSP-M ½" - ¾"      NPT-M ½" - ¾"  
Options: further connections types or direct connections to the process without shut-off cocks  
(See page 1.51)

**Vent:**      Standard: threaded ½" with plug      Option: see page 1.52  
**Drain:**      Standard: cock DS D12 threaded ½"      Option: see page 1.52

#### Glasses

Reflex - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081  
Standard: fitted with type A (See page 1.69)

#### Accessories

See from page 1.55

#### Weights

Housing DS RCF: see below table  
Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)

#### Tightening torque of housing screws

Standard: 35 Nm

#### Spare parts

Housing DS RCF: see from page 1.69 (Drawing with components and parts list see page 1.62)  
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

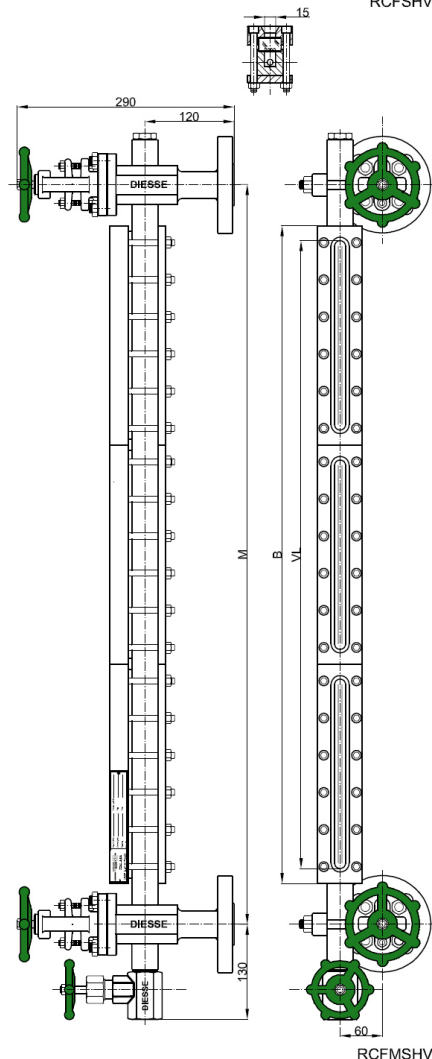
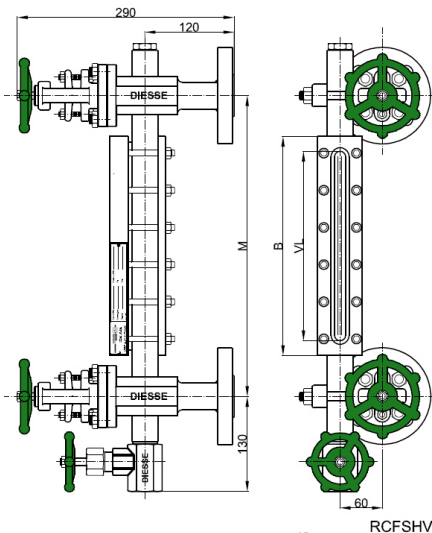
CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+40	VL	x No. elements	
11	1x1	130	170	95	115x1	4,3
12	2x1	155	195	120	140x1	4,8
13	3x1	180	220	145	165x1	5,3
14	4x1	205	245	170	190x1	5,7
15	5x1	235	275	200	220x1	6,5
16	6x1	265	305	230	250x1	6,9
17	7x1	295	335	260	280x1	7,6
18	8x1	335	375	300	320x1	8,3
19	9x1	360	400	320	340x1	8,9
24	4x2	410	450	375	190x2	9,9
25	5x2	470	510	435	220x2	11,5
26	6x2	530	570	495	250x2	12,3
27	7x2	590	630	555	280x2	13,8
28	8x2	670	710	635	320x2	15,1
29	9x2	720	760	680	340x2	16,3
36	6x3	795	835	760	250x3	17,8
37	7x3	885	925	850	280x3	19,9
38	8x3	1005	1045	970	320x3	22,0
39	9x3	1080	1120	1040	340x3	23,8
47	7x4	1180	1220	1145	280x4	26,0
48	8x4	1340	1380	1305	320x4	28,8
49	9x4	1440	1480	1400	340x4	31,2
57	7x5	1475	1515	1440	280x5	32,1
58	8x5	1675	1715	1640	320x5	35,6
59	9x5	1800	1840	1760	340x5	38,6
68	8x6	2010	2050	1975	320x6	42,6
69	9x6	2160	2200	2120	340x6	46,1
78	8x7	2345	2385	2310	320x7	49,3
79	9x7	2520	2560	2480	340x7	53,5
88	8x8	2680	2720	2645	320x8	56,1
89	9x8	2880	2920	2840	340x8	60,9

Tab. RCF



## GLASS LEVEL GAUGE REFLEX TYPE PN40 and PN64 / Class 300 DS LG - RCF SHV

Code: DS LG-RCF... /40/RF-SHV... /...-M...-CS/CS



### Technical data

#### Service conditions

Max Pressure: PN40 and PN64; Class 300 (A105: 51 bar @ 38°C; AISI 316L: 49,6 bar @ 38°C)  
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

#### View

Standard: front, on request lateral (right or left) adjustable in the production phase

#### Distance (Centre-to-centre)

Standard: see below table for minimum distance (Fixed distance, not adjustable)  
Option: On request intermediate distances and over 3.000 mm

#### Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105 / A105 LF2	AISI 316L	AISI 316L
Valves body:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

#### Gaskets

Standard: graphite/copper

Option: graphite/AISI 316 or PTFE/AISI316

#### Shut-off valves

DS SHV: globe type

Handling: by handwheel

Process connections:

Standard flanges: UNI PN40-64 DN15-20-25 ANSI #150-300-600/RF DN 1/2" - 3/4" - 1"

Standard threaded unions: BSP-M 1/2" - 3/4" NPT-M 1/2" - 3/4"

Options: further connections types or direct connections to the process without shut-off valves

(See page 1.53)

Vent: Standard: threaded 1/2" with plug

Option: see page 1.54

Drain: Standard: valve DS DHV threaded 3/4"

Option: see page 1.54

#### Glasses

Reflex - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081

Standard: fitted with type A (See page 1.69)

#### Accessories

See from page 1.55

#### Weights

Housing DS RCF: see below table

Valves DS SHV: Kg. 11,8 approx. (With flanges UNI DN20 PN40)

#### Tightening torque of housing screws

Standard: 35 Nm

#### Spare parts

Housing DS RCF: see from page 1.69 (Drawing with components and parts list see page 1.62)

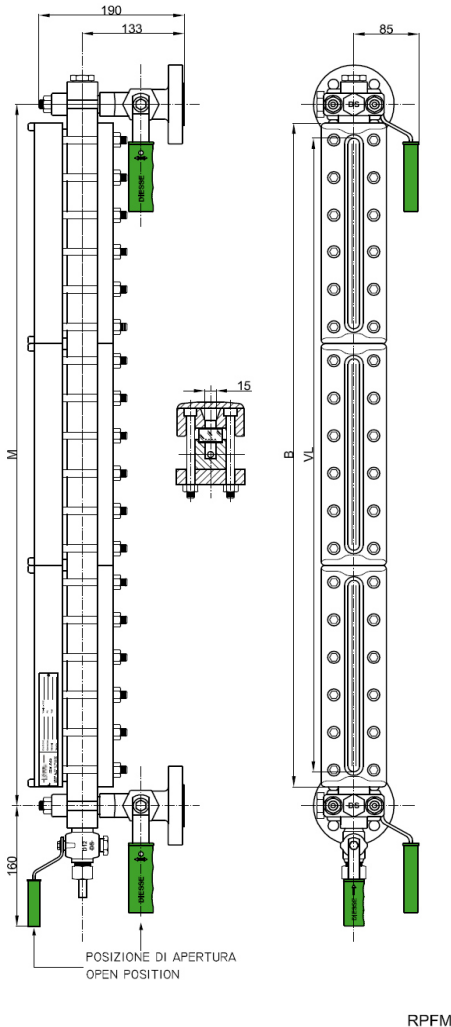
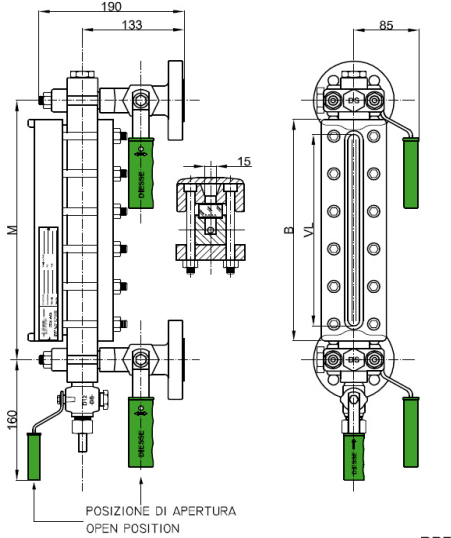
Valves DS SHV: see from page 1.74 (Drawing with components and parts list see page 1.68)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+80	VL	x No. elements	
11	1x1	130	210	95	115x1	4,3
12	2x1	155	235	120	140x1	4,8
13	3x1	180	260	145	165x1	5,3
14	4x1	205	285	170	190x1	5,7
15	5x1	235	315	200	220x1	6,5
16	6x1	265	345	230	250x1	6,9
17	7x1	295	375	260	280x1	7,6
18	8x1	335	415	300	320x1	8,3
19	9x1	360	440	320	340x1	8,9
24	4x2	410	490	375	190x2	9,9
25	5x2	470	550	435	220x2	11,5
26	6x2	530	610	495	250x2	12,3
27	7x2	590	670	555	280x2	13,8
28	8x2	670	750	635	320x2	15,1
29	9x2	720	800	680	340x2	16,3
36	6x3	795	875	760	250x3	17,8
37	7x3	885	965	850	280x3	19,9
38	8x3	1005	1085	970	320x3	22,0
39	9x3	1080	1160	1040	340x3	23,8
47	7x4	1180	1260	1145	280x4	26,0
48	8x4	1340	1420	1305	320x4	28,8
49	9x4	1440	1520	1400	340x4	31,2
57	7x5	1475	1555	1440	280x5	32,1
58	8x5	1675	1755	1640	320x5	35,6
59	9x5	1800	1880	1760	340x5	38,6
68	8x6	2010	2090	1975	320x6	42,6
69	9x6	2160	2240	2120	340x6	46,1
78	8x7	2345	2425	2310	320x7	49,3
79	9x7	2520	2600	2480	340x7	53,5
88	8x8	2680	2760	2645	320x8	56,1
89	9x8	2880	2960	2840	340x8	60,9

Tab. RCF

## GLASS LEVEL GAUGE REFLEX TYPE PN100 and PN160 / Class 600 and 900 DS LG - RPF GR18

Code: DS LG-RPF... /100/RF-GR18/.../...-M...-CS/CS



### Technical data

#### Service conditions

Max Pressure: PN100; Class 600 (A105: 102 bar @ 38°C; AISI 316L: 99,3 bar @ 38°C) and PN160; Class 900 (A105: 153,1 bar @ 38°C; AISI 316L: 148,9 bar @ 38°C)  
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

#### View

Standard: front, on request lateral (right or left) adjustable in the production phase

#### Distance (Centre-to-centre)

Standard: see below table for minimum distance (Fixed distance, not adjustable)  
Option: On request intermediate distances and over 2.000 mm

#### Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body & cocks body:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

#### Gaskets

Standard: graphite/copper      Option: graphite/AISI 316 or PTFE/AISI316

#### Shut-off cocks

DS GR18: cylindrical plug type - Straight type - Quick 90° closing  
Handling: lever operated with PP handle (Standard: right; Option: left)

#### Process connections:

Standard flanges:	UNI PN100-160 DN20 - DN25	ANSI #600-900/RF DN ¾" - 1"
Standard threaded unions:	BSP-M ¾" - 1"	NPT-M ¾" - 1"

Options: further connections types or direct connections to the process without shut-off cocks  
(See page 1.51)

**Vent:** Standard: threaded ½" with plug

Option: see page 1.52

**Drain:** Standard: cock DS D12 threaded ½"

Option: see page 1.52

#### Glasses

Reflex - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081  
Standard: fitted with type B (See page 1.69)

#### Accessories

See from page 1.55

#### Weights

Housing DS RPF: see below table  
Cocks DS GR18: Kg. 9,2 approx. (With flanges UNI DN20 PN100)

#### Tightening torque of housing screws

Standard: 75 Nm

#### Spare parts

Housing DS RPF: see from page 1.69 (Drawing with components and parts list see page 1.63)  
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+50	VL	x No. elements	
11	1x1	130	180	95	115x1	7,7
12	2x1	155	205	120	140x1	8,6
13	3x1	180	230	145	165x1	9,9
14	4x1	205	255	170	190x1	11,0
15	5x1	235	285	200	220x1	12,3
16	6x1	265	315	230	250x1	13,1
17	7x1	295	345	260	280x1	14,8
18	8x1	335	385	300	320x1	16,0
19	9x1	360	410	320	340x1	17,7
24	4x2	410	460	375	190x2	20,5
25	5x2	470	520	435	220x2	23,1
26	6x2	530	580	495	250x2	24,7
27	7x2	590	640	555	280x2	28,1
28	8x2	670	720	635	320x2	30,5
29	9x2	720	770	680	340x2	33,9
36	6x3	795	845	760	250x3	36,3
37	7x3	885	935	850	280x3	41,4
38	8x3	1005	1055	970	320x3	45,0
39	9x3	1080	1130	1040	340x3	50,1
47	7x4	1180	1230	1145	280x4	54,7
48	8x4	1340	1390	1305	320x4	59,5
49	9x4	1440	1490	1400	340x4	66,3
57	7x5	1475	1525	1440	280x5	68,0
58	8x5	1675	1725	1640	320x5	74,0
59	9x5	1800	1850	1760	340x5	82,5

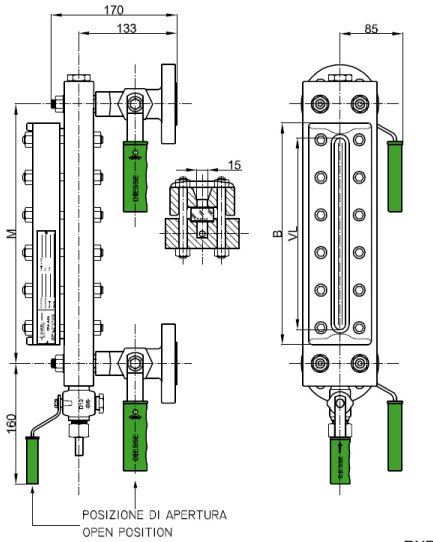
Tab. RPF



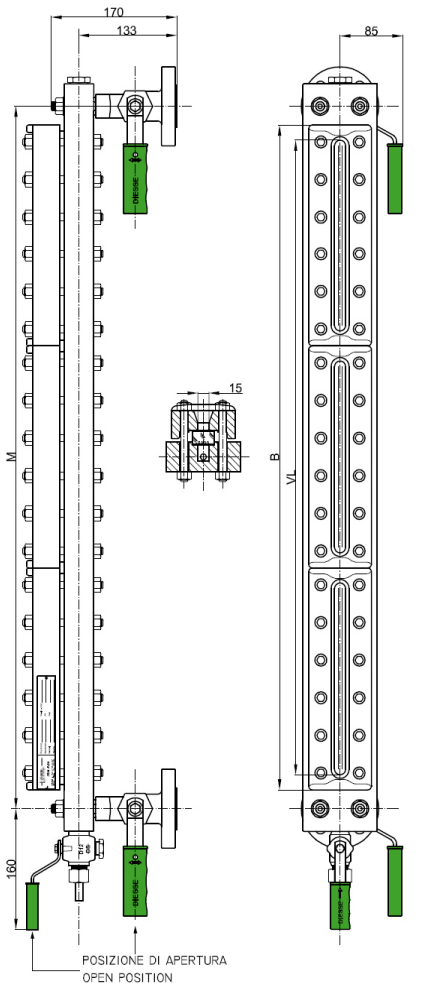


## GLASS LEVEL GAUGE REFLEX TYPE PN160 / Class 900 DS LG - RXF GR18

Code: DS LG-RXF...-... /160/RF-GR18/.../...-M...-CS/CS



RXF



RXFM

### Technical data

#### Service conditions

Max Pressure: PN160; Class 900 (A105: 153,1 bar @ 38°C; AISI 316L: 148,9 bar @ 38°C)  
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

#### View

Standard: front, on request lateral (right or left) adjustable in the production phase

#### Distance (Centre-to-centre)

Standard: see below table for minimum distance (Fixed distance, not adjustable)  
Option: On request intermediate distances and over 2.000 mm

#### Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body & cocks body:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

#### Gaskets

Standard: graphite/copper      Option: graphite/AISI 316 or PTFE/AISI316

#### Shut-off cocks

DS GR18: cylindrical plug type - Straight type - Quick 90° closing  
Handling: lever operated with PP handle (Standard: right; Option: left)

#### Process connections:

Standard flanges:	UNI PN160 DN20 - DN25	ANSI #900/RF DN ¾" - 1"
Standard threaded unions:	BSP-M ¾" - 1"	NPT-M ¾" - 1"

Options: further connections types or direct connections to the process without shut-off cocks  
(See page 1.51)

**Vent:** Standard: threaded ½" with plug

Option: see page 1.52

**Drain:** Standard: cock DS D12 threaded ½"

Option: see page 1.52

#### Glasses

Reflex - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081  
Standard: fitted with type B (See page 1.69)

#### Accessories

See from page 1.55

#### Weights

Housing DS RXF: see below table

Cocks DS GR18: Kg. 9,2 approx. (With flanges UNI DN20 PN100)

#### Tightening torque of housing screws

Standard: 75 Nm

#### Spare parts

Housing DS RXF: see from page 1.69 (Drawing with components and parts list see page 1.63)

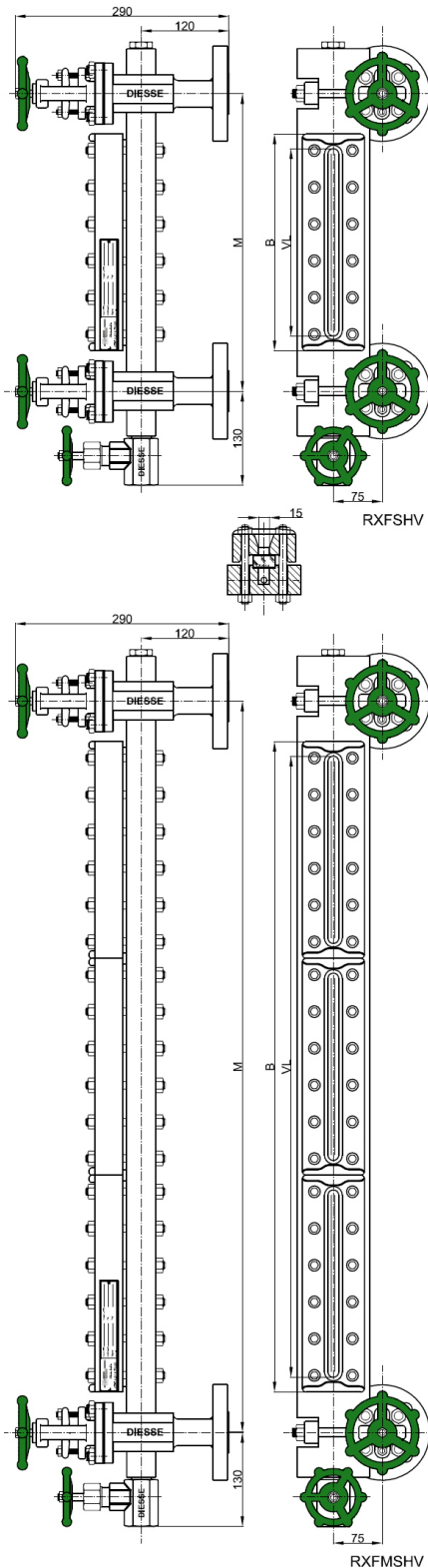
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+50	VL	x No. elements	
11	1x1	130	180	95	115x1	11,3
12	2x1	155	205	120	140x1	12,7
13	3x1	180	230	145	165x1	14,4
14	4x1	205	255	170	190x1	15,5
15	5x1	235	285	200	220x1	17,7
16	6x1	265	315	230	250x1	19,0
17	7x1	295	345	260	280x1	21,3
18	8x1	335	385	300	320x1	23,1
19	9x1	360	410	320	340x1	25,2
24	4x2	410	460	375	190x2	28,0
25	5x2	470	520	435	220x2	32,4
26	6x2	530	580	495	250x2	35,0
27	7x2	590	640	555	280x2	39,6
28	8x2	670	720	635	320x2	43,2
29	9x2	720	770	680	340x2	47,4
36	6x3	795	845	760	250x3	51,0
37	7x3	885	935	850	280x3	57,9
38	8x3	1005	1055	970	320x3	63,3
39	9x3	1080	1130	1040	340x3	69,6
47	7x4	1180	1230	1145	280x4	76,2
48	8x4	1340	1390	1305	320x4	83,4
49	9x4	1440	1490	1400	340x4	91,8
57	7x5	1475	1525	1440	280x5	94,5
58	8x5	1675	1725	1640	320x5	103,5
59	9x5	1800	1850	1760	340x5	114,0

Tab. RXF

## GLASS LEVEL GAUGE REFLEX TYPE PN160 / Class 900 DS LG - RXF SHV

Code: DS LG-RXF... /160/RF-SHV/...-M...-CS/CS



### Technical data

#### Service conditions

Max Pressure: PN160; Class 900 (A105: 153,1 bar @ 38°C; AISI 316L: 148,9 bar @ 38°C)  
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

#### View

Standard: front, on request lateral (right or left) adjustable in the production phase

#### Distance (Centre-to-centre)

Standard: see below table for minimum distance (Fixed distance, not adjustable)  
Option: On request intermediate distances and over 2.000 mm

#### Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105 / A105 LF2	AISI 316L	AISI 316L
Valves body:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

#### Gaskets

Standard: graphite/copper

Option: graphite/AISI 316 or PTFE/AISI316

#### Shut-off valves

DS SHV: globe type

Handling: by handwheel

Process connections:

Standard flanges: UNI PN160 DN20-25

ANSI #900/RF DN ¾" - 1"

Standard threaded unions: BSP-M ¾" - 1"

NPT-M ¾" - 1"

Options: further connections types or direct connections to the process without shut-off valves

(See page 1.53)

Vent: Standard: threaded ½" with plug

Option: see page 1.54

Drain: Standard: valve DS DHV threaded ¾"

Option: see page 1.54

#### Glasses

Reflex - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081  
Standard: fitted with type B (See page 1.69)

#### Accessories

See from page 1.55

#### Weights

Housing DS RXF: see below table

Valves DS SHV: Kg. 13,5 approx. (With flanges UNI DN20 PN160)

#### Tightening torque of housing screws

Standard: 75 Nm

#### Spare parts

Housing DS RXF: see from page 1.69 (Drawing with components and parts list see page 1.63)

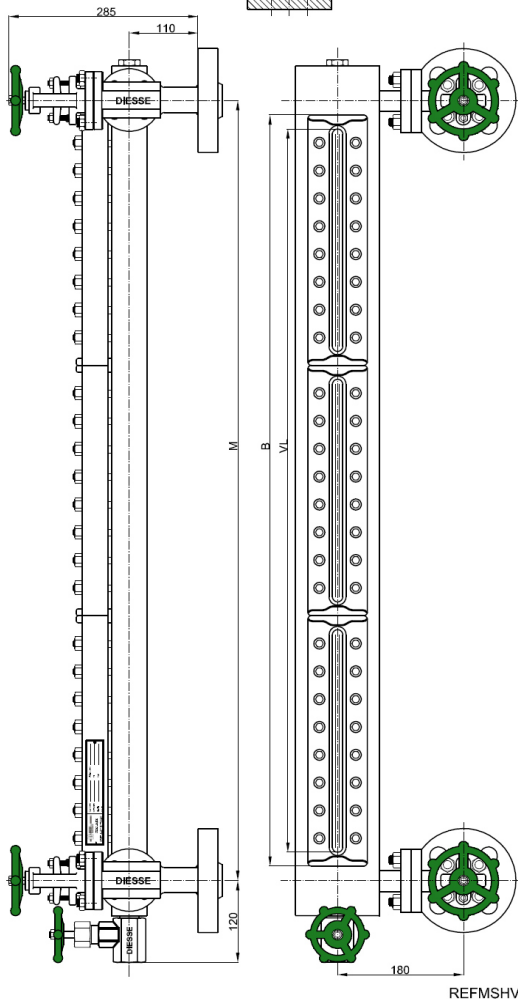
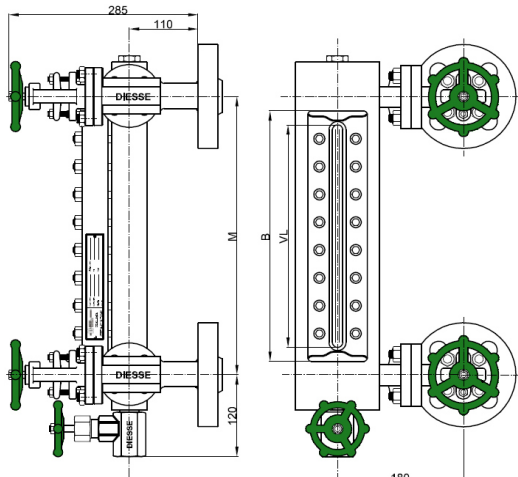
Valves DS SHV: see from page 1.74 (Drawing with components and parts list see page 1.68)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+80	VL	x No. elements	
11	1x1	130	210	95	115x1	11,3
12	2x1	155	235	120	140x1	12,7
13	3x1	180	260	145	165x1	14,4
14	4x1	205	285	170	190x1	15,5
15	5x1	235	315	200	220x1	17,7
16	6x1	265	345	230	250x1	19,0
17	7x1	295	375	260	280x1	21,3
18	8x1	335	415	300	320x1	23,1
19	9x1	360	440	320	340x1	25,2
24	4x2	410	490	375	190x2	28,0
25	5x2	470	550	435	220x2	32,4
26	6x2	530	610	495	250x2	35,0
27	7x2	590	670	555	280x2	39,6
28	8x2	670	750	635	320x2	43,2
29	9x2	720	800	680	340x2	47,4
36	6x3	795	875	760	250x3	51,0
37	7x3	885	965	850	280x3	57,9
38	8x3	1005	1085	970	320x3	63,3
39	9x3	1080	1160	1040	340x3	69,6
47	7x4	1180	1260	1145	280x4	76,2
48	8x4	1340	1420	1305	320x4	83,4
49	9x4	1440	1520	1400	340x4	91,8
57	7x5	1475	1555	1440	280x5	94,5
58	8x5	1675	1755	1640	320x5	103,5
59	9x5	1800	1880	1760	340x5	114,0

Tab. RXF

## GLASS LEVEL GAUGE REFLEX TYPE PN250 / Class 1500 DS LG - REF SHV

Code: DS LG-REF...-... /1500/...-SHV/.../...-M...-CS/CS



### Technical data

#### Service conditions

Max Pressure: PN250; Class 1500 (A105: 255,5 bar @ 38°C; AISI 316L: 239,2 bar @ 38°C)  
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

#### View

Standard: front, on request lateral (right or left) adjustable in the production phase

#### Distance (Centre-to-centre)

Standard: see below table for minimum distance (Fixed distance, not adjustable)  
Option: On request intermediate distances and over 2.000 mm

#### Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105 / A105 LF2	AISI 316L	AISI 316L
Valves body:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

#### Gaskets

Standard: graphite/AISI 316

Option: PTFE/AISI316

#### Shut-off valves

DS SHV: globe type  
Handling: by handwheel

#### Process connections:

Standard flanges: UNI PN250 DN On request ANSI #1500 DN On request

Options: further connections types or direct connections to the process without shut-off valves  
(See page 1.53)

Vent: Standard: threaded 1/2" with plug

Option: see page 1.54

Drain: Standard: valve DS DHV threaded 3/4"

Option: see page 1.54

#### Glasses

Reflex - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081  
Standard: fitted with type B, thickness 21 mm (See page 1.69)

#### Accessories

See from page 1.55

#### Weights

Housing DS REF: see below table

Valves DS SHV: Kg. 16,5 approx. (With flanges 1" ANSI 1500#RF)

#### Tightening torque of housing screws

Standard: 90 Nm

#### Spare parts

Housing DS REF: see from page 1.69 (Drawing with components and parts list see page 1.63)

Valves DS SHV: see from page 1.74 (Drawing with components and parts list see page 1.68)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+80	VL	x No. elements	
11	1x1	130	210	95	115x1	13,4
12	2x1	155	235	120	140x1	15,2
13	3x1	180	260	145	165x1	17,3
14	4x1	205	285	170	190x1	18,8
15	5x1	235	315	200	220x1	21,5
16	6x1	265	345	230	250x1	23,3
17	7x1	295	375	260	280x1	26,0
18	8x1	335	415	300	320x1	28,5
19	9x1	360	440	320	340x1	31,0
24	4x2	410	490	375	190x2	34,6
25	5x2	470	550	435	220x2	40,0
26	6x2	530	610	495	250x2	43,5
27	7x2	590	670	555	280x2	49,1
28	8x2	670	750	635	320x2	53,9
29	9x2	720	800	680	340x2	59,0
36	6x3	795	875	760	250x3	63,7
37	7x3	885	965	850	280x3	72,1
38	8x3	1005	1085	970	320x3	79,4
39	9x3	1080	1160	1040	340x3	86,9
47	7x4	1180	1260	1145	280x4	95,1
48	8x4	1340	1420	1305	320x4	104,9
49	9x4	1440	1520	1400	340x4	114,9
57	7x5	1475	1555	1440	280x5	118,1
58	8x5	1675	1755	1640	320x5	130,3
59	9x5	1800	1880	1760	340x5	142,8

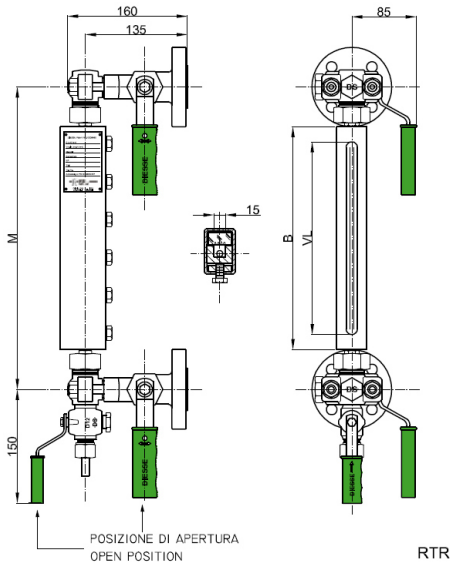
Tab. REF



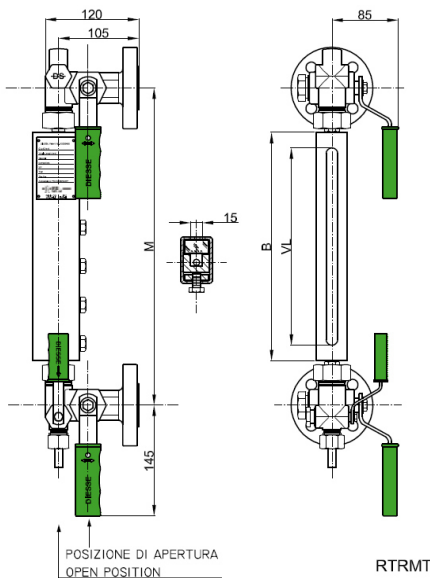
## GLASS LEVEL GAUGE REFLEX TYPE PN16

### DS LG - RTR GR18 / MT18

Code: DS LG-RTR...-... /16/RF-GR18/.../...-M...-CS/CS



Code: DS LG-RTR...-... /16/RF-MT18/.../...-M...-CS/CS



#### Technical data

##### Service conditions

Max Pressure: PN16

Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

##### View

Standard: adjustable on 360° in the installation phase

##### Distance (Centre-to-centre)

Standard: see below table (Distance adjustable - 0 mm / + 10 mm)

##### Materials (Standard)

Execution: CS/CS  
Gauge body & cocks body: ASTM A105  
Cocks trim: AISI 303  
Non-wetted parts: Carbon steel galvanized

##### Gaskets

Standard: graphite/copper      Option: graphite/AISI 316 or PTFE/AISI316

##### Shut-off cocks

DS GR18: cylindrical plug type - Straight type - Quick 90° closing

DS MT18: cylindrical plug type with monolithic body - Straight type - Quick 90° closing

(see page 1.47)

**Centre-to-centre distance  $M = B + 115 \text{ mm}$  or  $140 \text{ mm}$**

Handling: lever operated with PP handle (Standard: right; Option: left)

##### Process connections:

Standard flanges: UNI PN16/40 DN15-20-25      ANSI #150/RF DN ½" - ¾" - 1"

Standard threaded unions: BSP-M ½" - ¾"      NPT-M ½" - ¾"

Options: further connections types or direct connections to the process without shut-off cocks

(See page 1.49)

**Vent:** Standard: blind

Option: see page 1.50

**Drain:** Standard: cock DS D12 threaded ½"

Option: see page 1.50

##### Glasses

Reflex - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081

Standard: fitted with type A (See page 1.69)

##### Accessories

See from page 1.55

##### Weights

Housing DS RTR: see below table

Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)

Cocks DS MT18: Kg. 6,1 approx. (With flanges UNI DN20 PN40)

##### Tightening torque of housing screws

Standard: 25 Nm

##### Spare parts

Housing DS RTR: see from page 1.69 (Drawing with components and parts list see page 1.61)

Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

Cocks DS MT18: see from page 1.72 (Drawing with components and parts list see page 1.67)

##### With cocks type DS GR18:

CODE	TYPE	BODY Length [mm]	DISTANCE SL Pipes L = 57 M [-0/+10 mm]	DISTANCE HL Pipes L = 70 M [-0/+10 mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+105	M = B+130	VL	x No. elements	
11	1x1	130	235	260	95	115x1	1,8
12	2x1	155	260	285	120	140x1	2,0
13	3x1	180	285	310	145	165x1	2,2
14	4x1	205	310	335	170	190x1	2,5
15	5x1	235	340	365	200	220x1	2,9
16	6x1	265	370	395	230	250x1	3,2
17	7x1	295	400	425	260	280x1	3,6
18	8x1	335	440	465	300	320x1	4,0
19	9x1	360	465	490	320	340x1	4,3

Tab. RTR

##### With cocks type DS MT18 (Monolithic body):

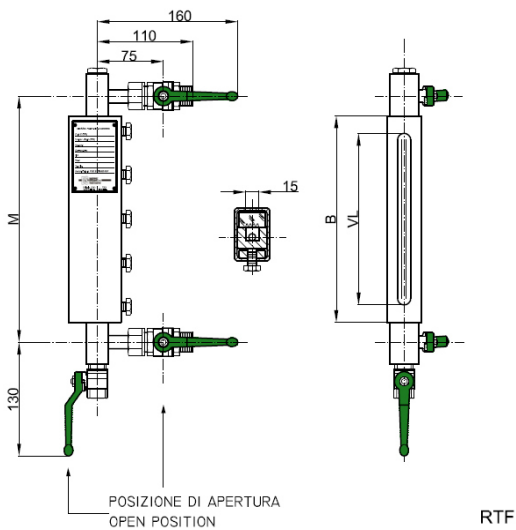
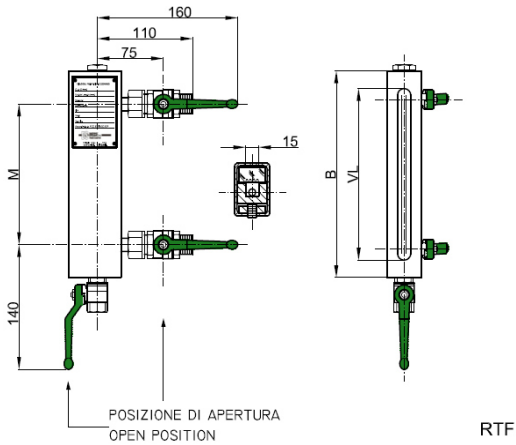
CODE	TYPE	BODY Length [mm]	DISTANCE SL Pipes L = 57 M [-0/+10 mm]	DISTANCE HL Pipes L = 70 M [-0/+10 mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+115	M = B+140	VL	x No. elements	
11	1x1	130	245	270	95	115x1	1,8
12	2x1	155	270	295	120	140x1	2,0
13	3x1	180	295	320	145	165x1	2,2
14	4x1	205	320	345	170	190x1	2,5
15	5x1	235	350	375	200	220x1	2,9
16	6x1	265	380	405	230	250x1	3,2
17	7x1	295	410	435	260	280x1	3,6
18	8x1	335	450	475	300	320x1	4,0
19	9x1	360	475	500	320	340x1	4,3

Tab. RTRMT

## GLASS LEVEL GAUGE REFLEX TYPE PN16

### DS LG - RTF SBB / D12

Code: DS LG-RTF...-1/2"GASM-SBB/DBB/PB-M...-CS/CS



#### Technical data

##### Service conditions

Max Pressure: PN16  
Max Temperature:  
- With PTFE gaskets and ball valves DS SBB: 120°C  
- With graphite gaskets and cylindrical plug cocks DS D12: 170°C

##### View

Standard: front, on request lateral (right or left) adjustable in the production phase

##### Distance (Centre-to-centre)

On request, Fixed distance, not adjustable

##### Materials (Standard)

Execution: CS/CS  
ASTM A105  
Gauge body: ASTM A105  
Body, ball and sealing of ball valves DS SBB: Brass (CW617N) / Brass (CW617N) / PTFE  
Body, trim and sealing of cocks DS D12: ASTM A105 / AISI 303 / Graphite  
Non-wetted parts: Carbon steel galvanized

##### Gaskets

Standard: PTFE/copper Option: graphite/copper

##### Valves

Standard: ball valves DS SBB threaded 1/2" BSP-M - Quick 90° closing  
Handling: lever operated

Option: on request cylindrical plug cocks DS D12 threaded 1/2" BSP-M or 1/2" BSP-F - Quick 90° closing (See page 3.3)  
Handling: lever operated with PP handle

##### Process connections:

Standard: threaded 1/2" BSP-M (With ball valves DS SBB)  
threaded 1/2" BSP-F (With revolving female connections - without valves)

##### Vent:

Standard: threaded 3/8" BSP-F with plug

##### Drain:

Standard: ball valve DS DBB threaded 3/8" BSP-F - Quick 90° closing  
Handling: lever operated

##### Option:

on request with cylindrical plug cocks DS D12 threaded 3/8" BSP-F or BSP-M

##### Glasses

Reflex - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081  
Standard: fitted with type A (See page 1.69)

##### Accessories

See from page 1.55

##### Weights

Housing DS RTF: see below table  
Ball valve DS SBB: Kg. 0,2 unit approx.  
Cock DS D12: Kg. 0,5 unit approx.

##### Tightening torque of housing screws

Standard: 20 Nm

##### Spare parts

Housing DS RTF: see from page 1.69 (Drawing with components and parts list see page 1.61)  
Cocks DS D12: see from page 1.72

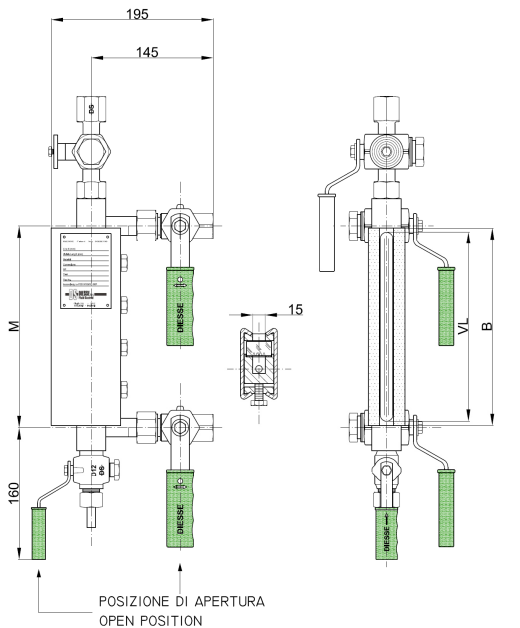
CODE	TYPE	BODY Length [mm]	DISTANCE [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M	VL		
11	1x1	130	On request	95	115	1,8
12	2x1	155	On request	120	140	2,0
13	3x1	180	On request	145	165	2,2
14	4x1	205	On request	170	190	2,5
15	5x1	235	On request	200	220	2,9
16	6x1	265	On request	230	250	3,2
17	7x1	295	On request	260	280	3,6
18	8x1	335	On request	300	320	4,0
19	9x1	360	On request	320	340	4,3

Tab. RTF

## GLASS LEVEL GAUGE REFLEX TYPE PN25

### DS LG - RBFPM D18

Code: DS LG-RBFPM...-1/2" GASF-D18/D12/PM18-M....-CS/CS



RBFPM

#### Technical data

##### Service conditions

Max Pressure: PN25  
Max Temperature: 170°C

##### View

Standard: front, on request lateral (right or left) adjustable in the production phase

##### Distance (Centre-to-centre)

On request, Fixed distance, not adjustable

##### Materials (Standard)

Execution: CS/CS  
Gauge body & cocks body: ASTM A105  
Cocks trim: AISI 303  
Non-wetted parts: Carbon steel galvanized

##### Gaskets

Standard: graphite/copper

##### Shut-off cocks

Standard: cylindrical plug cocks DS D18 threaded 1/2" BSP-F - Quick 90° closing (See page 3.4)  
Handling: lever operated with PP handle

##### Process connections:

Standard: threaded 1/2" BSP-F (With cylindrical plug cocks DS D18)  
threaded M28x2-F (With revolving female connections - without valves)

##### Vent:

Standard: three way cylindrical plug manometer setting valve with control flange DS PM18 threaded 1/2" BSP-F (See page 3.5)

Handling: lever operated with PP handle

Option: on request threaded 1/2" BSP-F with plug (Without cock)

##### Drain:

Standard: with cylindrical plug cock DS D12 threaded 1/2" BSP-M with drain tube - Quick 90° closing (See page 3.3)

Handling: lever operated with PP handle

##### Glasses

Reflex - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081

Standard: fitted with type A (See page 1.69)

Option: type B (See page 1.69)

##### Accessories

See from page 1.55

##### Weights

Housing DS RBFPM: see below table

Cocks DS D18: Kg. 0,9 unit approx.

Cock DS PM18: Kg. 1,2 unit approx.

Cock DS D12: Kg. 0,5 unit approx.

##### Tightening torque of housing screws

Standard: 40 Nm

##### Spare parts

Housing DS RBFPM: see from page 1.69 (Drawing with components and parts list see page 1.61)

Cocks DS D18: see from page 1.72

Cock DS PM18: see from page 1.72

Cock DS D12: see from page 1.72

CODE	TYPE	BODY Length [mm]	DISTANCE [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M	VL		
11	1x1	130	On request	95	115	2,4
12	2x1	155	On request	120	140	2,8
13	3x1	180	On request	145	165	3,3
14	4x1	205	On request	170	190	3,8
15	5x1	235	On request	200	220	4,3
16	6x1	265	On request	230	250	4,9
17	7x1	295	On request	260	280	5,4
18	8x1	335	On request	300	320	6,1
19	9x1	360	On request	320	340	6,6

Tab. RBFPM



## MARINE LEVEL GAUGES

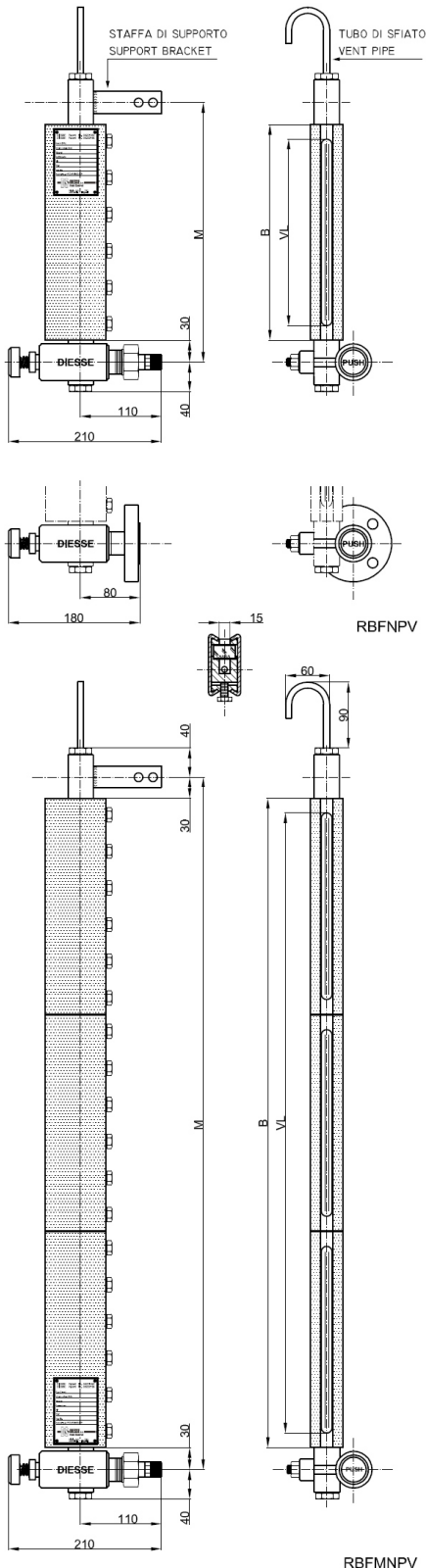
On request the product is available also with  
**the approval certificate of Lloyd's Register**





## GLASS LEVEL GAUGE REFLEX TYPE PN16 DS LG - RBF NPV

Code: DS LG-RBF...-... /40/RF-NPV...-...-M...-CS/CS



### Technical data

#### Service conditions

Pressione max: PN16  
Temperatura max: 150°C

#### Application

Fluid storage tanks also aboard of ships

#### View

Standard: front, on request lateral (right or left) adjustable in the production phase

#### Distance (Centre-to-centre)

Standard: see below table for minimum distance (Fixed distance, not adjustable)  
Option: On request intermediate distances and over 3.000 mm

#### Materials (Standard)

Execution:	CS/CS	SS/CS
Gauge body & valve body:	ASTM A105	AISI 316L
Stem and disc:	AISI 410	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized

#### Gaskets

Standard: graphite/copper      Option: graphite/AISI 316 or PTFE/AISI316

#### Self-closing Valve

DS NPV: self-closing, push button type

Handling: opening by push button (Standard: valve on the right side; On request on the left side)

#### Process connections:

Standard flange:	UNI PN16 DN15-20-25	ANSI #150/RF DN ½" - ¾" - 1"
Standard threaded unions:	BSP-M ½" - ¾"	NPT-M ½" - ¾"

Option: further connections types

**Vent:** Standard: threaded ½" with vent pipe

Option: on request (See details at page 1.52)

**Drain:** Standard: threaded ½" with plug

Option: on request (See details at page 1.52)

#### Glasses

Reflex - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081

Standard: fitted with type A (See page 1.69)

Option: type B (See page 1.69)

#### Accessories

See from page 1.55

#### Weights

Housing DS RBF: see below table

Valve DS NPV: Kg. 2,6 approx. (With flanges UNI DN20 PN16)

#### Tightening torque of housing screws

Standard: 40 Nm

#### Spare parts

Housing DS RBF: see from page 1.69 (Drawing with components and parts list see page 1.61)

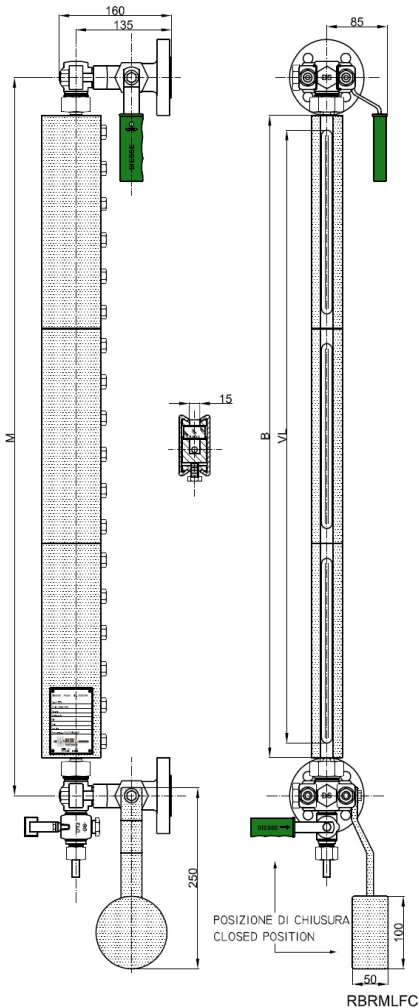
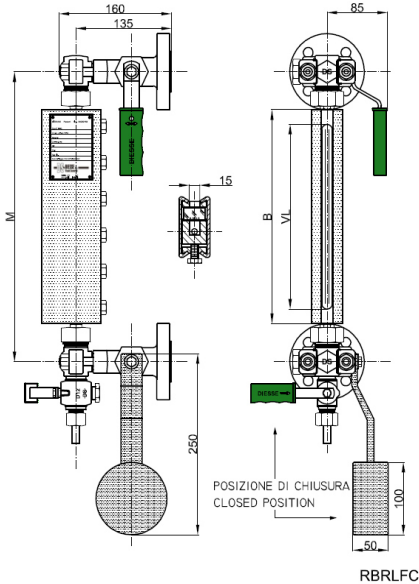
Valve DS NPV: see from page 1.74 (Drawing with components and parts list see page 1.67)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+60	VL	x No. elements	
11	1x1	130	190	95	115x1	3,7
12	2x1	155	215	120	140x1	4,1
13	3x1	180	240	145	165x1	4,6
14	4x1	205	265	170	190x1	5,1
15	5x1	235	295	200	220x1	5,6
16	6x1	265	325	230	250x1	6,2
17	7x1	295	355	260	280x1	6,7
18	8x1	335	395	300	320x1	7,4
19	9x1	360	420	320	340x1	7,9
24	4x2	410	470	375	190x2	8,8
25	5x2	470	530	435	220x2	9,8
26	6x2	530	590	495	250x2	11,0
27	7x2	590	650	555	280x2	12,0
28	8x2	670	730	635	320x2	13,4
29	9x2	720	780	680	340x2	14,4
36	6x3	795	855	760	250x3	15,7
37	7x3	885	945	850	280x3	17,2
38	8x3	1005	1065	970	320x3	19,3
39	9x3	1080	1140	1040	340x3	20,8
47	7x4	1180	1240	1145	280x4	22,5
48	8x4	1340	1400	1305	320x4	25,3
49	9x4	1440	1500	1400	340x4	27,3
57	7x5	1475	1535	1440	280x5	27,8
58	8x5	1675	1735	1640	320x5	31,3
59	9x5	1800	1860	1760	340x5	33,8
68	8x6	2010	2070	1975	320x6	37,2
69	9x6	2160	2220	2120	340x6	40,2
78	8x7	2345	2405	2310	320x7	43,2
79	9x7	2520	2580	2480	340x7	46,7
88	8x8	2680	2740	2645	320x8	49,3
89	9x8	2880	2940	2840	340x8	53,2

Tab. RBF

## GLASS LEVEL GAUGE REFLEX TYPE PN25 and PN40 / Class 150 DS LG - RBR GR18 - LFC

Code: DS LG-RBR..... /40/RF-GR18/.../...M....-CS/CS-LFC



### Technical data

#### Service conditions

Max Pressure: PN25 and PN40

Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

#### Application

Fluid storage tanks also aboard of ships

#### View

Standard: adjustable on 360° in the installation phase

#### Distance (Centre-to-centre)

Standard: see below table (Distance adjustable - 0 mm / + 10 mm)

Option: On request intermediate distances and over 3.000 mm

#### Materials (Standard)

Execution:	CS/CS	SS/CS
Gauge body & cocks body:	ASTM A105	AISI 316L
Cocks trim:	AISI 303	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized

#### Gaskets

Standard: graphite/copper

Option: graphite/AISI 316 or PTFE/AISI316

#### Shut-off cocks

DS GR18: cylindrical plug type - Straight type - Quick 90° closing

Lower cock with weight closing accessory for self closing

#### Process connections:

Standard flanges: UNI PN40 DN15-20-25

ANSI #150-300/RF DN 1/2" - 3/4" - 1"

Standard threaded unions: BSP-M 1/2" - 3/4"

NPT-M 1/2" - 3/4"

Options: further connections types to the process (See page 1.49)

**Vent:** Standard: blind

Option: see page 1.50

**Drain:** Standard: cock DS D12 threaded 1/2"

Option: see page 1.50

#### Glasses

Reflex - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081

Standard: fitted with type A (See page 1.69)

Option: type B (See page 1.69)

#### Accessories

See from page 1.55

#### Weights

Housing DS RBR: see below table

Cocks DS GR18 with weight closing for lower handle: Kg. 10,8 approx. (With flanges UNI DN20 PN40)

#### Tightening torque of housing screws

Standard: 40 Nm

#### Spare parts

Housing DS RBR: see from page 1.69 (Drawing with components and parts list see page 1.61)

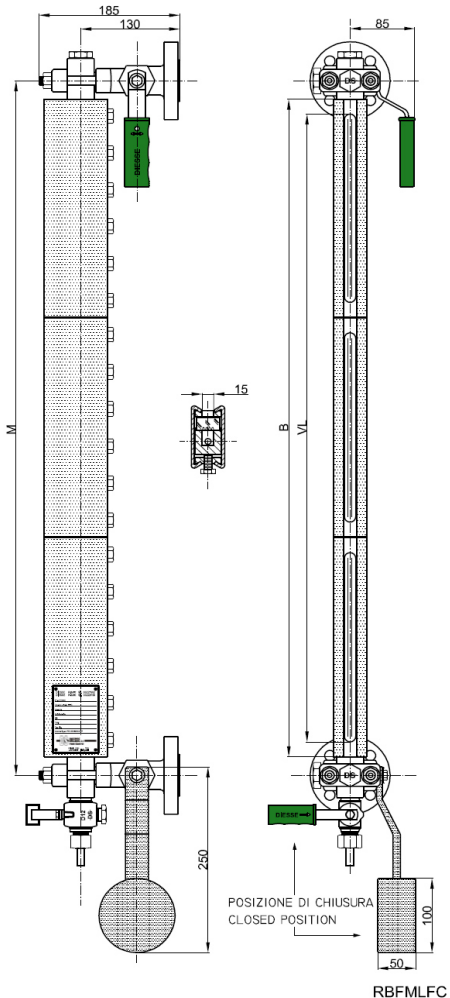
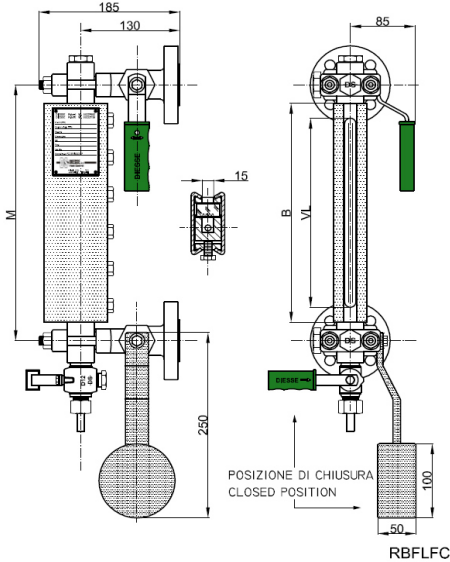
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

CODE	TYPE	BODY Length [mm]	DISTANCE SL	DISTANCE HL	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
			Pipes L = 57 M [-0/+10 mm]	Pipes L = 70 M [-0/+10 mm]			
x No. el.	B	M = B+105	M = B+130	VL	x No. elements		
11	1x1	130	235	260	95	115x1	2,4
12	2x1	155	260	285	120	140x1	2,8
13	3x1	180	285	310	145	165x1	3,3
14	4x1	205	310	335	170	190x1	3,8
15	5x1	235	340	365	200	220x1	4,3
16	6x1	265	370	395	230	250x1	4,9
17	7x1	295	400	425	260	280x1	5,4
18	8x1	335	440	465	300	320x1	6,1
19	9x1	360	465	490	320	340x1	6,6
24	4x2	410	515	540	375	190x2	7,5
25	5x2	470	575	600	435	220x2	8,5
26	6x2	530	635	660	495	250x2	9,7
27	7x2	590	695	720	555	280x2	10,7
28	8x2	670	775	800	635	320x2	12,1
29	9x2	720	825	850	680	340x2	13,1
36	6x3	795	900	925	760	250x3	14,4
37	7x3	885	990	1015	850	280x3	15,9
38	8x3	1005	1110	1145	970	320x3	18,0
39	9x3	1080	1185	1210	1040	340x3	19,5
47	7x4	1180	1285	1310	1145	280x4	21,2
48	8x4	1340	1445	1470	1305	320x4	24,0
49	9x4	1440	1545	1570	1400	340x4	26,0
57	7x5	1475	1580	1605	1440	280x5	26,5
58	8x5	1675	1780	1805	1640	320x5	30,0
59	9x5	1800	1905	1930	1760	340x5	32,5
68	8x6	2010	2115	2140	1975	320x6	35,9
69	9x6	2160	2265	2290	2120	340x6	38,9
78	8x7	2345	2450	2475	2310	320x7	41,9
79	9x7	2520	2625	2650	2480	340x7	45,4
88	8x8	2680	2785	2810	2645	320x8	47,9
89	9x8	2880	2985	3010	2840	340x8	51,9

Tab. RBR

## GLASS LEVEL GAUGE REFLEX TYPE PN25 and PN40 / Class 150 DS LG - RBF GR18 - LFC

Code: DS LG-RBF... /40/RF-GR18/...-M...-CS/CS - LFC



### Technical data

#### Service conditions

Max Pressure: PN25 and PN40

Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

#### Application

Fluid storage tanks also aboard of ships

#### View

Standard: front, on request lateral (right or left) adjustable in the production phase

#### Distance (Centre-to-centre)

Standard: see below table for minimum distance (Fixed distance, not adjustable)

Option: On request intermediate distances and over 3.000 mm

#### Materials (Standard)

Execution:	CS/CS	SS/CS
Gauge body & cocks body:	ASTM A105	AISI 316L
Cocks trim:	AISI 303	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized

#### Gaskets

Standard: graphite/copper

Option: graphite/AISI 316 or PTFE/AISI316

#### Shut-off cocks

DS GR18: cylindrical plug type - Straight type - Quick 90° closing

Lower cock with weight closing accessory for self closing

#### Process connections:

Standard flanges: UNI PN40 DN15-20-25 ANSI #150-300-600/RF DN 1/2" - 3/4" - 1"

Standard threaded unions: BSP-M 1/2" - 3/4" NPT-M 1/2" - 3/4"

Options: further connections types to the process (see page 1.51)

Vent: Standard: threaded 1/2" with plug

Option: see page 1.52

Drain: Standard: cock DS D12 threaded 1/2"

Option: see page 1.52

#### Glasses

Reflex - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081

Standard: fitted with type A (See page 1.69)

Option: type B (See page 1.69)

#### Accessories

See from page 1.55

#### Weights

Housing DS RBF: see below table

Cocks DS GR18 with weight closing for lower handle: Kg. 10,8 approx. (With flanges UNI DN20 PN40)

#### Tightening torque of housing screws

Standard: 40 Nm

#### Spare parts

Housing DS RBR: see from page 1.69 (Drawing with components and parts list see page 1.61)

Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

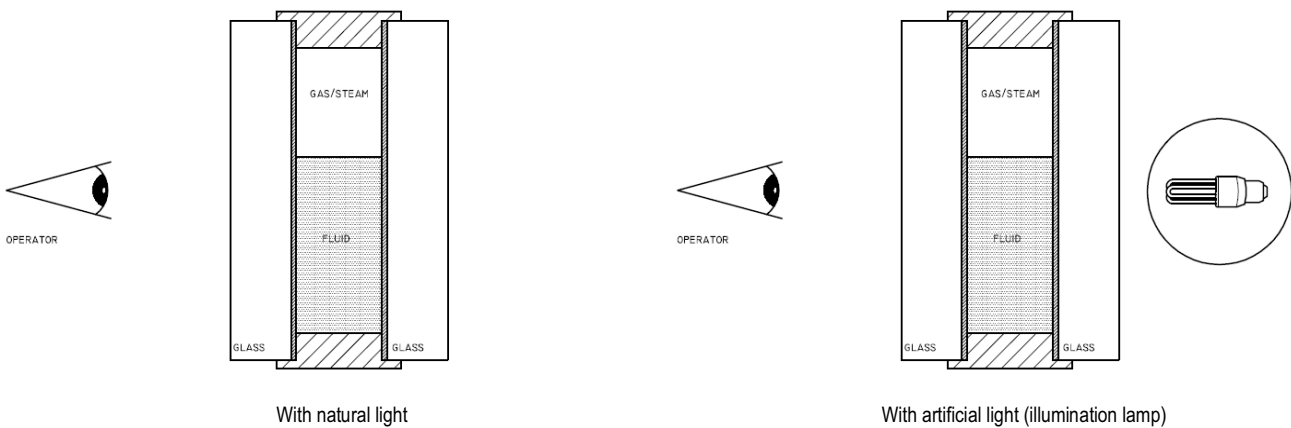
CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+40	VL	x No. elements	
11	1x1	130	170	95	115x1	3,7
12	2x1	155	195	120	140x1	4,1
13	3x1	180	220	145	165x1	4,6
14	4x1	205	245	170	190x1	5,1
15	5x1	235	275	200	220x1	5,6
16	6x1	265	305	230	250x1	6,2
17	7x1	295	335	260	280x1	6,7
18	8x1	335	375	300	320x1	7,4
19	9x1	360	400	320	340x1	7,9
24	4x2	410	450	375	190x2	8,8
25	5x2	470	510	435	220x2	9,8
26	6x2	530	570	495	250x2	11,0
27	7x2	590	630	555	280x2	12,0
28	8x2	670	710	635	320x2	13,4
29	9x2	720	760	680	340x2	14,4
36	6x3	795	835	760	250x3	15,7
37	7x3	885	925	850	280x3	17,2
38	8x3	1005	1045	970	320x3	19,3
39	9x3	1080	1120	1040	340x3	20,8
47	7x4	1180	1220	1145	280x4	22,5
48	8x4	1340	1380	1305	320x4	25,3
49	9x4	1440	1480	1400	340x4	27,3
57	7x5	1475	1515	1440	280x5	27,8
58	8x5	1675	1715	1640	320x5	31,3
59	9x5	1800	1840	1760	340x5	33,8
68	8x6	2010	2050	1975	320x6	37,2
69	9x6	2160	2200	2120	340x6	40,2
78	8x7	2345	2385	2310	320x7	43,2
79	9x7	2520	2560	2480	340x7	46,7
88	8x8	2680	2720	2645	320x8	49,3
89	9x8	2880	2920	2840	340x8	53,2

Tab. RBF

# TRASPARENT level gauges

In this kind of level gauge, the fluid is held between two smooth glasses. The level can be identified as the fluid has a different level of transparency compared to gases and steam.

The transparent level gauge is particularly recommended for applications where the glass needs to be protected from corrosive fluids and high temperatures. A lamp can also be fitted behind the gauge to improve visibility in special operating conditions.



The product line includes level gauges suitable for pressure ratings from PN10 to PN250 and a huge number of industrial process applications.

**This type of gauge is recommended:**

- for use with corrosive fluids (protective shield for the glass is required)
- for steam with an operating pressure > 20 bar (protective shield for the glass is required)
- if repeated thermal shocks are likely (protective shield for the glass is required)
- for checking the interface (level of separation between two immiscible fluids)
- for checking the colour of a fluid
- for dirty / oily fluids

**Operating limits / Conditions:**

Process:

Max. pressure: 255,5 bar @ 38°C (rating class 1500)

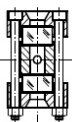
Max. temperature: 300°C (max. temperature allowed by borosilicate glasses as per the DIN 7081 standard - see page 1.69)

Steam: (see page 1.59)

Max. pressure: 70 bar

Max. temperature: 280°C

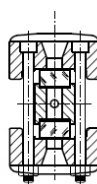
**Types:**



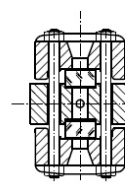
**PN25/40**  
Class 150/300



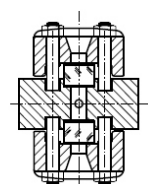
**PN40/64**  
Class 300



**PN64/100**  
Class 600



**PN100/160**  
Class 600/900



**PN250**  
Class 1500



## TRASPARENT level gauges

### Materials / Specifications:

#### Connections between housing and cocks:

- with grinded pipes and stuffing box (View can be turned can be positioned by the customer during installation)
- fixed centre-to-centre distance with metal seal (View can be turned can be positioned during manufacture)

#### Wetted parts:

- standard: galvanized ASTM A105 or A105 LF2 carbon steel, ASTM A182 F316L stainless steel
- additional options: on request

#### Non-wetted parts:

- standard: galvanized carbon steel, AISI 316/316L stainless steel
- additional options: on request

#### Gaskets: (See page 1.71)

- standard: graphite/copper (ASTM A105), graphite/AISI 316 (A105 LF2 and ASTM A182 F316L)
- additional options: PTFE/AISI 316; other extras on request

#### Glasses: (See page 1.69)

- transparent borosilicate glasses, thermally pre-stressed and extra hard as per the DIN 7081 standard

#### Shut-off: (See page 1.49)

- standard: upper valve and lower valve (side/side)
- additional options: on request

#### Drain: (See page 1.50)

- standard: threaded valve
- additional options: on request

#### Vent: (See page 1.50)

- standard: blind (for grinded pipes version)
- threaded with plug (for fixed distance version)
- additional options: on request

### Tank connections:

#### Flanged:

- UNI standard: PN40 DN15 / DN20 / DN25
- ANSI standard: #150 / #300 / #600 DN 1/2" / 3/4" / 1"
- additional options: on request

#### Threaded:

- BSP (GAS) standard: 1/2"-M / 3/4"-M
- NPT standard: 1/2"-M / 3/4"-M

#### Weld-on: from 1/2" to 1" BW or SW

Option: further connections type or direct connections to the process without shut-off cocks (See page 1.49 for more details)

### Shut-off cocks, drain cock and vent cock:

- Cylindrical plug cocks (GR18 or DS MT18 - see page 1.47)
- Globe valves (DS SHV - see page 1.48)
- Push-button valves (DS NPV - see page 1.48)
- Ball valves (DS SBB)

### Spare parts:

***Our spare parts are interchangeable with those of major international manufacturers.***

For the full range of complete sets, turn to the spares section on page 1.69.

### Accessories:

Mica or PCTFE protective shield for the glass, flameproof and watertight illumination lamp (ATEX approved), lower and/or upper safety ball, pusher for safety ball, calibrated scale, non-frosting extension, minimum level arrow, continuous reading, cocks handles lock (See page 1.55 for details)

### Certifications (On request):

- ATEX
- Tests and inspection by Notified Bodies
- NACE MR0175
- Others on request

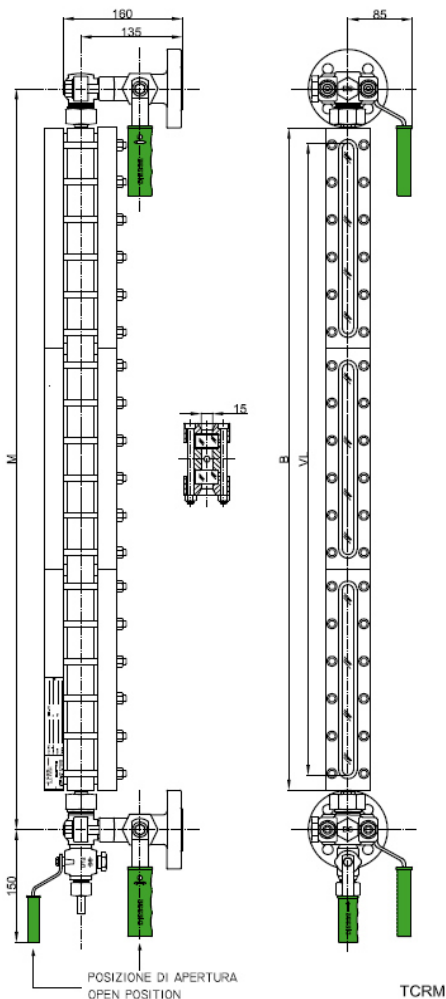
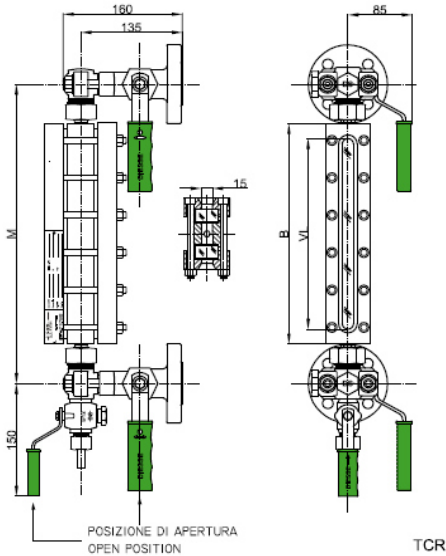
**All DIESSE products are individually checked and tested in accordance with company quality procedures and the industry regulations currently in effect.**

**Certificates can be issued on request.**

## GLASS LEVEL GAUGE TRANSPARENT TYPE PN25 and PN40

### DS LG - TCR GR18

Code: DS LG-TCR...-... /40/RF-GR18/.../...-M...-CS/CS



#### Technical data

##### Service conditions

Max Pressure: PN25 e PN40

Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

##### View

Standard: adjustable on 360° in the installation phase

Note: depending on operating conditions, each element may have one or more internal reinforcements

##### Distance (Centre-to-centre)

Standard: see below table (**Distance adjustable - 0 mm / + 10 mm**)

Option: On request intermediate distances and over 3.000 mm

##### Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body & cocks body:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

##### Gaskets

Standard: graphite/copper

Option: graphite/AISI 316 or PTFE/AISI316

##### Shut-off cocks

DS GR18: cylindrical plug type - Straight type - Quick 90° closing

Handling: lever operated with PP handle (Standard: right; Option: left)

##### Process connections:

Standard flanges:	UNI PN40 DN15-20-25	ANSI #150-300/RF DN ½" - ¾" - 1"
Standard threaded unions:	BSP-M ½" - ¾"	NPT-M ½" - ¾"

Options: further connections types or direct connections to the process without shut-off cocks (See page 1.49)

**Vent:** Standard: blind

Option: see page 1.50

**Drain:** Standard: cock DS D12 threaded ½"

Option: see page 1.50

##### Glasses

Transparent - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081

Standard: fitted with type A (See page 1.69)

##### Accessories

See from page 1.55

##### Weights

Housing DS TCR: see below table

Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)

##### Tightening torque of housing screws

Standard: 35 Nm

##### Spare parts

Housing DS TCR: see from page 1.69 (Drawing with components and parts list see page 1.64)

Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

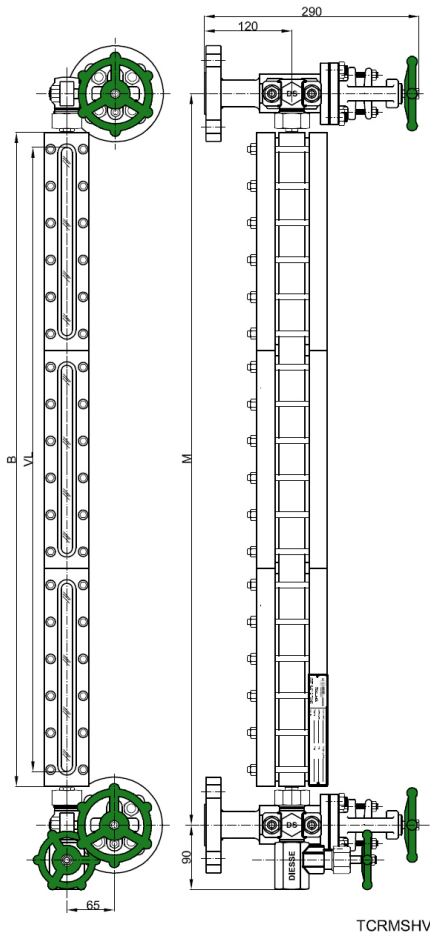
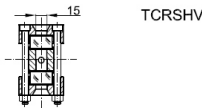
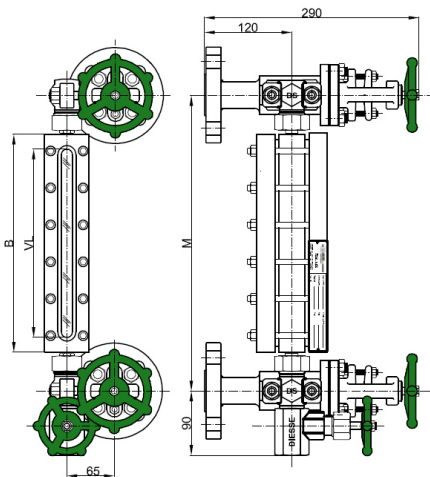
CODE	TYPE	BODY Length [mm]	DISTANCE SL Pipes L = 57 M [-0/+10 mm]	DISTANCE HL Pipes L = 70 M [-0/+10 mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+105	M = B+130	VL	x No. elements	
11	1x1	130	235	260	95	115x1	3,2
12	2x1	155	260	285	120	140x1	3,8
13	3x1	180	285	310	145	165x1	4,3
14	4x1	205	310	335	170	190x1	4,7
15	5x1	235	340	365	200	220x1	5,5
16	6x1	265	370	395	230	250x1	6,0
17	7x1	295	400	425	260	280x1	6,7
18	8x1	335	440	465	300	320x1	7,4
19	9x1	360	465	490	320	340x1	8,1
24	4x2	410	515	540	375	190x2	9,2
25	5x2	470	575	600	435	220x2	10,8
26	6x2	530	635	660	495	250x2	11,8
27	7x2	590	695	720	555	280x2	13,3
28	8x2	670	775	800	635	320x2	14,6
29	9x2	720	825	850	680	340x2	16,0
36	6x3	795	900	925	760	250x3	17,7
37	7x3	885	990	1015	850	280x3	19,8
38	8x3	1005	1110	1145	970	320x3	21,9
39	9x3	1080	1185	1210	1040	340x3	24,0
47	7x4	1180	1285	1310	1145	280x4	26,3
48	8x4	1340	1445	1470	1305	320x4	29,1
49	9x4	1440	1545	1570	1400	340x4	31,9
57	7x5	1475	1580	1605	1440	280x5	32,8
58	8x5	1675	1780	1805	1640	320x5	36,3
59	9x5	1800	1905	1930	1760	340x5	39,8
68	8x6	2010	2115	2140	1975	320x6	43,6
69	9x6	2160	2265	2290	2120	340x6	47,8
78	8x7	2345	2450	2475	2310	320x7	50,8
79	9x7	2520	2625	2650	2480	340x7	55,7
88	8x8	2680	2785	2810	2645	320x8	57,9
89	9x8	2880	2985	3010	2840	340x8	63,5

Tab. TCR

## GLASS LEVEL GAUGE TRANSPARENT TYPE PN25 and PN40

### DS LG - TCR SHV

Code: DS LG-TCR...-... /40/RF-SHV/...-...-M...-CS/CS



#### Technical data

##### Service conditions

Max Pressure: PN25 e PN40

Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

##### View

Standard: adjustable on 360° in the installation phase

Note: depending on operating conditions, each element may have one or more internal reinforcements

##### Distance (Centre-to-centre)

Standard: see below table (**Distance adjustable - 0 mm + 10 mm**)

Option: On request intermediate distances and over 3.000 mm

##### Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105 / A105 LF2	AISI 316L	AISI 316L
Valves body:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

##### Gaskets

Standard: graphite/copper

Option: graphite/AISI 316 or PTFE/AISI316

##### Shut-off valves

DS SHV: globe type

Handling: by handwheel

##### Process connections:

Standard flanges: UNI PN40 DN15-20-25

ANSI #150-300/RF DN 1/2" - 3/4" - 1"

Standard threaded unions: BSP-M 1/2" - 3/4"

NPT-M 1/2" - 3/4"

Options: further connections types or direct connections to the process without shut-off valves (See page 1.53)

##### Vent:

Standard: blind

Option: see page 1.54

##### Drain:

Standard: valve DS DHV threaded 3/4"

Option: see page 1.54

##### Glasses

Transparent - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081 Standard: fitted with type A (See page 1.69)

##### Accessories

See from page 1.55

##### Weights

Housing DS TCR: see below table

Valves DS SHV: Kg. 11,8 approx. (With flanges UNI DN20 PN40)

##### Tightening torque of housing screws

Standard: 35 Nm

##### Spare parts

Housing DS TCR: see from page 1.69 (Drawing with components and parts list see page 1.64)

Valves DS GR18: see from page 1.74 (Drawing with components and parts list see page 1.68)

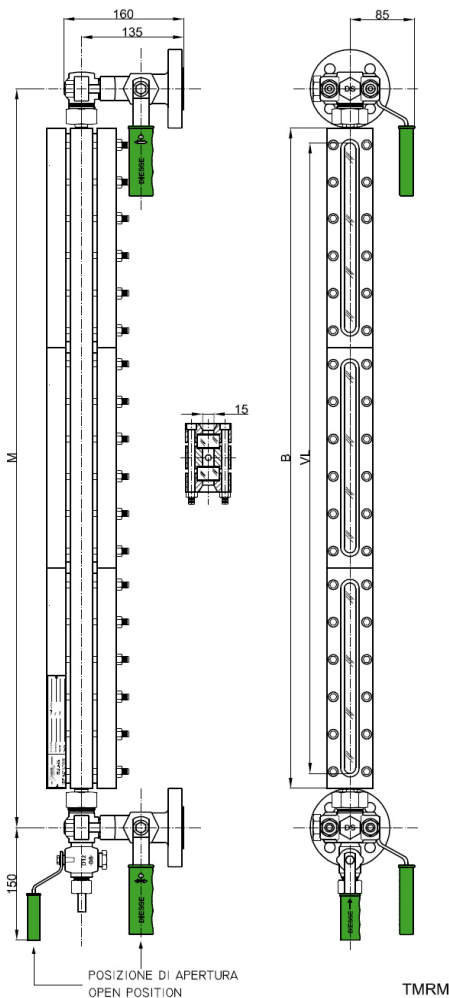
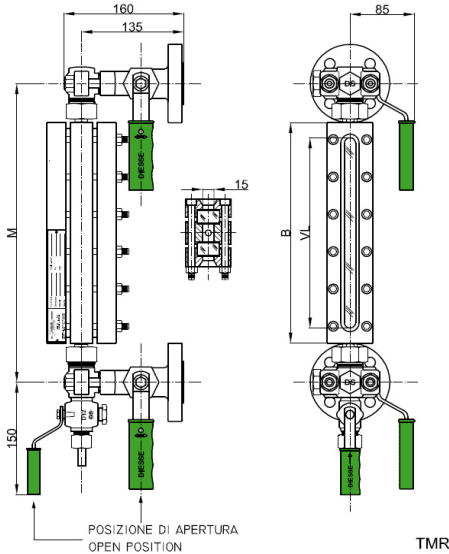
CODE	TYPE	BODY Length [mm]	DISTANCE SL Pipes L = 57 M [-0/+10 mm]	DISTANCE HL Pipes L = 70 M [-0/+10 mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+105	M = B+130	VL	x No. elements	
11	1x1	130	235	260	95	115x1	3,2
12	2x1	155	260	285	120	140x1	3,8
13	3x1	180	285	310	145	165x1	4,3
14	4x1	205	310	335	170	190x1	4,7
15	5x1	235	340	365	200	220x1	5,5
16	6x1	265	370	395	230	250x1	6,0
17	7x1	295	400	425	260	280x1	6,7
18	8x1	335	440	465	300	320x1	7,4
19	9x1	360	465	490	320	340x1	8,1
24	4x2	410	515	540	375	190x2	9,2
25	5x2	470	575	600	435	220x2	10,8
26	6x2	530	635	660	495	250x2	11,8
27	7x2	590	695	720	555	280x2	13,3
28	8x2	670	775	800	635	320x2	14,6
29	9x2	720	825	850	680	340x2	16,0
36	6x3	795	900	925	760	250x3	17,7
37	7x3	885	990	1015	850	280x3	19,8
38	8x3	1005	1110	1145	970	320x3	21,9
39	9x3	1080	1185	1210	1040	340x3	24,0
47	7x4	1180	1285	1310	1145	280x4	26,3
48	8x4	1340	1445	1470	1305	320x4	29,1
49	9x4	1440	1545	1570	1400	340x4	31,9
57	7x5	1475	1580	1605	1440	280x5	32,8
58	8x5	1675	1780	1805	1640	320x5	36,3
59	9x5	1800	1905	1930	1760	340x5	39,8
68	8x6	2010	2115	2140	1975	320x6	43,6
69	9x6	2160	2265	2290	2120	340x6	47,8
78	8x7	2345	2450	2475	2310	320x7	50,8
79	9x7	2520	2625	2650	2480	340x7	55,7
88	8x8	2680	2785	2810	2645	320x8	57,9
89	9x8	2880	2985	3010	2840	340x8	63,5

Tab. TCR

## GLASS LEVEL GAUGE TRANSPARENT TYPE PN40

### DS LG - TMR GR18

Code: DS LG-TMR... /40/RF-GR18/...-M...-CS/CS



#### Technical data

#### Service conditions

Max Pressure: PN40

Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

#### View

Standard: adjustable on 360° in the installation phase

#### Distance (Centre-to-centre)

Standard: see below table (Distance adjustable - 0 mm / + 10 mm)

Option: On request intermediate distances and over 3.000 mm

#### Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body & cocks body:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

#### Gaskets

Standard: graphite/copper

Option: graphite/AISI 316 or PTFE/AISI316

#### Shut-off cocks

DS GR18: cylindrical plug type - Straight type - Quick 90° closing

Handling: lever operated with PP handle (Standard: right; Option: left)

#### Process connections:

Standard flanges: UNI PN40 DN15-20-25 ANSI #150-300/RF DN 1/2" - 3/4" - 1"

Standard threaded unions: BSP-M 1/2" - 3/4" NPT-M 1/2" - 3/4"

Options: further connections types or direct connections to the process without shut-off cocks

(See page 1.49)

#### Vent:

Standard: blind

Option: see page 1.50

#### Drain:

Standard: cock DS D12 threaded 1/2"

Option: see page 1.50

#### Glasses

Transparent - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081

Standard: fitted with type B (See page 1.69)

Option: type A (See page 1.69)

#### Accessories

See from page 1.55

#### Weights

Housing DS TMR: see below table

Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)

#### Tightening torque of housing screws

Standard: 35 Nm

#### Spare parts

Housing DS TMR: see from page 1.69 (Drawing with components and parts list see page 1.64)

Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

CODE	TYPE	BODY Length [mm]	DISTANCE SL Pipes L = 57 M [-0/+10 mm]	DISTANCE HL Pipes L = 70 M [-0/+10 mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+105	M = B+130	VL	x No. elements	
11	1x1	130	235	260	95	115x1	3,6
12	2x1	155	260	285	120	140x1	4,3
13	3x1	180	285	310	145	165x1	4,9
14	4x1	205	310	335	170	190x1	5,4
15	5x1	235	340	365	200	220x1	6,3
16	6x1	265	370	395	230	250x1	6,9
17	7x1	295	400	425	260	280x1	7,7
18	8x1	335	440	465	300	320x1	8,6
19	9x1	360	465	490	320	340x1	9,4
24	4x2	410	515	540	375	190x2	10,6
25	5x2	470	575	600	435	220x2	12,4
26	6x2	530	635	660	495	250x2	13,6
27	7x2	590	695	720	555	280x2	15,2
28	8x2	670	775	800	635	320x2	17,0
29	9x2	720	825	850	680	340x2	18,6
36	6x3	795	900	925	760	250x3	20,3
37	7x3	885	990	1015	850	280x3	22,7
38	8x3	1005	1110	1145	970	320x3	25,4
39	9x3	1080	1185	1210	1040	340x3	27,8
47	7x4	1180	1285	1310	1145	280x4	30,2
48	8x4	1340	1445	1470	1305	320x4	33,8
49	9x4	1440	1545	1570	1400	340x4	37,0
57	7x5	1475	1580	1605	1440	280x5	37,7
58	8x5	1675	1780	1805	1640	320x5	42,2
59	9x5	1800	1905	1930	1760	340x5	46,2
68	8x6	2010	2115	2140	1975	320x6	50,6
69	9x6	2160	2265	2290	2120	340x6	55,4
78	8x7	2345	2450	2475	2310	320x7	59,0
79	9x7	2520	2625	2650	2480	340x7	64,6
88	8x8	2680	2785	2810	2645	320x8	67,4
89	9x8	2880	2985	3010	2840	340x8	73,8

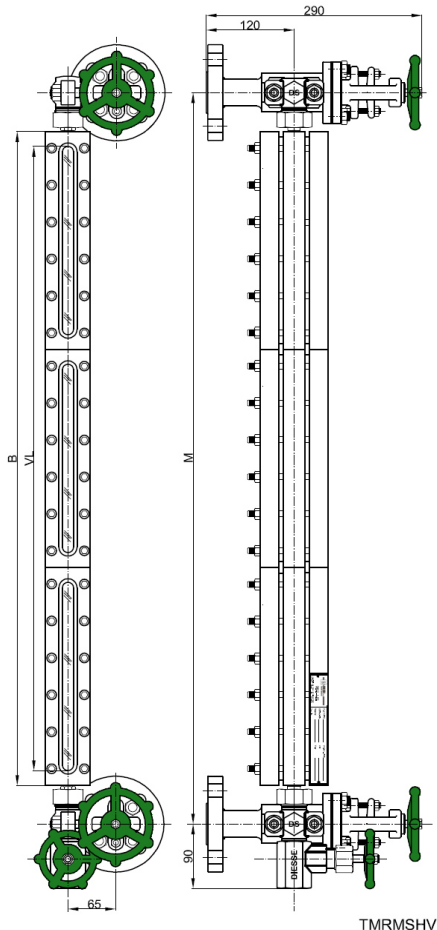
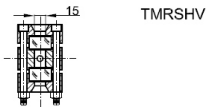
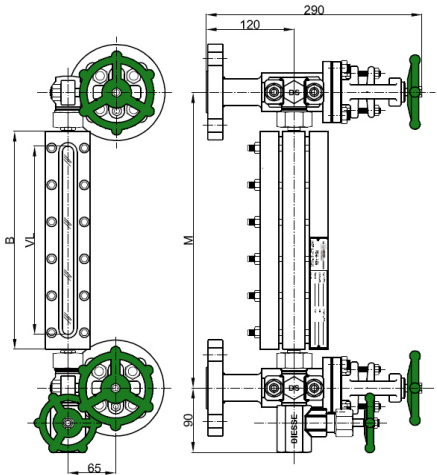
Tab. TMR



## GLASS LEVEL GAUGE TRANSPARENT TYPE PN40

### DS LG - TMR SHV

Code: DS LG-TMR... /40/RF-SHV.../...-M...-CS/CS



#### Technical data

#### Service conditions

Max Pressure: PN40

Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

#### View

Standard: adjustable on 360° in the installation phase

#### Distance (Centre-to-centre)

Standard: see below table (**Distance adjustable - 0 mm / + 10 mm**)

Option: On request intermediate distances and over 3.000 mm

#### Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105 / A105 LF2	AISI 316L	AISI 316L
Valves body:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

#### Gaskets

Standard: graphite/copper

Option: graphite/AISI 316 or PTFE/AISI316

#### Shut-off valves

DS SHV: globe type

Handling: by handwheel

#### Process connections:

Standard flanges: UNI PN40 DN15-20-25 ANSI #150-300/RF DN ½" - ¾" - 1"

Standard threaded unions: BSP-M ½" - ¾" NPT-M ½" - ¾"

Options: further connections types or direct connections to the process without shut-off valves

(See page 1.53)

Vent: Standard: blind

Option: see page 1.54

Drain: Standard: valve DS DHV threaded ¾"

Option: see page 1.54

#### Glasses

Transparent - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081

Standard: fitted with type B (See page 1.69)

Option: type A (See page 1.69)

#### Accessories

See from page 1.55

#### Weights

Housing DS TMR: see below table

Valves DS SHV: Kg. 11,8 approx. (With flanges UNI DN20 PN40)

#### Tightening torque of housing screws

Standard: 35 Nm

#### Spare parts

Housing DS TMR: see from page 1.69 (Drawing with components and parts list see page 1.64)

Valves DS SHV: see from page 1.74 (Drawing with components and parts list see page 1.68)

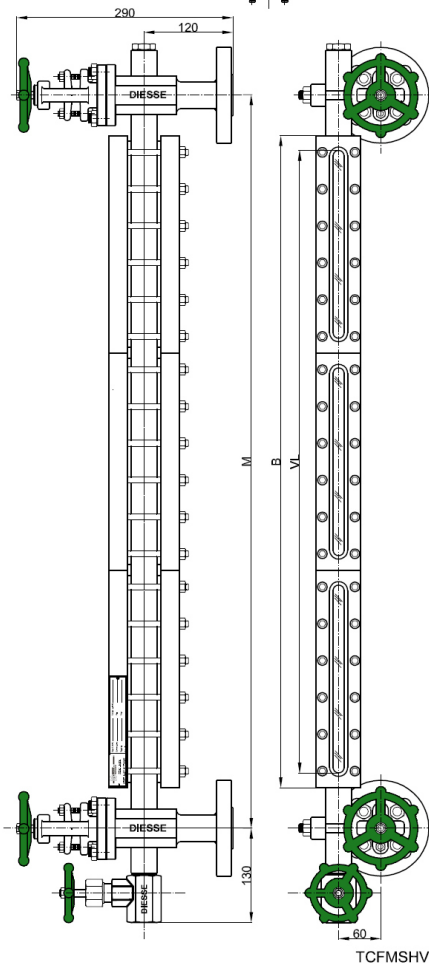
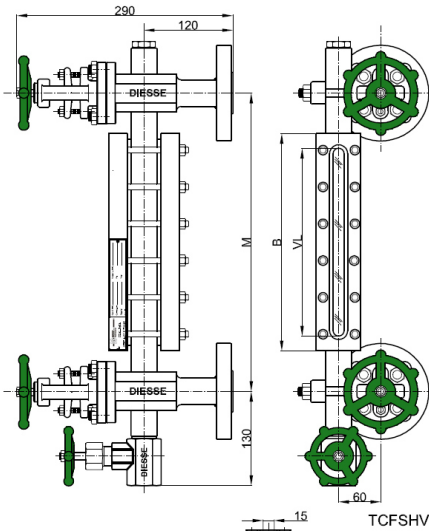
CODE	TYPE	BODY Length [mm]	DISTANCE SL Pipes L = 57 M [-0/+10 mm]	DISTANCE HL Pipes L = 70 M [-0/+10 mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+105	M = B+130	VL	x No. elements	
11	1x1	130	235	260	95	115x1	3,6
12	2x1	155	260	285	120	140x1	4,3
13	3x1	180	285	310	145	165x1	4,9
14	4x1	205	310	335	170	190x1	5,4
15	5x1	235	340	365	200	220x1	6,3
16	6x1	265	370	395	230	250x1	6,9
17	7x1	295	400	425	260	280x1	7,7
18	8x1	335	440	465	300	320x1	8,6
19	9x1	360	465	490	320	340x1	9,4
24	4x2	410	515	540	375	190x2	10,6
25	5x2	470	575	600	435	220x2	12,4
26	6x2	530	635	660	495	250x2	13,6
27	7x2	590	695	720	555	280x2	15,2
28	8x2	670	775	800	635	320x2	17,0
29	9x2	720	825	850	680	340x2	18,6
36	6x3	795	900	925	760	250x3	20,3
37	7x3	885	990	1015	850	280x3	22,7
38	8x3	1005	1110	1145	970	320x3	25,4
39	9x3	1080	1185	1210	1040	340x3	27,8
47	7x4	1180	1285	1310	1145	280x4	30,2
48	8x4	1340	1445	1470	1305	320x4	33,8
49	9x4	1440	1545	1570	1400	340x4	37,0
57	7x5	1475	1580	1605	1440	280x5	37,7
58	8x5	1675	1780	1805	1640	320x5	42,2
59	9x5	1800	1905	1930	1760	340x5	46,2
68	8x6	2010	2115	2140	1975	320x6	50,6
69	9x6	2160	2265	2290	2120	340x6	55,4
78	8x7	2345	2450	2475	2310	320x7	59,0
79	9x7	2520	2625	2650	2480	340x7	64,6
88	8x8	2680	2785	2810	2645	320x8	67,4
89	9x8	2880	2985	3010	2840	340x8	73,8

Tab. TMR



## GLASS LEVEL GAUGE TRANSPARENT TYPE PN40 / Class 300 DS LG - TCF SHV

Code: DS LG-TCF...-... /40/RF-SHV...-...-M...-CS/CS



### Technical data

#### Service conditions

Max Pressure: PN40; Class 300 (A105: 51 bar @ 38°C; AISI 316L: 49,6 bar @ 38°C)  
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

#### View

Standard: front, on request lateral (right or left) adjustable in the production phase  
Note: depending on operating conditions, each element may have one or more internal reinforcements

#### Distance (Centre-to-centre)

Standard: see below table for minimum distance (Fixed distance, not adjustable)  
Option: On request intermediate distances and over 3.000 mm

#### Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105 / A105 LF2	AISI 316L	AISI 316L
Valves body:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

#### Gaskets

Standard: graphite/copper      Option: graphite/AISI 316 or PTFE/AISI316

#### Shut-off valves

DS SHV: globe type  
Handling: by handwheel

#### Process connections:

Standard flanges: UNI PN40 DN15-20-25      ANSI #150-300/RF DN ½" - ¾" - 1"  
Standard threaded unions: BSP-M ½" - ¾"      NPT-M ½" - ¾"  
Options: further connections types or direct connections to the process without shut-off valves  
(See page 1.53)

**Vent:** Standard: threaded ½" with plug      Option: see page 1.54  
**Drain:** Standard: valve DS DHV threaded ¾"      Option: see page 1.54

#### Glasses

Transparent - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081  
Standard: fitted with type A (See page 1.69)

#### Accessories

See from page 1.55

#### Weights

Housing DS TCF: see below table  
Valves DS SHV: Kg. 11,8 approx. (With flanges UNI DN20 PN40)

#### Tightening torque of housing screws

Standard: 35 Nm

#### Spare parts

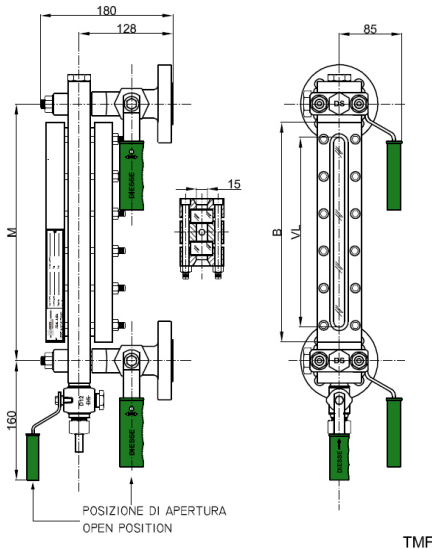
Housing DS TCF: see from page 1.69 (Drawing with components and parts list see page 1.64)  
Valves DS SHV: see from page 1.74 (Drawing with components and parts list see page 1.68)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+80	VL	x No. elements	
11	1x1	130	210	95	115x1	4,5
12	2x1	155	235	120	140x1	5,1
13	3x1	180	260	145	165x1	5,6
14	4x1	205	285	170	190x1	6,0
15	5x1	235	315	200	220x1	6,8
16	6x1	265	345	230	250x1	7,3
17	7x1	295	375	260	280x1	8,0
18	8x1	335	415	300	320x1	8,7
19	9x1	360	440	320	340x1	9,4
24	4x2	410	490	375	190x2	10,5
25	5x2	470	550	435	220x2	12,1
26	6x2	530	610	495	250x2	13,1
27	7x2	590	670	555	280x2	14,6
28	8x2	670	750	635	320x2	15,9
29	9x2	720	800	680	340x2	17,3
36	6x3	795	875	760	250x3	19,0
37	7x3	885	965	850	280x3	21,1
38	8x3	1005	1085	970	320x3	23,2
39	9x3	1080	1160	1040	340x3	25,3
47	7x4	1180	1260	1145	280x4	27,6
48	8x4	1340	1420	1305	320x4	30,4
49	9x4	1440	1520	1400	340x4	33,2
57	7x5	1475	1555	1440	280x5	34,1
58	8x5	1675	1755	1640	320x5	37,6
59	9x5	1800	1880	1760	340x5	41,1
68	8x6	2010	2090	1975	320x6	44,9
69	9x6	2160	2240	2120	340x6	49,1
78	8x7	2345	2425	2310	320x7	52,1
79	9x7	2520	2600	2480	340x7	57,0
88	8x8	2680	2760	2645	320x8	59,2
89	9x8	2880	2960	2840	340x8	64,8

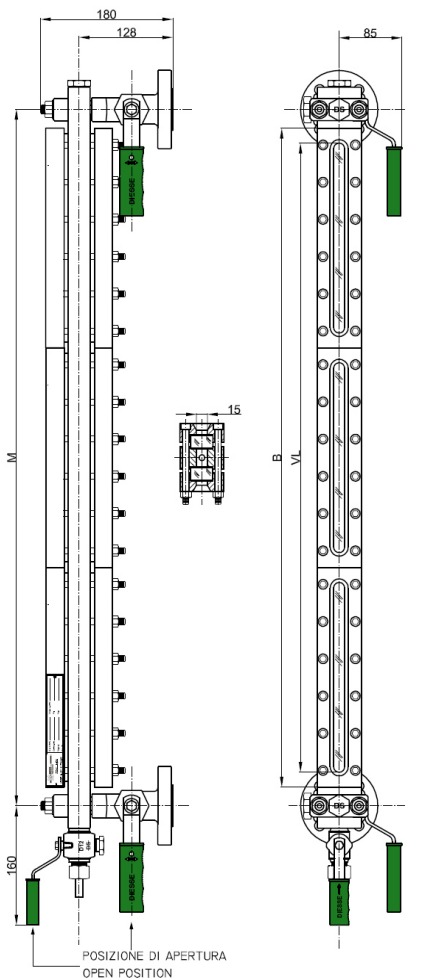
Tab. TCF

## GLASS LEVEL GAUGE TRANSPARENT TYPE PN40 and PN64 / Class 300 DS LG - TMF GR18

Code: DS LG-TMF... /40/RF-GR18/...-M...-CS/CS



TMF



TMFM

### Technical data

#### Service conditions

Max Pressure: PN40 e PN64; Class 300 (A105: 51 bar @ 38°C; AISI 316L: 49,6 bar @ 38°C)  
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

#### View

Standard: front, on request lateral (right or left) adjustable in the production phase

#### Distance (Centre-to-centre)

Standard: see below table for minimum distance (Fixed distance, not adjustable)  
Option: On request intermediate distances and over 3.000 mm

#### Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body & cocks body:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

#### Gaskets

Standard: graphite/copper      Option: graphite/AISI 316 or PTFE/AISI316

#### Shut-off cocks

DS GR18: cylindrical plug type - Straight type - Quick 90° closing  
Handling: lever operated with PP handle (Standard: right; Option: left)

#### Process connections:

Standard flanges:      UNI PN40-64 DN15-20-25      ANSI #150-300/RF DN ½" - ¾" - 1"  
Standard threaded unions:      BSP-M ½" - ¾"      NPT-M ½" - ¾"  
Options: further connections types or direct connections to the process without shut-off cocks  
(See page 1.51)

**Vent:**      Standard: threaded ½" with plug      Option: see page 1.52  
**Drain:**      Standard: cock DS D12 threaded ½"      Option: see page 1.52

#### Glasses

Transparent - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081  
Standard: fitted with type B (See page 1.69)      Option: type A (See page 1.69)

#### Accessories

See from page 1.55

#### Weights

Housing DS TMF: see below table  
Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)

#### Tightening torque of housing screws

Standard: 35 Nm

#### Spare parts

Housing DS TMF: see from page 1.69 (Drawing with components and parts list see page 1.64)  
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

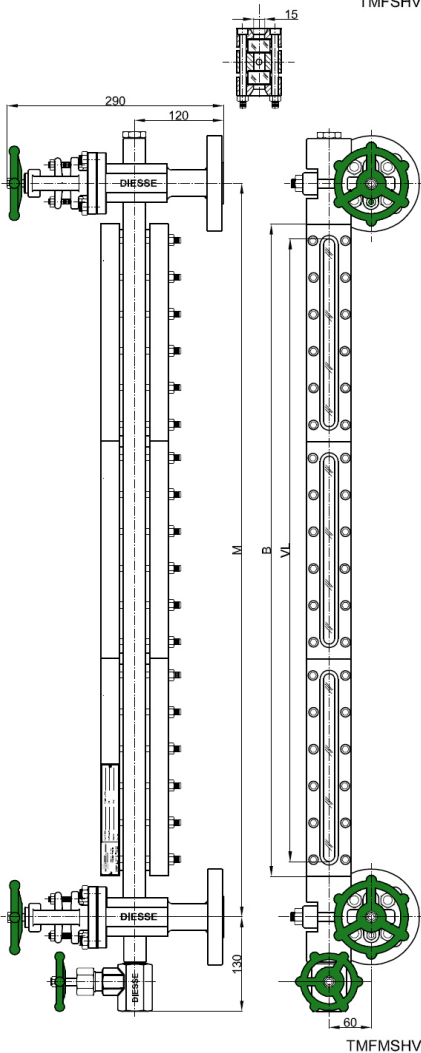
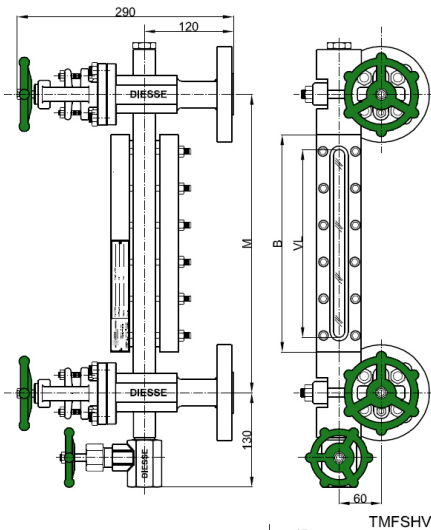
CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+40	VL	x No. elements	
11	1x1	130	170	95	115x1	5,4
12	2x1	155	195	120	140x1	6,1
13	3x1	180	220	145	165x1	6,7
14	4x1	205	245	170	190x1	7,2
15	5x1	235	275	200	220x1	8,1
16	6x1	265	305	230	250x1	8,8
17	7x1	295	335	260	280x1	9,5
18	8x1	335	375	300	320x1	10,4
19	9x1	360	400	320	340x1	11,2
24	4x2	410	450	375	190x2	12,4
25	5x2	470	510	435	220x2	14,2
26	6x2	530	570	495	250x2	15,4
27	7x2	590	630	555	280x2	17,0
28	8x2	670	710	635	320x2	18,8
29	9x2	720	760	680	340x2	20,4
36	6x3	795	835	760	250x3	22,1
37	7x3	885	925	850	280x3	24,5
38	8x3	1005	1045	970	320x3	27,2
39	9x3	1080	1120	1040	340x3	29,6
47	7x4	1180	1220	1145	280x4	32,0
48	8x4	1340	1380	1305	320x4	35,6
49	9x4	1440	1480	1400	340x4	38,8
57	7x5	1475	1515	1440	280x5	39,5
58	8x5	1675	1715	1640	320x5	44,0
59	9x5	1800	1840	1760	340x5	48,0
68	8x6	2010	2050	1975	320x6	52,4
69	9x6	2160	2200	2120	340x6	57,2
78	8x7	2345	2385	2310	320x7	60,8
79	9x7	2520	2560	2480	340x7	66,4
88	8x8	2680	2720	2645	320x8	69,2
89	9x8	2880	2920	2840	340x8	75,6

Tab. TMF



## GLASS LEVEL GAUGE TRANSPARENT TYPE PN40 and PN64 / Class 300 DS LG - TMF SHV

Code: DS LG-TMF...-... /40/RF-SHV...-...-M...-CS/CS



### Technical data

#### Service conditions

Max Pressure: PN40 e PN64; Class 300 (A105: 51 bar @ 38°C; AISI 316L: 49,6 bar @ 38°C)  
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

#### View

Standard: front, on request lateral (right or left) adjustable in the production phase

#### Distance (Centre-to-centre)

Standard: see below table for minimum distance (Fixed distance, not adjustable)  
Option: On request intermediate distances and over 3.000 mm

#### Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105 / A105 LF2	AISI 316L	AISI 316L
Valves body:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

#### Gaskets

Standard: graphite/copper

Option: graphite/AISI 316 or PTFE/AISI316

#### Shut-off valves

DS SHV: globe type

Handling: by handwheel

Process connections:

Standard flanges: UNI PN40-64 DN15-20-25 ANSI #150-300/RF DN 1/2" - 3/4" - 1"

Standard threaded unions: GAS-M 1/2" - 3/4" NPT-M 1/2" - 3/4"

Options: further connections types or direct connections to the process without shut-off valves

(See page 1.53)

Vent: Standard: threaded 1/2" with plug

Option: see page 1.54

Drain: Standard: valve DS DHV threaded 3/4"

Option: see page 1.54

#### Glasses

Transparent - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081

Standard: fitted with type B (See page 1.69)

Option: type A (See page 1.69)

#### Accessories

See from page 1.55

#### Weights

Housing DS TMF: see below table

Valves DS SHV: Kg. 11,8 approx. (With flanges UNI DN20 PN40)

#### Tightening torque of housing screws

Standard: 35 Nm

#### Spare parts

Housing DS TMF: see from page 1.69 (Drawing with components and parts list see page 1.64)

Valves DS SHV: see from page 1.74 (Drawing with components and parts list see page 1.68)

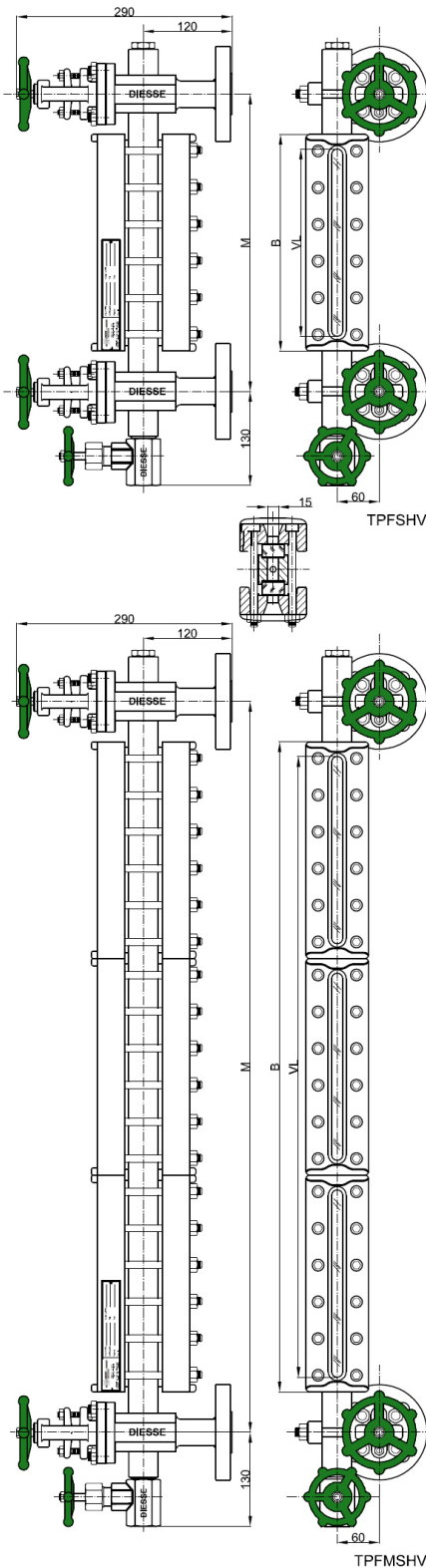
CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+80	VL	x No. elements	
11	1x1	130	210	95	115x1	5,4
12	2x1	155	235	120	140x1	6,1
13	3x1	180	260	145	165x1	6,7
14	4x1	205	285	170	190x1	7,2
15	5x1	235	315	200	220x1	8,1
16	6x1	265	345	230	250x1	8,8
17	7x1	295	375	260	280x1	9,5
18	8x1	335	415	300	320x1	10,4
19	9x1	360	440	320	340x1	11,2
24	4x2	410	490	375	190x2	12,4
25	5x2	470	550	435	220x2	14,2
26	6x2	530	610	495	250x2	15,4
27	7x2	590	670	555	280x2	17,0
28	8x2	670	750	635	320x2	18,8
29	9x2	720	800	680	340x2	20,4
36	6x3	795	875	760	250x3	22,1
37	7x3	885	965	850	280x3	24,5
38	8x3	1005	1085	970	320x3	27,2
39	9x3	1080	1160	1040	340x3	29,6
47	7x4	1180	1260	1145	280x4	32,0
48	8x4	1340	1420	1305	320x4	35,6
49	9x4	1440	1520	1400	340x4	38,8
57	7x5	1475	1555	1440	280x5	39,5
58	8x5	1675	1755	1640	320x5	44,0
59	9x5	1800	1880	1760	340x5	48,0
68	8x6	2010	2090	1975	320x6	52,4
69	9x6	2160	2240	2120	340x6	57,2
78	8x7	2345	2425	2310	320x7	60,8
79	9x7	2520	2600	2480	340x7	66,4
88	8x8	2680	2760	2645	320x8	69,2
89	9x8	2880	2960	2840	340x8	75,6

Tab. TMF



## GLASS LEVEL GAUGE TRANSPARENT TYPE PN64 and PN100 / Class 600 DS LG - TPF SHV

Code: DS LG-TPF..... /100/RF-GR18/.../...-M...-CS/CS



### Technical data

#### Service conditions

Max Pressure: PN64 e PN100; Class 600 (A105: 102 bar @ 38°C; AISI 316L: 99,3 bar @ 38°C)  
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

#### View

Standard: front, on request lateral (right or left) adjustable in the production phase  
Note: depending on operating conditions, each element may have one or more internal reinforcements

#### Distance (Centre-to-centre)

Standard: see below table for minimum distance (Fixed distance, not adjustable)  
Option: On request intermediate distances and over 2.000 mm

#### Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105 / A105 LF2	AISI 316L	AISI 316L
Valves body:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

#### Gaskets

Standard: graphite/copper      Option: graphite/AISI 316 or PTFE/AISI316

#### Shut-off valves

DS SHV: globe type  
Handling: by handwheel

#### Process connections:

Standard flanges:      UNI PN64-100 DN15-20-25      ANSI #600/RF DN ¾" - 1"  
Standard threaded unions:      BSP-M ¾" - 1"      NPT-M ¾" - 1"  
Options: further connections types or direct connections to the process without shut-off valves  
(See page 1.53)

**Vent:** Standard: threaded ½" with plug      Option: see page 1.54  
**Drain:** Standard: valve DS DHV threaded ¾"      Option: see page 1.54

#### Glasses

Transparent - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081  
Standard: fitted with type B (See page 1.69)

#### Accessories

See from page 1.55

#### Weights

Housing DS TPF: see below table  
Valves DS SHV: Kg. 13,5 approx. (With flanges UNI DN20 PN100)

#### Tightening torque of housing screws

Standard: 75 Nm

#### Spare parts

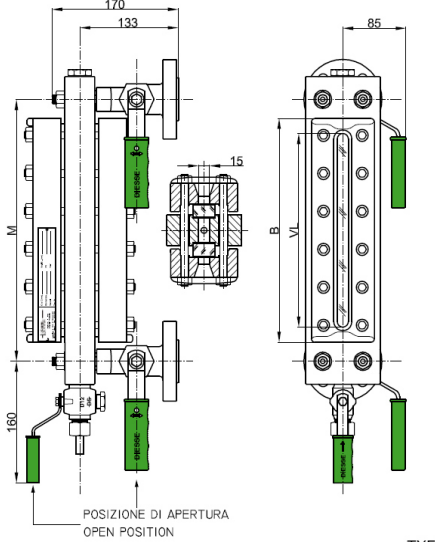
Housing DS TPF: see from page 1.69 (Drawing with components and parts list see page 1.65)  
Valves DS SHV: see from page 1.74 (Drawing with components and parts list see page 1.68)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+80	VL	x No. elements	
11	1x1	130	210	95	115x1	7,9
12	2x1	155	235	120	140x1	9,0
13	3x1	180	260	145	165x1	10,5
14	4x1	205	285	170	190x1	11,5
15	5x1	235	315	200	220x1	12,8
16	6x1	265	345	230	250x1	13,5
17	7x1	295	375	260	280x1	15,4
18	8x1	335	415	300	320x1	16,8
19	9x1	360	440	320	340x1	18,1
24	4x2	410	490	375	190x2	21,5
25	5x2	470	550	435	220x2	24,1
26	6x2	530	610	495	250x2	25,5
27	7x2	590	670	555	280x2	29,3
28	8x2	670	750	635	320x2	32,1
29	9x2	720	800	680	340x2	34,7
36	6x3	795	875	760	250x3	37,5
37	7x3	885	965	850	280x3	43,2
38	8x3	1005	1085	970	320x3	47,4
39	9x3	1080	1160	1040	340x3	51,3
47	7x4	1180	1260	1145	280x4	57,1
48	8x4	1340	1420	1305	320x4	62,7
49	9x4	1440	1520	1400	340x4	67,9
57	7x5	1475	1555	1440	280x5	71,0
58	8x5	1675	1755	1640	320x5	78,0
59	9x5	1800	1880	1760	340x5	84,5

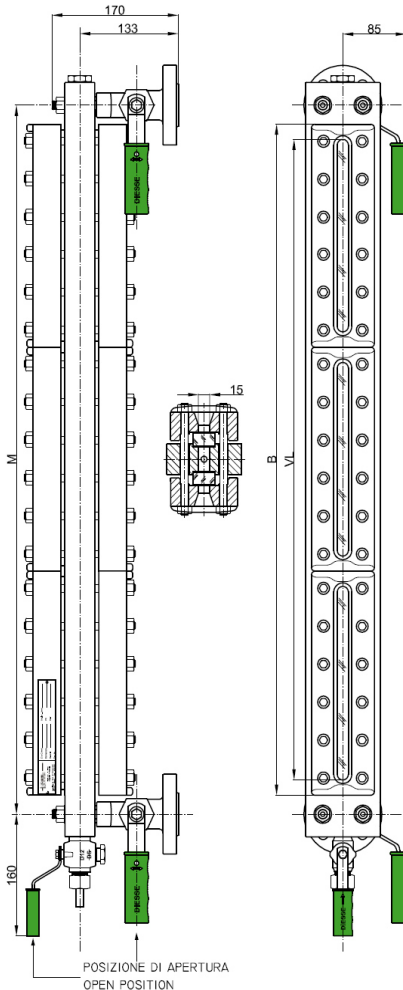
Tab. TPF

## GLASS LEVEL GAUGE TRANSPARENT TYPE PN100 and PN160 / Class 600 and 900 DS LG - TXF GR18

Code: DS LG-TXF..... /160/RF-GR18/.....-M...-CS/CS



TXF



TXFM

### Technical data

#### Service conditions

Max Pressure: PN100; Class 600 (A105: 102 bar @ 38°C; AISI 316L: 99,3 bar @ 38°C) and PN160; Class 900 (A105: 153,1 bar @ 38°C; AISI 316L: 148,9 bar @ 38°C)  
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

#### View

Standard: front, on request lateral (right or left) adjustable in the production phase

#### Distance (Centre-to-centre)

Standard: see below table for minimum distance (Fixed distance, not adjustable)  
Option: On request intermediate distances and over 2.000 mm

#### Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body & cocks body:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

#### Gaskets

Standard: graphite/copper      Option: graphite/AISI 316 or PTFE/AISI316

#### Shut-off cocks

DS GR18: cylindrical plug type - Straight type - Quick 90° closing  
Handling: lever operated with PP handle (Standard: right; Option: left)

#### Process connections:

Standard flanges:      UNI PN100-160 DN20 - DN25      ANSI #600-900/RF DN ¾" - 1"  
Standard threaded unions:      BSP-M ¾" - 1"      NPT-M ¾" - 1"

Options: further connections types or direct connections to the process without shut-off cocks  
(See page 1.51)

**Vent:** Standard: threaded ½" with plug      Option: see page 1.52

**Drain:** Standard: cock DS D12 threaded ½"      Option: see page 1.52

#### Glasses

Transparent - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081  
Standard: fitted with type B (See page 1.69)

#### Accessories

See from page 1.55

#### Weights

Housing DS TXF: see below table

Cocks DS GR18: Kg. 9,2 approx. (With flanges UNI DN20 PN100)

#### Tightening torque of housing screws

Standard: 75 Nm

#### Spare parts

Housing DS TXF: see from page 1.69 (Drawing with components and parts list see page 1.65)

Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+50	VL	x No. elements	
11	1x1	130	180	95	115x1	11,6
12	2x1	155	205	120	140x1	13,2
13	3x1	180	230	145	165x1	15,1
14	4x1	205	255	170	190x1	16,5
15	5x1	235	285	200	220x1	18,3
16	6x1	265	315	230	250x1	19,5
17	7x1	295	345	260	280x1	22,0
18	8x1	335	385	300	320x1	24,1
19	9x1	360	410	320	340x1	25,8
24	4x2	410	460	375	190x2	30,0
25	5x2	470	520	435	220x2	33,6
26	6x2	530	580	495	250x2	36,0
27	7x2	590	640	555	280x2	41,0
28	8x2	670	720	635	320x2	45,2
29	9x2	720	770	680	340x2	48,6
36	6x3	795	845	760	250x3	52,5
37	7x3	885	935	850	280x3	60,0
38	8x3	1005	1055	970	320x3	66,3
39	9x3	1080	1130	1040	340x3	71,4
47	7x4	1180	1230	1145	280x4	79,0
48	8x4	1340	1390	1305	320x4	87,4
49	9x4	1440	1490	1400	340x4	94,2
57	7x5	1475	1525	1440	280x5	98,0
58	8x5	1675	1725	1640	320x5	108,5
59	9x5	1800	1850	1760	340x5	117,0

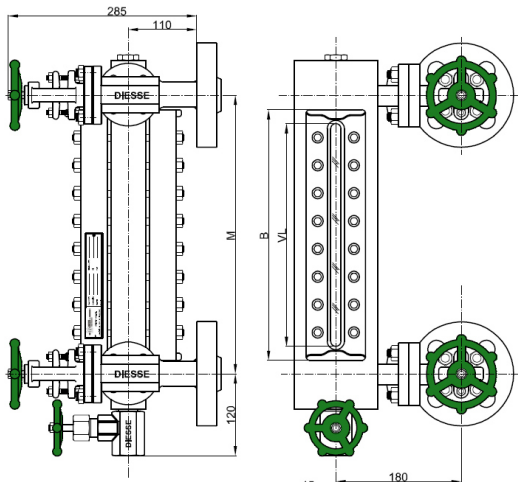
Tab. TXF



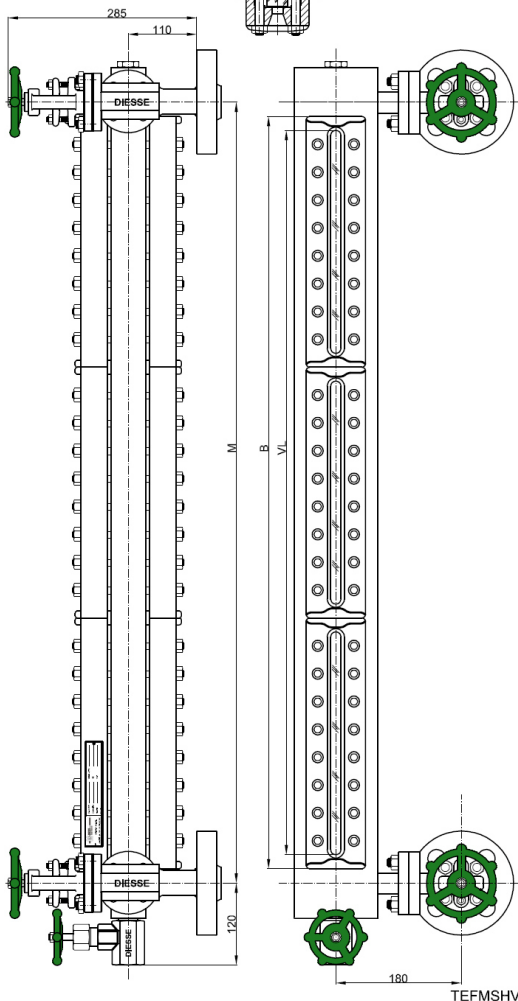


## GLASS LEVEL GAUGE TRANSPARENT TYPE PN250 / Class 1500 DS LG - TEF SHV

Code: DS LG-TEF.... /1500/...-SHV/...-M...-CS/CS



TEFSHV



TEFMSHV

### Technical data

#### Service conditions

Max Pressure: PN250; Class 1500 (A105: 255,5 bar @ 38°C; AISI 316L: 239,2 bar @ 38°C)  
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

#### View

Standard: front, on request lateral (right or left) adjustable in the production phase

#### Distance (Centre-to-centre)

Standard: see below table for minimum distance (Fixed distance, not adjustable)  
Option: On request intermediate distances and over 2.000 mm

#### Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105 / A105 LF2	AISI 316L	AISI 316L
Valves body:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

#### Gaskets

Standard: graphite/AISI 316

Option: PTFE/AISI316

#### Shut-off valves

DS SHV: globe type  
Handling: by handwheel

#### Process connections:

Standard flanges: UNI PN250 DN On request ANSI #1500 DN On request

Options: further connections types or direct connections to the process without shut-off valves  
(See page 1.53)

Vent: Standard: threaded 1/2" with plug

Option: see page 1.54

Drain: Standard: cock DS DHV threaded 3/4"

Option: see page 1.54

#### Glasses

Transparent - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081  
Standard: fitted with type B, thickness 21 mm (See page 1.69)

#### Accessories

See from page 1.55

#### Weights

Housing DS TEF: see below table

Valves DS SHV: Kg. 16,5 approx. (With flanges 1" ANSI 1500#RF)

#### Tightening torque of housing screws

Standard: 90 Nm

#### Spare parts

Housing DS TEF: see from page 1.69 (Drawing with components and parts list see page 1.65)

Valves DS SHV: see from page 1.74 (Drawing with components and parts list see page 1.68)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+80	VL	x No. elements	
11	1x1	130	210	95	115x1	13,7
12	2x1	155	235	120	140x1	15,7
13	3x1	180	260	145	165x1	18,0
14	4x1	205	285	170	190x1	19,8
15	5x1	235	315	200	220x1	22,1
16	6x1	265	345	230	250x1	23,8
17	7x1	295	375	260	280x1	26,7
18	8x1	335	415	300	320x1	29,5
19	9x1	360	440	320	340x1	31,6
24	4x2	410	490	375	190x2	36,6
25	5x2	470	550	435	220x2	41,1
26	6x2	530	610	495	250x2	44,5
27	7x2	590	670	555	280x2	50,5
28	8x2	670	750	635	320x2	55,9
29	9x2	720	800	680	340x2	60,1
36	6x3	795	875	760	250x3	65,2
37	7x3	885	965	850	280x3	74,2
38	8x3	1005	1085	970	320x3	82,4
39	9x3	1080	1160	1040	340x3	88,7
47	7x4	1180	1260	1145	280x4	97,9
48	8x4	1340	1420	1305	320x4	108,9
49	9x4	1440	1520	1400	340x4	117,3
57	7x5	1475	1555	1440	280x5	121,6
58	8x5	1675	1755	1640	320x5	135,5
59	9x5	1800	1880	1760	340x5	145,8

Tab. TEF

## weld-on level gauges

This type of level gauge is designed to be welded on to the tank and withstand the pressure inside it.

It is made from both carbon steel and stainless steel and can take reflex and transparent glasses. Reflex glasses are recommended as they improve visibility.

In order to prevent warping or distortions while the level gauge is in service, the technician tasked with installing the product must reinforce the wall of the tank where the gauge is to be welded on.

For visible lengths exceeding 320 mm, we recommend welding additional gauges on different axes to avoid weakening the tank structure.

During welding operations (which must only be carried out prior to gauge assembly), special care must be taken to avoid exposing the weld-on base to high temperatures for long periods of time as this may compromise the resistance of the gauge when in operation.

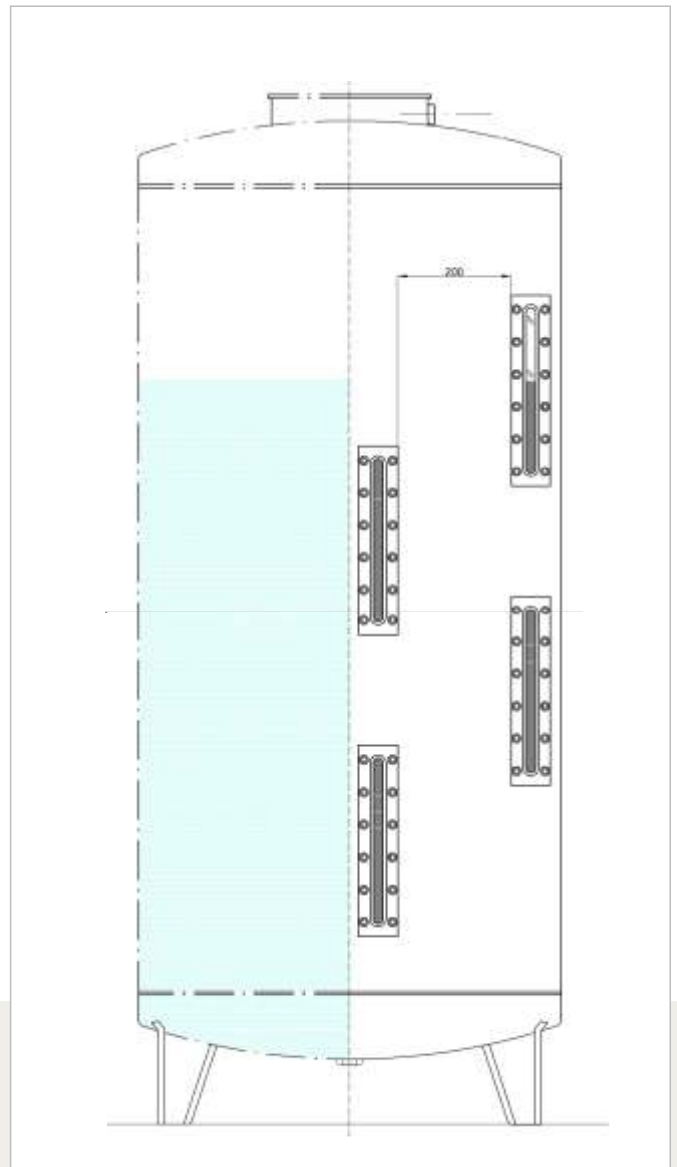
### Operating limits / Conditions:

Process:

Max. pressure: rating class 300 (A105: 51 bar; AISI 316L : 49,6 bar) @ 38°C

Max. temperature: 300°C (max. temperature allowed by borosilicate glasses as per the DIN 7081 standard - see page 1.69)

On request: rating class 600 (A105: 102 bar; AISI 316L : 99,3 bar) @ 38°C



## Materials / Specifications

### Weld-on base:

- standard: flat with a hole running along the whole visible length
- additional options: with radius (state the tank radius); with 2 holes ( $\varnothing$ : 15 mm) at the far ends of the visible length

### Wetted parts:

- standard: galvanized ASTM A105 or A105 LF2 carbon steel, ASTM A182 F316L stainless steel
- additional options: on request

### Non-wetted parts:

- standard: galvanized carbon steel, AISI 316L stainless steel
- additional options: on request

### Gaskets: (see page 1.71)

- standard: graphite
- additional options: PTFE; other extras on request

### Glasses: (see page 1.69)

- reflex or transparent borosilicate glasses, thermally pre-stressed and extra hard as per the DIN 7081 standard

### **Spare parts:**

**Our spare parts are interchangeable with those of major international manufacturers.**

For the full range of complete sets, turn to the spares section on page 1.69.

### **Accessories:**

Mica or PCTFE protective shield (for transparent glass only), calibrated scale, non-frosting extension, minimum level arrow (see page 1.55 for details)

### **Certifications (on request):**

- NACE MR0175
- Others on request



**This kind of level gauge can only be tested once it has been welded on to the tank in question.**

**All DIESSE components are individually checked and tested in accordance with company quality procedures and the industry regulations currently in effect.**

**Certificates can be issued on request.**



## level gauges WITH GLASS TUBE

Level gauges with a glass tube are an inexpensive but valid option for checking the level of non-hazardous or non-reactive fluids in unpressurised tanks.

An external metal protection of the glass tube is recommended.

### Available configurations:

Borosilicate glass tube. Diameter: 16 mm; thickness: 2.5 mm.

Centre-to-centre distance with a single tube: 3000 mm.

Visible length (without protection):  
centre-to-centre distance - 95 mm.

Visible length (with protection):  
centre-to-centre distance - 135 mm.

Spare glass tube: centre-to-centre distance - 30 mm.

Spare protection: centre-to-centre distance - 100 mm.

In the event of greater centre-to-centre distances, additional pipes can be connected up via middle terminals for glass tube

### Operating limits / Conditions:

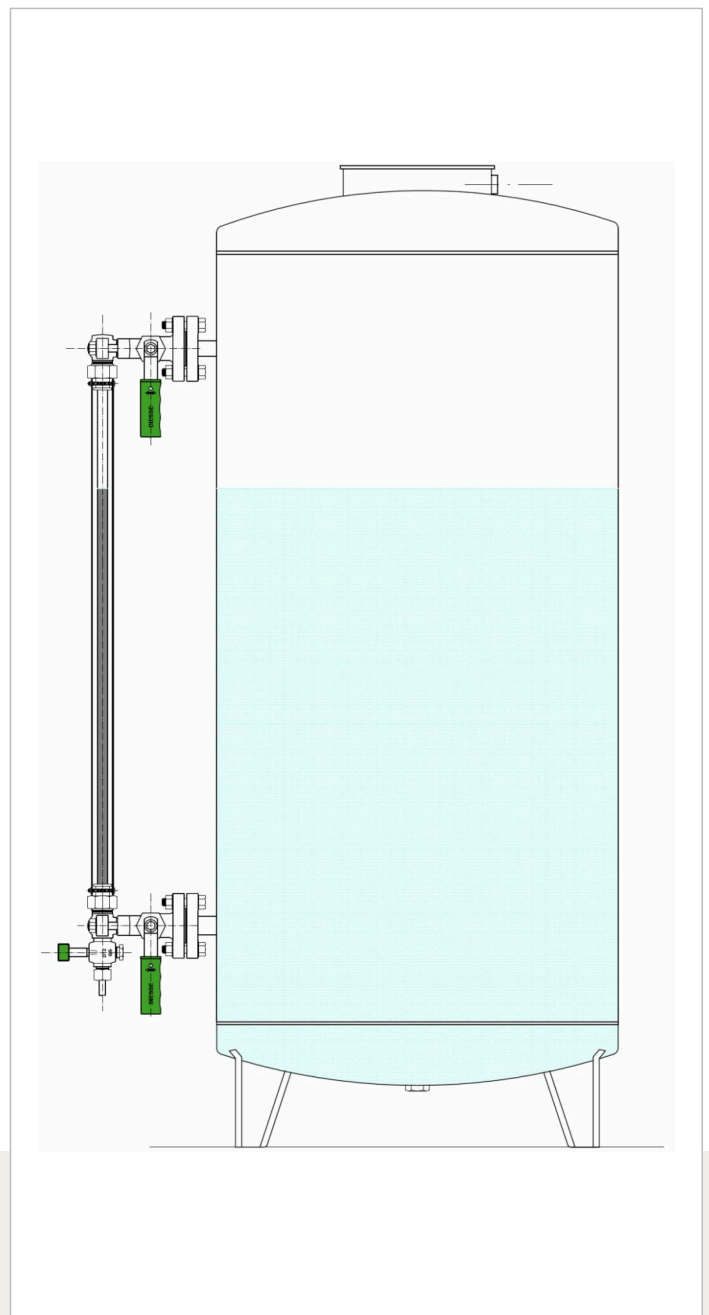
#### Process:

Max. pressure: 5 bar @ 38°C (the max. pressure also depends on the length and temperature)

Max. temperature: 120°C

### The product is NOT suitable for use in the following instances:

- if it is likely to be exposed to vibrations (glass tube will break)
- if the installation is situated by a walkway (possibility of blows/impact)
- if exposed to steam (shortens glass tube life)





## Materials / Specifications

Transparent tube: grade 3.3 borosilicate glass

Glass protection (optional): AISI 304 stainless steel

Wetted parts:

- standard: galvanized ASTM A105 or A105 LF2 carbon steel, ASTM A182 F316L stainless steel
- additional options: on request

Non-wetted parts:

- standard: galvanized carbon steel, AISI 316/316L stainless steel
- additional options: on request

Gaskets: (see page 1.72)

Cocks:

- standard: graphite/copper (ASTM A105), graphite/AISI 316 (A105 LF2 and ASTM A182 F316L)
- additional options: PTFE; other extras on request

Sealing gasket:

- standard: EPDM
- additional options: graphite or PTFE; other extras on request

Shut-off: (see page 1.49)

- standard: upper valve and lower valve (side/side)
- additional options: on request

Drain: (see page 1.50)

- standard: threaded valve
- additional options: on request

Vent: (see page 1.50)

- standard: blind
- additional options: threaded with plug; other extras on request

### Tank connections:

Flanged:

- UNI standard: PN40 DN15 / DN20 / DN25
- ANSI standard: #150 DN ½" / ¾" / 1"
- additional options: on request

Threaded:

- BSP (GAS) standard: ½"-M / ¾"-M
- NPT standard: ½"-M / ¾"-M

Weld-on: from ½" to 1" BW or SW

Option: further connections type or direct connections to the process without shut-off cocks (see page 1.49 for more details)

### Shut-off cocks, drain cock and vent cock:

- Cylindrical plug cocks

### Spares:

***Our spare parts are interchangeable with those of major international manufacturers.***

For the full range of complete sets, turn to the spares section on page 1.69.

### Accessories:

Stainless steel "U" protection, lower and/or upper safety ball, pusher for safety ball, calibrated, non-frosting extension, minimum level arrow, continuous reading, cocks handles lock (see page 1.55 for details)

### Certifications (on request):

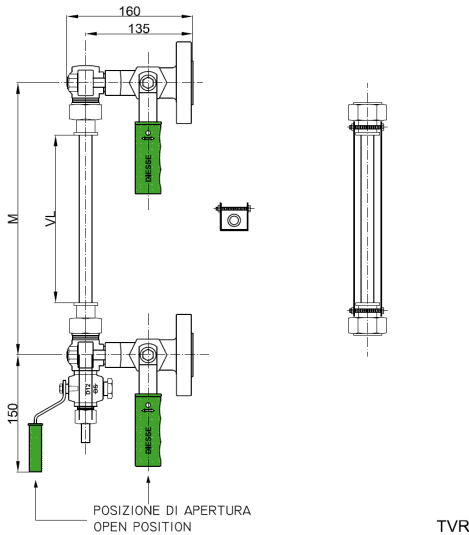
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**For this kind of gauge the pressure test can be performed only on the cocks (on request), glass tubes cannot be tested due to their fragility. All DIESSE components are individually checked and tested in accordance with company quality procedures and the industry regulations currently in effect. Certificates can be issued on request.**

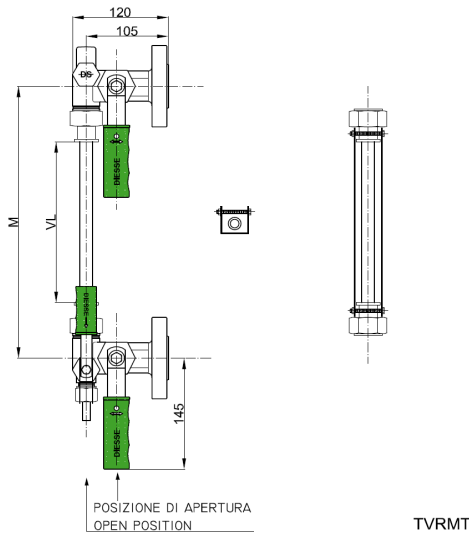
## LEVEL GAUGE WITH GLASS TUBE AND "U" SHAPED PROTECTION

### DS LG - TVR GR18 / MT18

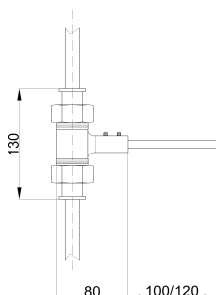
Code: DS LG-TVR... /16/RF-GR18/...-M...-CS/CS



Code: DS LG TVR... /16/RF-MT18/...-M...-CS/CS



MIDDLE TERMINAL  
CODE: MJT



#### Technical data

#### Service conditions

Max Pressure: 5 barg (Max. pressure also function of the length and the temperature)  
Max Temperature: 120°C

#### View

Standard: adjustable on 360° in the installation phase (Rotating the "U" shaped protection)

#### Distance (Centre-to-centre)

On request

Max with a single glass tube 3.000 mm

Option: on request are available distances over 3.000 mm using the middle terminals to connect more glass tubes

#### Visible length [VL]

#### With shut-off cocks DS GR18

- **With the "U" shaped protection**

Visible length [VL] = Centre-to-centre distance [M] - 135 mm (With extended stuffing box covers to fasten the "U" shaped protection)

- **Without protection**

Visible length [VL] = Centre-to-centre distance [M] - 95 mm (With standard stuffing box covers)

#### With shut-off cocks DS MT18

- **With the "U" shaped protection**

Visible length [VL] = Centre-to-centre distance [M] - 145 mm (With extended stuffing box covers to fasten the "U" shaped protection)

- **Without protection**

Visible length [VL] = Centre-to-centre distance [M] - 105 mm (With standard stuffing box cover)

#### Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Cocks body:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

#### Glass tube

Standard: borosilicate glass 3.3, Ø 16 mm, thickness 2,5 mm

#### Protection for glass tube (Option always recommended)

Standard: metal sheet "U" shaped in stainless steel AISI 304

#### Gaskets

Standard:	Cocks: graphite/copper	Glass sealing: EPDM
Option:	Cocks: graphite/AISI 316	Glass sealing: graphite
	Cocks: PTFE/AISI316	Glass sealing: PTFE

#### Shut-off cocks

DS GR18: cylindrical plug type - Straight type - Quick 90° closing

DS MT18: cylindrical plug type with monolithic body - Straight type - Quick 90° closing

Handling: lever operated with PP handle (Standard: right; Option: left)

#### Process connections:

Standard flanges:	UNI PN16/40 DN15-20-25	ANSI #150/RF DN 1/2" - 3/4" - 1"
Standard threaded unions:	BSP-M 1/2" - 3/4"	NPT-M 1/2" - 3/4"

Options: further connections types or direct connections to the process without cocks  
(See page 1.49)

**Vent:** Standard: blind

Option: see page 1.50

**Drain:** Standard: cock DS D12 threaded 1/2"

Option: see page 1.50

#### Accessories

See from page 1.55

#### Weights

Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)

Cocks DS MT18: Kg. 6,1 approx. (With flanges UNI DN20 PN40)

#### Spare parts

Glass tube: Length = Centre-to-centre distance [M] - 30 mm

Protection: Length = Centre-to-centre distance [M] - 100 mm

Cocks DS GR18: see from page 1.72

(Drawing with components and parts list see page 1.66)

Cocks DS MT18: see from page 1.64

(Drawing with components and parts list see page 1.67)

#### Utilization

#### The product is NOT suitable for use in the following instances:

- if it is likely to be exposed to vibrations (Glass tube will break)
- if the installation is situated by a walkway (Possibility of blows/impact)
- if exposed to steam (Shortens glass tube life)