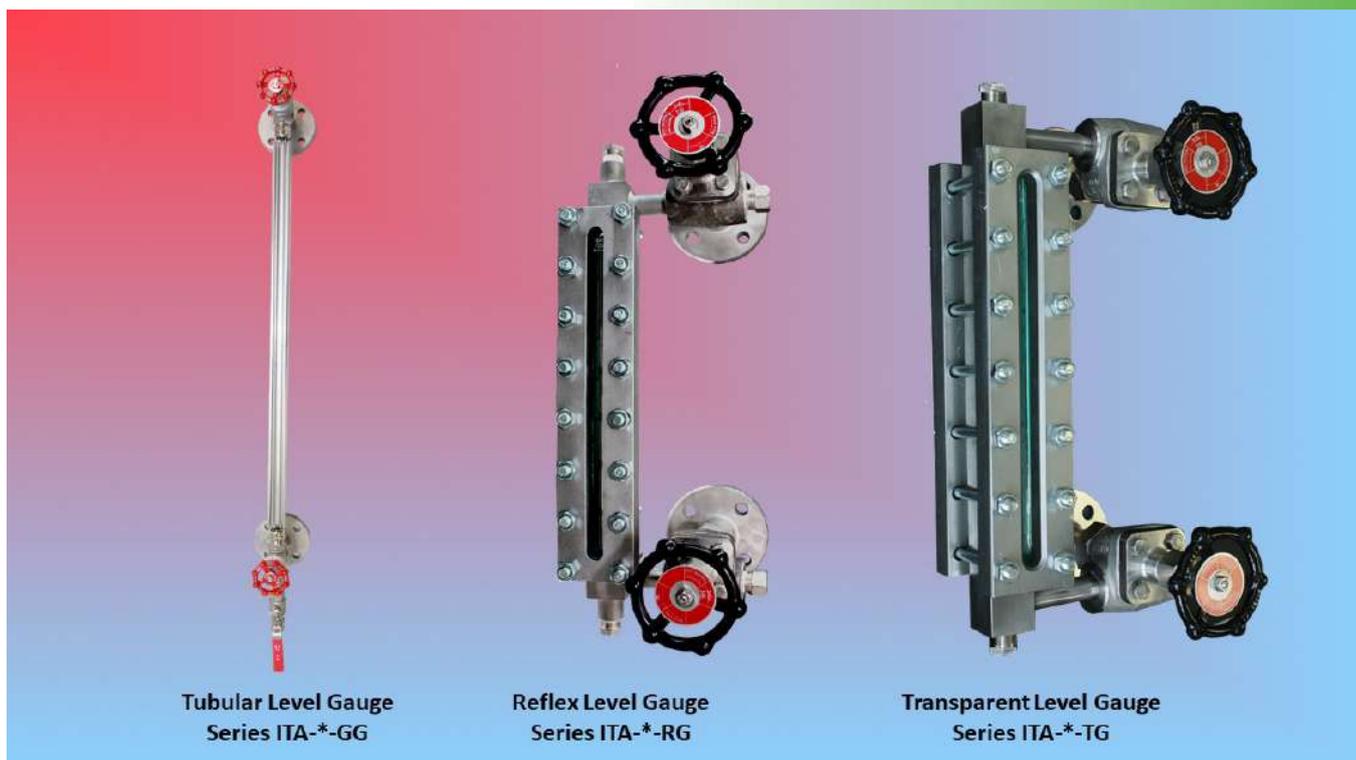




LEVEL GAUGES WITH DIRECT LIQUID VISIBILITY

Tubular/Reflex/Transparent types

Series: ITA-GG / ITA-RG / ITA-TG



Technical Information

05/2022

LEVEL GAUGES WITH DIRECT VISIBILITY

Intra-Automation

LEVEL GAUGES WITH DIRECT LIQUID VISIBILITY

Printed 2022

Printing errors and technical changes reserved

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Series: ITA-GG / ITA-RG / ITA-TG

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LEVEL GAUGES WITH DIRECT VISIBILITY

ITA-GG/RG/TG

1. Introduction

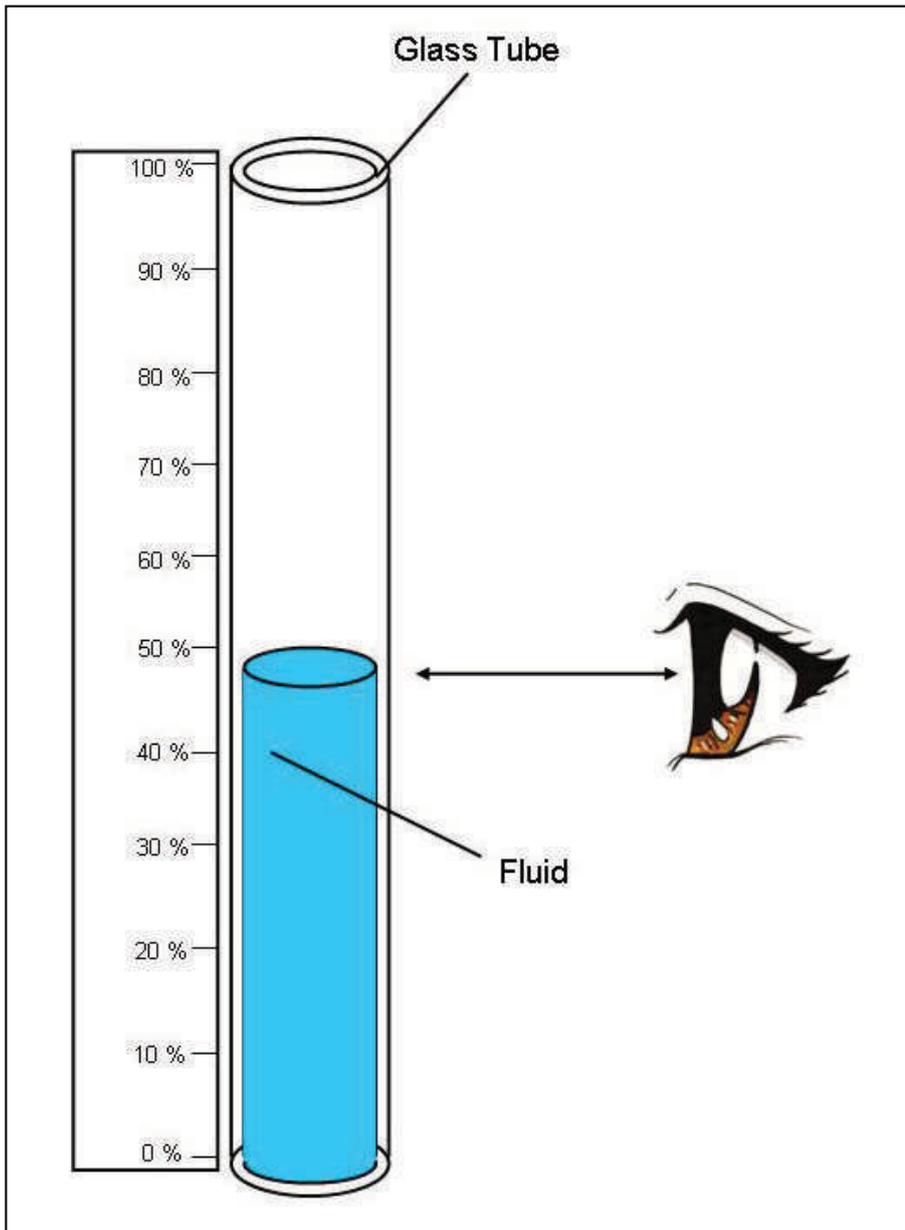
Due to some reasons (obligations by law, practical reasons or similar) it can be necessary, that a fluid level can be observed directly. For that kind of applications, Intra-Automation has developed its own series of Tubular Level Gauges (ITA-GG), Reflex Level Gauges (ITA-RG) and Transparent Level Gauges (ITA-TG). Together with our Magnetically Controlled Level Gauge (ITA) and several electronic transmitters, we now have a complete product line for level monitoring. In this brochure, the devices for direct visibility of levels are to be described.

ITA Level Gauges are coded as follows:

ITA-	Device for level measurement
3	up to PN16 / 150 lbs, material: stainless steel
6	up to PN40 / 300 lbs, material: stainless steel
7	up to PN63 / 300 lbs, material: stainless steel
10	up to PN100 / 600 lbs, material: stainless steel
11	up to PN160 / 900 lbs, material: stainless steel
12	up to PN250 / 1500 lbs, material: stainless steel
13	up to PN320 / 2500 lbs, material: stainless steel
-GG	Tubular type
-RG	Reflex type
-TG	Transparent type

Please note that not all level gauge types are suitable for all pressure ratings!

A tubular level gauge consists of a glass tube between two shut-off-safety-valves. The valves also serve as process connection via flange, thread or welding end.



The level gauge is mounted to the tank as a bypass chamber. It works according to the law of communicating tubes. The level in the glass tube is identical to the level in the tank and can be monitored directly.



LEVEL GAUGES WITH DIRECT VISIBILITY

ITA-GG

2.2. Order codes

Type:	Tubular-Level-Gauge
Rating:	max. 30 bar / 435 PSI
Appli.:	Liquids

Code:	Description:
	1. Design:
ITA-	level gauge
	1.1 Rating
3-	max. 30 bar@20°C or 435 PSI @68°F
	1.2 Type
GG-	Glass tube
	2. C to C dimension (mm):
C/C-	
	3. Visible length (mm):
VL-	
	4. Glass
	4.0. material/size
1-	Duran / Ø 16 x 2,5 mm
Y-	Special design
	4.1. glass tube protection / material
E-	U-profile, stainless steel
Y-	Special design
	4.2. gasket
P-	PTFE (max. 200°C/392°F)
Y-	Special design
	5. Process connection
	5.0. alignment
BT-	bottom/top
YY-	Special design
	5.1. orientation
L-	left hand of gauge
R-	right hand of gauge
B-	back hand of gauge
Y-	Special Design
	5.2. type
W-	welding connection (please specify)
N-	threaded connection (please specify)
E-	WN flange facing EN Form B1/B2
A-	WN flange facing ASME RF
Y-	Special design
	5.3. size
1-	DN15 / 1/2"
2-	DN20 / 3/4" (on concentric reducer)
3-	DN 25 / 1" (on concentric reducer)
4-	DN 40 / 1-1/2" (on concentric reducer)
5-	DN 50 / 2" (on concentric reducer)
Y-	Special design

Type:	Tubular-Level-Gauge
Rating:	max. 30 bar / 435 PSI
Appli.:	Liquids

Code:	Description:
	5.4. pressure rating
A-	PN6
B-	PN10
C-	PN16 or ANSI 150 lbs
D-	PN40 or ANSI 300 lbs
Y-	Special design
	6. Material of construction ASTM/EN (DIN)
	6.1 process connection
N-	ASTM A234/ P235GH (1.0305) -only thread or weld connection-
C-	A105/P250GH (1.0460)
S-	316L/X2CrNiMo17-12-2 (1.4404)
T-	316Ti/X6CrNiTi18-10 (1.4571)
Y-	Special Design
	7. Vent at top
	7.1. plug
0-	Without
1-	G1/2" with soft iron gasket
2-	1/2"-NPT, plugged
Y-	Special design
	7.2. flange
0-	Without
1-	DN15 / 1/2"
2-	DN20 / 3/4"
3-	DN25 / 1"
4-	DN40 / 1-1/2"
Y-	Special design
	7.2.1 rating
0-	Without
A-	PN6
B-	PN10
C-	PN16 or ANSI 150 lbs
D-	PN40 or ANSI 300 lbs
Y-	Special design
	7.2.2 material
N-	ASTM A234/ P235GH (1.0305) -only thread or weld connection-
C-	A105/P250GH (1.0460)
S-	316L/X2CrNiMo17-12-2 (1.4404)
T-	316Ti/X6CrNiTi18-10 (1.4571)
Y-	Special Design

LEVEL GAUGES WITH DIRECT VISIBILITY

ITA-GG

2.2. Order codes (continuation)

Type:	Tubular-Level-Gauge
Rating:	max. 30 bar / 435 PSI
Appli.:	Liquids

Code:	Description:
	8. Drain at bottom
	8.1. plug
0-	Without
1-	G1/2" with soft iron gasket
2-	1/2"-NPT, plugged
Y-	Special design
	8.2. flange
0-	without
1-	DN15 / 1/2"
2-	DN20 / 3/4"
3-	DN25 / 1"
4-	DN40 / 1-1/2"
Y-	Special design
	8.2.1 rating
0-	without
A-	PN6
B-	PN10
C-	PN16 or ANSI 150 lbs
D-	PN40 or ANSI 300 lbs
Y-	Special design
	8.2.2 material
N-	ASTM A234/ P235GH (1.0305) -only thread or weld connection-
C-	A105/P250GH (1.0460)
S-	316L/X2CrNiMo17-12-2 (1.4404)
T-	316Ti/X6CrNiTi18-10 (1.4571)
Y-	Special design
	9. Process ball-check shut-off-valve, PN40
S-	316L/X2CrNiMo17-12-2 (1.4404)
Y-	Special design
	10. Accessories
00-	without
BV-	vent ball valve, PN40, 1/2"-NPT, material body/ packing: 316L/ PTFE
BD-	drain ball valve, PN40, 1/2"-NPT, material body/ packing: 316L/ PTFE
VV-	vent needle valve, PN400, 1/2"-NPT, material body/ packing: 316L/ Graphite
VD-	drain needle valve, PN400, 1/2"-NPT, material body/ packing: 316L/ Graphite
GV-	vent gate valve, 800lbs, 1/2"-NPT, material body/ packing: 316L/ Graphite
GD-	drain gate valve, 800lbs, 1/2"-NPT, material body/ packing: 316L/ Graphite
A0-	scale, Aluminium -graduation to be specified-
S0-	scale, 316SS -graduation to be specified-
P0-	painting, Celerol, max. 300 °C -rust protection-
Y0-	Special design

ITA-GG

2.2 Order codes (continuation)

Type:	Tubular-Level-Gauge
Rating:	max. 30 bar / 435 PSI
Appl.:	Liquids

Code:	Description:
	11. Documentation
+00-	without
+A1-	EN10204 –3.1 material certificate
+A2-	EN10204 –3.1 material certificate; NACE MR0175
+F1-	hydrostatic pressure test certificate (1,5 times P design@20°C)
+FA-	dimensional drawing (PDF-file)
+FC-	certificate of conformance
+YY-	Special design

LEVEL GAUGES WITH DIRECT VISIBILITY

ITA-RG

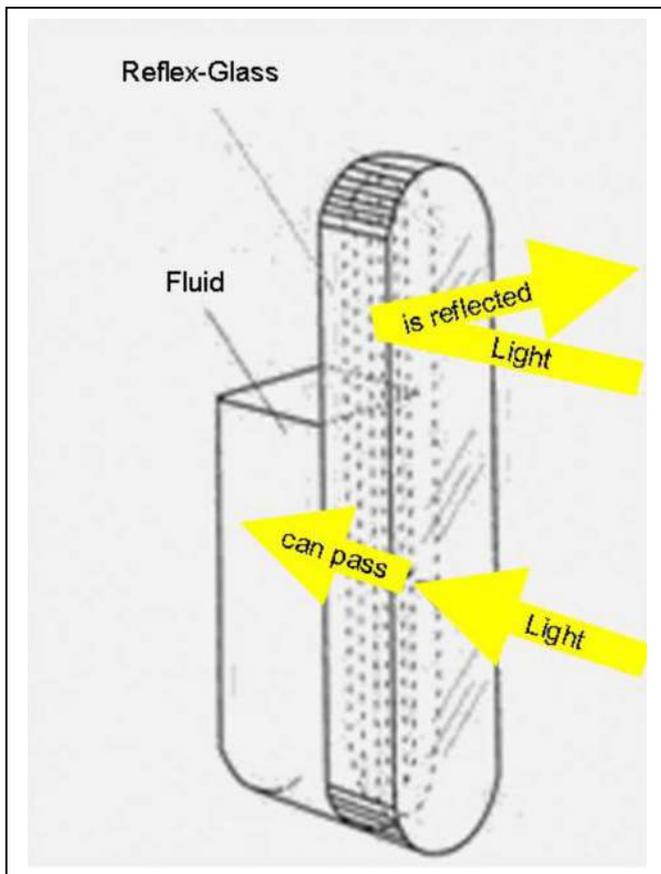
3. Reflex Level Gauges

ITA-RG

3.1 Description / Functional Principle

Reflex Level Gauges are designed to be connected sideways to the tank as a bypass tube. They are customized to the client's requirements. They fit exactly to the application, provided the client's information is exact. The tank connections are equipped with safety valves to avoid letting flow out the liquid in case of a glass break. For a safe shut-off, the needed pressure is 2 bar (min.). The gauge body itself consists of a stand pipe, which contains the fluid to be measured, of Reflex-glass segments (DIN glasses) and of a cover, which fixes the Reflex glass at the cut-out of the stand pipe.

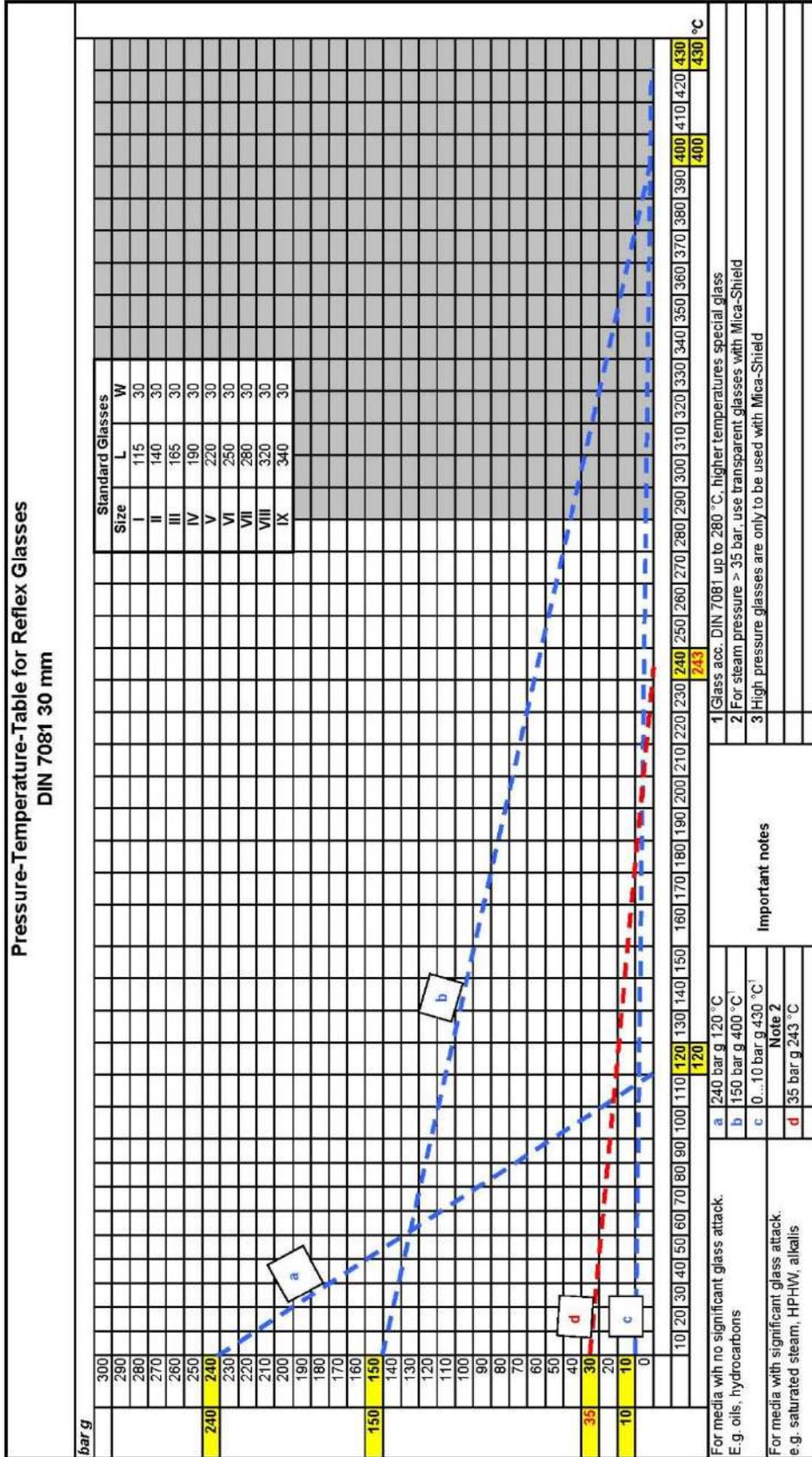
Intra-Reflex Level Gauges are made from stainless steel 316L (1.4404) or from carbon steel. The glass is borosilicate. For higher temperatures the gauges are equipped with a heat protection.



The glass of a Reflex Level Gauge is ground in a way to enable it to refract light like a prism. At the zone of liquid to measure, the light gets almost absorbed. That makes this zone very much darker than the zone of gas. By this contrast the liquid level can be observed clearly.

The Reflex Level Gauge is connected to the tank by two process connections, one at the upper end of the gauge and one at the lower end. So the tank and the gauge act as "communicating" tubes. So the liquid level in the gauge always corresponds exactly to the liquid level in the tank.

1. Temperature-pressure relation:



LEVEL GAUGES WITH DIRECT VISIBILITY

ITA-RG

3.3 Order codes

Type:	Reflex-Level-Gauge
Rating:	PN16 up to PN250 or 150 lbs up to 1500 lbs
Appl.:	Liquids / Steam

Code:	Description:
	1. Design:
ITA-	Level gauge
	1.1 Rating
3-	PN16 or ANSI 150 lbs
6-	PN40 or ANSI 300 lbs
7-	PN63
10	PN100 or ANSI 600 lbs
-11	PN160 or ANSI 900 lbs
-12	PN250 or ANSI 1500 lbs
	1.2. Type:
RG-	Reflex-Gauge
	2. C to C dimension (mm):
C/C-	
	3. Visible length (mm):
VL-	
	4. Glass
	4.0. material/type/standard/size (LxWxH) [x=quantity]
1x-	Borosilicate /1 / DIN7081 / 115 x 30 x 17 mm
2x-	Borosilicate /2 / DIN7081 / 140 x 30 x 17 mm
3x-	Borosilicate /3 / DIN7081 / 165 x 30 x 17 mm
4x-	Borosilicate /4 / DIN7081 / 190 x 30 x 17 mm
5x-	Borosilicate /5 / DIN7081 / 220 x 30 x 17 mm
6x-	Borosilicate /6 / DIN7081 / 250 x 30 x 17 mm
7x-	Borosilicate /7 / DIN7081 / 280 x 30 x 17 mm
8x-	Borosilicate /8 / DIN7081 / 320 x 30 x 17 mm
9x-	Borosilicate /9 / DIN7081 / 340 x 30 x 17 mm
YY-	Special design
	4.1 protection
0-	Without
Y-	Special design
	4.2 gaskets / cushion
K-	Klingersil C4400
G-	Graphite
Y-	Special design
	5. Process connection (upper/lower)
	5.0. alignment (upper/lower)
SS-	side/side
BT-	top/bottom
BS-	side/bottom
TS-	top/side
YY-	Special design

Type:	Reflex-Level-Gauge
Rating:	PN16 up to PN250 or 150 lbs up to 1500 lbs
Appl.:	Liquids / Steam

Code:	Description:
	5.1 orientation
L-	left hand of gauge
R-	right hand of gauge
B-	back hand of gauge
Y-	Special design
	5.2 type
WX-	welding connection (please specify)
NX-	threaded connection (please specify)
E1-	WN flange facing EN Form B1/B2
A1-	WN flange facing ASME RF
A2-	WN flange facing ASME RTJ
Y9-	Special design
	5.3. Size:
1-	DN15 / 1/2"
2-	DN20 / 3/4"
3-	DN25 / 1" (on concentric reducer)
4-	DN40 / 1 1/2" (on concentric reducer)
5-	DN50 / 2" (on concentric reducer)
6-	DN65 / 2 1/2" (on concentric reducer)
7-	DN80 / 3" (on concentric reducer)
9-	Special Design
	5.4. Pressure rating:
0-	Without
A-	PN6
B-	PN10
C-	PN16 or ANSI 150 lbs
D-	PN40 or ANSI 300 lbs
E-	PN63
F-	PN100 or ANSI 600 lbs
G-	PN160 or ANSI 900 lbs
H-	PN250
I-	PN320 or ANSI 1500 lbs
J-	PN400 or ANSI 2500 lbs
Y-	Special Design
	6. Material of construction ASTM/EN (DIN)
	6.0. Pressure chamber
1-	ASTM A 242 / S355J2H (1.0570)
2-	316L / X2CrNiMo17-12-2 (1.4404)
3-	316Ti / X6CrNiTi18-10 (1.4571)
4-	A350LF2 / TStE355 (1.0566)
9-	Special Design

LEVEL GAUGES WITH DIRECT VISIBILITY

ITA-RG

3.3 Order codes (continuation)

Type:	Reflex-Level-Gauge
Rating:	PN16 up to PN250 or 150 lbs up to 1500 lbs
Appl.:	Liquids / Steam

Code:	Description:
	6.1 Cover plate
C-	ASTM A 242 / S355J2H (1.0570)
S-	316L / X2CrNiMo17-12-2 (1.4404)
T-	316Ti / X6CrNiTi18-10 (1.4571)
A-	A350LF2 / TStE355 (1.0566)
Y	Special Design
	6.2 Process connection
N-	ASTM A 234 / P235GH (1.0305) - only thread or weld connection -
C-	ASTM A 242 / S355J2H (1.0570)
S-	316L / X2CrNiMo17-12-2 (1.4404)
T-	316Ti / X6CrNiTi18-10 (1.4571)
A-	A350LF2 / TStE355 (1.0566)
Y	Special Design
	6.3. Bolts / nuts:
C-	C.S., zinc-plated
S-	316SS
Y-	Other
	7.0 Vent at top
	7.1 Plug
0-	without
1-	G1/2" with soft iron seal
2-	1/2"-NPT, plugged
3-	3/4"-NPT, plugged
9-	Special design
	7.2 Flange
0-	without
1-	DN15 / 1/2"
2-	DN20 / 3/4"
3-	DN25 / 1"
4-	DN40 / 1 1/2"
5-	DN50 / 2"
	7.2.1 Rating
0-	Without
A-	PN6
B-	PN10
C-	PN16 or ANSI 150 lbs
D-	PN40 or ANSI 300 lbs
E-	PN63
F-	PN100 or ANSI 600 lbs
G-	PN160 or ANSI 900 lbs
H-	PN250
I-	PN320 or ANSI 1500 lbs
J-	PN400 or ANSI 2500 lbs
Y-	Special design

Type:	Reflex-Level-Gauge
Rating:	PN16 up to PN250 or 150 lbs up to 1500 lbs
Appl.:	Liquids / Steam

Code:	Description:
	7.2.2 Material
N-	316Ti/ X6CrNiTi18-10 (1.4571) -only for plug-
C-	A105/ P250GH (1.0460)
S-	316L/ X2CrNiiMo17-12-2 (1.4404)
T-	316Ti/ X6CrNiTi18-10 (1.4571)
A-	A350LF2/ P355QH (1.0566)
Y-	Special design
	8.0 Drain at bottom
	8.1 Plug
0-	without
1-	G1/2" with soft iron seal
2-	1/2"-NPT, plugged
3-	3/4"-NPT, plugged
9-	Special design
	8.2 Flange
0-	without
1-	DN15 / 1/2"
2-	DN20 / 3/4"
3-	DN25 / 1"
4-	DN40 / 1 1/2"
5-	DN50 / 2"
	8.2.1 Rating
0-	Without
A-	PN6
B-	PN10
C-	PN16 or ANSI 150 lbs
D-	PN40 or ANSI 300 lbs
E-	PN63
F-	PN100 or ANSI 600 lbs
G-	PN160 or ANSI 900 lbs
H-	PN250
I-	PN320 or ANSI 1500 lbs
J-	PN400 or ANSI 2500 lbs
Y-	Special design
	8.2.2 Material
N-	316Ti/ X6CrNiTi18-10 (1.4571) -only for plug-
C-	A105/ P250GH (1.0460)
S-	316L/ X2CrNiiMo17-12-2 (1.4404)
T-	316Ti/ X6CrNiTi18-10 (1.4571)
A-	A350LF2/ P355QH (1.0566)
Y-	Special design

LEVEL GAUGES WITH DIRECT VISIBILITY

ITA-RG

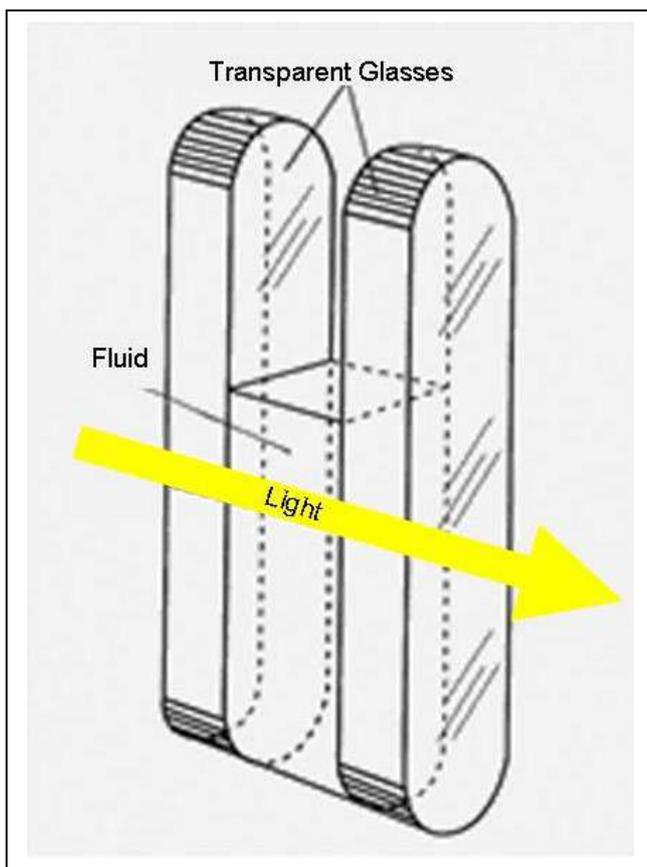
3.3 Order codes (continuation)

Type:	Reflex-Level-Gauge
Rating:	PN16 up to PN250 or 150 lbs up to 1500 lbs
Appl.:	Liquids / Steam

Code:	Description:
	9. Process ball-check shut-off-valve, 2500 lbs
1-	A105 / C21 (1.0432); trim: 316SS
S-	316L/ X2CrNiiMo17-12-2 (1.4404); trim: 316SS
T-	DUPLEX/ X2CrNiMON22-5-3 (1.4462); trim: Monel
A-	A350LF2/ P355QH (1.0566)
Y	Special Design
	10. Accessories (multiple choice possible)
00-	without
BV-	vent ball valve, PN40, 1/2"-NPT, material body/ packing: 316L/ PTFE
BD-	drain ball valve, PN40, 1/2"-NPT, material body/ packing: 316L/ PTFE
VV-	vent needle valve, PN400, 1/2"-NPT, material body/ packing: 316L/ Graphite
VD-	drain needle valve, PN400, 1/2"-NPT, material body/ packing: 316L/ Graphite
GV-	vent gate valve, 800lbs, 1/2"-NPT, material body/ packing: 316L/ Graphite
GD-	drain gate valve, 800lbs, 1/2"-NPT, material body/ packing: 316L/ Graphite
IO-	illuminator, 230V 50/60Hz; IP6x; LED
IX-	illuminator, 230V 50/60Hz; IP6x; LED; Ex d IIB T4 Gb Ta -40°C to +85°C
A0-	scale, Aluminium -graduation to be specified-
S0-	scale, 316SS -graduation to be specified-
P0-	painting, Celerol, max. 300 °C -rust protection-
Y0-	Special design
	11. Documentation (multiple choice possible)
+00-	without
+A1-	EN10204-3.1 material certificate
+A2-	EN10204-3.1 material certificate; NACE MR0175
+F1-	hydrostatic pressure test certificate (1,5 times Pdesign@20°C)
+F9-	hydrostatic pressure test certificate (1,5 times Pdesign@20°C)
+FA-	positive material inspection certificate (PMI)
+FC-	certificate of conformance
+YY-	Special Design

Transparent Level Gauges are designed to be connected sideways to the tank as a bypass tube. They are customized to the client's requirements. They fit exactly to the application, provided the client's information is exact. The tank connections are equipped with safety valves to avoid to let flow out the liquid in case of a glass break. For a safe shut-off, the needed pressure is 2 bar (min.). The gauge body itself consists of a stand pipe, which contains the fluid to be measured, of Transparent-glass segments (DIN glasses) and of covers, which fix the Transparent glasses at the cut-outs of the stand pipe.

Intra-Transparent Level Gauges are made from stainless steel 316L (1.4404) or from carbon steel. The glasses are borosilicate. For higher temperatures the gauges are equipped with a heat protection.



Inside the stand pipe of a Transparent Level Gauge, the liquid column is placed between two glass panels, which enable to see through. This transparency makes observation of the liquid level easily possible.

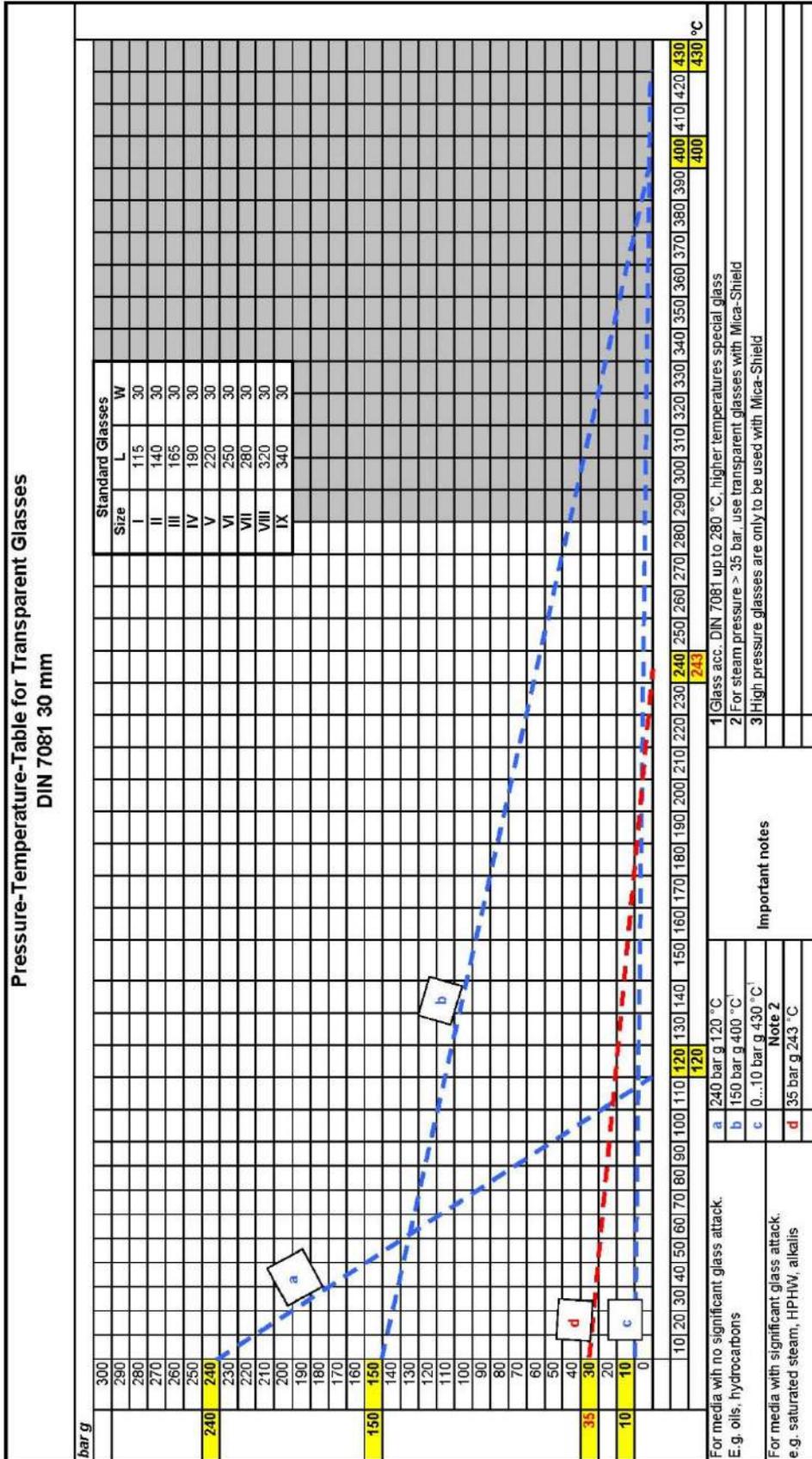
The Transparent Level Gauge is connected to the tank by two process connections, one at the upper end of the gauge and one at the lower end. So the tank and the gauge act as "communicating" tubes. So the liquid level in the gauge always corresponds exactly to the liquid level in the tank.

LEVEL GAUGES WITH DIRECT VISIBILITY

ITA-TG

4.2 Technical Data

1. Temperature-pressure relation:



Type:	Transparent-Level-Gauge
Rating:	PN16 up to PN250 or 150 lbs up to 1500 lbs
Appl.:	Liquids / Steam

Code:	Description:
	1. Design:
ITA-	Level gauge
	1.1 Rating
3-	PN16 or ANSI 150 lbs
6-	PN40 or ANSI 300 lbs
7-	PN63
10	PN100 or ANSI 600 lbs
-11	PN160 or ANSI 900 lbs
-12	PN250 or ANSI 1500 lbs
	1.2. Type:
TG-	Transparent-Gauge
	2. C to C dimension (mm):
C/C-	
	3. Visible length (mm):
VL-	
	4. Glass
	4.0. material/type/standard/size (LxWxH) [x=quantity]
1x-	Borosilicate /1 / DIN7081 / 115 x 30 x 17 mm
2x-	Borosilicate /2 / DIN7081 / 140 x 30 x 17 mm
3x-	Borosilicate /3 / DIN7081 / 165 x 30 x 17 mm
4x-	Borosilicate /4 / DIN7081 / 190 x 30 x 17 mm
5x-	Borosilicate /5 / DIN7081 / 220 x 30 x 17 mm
6x-	Borosilicate /6 / DIN7081 / 250 x 30 x 17 mm
7x-	Borosilicate /7 / DIN7081 / 280 x 30 x 17 mm
8x-	Borosilicate /8 / DIN7081 / 320 x 30 x 17 mm
9x-	Borosilicate /9 / DIN7081 / 340 x 30 x 17 mm
YY-	Special design
	4.1 protection
0-	Without
M-	MICA shields
Y-	Special design
	4.2 gaskets / cushion
K-	Klingersil C4400
G-	Graphite
Y-	Special design
	5. Process connection (upper/lower)
	5.0. alignment (upper/lower)
SS-	side/side
BT-	top/bottom
BS-	side/bottom
TS-	top/side
YY-	Special design

LEVEL GAUGES WITH DIRECT VISIBILITY

ITA-TG

4.3 Order codes (continuation)

Type:	Reflex-Level-Gauge
Rating:	PN16 up to PN250 or 150 lbs up to 1500 lbs
Appl.:	Liquids / Steam

Code:	Description:
	5.1 orientation
L-	left hand of gauge
R-	right hand of gauge
B-	back hand of gauge
Y-	Special design
	5.2 type
WX-	welding connection (please specify)
NX-	threaded connection (please specify)
E1-	WN flange facing EN Form B1/B2
A1-	WN flange facing ASME RF
A2-	WN flange facing ASME RTJ
Y9-	Special design
	5.3. Size:
1-	DN15 / 1/2"
2-	DN20 / 3/4"
3-	DN25 / 1" (on concentric reducer)
4-	DN40 / 1 1/2" (on concentric reducer)
5-	DN50 / 2" (on concentric reducer)
6-	DN65 / 2 1/2" (on concentric reducer)
7-	DN80 / 3" (on concentric reducer)
9-	Special Design
	5.4. Pressure rating:
0-	Without
A-	PN6
B-	PN10
C-	PN16 or ANSI 150 lbs
D-	PN40 or ANSI 300 lbs
E-	PN63
F-	PN100 or ANSI 600 lbs
G-	PN160 or ANSI 900 lbs
H-	PN250
I-	PN320 or ANSI 1500 lbs
J-	PN400 or ANSI 2500 lbs
Y-	Special Design
	6. Material of construction ASTM/EN (DIN)
	6.0. Pressure chamber
1-	ASTM A 242 / S355J2H (1.0570)
2-	316L / X2CrNiMo17-12-2 (1.4404)
3-	316Ti / X6CrNiTi18-10 (1.4571)
4-	A350LF2 / TStE355 (1.0566)
9-	Special Design

ITA-TG

4.3 Order codes

Type:	Transparent-Level-Gauge
Rating:	PN16 up to PN250 or 150 lbs up to 1500 lbs
Appl.:	Liquids / Steam

Code:	Description:
	6.1 Cover plate
C-	ASTM A 242 / S355J2H (1.0570)
S-	316L / X2CrNiMo17-12-2 (1.4404)
T-	316Ti / X6CrNiTi18-10 (1.4571)
A-	A350LF2 / TStE355 (1.0566)
Y-	Special Design
	6.2 Process connection
N-	ASTM A 234 / P235GH (1.0305) - only thread or weld connection -
C-	ASTM A 242 / S355J2H (1.0570)
S-	316L / X2CrNiMo17-12-2 (1.4404)
T-	316Ti / X6CrNiTi18-10 (1.4571)
A-	A350LF2 / TStE355 (1.0566)
Y-	Special Design
	6.3. Bolts / nuts:
C-	C.S., zinc-plated
S-	316SS
Y-	Other
	7.0 Vent at top
	7.1 Plug
0-	without
1-	G1/2" with soft iron seal
2-	1/2"-NPT, plugged
3-	3/4"-NPT, plugged
9-	Special design
	7.2 Flange
0-	without
1-	DN15 / 1/2"
2-	DN20 / 3/4"
3-	DN25 / 1"
4-	DN40 / 1 1/2"
5-	DN50 / 2"
	7.2.1 Rating
0-	Without
A-	PN6
B-	PN10
C-	PN16 or ANSI 150 lbs
D-	PN40 or ANSI 300 lbs
E-	PN63
F-	PN100 or ANSI 600 lbs
G-	PN160 or ANSI 900 lbs
H-	PN250
I-	PN320 or ANSI 1500 lbs
J-	PN400 or ANSI 2500 lbs
Y-	Special design

LEVEL GAUGES WITH DIRECT VISIBILITY

ITA-TG

4.3 Order codes (continuation)

Type:	Transparent-Level-Gauge
Rating:	PN16 up to PN250 or 150 lbs up to 1500 lbs
Appl.:	Liquids / Steam

Code:	Description:
	7.2.2 Material
N-	316Ti/ X6CrNiTi18-10 (1.4571) -only for plug-
C-	A105/ P250GH (1.0460)
S-	316L/ X2CrNiiMo17-12-2 (1.4404)
T-	316Ti/ X6CrNiTi18-10 (1.4571)
A-	A350LF2/ P355QH (1.0566)
Y-	Special design
	8.0 Drain at bottom
	8.1 Plug
0-	without
1-	G1/2" with soft iron seal
2-	1/2"-NPT, plugged
3-	3/4"-NPT, plugged
9-	Special design
	8.2 Flange
0-	without
1-	DN15 / 1/2"
2-	DN20 / 3/4"
3-	DN25 / 1"
4-	DN40 / 1 1/2"
5-	DN50 / 2"
	8.2.1 Rating
0-	Without
A-	PN6
B-	PN10
C-	PN16 or ANSI 150 lbs
D-	PN40 or ANSI 300 lbs
E-	PN63
F-	PN100 or ANSI 600 lbs
G-	PN160 or ANSI 900 lbs
H-	PN250
I-	PN320 or ANSI 1500 lbs
J-	PN400 or ANSI 2500 lbs
Y-	Special design
	8.2.2 Material
N-	316Ti/ X6CrNiTi18-10 (1.4571) -only for plug-
C-	A105/ P250GH (1.0460)
S-	316L/ X2CrNiiMo17-12-2 (1.4404)
T-	316Ti/ X6CrNiTi18-10 (1.4571)
A-	A350LF2/ P355QH (1.0566)
Y-	Special design

Type:	Transparent-Level-Gauge
Rating:	PN16 up to PN250 or 150 lbs up to 1500 lbs
Appl.:	Liquids / Steam

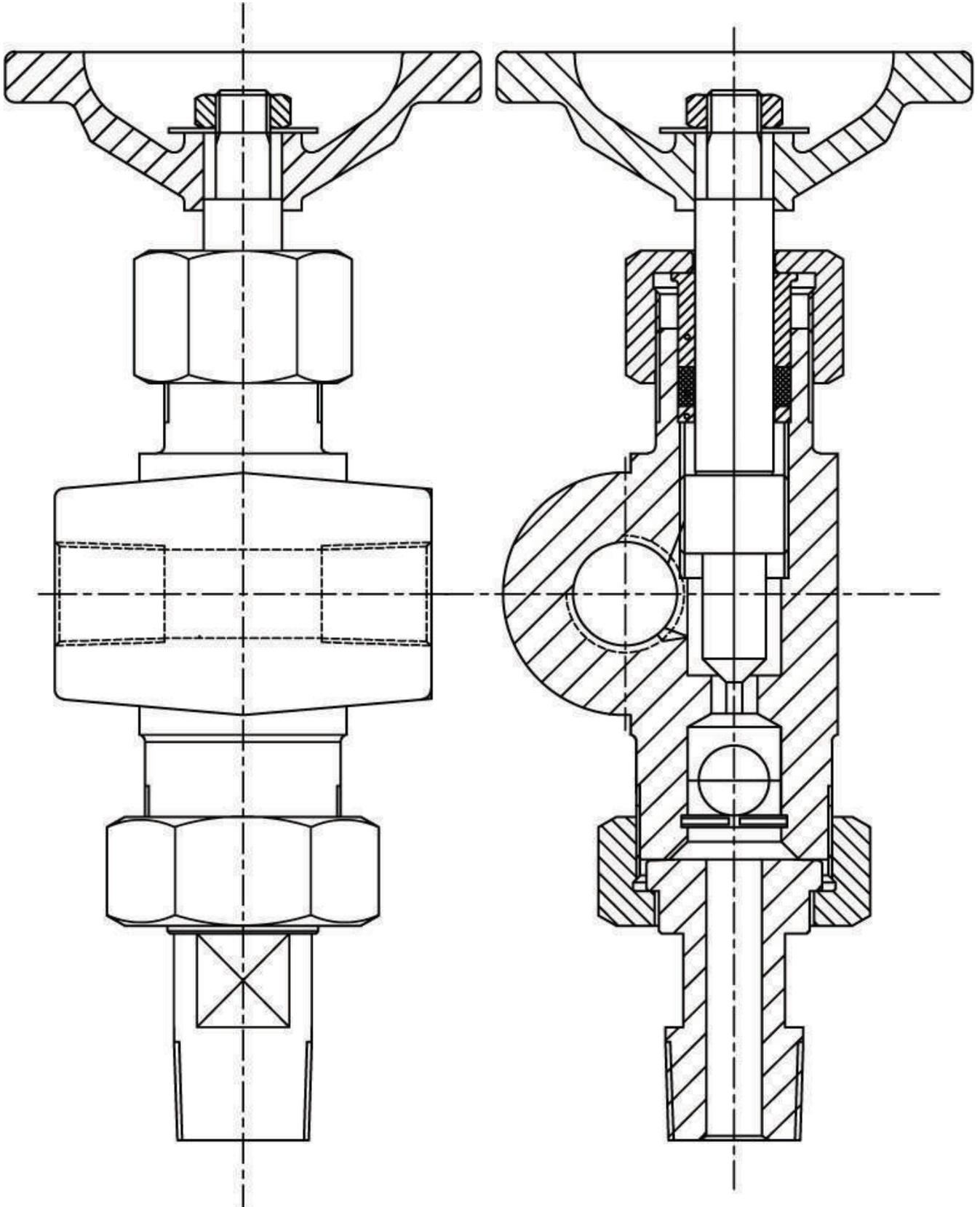
Code:	Description:
	9. Process ball-check shut-off-valve, 2500 lbs
1-	A105 / C21 (1.0432); trim: 316SS
S-	316L/ X2CrNiMo17-12-2 (1.4404); trim: 316SS
T-	DUPLEX/ X2CrNiMON22-5-3 (1.4462); trim: Monel
A-	A350LF2/ P355QH (1.0566)
Y-	Special Design
	10. Accessories (multiple choice possible)
00-	without
BV-	vent ball valve, PN40, 1/2"-NPT, material body/ packing: 316L/ PTFE
BD-	drain ball valve, PN40, 1/2"-NPT, material body/ packing: 316L/ PTFE
VV-	vent needle valve, PN400, 1/2"-NPT, material body/ packing: 316L/ Graphite
VD-	drain needle valve, PN400, 1/2"-NPT, material body/ packing: 316L/ Graphite
GV-	vent gate valve, 800lbs, 1/2"-NPT, material body/ packing: 316L/ Graphite
GD-	drain gate valve, 800lbs, 1/2"-NPT, material body/ packing: 316L/ Graphite
IO-	illuminator, 230V 50/60Hz; IP6x; LED
IX-	illuminator, 230V 50/60Hz; IP6x; LED; Ex d IIB T4 Gb Ta -40°C to +85°C
A0-	scale, Aluminium -graduation to be specified-
S0-	scale, 316SS -graduation to be specified-
P0-	painting, Celerol, max. 300 °C -rust protection-
Y0-	Special design
	11. Documentation (multiple choice possible)
+00-	without
+A1-	EN10204-3.1 material certificate
+A2-	EN10204-3.1 material certificate; NACE MR0175
+F1-	hydrostatic pressure test certificate (1,5 times Pdesign@20°C)
+F9-	hydrostatic pressure test certificate (1,5 times Pdesign@20°C)
+FA-	positive material inspection certificate (PMI)
+FC-	certificate of conformance
+YY-	Special Design

LEVEL GAUGES WITH DIRECT VISIBILITY

ITA-GG/RG/TG

5. Ball-Check Valve

The level gauges are protected by ball check valves:



Constructional drawing ball check valve.



Reflex Glass



Transparent Glass

Intra-Automation GmbH uses toughened Borosilicate glasses according to DIN 7081 for its Reflex Level Gauges (ITA-'-RG) and Transparent Level Gauges (ITA-*'-TG). This standard is engraved in the glasses.

The capabilities of the glasses are as follows:

- 1.) Unprotected reflective or transparent panes designed for continuous exposure to saturated steam or hot water pressure **up to 35 bar** and a temperature **up to 243°C**.
- 2.) Mica-film protected reflective or transparent panes designed for continuous exposure to saturated steam or hot water pressure **up to 70 bar** and a temperature **up to 300°C**¹.
- 3.) Panes designed for continuous exposure to non-aggressive media at a temperature **up to 280°C** (under special conditions, panes may be used at temperatures **up to 300°C**¹).

¹: Panes designed for continuous service shall resist temperatures up to 280°C. Temperatures exceeding 280°C may cause the induced compressive stress to be relieved, reducing it to approximately 90% of its initial value following a service of 300 hours at 300°C. Panes may be used at temperatures between 280°C and 300°C provided the pane is protected using a Mica-film, and the service hours above 280°C total no more than 300.

Dimensions of glass panes:

Type of Gauge	Glass no.								
	1	2	3	4	5	6	7	8	9
	Dimension in mm:								
Reflex	115	140	165	190	220	250	280	320	340
Transparent	115	140	165	190	220	250	280	320	340

CONTACT

DO YOU NEED SUPPORT?

Are you searching for solutions regarding level and flow measurement?

Do you search for special accessories for your metering point?

Do you need support regarding calculation or design of your special application?

Please contact us! Intra-Automation is not just manufacturer and supplier of hardware, we are also

THE EXPERT IN LEVEL AND FLOW

and are willing to share our knowledge on request.

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