

Indication rails: Data sheet summary

Data Sheet No.	Description	Material	Enclosure	Flap-colour	max. liquid operating temperature range	Page
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Indication rails

34837	Indication rails for standard applications	PC	IP65	red/silver	-100°C ... +150°C	2
41008	Indication rails for wet, dusty or corrosive environment	PC	IP68	red/silver	-100°C ... +150°C	3
34560	Indication rails for medium temperature	Al	IP54	red/silver	-40°C ... +250°C	4
37100	Indication rails for high temperature	Al	IP54	black/silver	-40°C ... +400°C	5
38602	Indication rails, protected for standard applications	316/PC	IP65	red/silver	-100°C ... +150°C	6
41313	Indication rails, protected for wet, dusty or corrosive environment	316/PC	IP68	red/silver	-100°C ... +150°C	7
42403	Indication rails for medium temperature	316	IP67	red/silver	-40°C ... +250°C	8
42404	Indication rails for high temperature	316	IP67	black/silver	-40°C ... +400°C	9

Summary of options for "extreme applications"

20050105	Reinforced fixation of the indication rails	316			-100°C ... +400°C	10
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20050105	Anti-frost block	PMMA			-100°C ... +135°C	

Summary of options for "optimised indication"

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20050106	Failure condition indication	-			-100°C ... +250°C	
20050106	Custom made measuring scales	Various			-100°C ... +400°C	

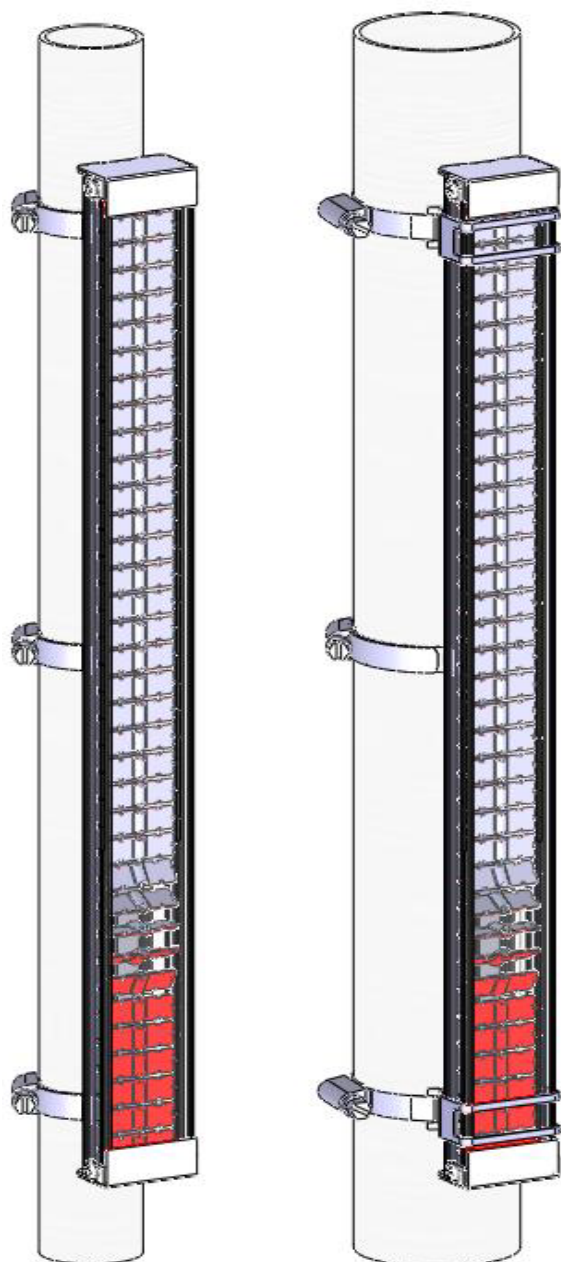


Fig. A

Fig. B

Indication rail: Polycarbonate, standard execution, T ≤ 150°C
(Flaps: red/silver)

Range of application:

Operating temperature ^{*1)}: -100°C to max. +150°C
Max. vertical velocity of float
(= rate of level change): ≤ 2.2m/sec

Execution:

Viewing angle (horizontal): Approx. 240°
Max. indication rail length: max. 5000mm
Protection class: IP65

Materials:

Inner and outer profiles: Transparent polycarbonate (*), UV stabilised
(* Makrolon, Illexon, Lexan, etc.)
Flaps: Aluminium: coloured, or anodised uncoloured
Stabilisation magnet: Ferrite
Magnetic guiding tape: Rubber-ferrite strip
End caps: Stainless steel 316
End cap seals: Silicone rubber
Fastening screws: Stainless steel (A2)

Clip types (Fig. A):

All Smart indicators (34000, 34110)
Standard indicators (23614)
All plastic indicators
All top of tank indicators (based on Type 23614)

Clips (Fig. A):

Float chamber diameter:	> 30...40mm	> 40...57mm	> 57...80mm
Hose clamp:	47353	47354	36243
Tightening torque (clip screw):	2.5...3.5Nm	2.5...3.5Nm	2.5...3.5Nm
Max. spacing between clips:	≤ 400mm	≤ 600mm	≤ 600mm

Clip types (Fig. B):

Standard indicators (34300, 32755)
All high-pressure indicators (36800, 26411, 25683, 32806)
All Petro indicators

Clips (Fig. B):

Float chamber diameter:	> 40...57mm	> 57...80mm
Reinforced fixation:	37220	37220
Hose clamp:	89250	89250
Tightening torque (clip screw):	2.5...3.5Nm	2.5...3.5Nm

Hose clamp:	47354	36243
Tightening torque (clip screw):	2.5...3.5Nm	2.5...3.5Nm
Max. spacing between clips:	≤ 600mm	≤ 600mm

Options:

a) Summary of options for extreme applications (reinforced fixation, end caps, protective sleeving, low temperature protection, etc.)
b) Summary of options for optimised indication (coloured flaps, failure mode indication, measuring scale, etc.)

Data sheets:

20050105
20050106

Note:

*1) Temperature of fluid inside the VLI float chamber

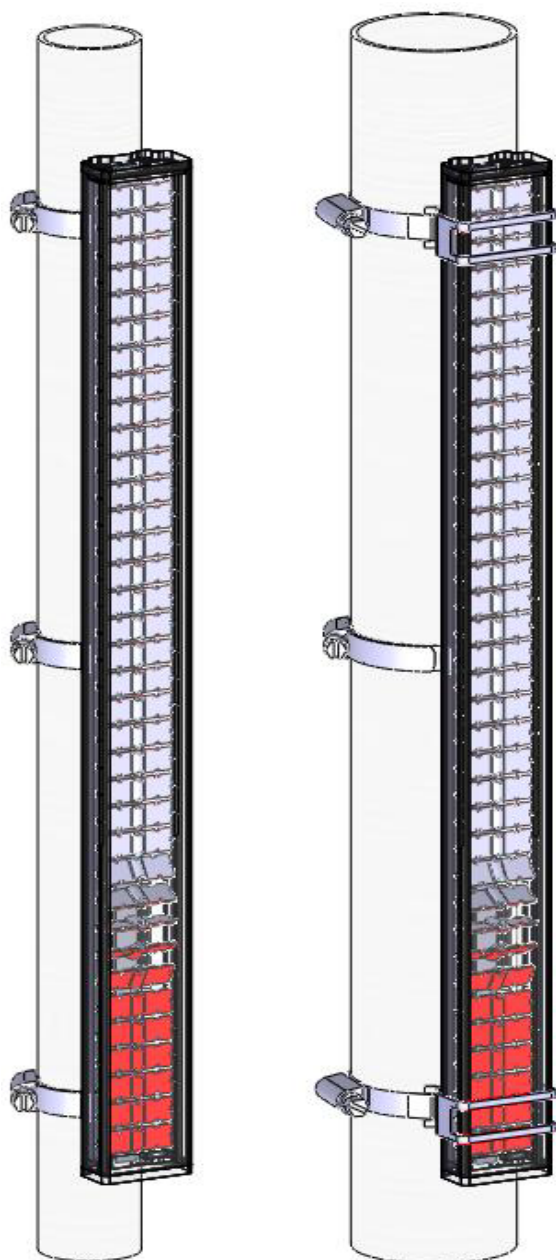


Fig. A

Fig. B

Indication rail: Polycarbonate, special execution, T ≤ 150°C

(Flaps: red/silver)

Filled with inert gas. Attention: Do not open!

Especially for wet, dusty or corrosive environment.
Applicable for low temperature applications. Due to the gas filling there will be no formation of ice inside the rail and therefore function is always guaranteed

Range of application:

Operating temperature ^{*1)}: -100°C to max. +150°C
Max. vertical velocity of float (= rate of level change): ≤ 2.2m/sec

Execution:

Viewing angle (horizontal): Approx. 240°
Max. indication rail length: max. 5000mm
Protection class: IP68

Materials:

Inner and outer profiles: Transparent polycarbonate (*), UV stabilised (* Makrolon, Illexon, Lexan, etc.)
Flaps: Aluminium: coloured or anodised uncoloured
Stabilisation magnet: Ferrite
Magnetic guiding tape: Rubber-ferrite strip
End caps: Polycarbonate transparent
End cap seals: none
Fastening screws: none

Clip types (Fig. A):

All Smart indicators (34000, 34110)
Standard indicators (23614)
All plastic indicators
All top of tank indicators (based on Type 23614)

Clip types (Fig. B):

Standard indicators (34300, 32755)
All high-pressure indicators (36800, 26411, 25683, 32806)
All Petro indicators

Clips (Fig. A):

Float chamber diameter:	> 30...40mm	> 40...57mm	> 57...80mm
Hose clamp:	47353	47354	36243
Tightening torque (clip screw):	2.5...3.5Nm	2.5...3.5Nm	2.5...3.5Nm
Max. spacing between clips:	≤ 400mm	≤ 600mm	≤ 600mm

Clips (Fig. B):

Float chamber diameter:	> 40...57mm	> 57...80mm
Reinforced fixation:	37220	37220
Hose clamp:	89250	89250
Tightening torque (clip screw):	2.5...3.5Nm	2.5...3.5Nm

Hose clamp:	47354	36243
Tightening torque (clip screw):	2.5...3.5Nm	2.5...3.5Nm
Max. spacing between clips:	≤ 600mm	≤ 600mm

Options:

a) Summary of options for extreme applications (reinforced fixation, end caps, protective sleeving, low temperature protection, etc.)
b) Summary of options for optimised indication (coloured flaps, failure mode indication, measuring scale, etc.)

Data sheets:

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Note:

*1) Temperature of fluid inside the VLI float chamber

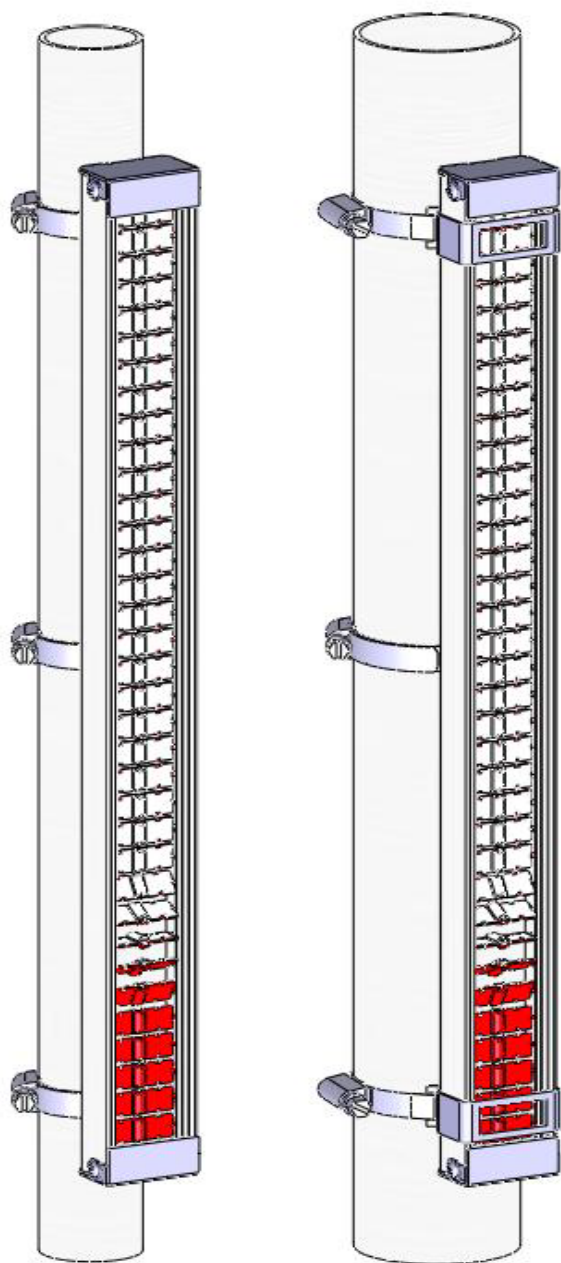


Fig. A

Fig. B

Indication rail: Aluminium, standard execution, T ≤ 250°C
(Flaps: red/silver)

Range of application:

Operating temperature ^{*1)}: -40°C to max. +250°C
Max. vertical velocity of float
(= rate of level change): ≤ 2.2m/sec

Execution:

Viewing angle (horizontal): Approx. 120°
Max. indication rail length: max. 6600mm
Protection class: IP54

Materials:

Inner and outer profiles: Aluminium alloy
Protection cover: Polycarbonate, transparent, UV stabilised
Flaps: Aluminium: coloured, or anodised uncoloured
Stabilisation magnet: Ferrite
Magnetic guiding tape: Rubber-ferrite strip
End caps: Stainless steel 316
End cap seals: Silicone rubber
Fastening screws: Stainless steel (A2)

Clip types (Fig. A):

All Smart indicators (34000, 34110)
Standard indicators (23614)
All plastic indicators
All top of tank indicators (based on Type 23614)

Clips (Fig. A):

Float chamber diameter:	> 30...40mm	> 40...57mm	> 57...80mm
Hose clamp:	47353	47354	36243
Tightening torque (clip screw):	2.5...3.5Nm	2.5...3.5Nm	2.5...3.5Nm
Max. spacing between clips:	≤ 400mm	≤ 600mm	≤ 600mm

Clip types (Fig. B):

Standard indicators (34300, 32755)
All high-pressure indicators (36800, 26411, 25683, 32806)
All Petro indicators

Clips (Fig. B):

Float chamber diameter:	> 40...57mm	> 57...80mm
Reinforced fixation:	36625	36625
Hose clamp:	89250	89250
Tightening torque (clip screw):	2.5...3.5Nm	2.5...3.5Nm

Hose clamp:	47354	36243
Tightening torque (clip screw):	2.5...3.5Nm	2.5...3.5Nm
Max. spacing between clips:	≤ 600mm	≤ 600mm

Options:

- a) Summary of options for extreme applications (reinforced fixation, end caps, protective sleeving, low temperature protection, etc.)
b) Summary of options for optimised indication (coloured flaps, failure mode indication, measuring scale, etc.)

Data sheets:

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Note:

^{*1)} Temperature of fluid inside the VLI float chamber

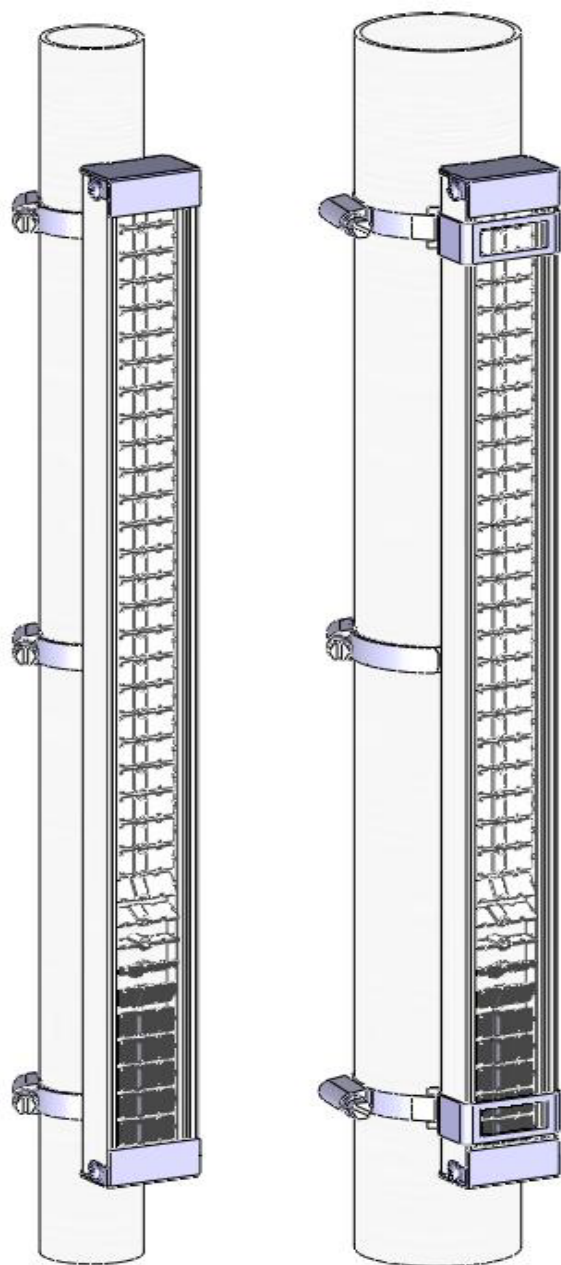


Fig. A

Fig. B

Indication rail: Aluminium, standard execution, T ≤ 400°C
(Flaps: black/silver)

Range of application:

Operating temperature ^{*1)}: -40°C to max. +400°C
Max. vertical velocity of float
(= rate of level change): ≤ 2.2m/sec

Execution:

Viewing angle (horizontal): Approx. 120°
Max. indication rail length: max. 6600mm
Protection class: IP54

Materials:

Inner and outer profiles: Aluminium alloy
Protection cover: Glass
Flaps: Aluminium: coloured (stove enamelled),
or colourless anodised
Stabilisation magnet: Ferrite
Magnetic guiding tape: Silicone-ferrite strip
End caps: Stainless steel 316
End cap seals: Silicone rubber
Fastening screws: Stainless steel (A2)

Clip types (Fig. A):

All Smart indicators (34000, 34110)
Standard indicators (23614)
All plastic indicators
All top of tank indicators (based on Type 23614)

Clips (Fig. A):

Float chamber diameter:	> 30...40mm	> 40...57mm	> 57...80mm
Hose clamp:	47353	47354	36243
Tightening torque (clip screw):	2.5...3.5Nm	2.5...3.5Nm	2.5...3.5Nm
Max. spacing between clips:	≤ 400mm	≤ 600mm	≤ 600mm

Clip types (Fig. B):

Standard indicators (34300, 32755)
All high-pressure indicators (36800, 26411, 25683, 32806)
All Petro indicators

Clips (Fig. B):

Float chamber diameter:	> 40...57mm	> 57...80mm
Reinforced fixation:	36625	36625
Hose clamp:	89250	89250
Tightening torque (clip screw):	2.5...3.5Nm	2.5...3.5Nm

Hose clamp:	47354	36243
Tightening torque (clip screw):	2.5...3.5Nm	2.5...3.5Nm
Max. spacing between clips:	≤ 600mm	≤ 600mm

Options:

- a) Summary of options for extreme applications (reinforced fixation, end caps, protective sleeving, low temperature protection, etc.)
b) Summary of options for optimised indication (coloured flaps, failure mode indication, measuring scale, etc.)

Data sheets:

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20050106

Note:

*1) Temperature of fluid inside the VLI float chamber

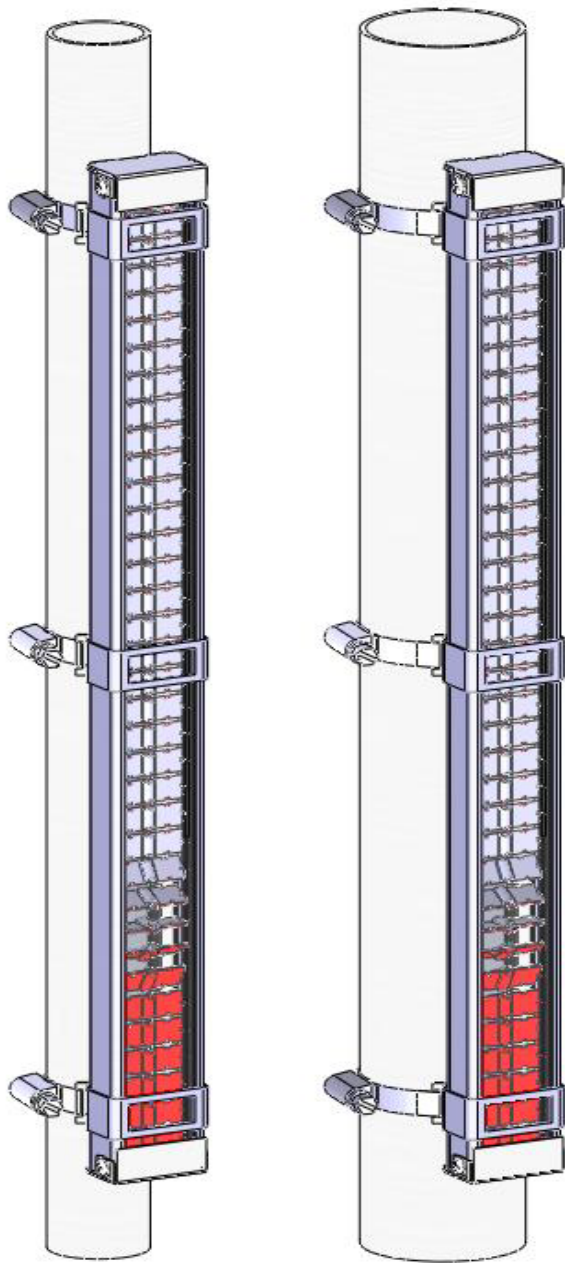


Fig. A

Fig. B

Indication rail 316/PC: Polycarbonate, standard execution, T ≤ 150°C
(Flaps: red/silver)

Range of application:

Operating temperature ^{*1)}: -100°C to max. +150°C
Max. vertical velocity of float
(= rate of level change): ≤ 2.2m/sec

Execution:

Viewing angle (horizontal): Approx. 120°
Max. indication rail length: max. 5000mm
Protection class: IP65

Materials:

Inner profile: Transparent polycarbonate (*), UV stabilised
(* Makrolon, Illexon, Lexan, etc.)
Outer profile: Protection sleeve, stainless steel 316
Flaps: Aluminium: coloured, or anodised uncoloured
Stabilisation magnet: Ferrite
Magnetic guiding tape: Rubber-ferrite strip
End caps: Stainless steel 316
End cap seals: Silicone rubber
Fastening screws: Stainless steel (A2)

Clip types (Fig. A and Fig. B):

All Smart indicators (34000, 34110)
All Standard indicators (23614, 34300, 32755)
All high-pressure indicators (36800, 26411, 25683, 32806)
All Petro indicators
All plastic indicators
All top of tank indicators (based on Type 23614)

Clips (Fig. A and Fig. B):

Float chamber diameter:	> 30...40mm	> 40...57mm	> 57...80mm
Reinforced fixation:	36625	36625	36625
Hose clamp:	89249	89250	89250
Tightening torque (clip screw):	2.5...3.5Nm	2.5...3.5Nm	2.5...3.5Nm
Max. spacing between clips:	≤ 400mm	≤ 600mm	≤ 600mm

Options:

a) Summary of options for extreme applications (reinforced fixation, end caps, protective sleeving, low temperature protection, etc.)
b) Summary of options for optimised indication (coloured flaps, failure mode indication, measuring scale, etc.)

Data sheets:

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Note:

*1) Temperature of fluid inside the VLI float chamber

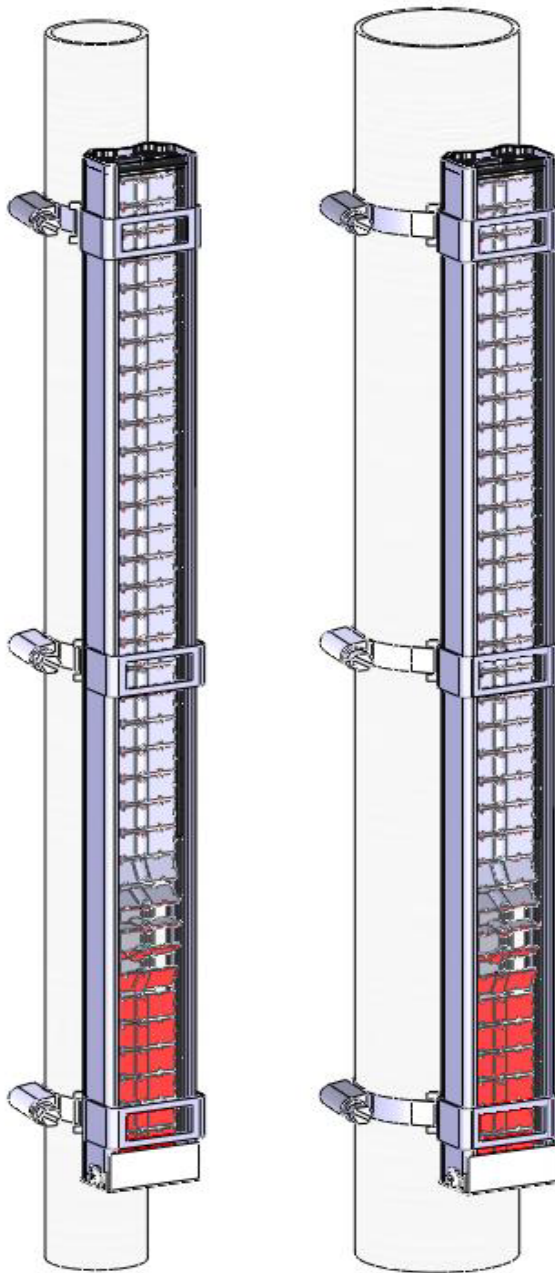


Fig. A

Fig. B

Indication rail: 316/PC, special execution, T ≤ 150°C

(Flaps: red/silver)

Filled with inert gas. Attention: Do not open!

Especially for wet, dusty or corrosive environment.
Applicable for low temperature applications. Due to the gas filling there will be no formation of ice inside the rail and therefore function is always guaranteed

Range of application:

Operating temperature ^{*1)}: -100°C to max. +150°C

Max. vertical velocity of float
(= rate of level change): ≤ 2.2m/sec

Execution:

Viewing angle (horizontal): ca. 120°

Max. indication rail length: max. 5000mm

Protection class: IP68

Materials:

Inner profile: Transparent polycarbonate (*), UV stabilised
(* Makrolon, Illexon, Lexan, etc.)
Outer profile: Protection sleeve, stainless steel 316
Flaps: Aluminium: coloured, or anodised uncoloured
Stabilisation magnet: Ferrite
Magnetic guiding tape: Rubber-ferrite strip
End caps: Polycarbonate transparent
End cap seals: none
Fastening screws: none

Clip types (Fig. A and Fig. B):

All Smart indicators (34000, 34110)
All Standard indicators (23614, 34300, 32755)
All high-pressure indicators (36800, 26411, 25683, 32806)
All Petro indicators
All plastic indicators
All top of tank indicators (based on Type 23614)

Clips (Fig. A and Fig. B):

Float chamber diameter:	> 30...40mm	> 40...57mm	> 57...80mm
Reinforced fixation:	36625	36625	36625
Hose clamp:	89249	89250	89250
Tightening torque (clip screw):	2.5...3.5Nm	2.5...3.5Nm	2.5...3.5Nm
Max. spacing between clips:	≤ 400mm	≤ 600mm	≤ 600mm

Options:

a) Summary of options for extreme applications (reinforced fixation, end caps, protective sleeving, low temperature protection, e
b) Summary of options for optimised indication (coloured flaps, failure mode indication, measuring scale, etc.)

Data sheets:

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20050106

Note:

*1) Temperature of fluid inside the VLI float chamber



Fig. A

Fig. B

Indication rail: 316L, standard execution, T ≤ 250°C
(Flaps: red/silver)

Range of application:

Operating temperature ^{*1)}: -40°C to max. +250°C
Max. vertical velocity of float
(= rate of level change): ≤ 2.2m/sec

Execution:

Viewing angle (horizontal): Approx. 120°
Max. indication rail length: max. 5000mm
Protection class: IP67

Materials:

Outer profile: Stainless steel SS316L
Inner profile: Aluminium alloy
Protection cover: Polycarbonate, transparent, UV stabilised
(PC = Polycarbonate, trade name i.e. Makrolon, Illexon, Lexan etc.)
Flaps: Aluminium: coloured, or colourless anodised
Stabilisation magnet: Ferrite
Magnetic guiding tape: Rubber-ferrite strip
End caps: Stainless steel 316
End cap seals: Silicone
Fastening screws: Stainless steel (A2)

Clip types (Fig. A and Fig. B):

All Smart indicators (34000, 34110)
All Standard indicators (23614, 34300, 32755)
All high-pressure indicators (36800, 26411, 25683, 32806)
All Petro indicators
All plastic indicators
All top of tank indicators (based on Type 23614)

Clips (Fig. A and Fig. B):

Float chamber diameter:	> 30...50mm	> 50...70mm	> 70...90mm
Reinforced fixation:	36625	37220	37220
Hose clamp:	89249	89250	84044
Tightening torque (clip screw):	2.5...3.5Nm	2.5...3.5Nm	2.5...3.5Nm
Max. spacing between clips:	≤ 400mm	≤ 600mm	≤ 600mm

Options:

a) Summary of options for extreme applications (reinforced fixation, end caps, protective sleeving, low temperature protection, etc.)
b) Summary of options for optimised indication (coloured flaps, failure mode indication, measuring scale, etc.)

Data sheets:

20050105
20050106

Note:

^{*1)} Temperature of fluid inside the VLI float chamber



Fig. A

Fig. B

Indication rail: 316L, Standard Execution, T ≤ 400°C
(Flaps: black/silver)

Range of application:

Operating temperature ^{*1)}: -40°C to max. +400°C
Max. vertical velocity of float (= rate of level change): ≤ 2.2m/sec

Execution:

Viewing angle (horizontal): Approx. 120°
Max. indication rail length: max. 5000mm
Protection class: IP67

Materials:

Outer profile: Stainless steel ss316L
Inner profile: Aluminium alloy
Protection cover: Glass
Flaps: Aluminium: coloured (stove enamelled), or colourless
Stabilisation magnet: Ferrite
Magnetic guiding tape: Silicone-ferrite strip
End caps: Stainless steel 316
End cap seals: Silicone
Fastening screws: Stainless steel (A2)

Clip types (Fig. A and Fig. B):

All Smart indicators (34000, 34110)
All Standard indicators (23614, 34300, 32755)
All high-pressure indicators (36800, 26411, 25683, 32806)
All Petro indicators
All plastic indicators
All top of tank indicators (based on Type 23614)

Clips (Fig. A and Fig. B):

	> 30...50mm	> 50...70mm	> 70...90mm
Float chamber diameter:			
Reinforced fixation:	36625	37220	37220
Hose clamp:	89249	89250	84044
Tightening torque (clip screw):	2.5...3.5Nm	2.5...3.5Nm	2.5...3.5Nm
Max. spacing between clips:	≤ 400mm	≤ 600mm	≤ 600mm

Options:

a) Summary of options for extreme applications (reinforced fixation, end caps, protective sleeving, low temperature protection, etc.)
b) Summary of options for optimised indication (coloured flaps, failure mode indication, measuring scale, etc.)

Data sheets:

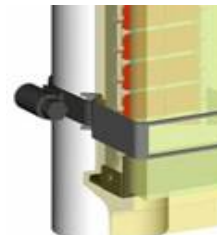
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Note:

^{*1)} Temperature of fluid inside the VLI float chamber

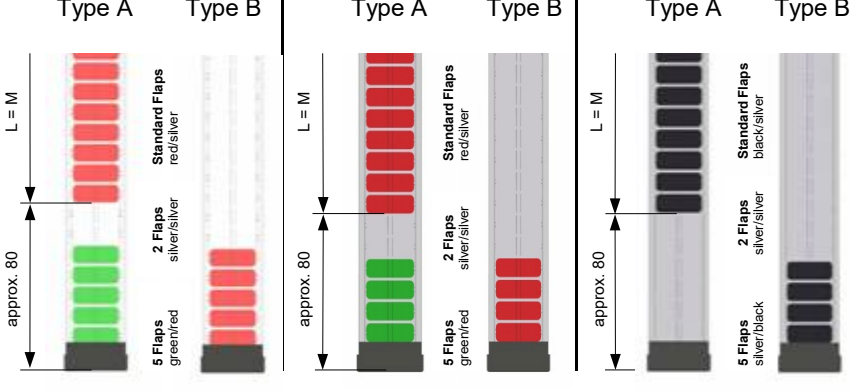
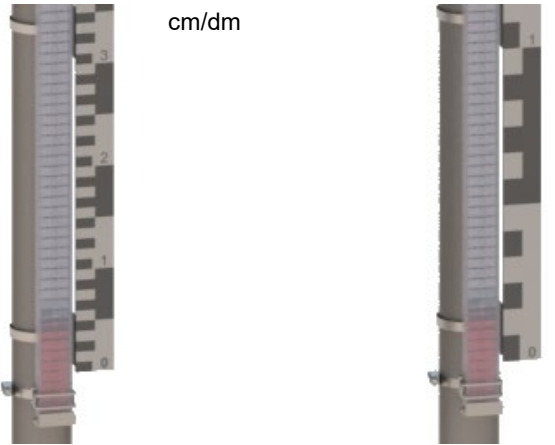
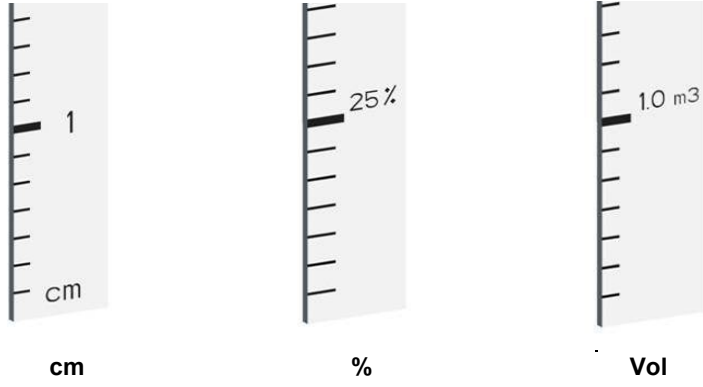
Options for "extreme applications"

20050105

Part-No.	Description	Fig.	Available for these Indication rails:
37220	Reinforced fixation of the indication rail Clip reinforcement for level indicators subject to strong vibration, shock, steam and other difficult conditions.		34837 41008 42403 >50mm 42404 >50mm
36625	Reinforced fixation of the indication rail Clip reinforcement for level indicators subject to strong vibration, shock, steam and other harsh conditions.		34560 37100 38602 41313 42403 <=50mm 42404 <=50mm
80769	Protection tube Temperature range: -100°C...+135°C Additional polyolefin protective cover. Recommended for low ambient temperatures (T < -5°C), harsh or dusty conditions, freezing conditions, or high humidity.		34837 Others on request!
38573	Anti-frost block Temperature range: -100°C...+135°C Additional 10mm polymethylmethacrylat plate (PMMA) including protection tube 80769. Recommended for low ambient temperatures (T < -5°C), dusty conditions, oil-smeared installations and corrosive atmospheres.		34837 34560 37100 38602 39057 38702

Options for "optimised indication"

20050106

Data Sheet No.	Description	Standard Indication rails	
		34837 / 38602 / 41008	34560 / 39057
-	Flap colours	T ≤ 150°C	T ≤ 250°C
	a) black/silver flaps b) yellow / silver flaps c) blue / silver flaps d) lilac / silver flaps e) green / silver flaps f) black / yellow flaps g) red / blue flaps h) red / green flaps i) Other colour combinations	37454 36737 36738 37457 37583 37455 37380 37456 On request	34570 37465 37464 37468 37584 37469 37466 37467 On request
	Colour combinations		
	The first specified colour always represents the liquid level.		
20040506	Failure mode		
	For indicating abnormal positions (Fig. B) of the float: e.g. abnormally low or high levels or due to damage of float. Normal condition: Fig. A Abnormal condition: Fig. B		
	Note:	If the failure mode indication option is ordered, the float chamber length below the indication range (C1) must be specified. (See VLI data sheets).	
20060903	Standard measuring scales		
	with cm/dm partition Measuring scale (DIBOND Alu; 39977) Measuring scale (304; 39765) with inch/feet partition Measuring scale (DIBOND Alu; 44696) Measuring scale (304; 44697) Standard scales are printed by means of screen printed.		
20060903	Custom made measuring scales	Typical examples of measurement: 	
	Measuring scale printed (DIBOND Alu; 40216) Measuring scale printed (304; 40217) Measuring scale engraving (DIBOND Alu; 40218) Measuring scale engraving (304; 40219) Custom scales are available: e.g. converted to liquid volume in tanks, volume gauging of irregular shaped / "non-linear" tanks, etc. Individual design must be confirmed by customer prior to manufacturing.		