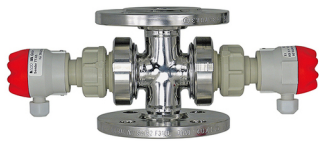
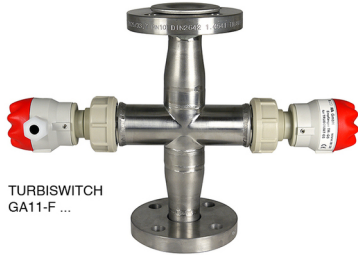


Turbidity measuring cells

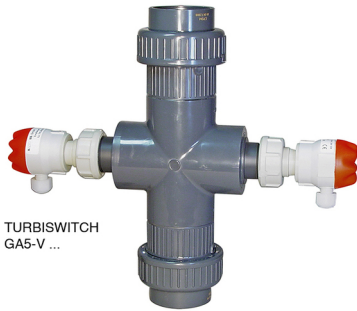
TURBISWITCH GA1 / GA5 / GA11



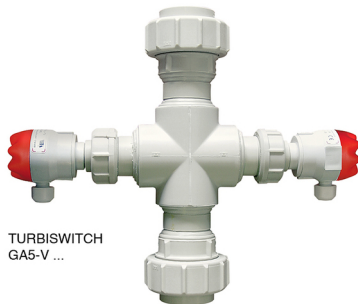
TURBISWITCH
GA1-F ...



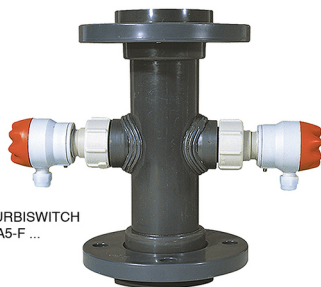
TURBISWITCH
GA11-F ...



TURBISWITCH
GA5-V ...



TURBISWITCH
GA5-V ...



TURBISWITCH
GA5-F ...

- Turbidity limit value detection
- From DN15 up to DN100
- For TURBISWITCH GS4 controller
- In-line or by-pass assembly
- PVC, PP or stainless steel versions

APPLICATIONS

For monitoring process of:

- Filtration / Ultrafiltration
- Reverse osmosis
- Cooling units
- Centrifuges / Separators
- Condensates
- Wasted water / Industrial water

DESCRIPTION

Turbidity is the result of existing particles in the liquid.

TURBISWITCH GA is designed for installation in pipeline; It measures optically the turbidity of the flowing liquid.

Transmitted light measurement is done between an emitter and a receiver, in front of each other. Attenuated light measurement is convert by the TURBISWITCH GS4, which compares the signal against the threshold set by the operator.

The limits of turbidity detection depend of the liquid's properties and nominal diameter of the measuring cell.

Measuring range is between 50 FAU min. (or above depending of liquid) and 10,000 FAU max.

Optical windows are of borosilicate glass with CLEANOSIL anti-fouling coating.

A turbidity control system includes:

- 1 Controller TURBISWITCH GS4 (data-sheet 410-02)
- 1 Measuring cell TURBISWITCH GA.. that includes fitted emitter (TT-HDR) and receiver (TR-HDR)

TECHNICAL FEATURES

TURBISWITCH GA1

Material	AISI 316 L (1.4404)
Fittings	Flanges DIN 2633, PN10
Liquid temperature	-10 ... +100 °C
Pressure limit	10 bar
Seals	EPDM (others on request)

TURBISWITCH GA11

Material	AISI 304 (1.4301)
Fittings	Loose flanges, DIN 2642, PN 10, AISI 316Ti (1.4541)
Liquid temperature	-10 ... +100 °C
Pressure limit	10 bar
Seals	EPDM (others on request)

NOTE:

Measuring cells design does not correspond to aseptic standards

Other versions on request

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Turbidity measuring cells
TURBISWITCH GA1 / GA5 / GA11

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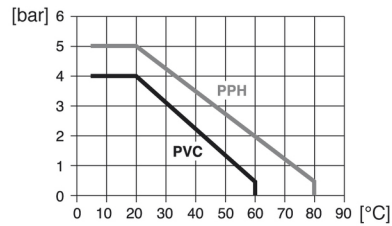
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FEATURES (continued)

TURBISWITCH GA5

Material	Or PVC, or PPH
Fittings	Solvent welding (PVC) or fusion welding (PPH)
Seals	Loose flanges DIN 2642 (with inserts and O-ring seals)
	EPDM (others on request)

Diagram: Operating pressure vs. Liquid temperature



Measuring cells GA1, GA5 and GA11 are supplied with one of each: emitter (TT-HDR) and receiver (TR-HDR).

EC Conformity: The instrument meets the legal requirements of the current European Directives

REFERENCES FOR SPARE PARTS AND ACCESORIES

The TT-HDR transmitter and the TR-HDR receiver are compatible with all GA... measuring cells and are available as spare parts.

Code	Reference	Description
410 901	TT-HDR	Emitter to use with a turbidity controller TURBISWITCH GS4
410 931	TR-HDR	Receiver to use with a turbidity controller TURBISWITCH GS4
410 101	TURBISWITCH GS4 G	TURBISWITCH GS4, power 100 ... 255 V AC, 50/60 Hz
410 102	TURBISWITCH GS4 D	TURBISWITCH GS4, power 10 ... 30 V DC or 12 ... 24 V AC

Code	Reference	Description
444 907	M 55x10	Set of 2 optical windows (CLEANOSIL coating), Ø 55, 10 mm thick With EPDM O-ring seals; For measuring cells GA1
444 908	M 30x15	Set of 2 optical windows (CLEANOSIL coating), Ø 30, 15 mm thick With EPDM O-ring seals; For measuring cells GA11 and GA5
421 602	Seal kit	1 Set of 4 o-ring seals, in EPDM

Other versions on request.



A TURBISWITCH GS4 is necessary to operate the measuring cell

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Turbidity measuring cells
TURBISWITCH GA1 / GA5 / GA11

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CODE NUMBERS AND REFERENCES

Code	Reference	Description
TURBISWITCH GA1-.. (Body: AISI 316L; Fittings: flanges, DIN 2633)		
422 116	TURBISWITCH GA1-F3	TURBISWITCH GA1; AISI 316 L flanges, ND25, PN10
422 118	TURBISWITCH GA1-F4	TURBISWITCH GA1; AISI 316 L flanges, ND32, PN10
422 120	TURBISWITCH GA1-F5	TURBISWITCH GA1; AISI 316 L flanges, ND40, PN10
422 122	TURBISWITCH GA1-F6	TURBISWITCH GA1; AISI 316 L flanges, ND50, PN10
412 124	TURBISWITCH GA1-F7	TURBISWITCH GA1; AISI 316 L flanges, ND65, PN10
412 126	TURBISWITCH GA1-F8	TURBISWITCH GA1; AISI 316 L flanges, ND80, PN10
422 128	TURBISWITCH GA1-F9	TURBISWITCH GA1; AISI 316 L flanges, ND100, PN10
TURBISWITCH GA11-.. (Body: AISI 304; Fittings: AISI 316 Ti loose flanges, DIN 2642)		
422 144	TURBISWITCH GA11-F3D	TURBISWITCH GA11; AISI 316 Ti loose flanges ND25, PN10
422 145	TURBISWITCH GA11-F4D	TURBISWITCH GA11; AISI 316 Ti loose flanges ND32, PN10
TURBISWITCH GA5-VV.. (Body: PVC; Fittings: PVC unions)		
422 500	TURBISWITCH GA5-VV11	TURBISWITCH GA5; PVC unions ND15
422 502	TURBISWITCH GA5-VV12	TURBISWITCH GA5; PVC unions ND20
422 504	TURBISWITCH GA5-VV13	TURBISWITCH GA5; PVC unions ND25
422 506	TURBISWITCH GA5-VV14	TURBISWITCH GA5; PVC unions ND32
422 508	TURBISWITCH GA5-VV15	TURBISWITCH GA5; PVC unions ND40
422 510	TURBISWITCH GA5-VV16	TURBISWITCH GA5; PVC unions ND50
422 560	TURBISWITCH GA5-VV17	TURBISWITCH GA5; PVC unions ND65
422 565	TURBISWITCH GA5-VV18	TURBISWITCH GA5; PVC unions ND80
TURBISWITCH GA5-VV.. (Body: PPH; Fittings: PPH unions)		
422 501	TURBISWITCH GA5-VV21	TURBISWITCH GA5; PPH unions ND15
422 503	TURBISWITCH GA5-VV22	TURBISWITCH GA5; PPH unions ND20
422 505	TURBISWITCH GA5-VV23	TURBISWITCH GA5; PPH unions ND25
422 507	TURBISWITCH GA5-VV24	TURBISWITCH GA5; PPH unions ND32
422 509	TURBISWITCH GA5-VV25	TURBISWITCH GA5; PPH unions ND40
422 511	TURBISWITCH GA5-VV26	TURBISWITCH GA5; PPH unions ND50
TURBISWITCH GA5-FF.. (Body: PVC; Fittings: PVC loose flanges DIN 2642)		
422 541	TURBISWITCH GA5-FF11	TURBISWITCH GA5; PVC loose flanges ND15
422 543	TURBISWITCH GA5-FF12	TURBISWITCH GA5; PVC loose flanges ND20
422 545	TURBISWITCH GA5-FF13	TURBISWITCH GA5; PVC loose flanges ND25
422 547	TURBISWITCH GA5-FF14	TURBISWITCH GA5; PVC loose flanges ND32
422 549	TURBISWITCH GA5-FF15	TURBISWITCH GA5; PVC loose flanges ND40
422 561	TURBISWITCH GA5-FF16	TURBISWITCH GA5; PVC loose flanges ND50
422 540	TURBISWITCH GA5-FF17	TURBISWITCH GA5; PVC loose flanges ND65
422 542	TURBISWITCH GA5-FF18	TURBISWITCH GA5; PVC loose flanges ND80
422 544	TURBISWITCH GA5-FF19	TURBISWITCH GA5; PVC loose flanges ND100
TURBISWITCH GA5-FF.. (Body: PPH; Fittings: PPH loose flanges, DIN 2642)		
422 551	TURBISWITCH GA5-FF21	TURBISWITCH GA5; PPH loose flanges ND15
422 553	TURBISWITCH GA5-FF22	TURBISWITCH GA5; PPH loose flanges ND20
422 555	TURBISWITCH GA5-FF23	TURBISWITCH GA5; PPH loose flanges ND25
422 556	TURBISWITCH GA5-FF24	TURBISWITCH GA5; PPH loose flanges ND32
422 557	TURBISWITCH GA5-FF25	TURBISWITCH GA5; PPH loose flanges ND40
422 558	TURBISWITCH GA5-FF26	TURBISWITCH GA5; PPH loose flanges ND50
422 559	TURBISWITCH GA5-FF27	TURBISWITCH GA5; PPH loose flanges ND65
422 552	TURBISWITCH GA5-FF28	TURBISWITCH GA5; PPH loose flanges ND80
422 554	TURBISWITCH GA5-FF29	TURBISWITCH GA5; PPH loose flanges ND100

Other versions on request

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Turbidity measuring cells
TURBISWITCH GA1 / GA5 / GA11

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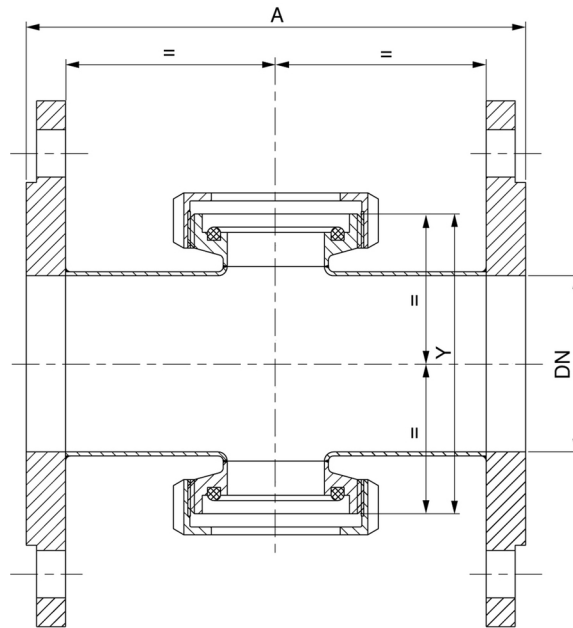
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DIMENSIONS

TURBISWITCH GA1-F...

DIN 2633



ND	A =	Y =
25	188	92
32	140	92
40	140	92
50	140	102
65	158	122
80	160	138
100	194	158

Other design (materials, fittings, etc.) on request

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Turbidity measuring cells
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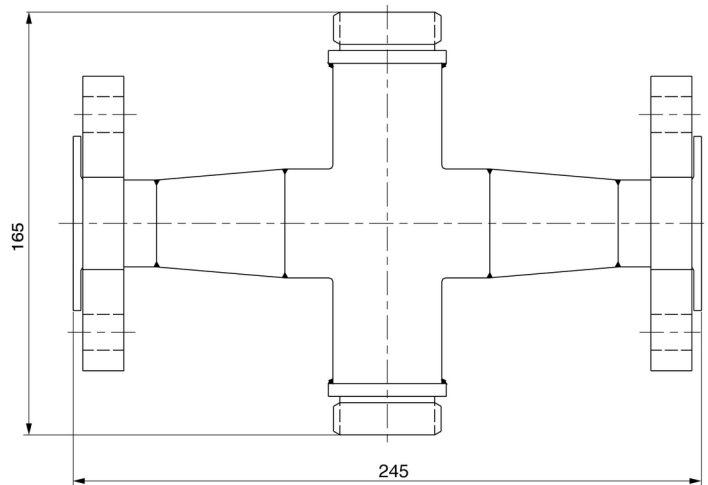
422-01 /4

DIMENSIONS

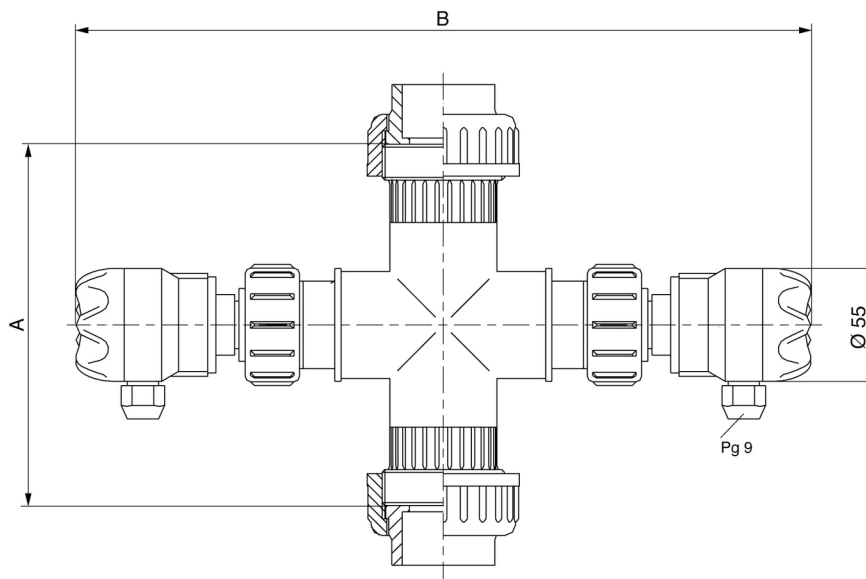
TURBISWITCH GA11-F...

DIN 2642

(Same dimensions for both ND 25 and ND 32 models)



TURBISWITCH GA5-VV...



TURBISWITCH GA5-VV 1.. (material: PVC)			TURBISWITCH GA5-VV 2.. (Material: PPH)	
ND	A (±2 mm)	B (±2 mm)	A (±2 mm)	B (±2 mm)
15	152	358	214	359
20	158	358	218	359
25	164	358	222	359
32	176	358	230	359
40	210	358	248	367
50	258	404	281	348
65	202	360	273	360
80	208	375	261	375
100	228	371	247	371

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Turbidity measuring cells
TURBISWITCH GA1 / GA5 / GA11

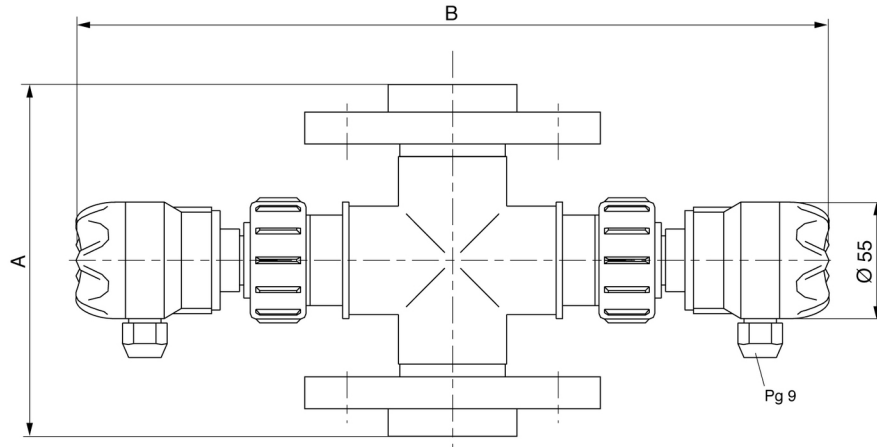
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DIMENSIONS (continued)



ND	TURBISWITCH GA5-FF 1.. (Material: PVC)		TURBISWITCH GA5-FF 2.. (Material: PPH)	
	A (±2 mm)	B (±2 mm)	A (±2 mm)	B (±2 mm)
15	143	358	214	359
20	149	358	218	359
25	155	358	222	359
32	167	358	230	359
40	197	358	254	367
50	237	404	290	348
65	290	360	290	360
80	310	375	310	375
100	350	371	350	371
125	350	401	350	401
150	350	421	350	421
200	350	461	350	461