



## Flow Meter Stau

Differential-pressure-bypass principle for liquids



- Wide choice of materials
- High volume rates of flow possible
- Orifice plate can be installed in any position
- No power requirement for indication
- Easy to install
- Measuring accuracy  $\pm 2\%$  FS
- Scale specific to the process fluid
- Optionally limit value switches



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#### Design and applications

The wide choice of materials that can be used to manufacture Stau bypass flow meters allows flow measurement of the most varied fluids.

The low-cost device in PVC is frequently used in swimming-pool water technology. The device in PP and PVDF is suitable for the flow measurement of aggressive media, e.g. in water treatment. For other fields of application there is a steel and stainless steel variant (Stau ½ and Stau V4A).

The Stau bypass flow meter operates on the differential-pressure-bypass method. A ring with an orifice plate is installed in the pipeline between flanges. The measuring orifice leads to a constriction and causes a differential pressure. As compensation a volume flow occurs in the bypass which is displayed by a variable area flow meter. This partial flow is proportional to the flow rate in the main pipeline. The unimpeded, straight tube length has to be 6 DN before and 4 DN behind the mounting position.

The partial flow can be turned on and off, as required, by installing two ball valves in the bypass line.

By installation of electrical limit value switches, which are adjustable throughout the entire measuring range, these devices can be used as detectors.

#### Low Voltage Directive

Above 50 V AC/75 V DC, electrical components are subjected to the EU Low Voltage Directive (LVD). The user is required to verify their use accordingly.

#### Features

- Wide choice of materials
- High volume rates of flow possible
- Orifice plate can be installed in any position
- No power requirement for indication
- Easy to install
- Measuring accuracy +/- 2 % FS
- Scale specific to the process fluid
- Optionally
  - Limit value switches
  - Extension of the bypass

#### Limit value switches MSK1/MSK'12/MSKW

In order to realize a local display with a monitoring function the flowmeter can be equipped with limit value switches. The limit value switch consists of a connector housing and a bistable reed switch. A magnet integrated in the float switches this reed switch. The limit value switch is guided in a guide slot on the back of the protective tube and can be adjusted throughout the entire measuring range. In case of inductive or capacitive load applications, e.g. caused by contactors or solenoid valves, uncontrolled current and voltage peaks may occur. In dependence on their geometry such peaks also occur in lines if they exceed a certain length. It is therefore recommended to use an additionally available arc suppression relay "MSR". This increases the switching capacity and avoids the appearance of inductive and capacitive peaks. It thereby ensures a long lifetime of the limit value switch.



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Dimensions				
DN	d <sub>4</sub>	A	B	C <sup>1)</sup>
32	78	160	<sup>2)</sup>	50
40	88	160	<sup>2)</sup>	50
50	102	160	<sup>2)</sup>	50
65	122	160	<sup>2)</sup>	50
80	138	160	<sup>2)</sup>	50
100	158	160	<sup>2)</sup>	50
125	188	160	<sup>2)</sup>	50
150	212	160	<sup>2)</sup>	50
200	268	160	<sup>2)</sup>	50
250	320	160	<sup>2)</sup>	50
300	370	160	<sup>2)</sup>	50
400	482	160	<sup>2)</sup>	50
1) optionally: special overall lengths possible 2) Stau-PVC 500 mm, DST-PP 528 mm, Stau-PVDF 555 mm, Stau-½ + Stau-V4A 543 mm *) all dimensions in mm				

Type series	
Stau-PVC	Device in PVC
Stau-PP	Device in PP
Stau-PVDF	Device in PVDF
Stau-½	Device in steel
Stau-V4A	Device in stainless steel
Stau-MSK1	With limit value switch (normally open)
Stau-MSK12	With limit value switch (normally closed)
Stau-MSKW	With limit value switch (change over)



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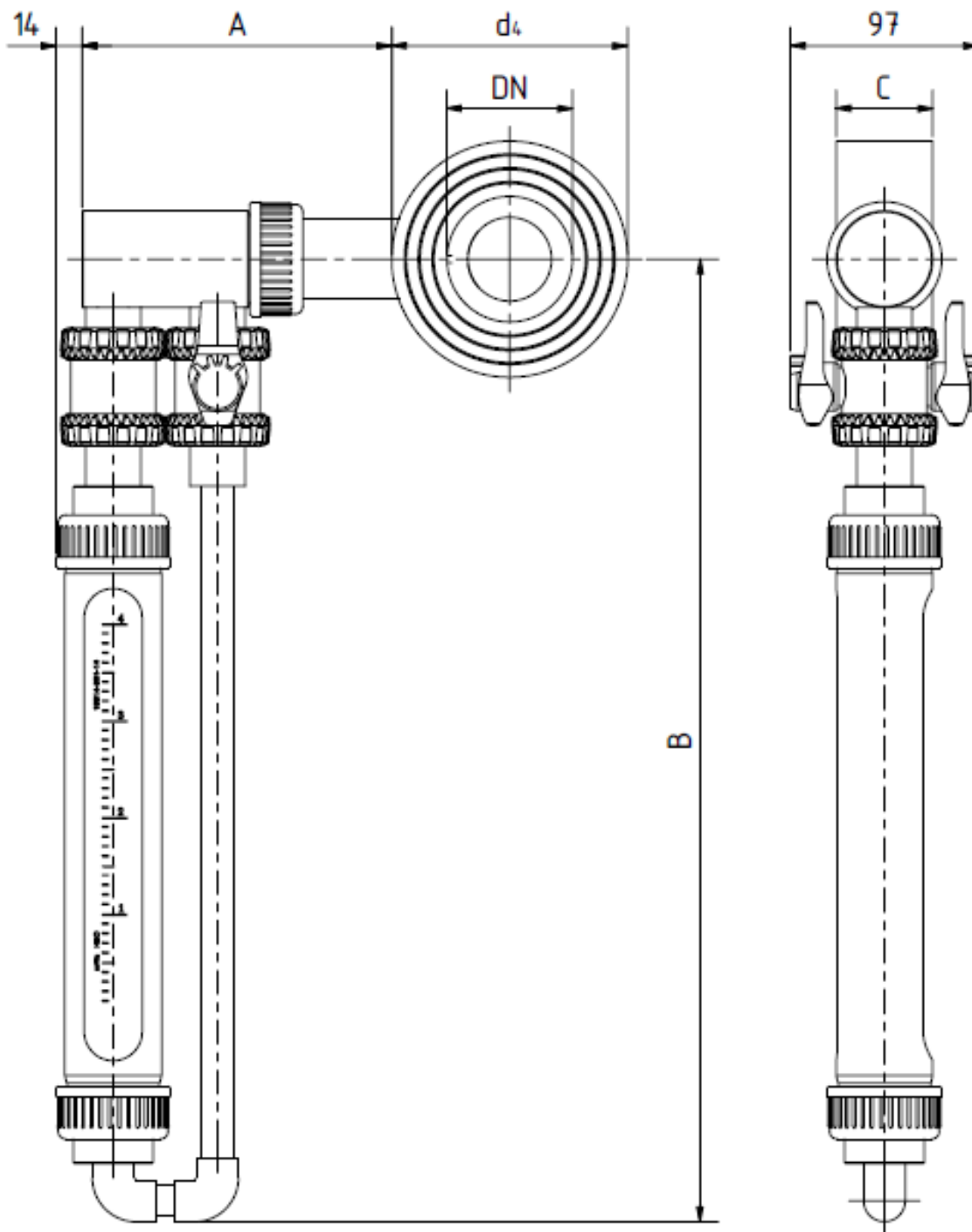
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Materials and technical data					
Model	Stau-PVC	Stau-PP	Stau-PVDF	Stau-1/2	Stau-V4A
Orifice plate	PVC	PP	PVDF	S335 <sup>2)</sup>	1.4571
Valves	PVC	PP	PVDF	1.4571	1.4571
Bypass line	PVC	PP	Polysulphone / PVDF can be supplied without valves	Brass, nickel- plated	1.4571
Indicator <sup>1)</sup>	PVC	PP	PVDF	Steel, zinc- plated	1.4571
Glass measuring tube	Borosilicate glass, optionally polysulphone	Borosilicate glass, optionally polysulphone	Borosilicate glass, optionally polysulphone	Borosilicate glass	Borosilicate glass
Float	PVC, optionally 1.4571, PTFE	PP, optionally 1.4571, PTFE	PVDF, optionally 1.4571, PTFE	Water: 1.4571 Air: anodized aluminum	Water: 1.4571 Air: PTFE
Gaskets	EPDM, optionally FKM	EPDM, optionally FKM	FKM, optionally EPDM	NBR	FKM
Max temperature / pressure (gauge)	20°C at 10 bar 40°C at 6 bar	20°C at 10 bar 70°C at 2,5 bar 80°C at 1,5 bar	20°C at 10 bar 80°C at 5 bar 100°C at 4 bar	20°C at 10 bar Special design: 80°C at 5 bar	20°C at 10 bar Special design: 80°C at 5 bar
1) see data sheet for the indicating devices 2) corrosion protection: epoxy paint, kiln-dried, traffic blue (RAL 5017), satin finished; corrosion class: C2					



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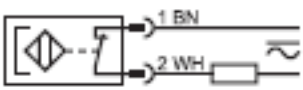
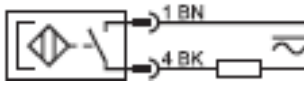

Measuring range						
DN <sup>2)</sup>	Measuring range <sup>1)</sup> H <sub>2</sub> O		Max. pressure loss in mbar	Measuring range <sup>1)</sup> Air at STP*		Max. pressure loss in mbar
32	20	- 160 l/h	150	8	- 18 m³/h	68
	3,5	- 25 m³/h	300	35	- 200 m³/h	38
40	0,02	- 0,16 m³/h	150	8	- 18 m³/h	68
	4	- 30 m³/h	350	35	- 200 m³/h	38
50	0,02	- 0,16 m³/h	150	8	- 18 m³/h	68
	4,5	- 14 m³/h	550	49	- 300 m³/h	38
65	1,2	- 2,7 m³/h	36	12,5	- 30 m³/h	6
	7	- 60 m³/h	550	78	- 535 m³/h	55
80	1,2	- 3,3 m³/h	51	14	- 30 m³/h	6
	13	- 100 m³/h	350	150	- 1010 m³/h	50
100	3	- 7 m³/h	58	30	- 70 m³/h	6
	25	- 200 m³/h	430	280	- 1750 m³/h	60
125	8	- 15 m³/h	30	95	- 200 m³/h	6
	40	- 300 m³/h	350	470	- 2850 m³/h	60
150	14	- 30 m³/h	42	185	- 400 m³/h	7
	55	- 380 m³/h	500	640	- 3850 m³/h	53
200	30	- 75 m³/h	60	380	- 790 m³/h	6
	90	- 650 m³/h	500	1125	- 6000 m³/h	69
250	43	- 140 m³/h	90	390	- 800 m³/h	7
	150	- 830 m³/h	354	1200	- 6000 m³/h	70
300	75	- 250 m³/h	84	390	- 800 m³/h	7
	185	- 1100 m³/h	378	1200	- 6000 m³/h	70
400	130	- 500 m³/h	150	-	- - - -	-
	300	- 1800 m³/h	280	-	- - - -	-
1) The minimum and maximum measuring range is specified for each nominal diameter. measuring ranges for other process fluids and operating conditions will be supplied on request 2) The inner diameter is made as prescribed by the pipe inner diameter. * at STP: at normal temperature and pressure (0 °C and 1013 mbar abs.)						

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Technical value data of the limit value switches			
Design	MSK1	MSK12	MSKW
Switching voltage	50 V AC/75 V DC	50 V AC/75 V DC	50 V AC/75 V DC
Switching current	0,5 A	0,5 A	0,5 A
Switching capacity	10 W NA	10 W NA	5 W NA
Dielectric strength	230 V AC/400 V DC	230 V AC/400 V DC	110 V AC/200 V DC
Temperature range <sup>1)</sup>	-20 ... +90 °C	-20 ... +90 °C	-20 ... +90 °C
Switching function	Normally closed	Normally open	Change over
Connection			
1) The thermal endurance of the flow meter is crucial.			

### Proper use

The user is responsible for assessing the suitability of the flow meters for his case of application, for use as prescribed and for material compatibility regarding the fluid product used in his process. The manufacturer shall not be liable for any damage arising from incorrect or improper use of the devices. Pressure surges can cause glass breakage and should therefore generally be avoided. The limit values given in the data sheet should be observed. In all other respects we advise following the installation recommendations.

### Important instructions!

Technical changes and errors reserved.

Pictures can be similar.

The operating instructions belonging to this device must be observed! Download at [www.schmidt-messtechnik.com](http://www.schmidt-messtechnik.com).