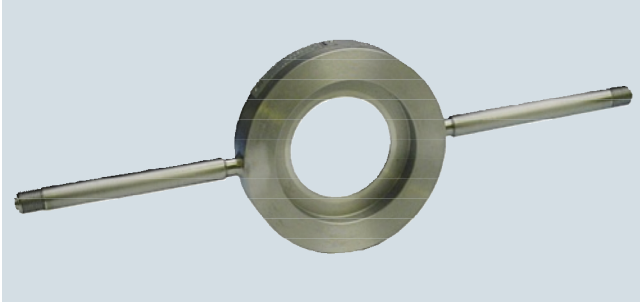


# Flow Measurement

## SITRANS F O delta p - Primary differential pressure devices

### Orifice plate with single tapping

#### Application



Suitable for non-corrosive and corrosive gases, vapors and liquids; permissible operating temperature -10 to +570 °C.

#### Design

One-piece orifice plate, orifice disk form A, B or D (see types of primary differential pressure devices in "Technical description", "Function"); see Ordering data for materials.

##### **Overall length**

40 mm to DIN 19205

##### **Nominal diameters**

EN: DN 50 to DN 500

ASME: 2 inch to 20 inch

##### **Nominal pressure**

EN: PN 6 to PN 315

ASME: class 150 to 2500

##### **Sealing face to the mating flanges**

- Plane, sealing face turned, N10/N12 to DIN ISO 1302
- Plane, sealing face turned, N8 to DIN ISO 1302
- Plane, RF (raised faced) for versions to ASME

##### **Tapping sockets**

- With connection thread G $\frac{1}{2}$  DIN ISO 228/1, with connection dimensions to DIN 19207 form V
- With threaded connection  $\frac{1}{2}$ -14 NPT male, for version to ASME
- With  $\varnothing$  12 mm pipe connection for pipe union with ferrule
- With welding connection,  $\varnothing$  21.3 mm

##### Connection size

The connection size depends on the operating pressure, the temperature of the medium (DIN 19 207 and 19 211) and the medium, e. g.

- For liquids and gases,
  - up to PN 160: Thread G $\frac{1}{2}$  or welding connection  $\varnothing$  21.3 mm
  - from PN 6 and PN 400: Welding connection  $\varnothing$  21.3 mm
  - > PN 400: Welding connection  $\varnothing$  24 mm
- For steam
  - up to PN 100: Thread G $\frac{1}{2}$  or welding connection  $\varnothing$  21.3 mm
  - > PN 100: Welding connection  $\varnothing$  24 mm

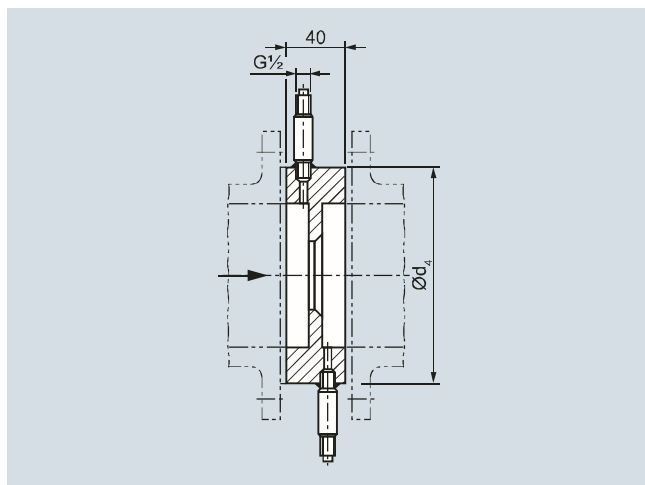
See "Technical description" and "Function" for position of the tapping sockets.

# Flow Measurement

## SITRANS F O delta p - Primary differential pressure devices

### Orifice plate with single tapping

#### Dimensional drawings



Tapping socket: Socket length is fixed in accordance with the pressure and nominal diameter (DIN 19 205, Part 2), dimensions in mm

- Threaded connections of tapping sockets for liquids and gases up to PN 160, for steam up to PN 100,

Versions for steam lines: See "Technical description", "Function" for position of the tapping sockets.

#### Nominal diameter acc. to EN

DN	Inside diameter	External diameter $d_4$ / sealing face: plane, with recess or with groove.										Weight (approx. in kg)	
		PN 6	PN 10	PN 16	PN 25	PN 40	PN 63	PN 100	PN 160	PN 250	PN 315	With smallest nominal pressure	With largest nominal pressure
50	45 ... 55	96	107	107	107	107	113	119	119	124	134	1.6	4.0
65	61 ... 71	116	127	127	127	127	138	144	144	154	170	2.2	6.3
80	77 ... 85	132	142	142	142	142	148	154	154	170	190	2.9	7.8
100	94 ... 108	152	162	162	168	168	174	180	180	202	229	3.2	11.5
125	117 ... 132	182	192	192	194	194	210	217	217	242	274	4.3	15.9
150	144 ... 160	207	218	218	224	224	247	257	257	284	311	4.7	20.6
200	188 ... 211	262	273	273	284	290	309	324	324	358	398	7.0	33.7
250	240 ... 262	317	328	329	340	352	364	391	388	442	488	9.0	50.6
300	292 ... 314	373	378	384	400	417	424	458	458	538	–	12.3	37.3
350	331 ... 362	423	438	444	457	474	486	512	–	–	–	17.7	44.6
400	383 ... 408	473	489	495	514	546	543	–	–	–	–	19.8	43.1
500	480 ... 514	578	594	617	624	628	–	–	–	–	–	25.6	46.6

Orifice plates with single tapplings for installation between EN flanges to EN 1092-1, dimensions in mm, weights

#### Nominal diameter acc. to ASME

ASME	External diameter $d_4$ / sealing face: plane, with recess or with groove.			Weight (approx. in kg)	
	Class 150	Class 300	Class 600	With smallest nominal pressure	With largest nominal pressure
2 inch	105	111	111	1.6	4.0
2½ inch	124	130	130	2.2	6.3
3 inch	137	149	149	2.9	7.8
4 inch	175	181	194	3.2	11.5
5 inch	197	216	241	4.3	15.9
6 inch	222	251	267	4.7	20.6
8 inch	279	308	321	7.0	33.7
10 inch	340	362	400	9.0	50.6
12 inch	410	422	457	12.3	37.3
14 inch	451	486	492	17.7	44.6
16 inch	514	540	565	19.8	43.1
20 inch	549	597	613	25.6	46.6

Orifice plates with single tapplings for installation between ASME flanges to ASME B 16.5, dimensions in mm and weights

# Flow Measurement

## SITRANS F O delta p - Primary differential pressure devices

### Orifice plate with single tapping

Selection and ordering data	Article No.	Order code	Selection and ordering data	Article No.	Order code
<b>Orifice plate with single tapplings</b>	<b>7 ME 1 1 2 0 -</b>	<b>- 1</b>	<b>Orifice plate with single tapplings</b>	<b>7 ME 1 1 2 0 -</b>	<b>- 1</b>
for mounting between flanges					
Sealing faces to the mating flanges: plane.					
<b><u>Nominal diameter acc. to EN</u></b>					
<b>DN 50</b>			<b>DN 250</b>		
PN 6		1 GA	PN 6		2 FA
PN 10 ... PN 40		1 GE	PN 10 and PN 16		2 FC
PN 63		1 GF	PN 25		2 FD
PN 100 and PN 160		1 GH	PN 40		2 FE
PN 250		1 GJ	PN 63		2 FF
PN 315		1 GK	PN 100 and PN 160		2 FH
<b>DN 65</b>			PN 250		2 FJ
PN 6		1 HA	PN 315		2 FK
PN 10 ... PN 40		1 HE	<b>DN 300</b>		
PN 63		1 HF	PN 6		2 GA
PN 100 and PN 160		1 HH	PN 10		2 GB
PN 250		1 HJ	PN 16		2 GC
PN 315		1 HK	PN 25		2 GD
<b>DN 80</b>			PN 40		2 GE
PN 6		1 JA	PN 63		2 GF
PN 10 ... PN 40		1 JE	PN 100 and PN 160		2 GH
PN 63		1 JF	<b>DN 350</b>		
PN 100 and PN 160		1 JH	PN 6		2 HA
PN 250		1 JJ	PN 10		2 HB
PN 315		1 JK	PN 16		2 HC
<b>DN 100</b>			PN 25		2 HD
PN 6		2 AA	PN 40		2 HE
PN 10 and PN 16		2 AC	PN 63		2 HF
PN 25 and PN 40		2 AE	PN 100		2 HG
PN 63		2 AF	<b>DN 400</b>		
PN 100 and PN 160		2 AH	PN 6		2 JA
PN 250		2 AJ	PN 10		2 JB
PN 315		2 AK	PN 16		2 JC
<b>DN 125</b>			PN 25		2 JD
PN 6		2 BA	PN 40		2 JE
PN 10 and PN 16		2 BC	PN 63		2 JF
PN 25 and PN 40		2 BE	<b>DN 500</b>		
PN 63		2 BF	PN 6		2 KA
PN 100 and PN 160		2 BH	PN 10		2 KB
PN 250		2 BJ	PN 16		2 KC
PN 315		2 BK	PN 25		2 KD
<b>DN 150</b>			PN 40		2 KE
PN 6		2 CA	<b><u>Nominal diameter acc. to ASME</u></b>		
PN 10 and PN 16		2 CC	<b>2 inch</b>		
PN 25 and PN 40		2 CE	Class 150		5 GA
PN 63		2 CF	Class 300		5 GB
PN 100 and PN 160		2 CH	Class 600		5 GC
PN 250		2 CJ	<b>2½ inch</b>		
PN 315		2 CK	Class 150		5 HA
<b>DN 200</b>			Class 300		5 HB
PN 6		2 EA	Class 600		5 HC
PN 10 and PN 16		2 EC	<b>3 inch</b>		
PN 25		2 ED	Class 150		5 JA
PN 40		2 EE	Class 300		5 JB
PN 63		2 EF	Class 600		5 JC
PN 100 and PN 160		2 EH	<b>4 inch</b>		
PN 250		2 EJ	Class 150		6 AA
PN 315		2 EK	Class 300		6 AB
			Class 600		6 AC
			<b>5 inch</b>		
			Class 150		6 BA
			Class 300		6 BB
			Class 600		6 BC

# Flow Measurement

## SITRANS F O delta p - Primary differential pressure devices

### Orifice plate with single tapping

Selection and ordering data	Article No.	Order code	Selection and ordering data	Article No.	Order code
<b>Orifice plate with single tapplings</b>	7 ME 1 1 2 0 -	- 1	<b>Orifice plate with single tapplings</b>	7 ME 1 1 2 0 -	- 1
<b>6 inch</b>			<b>Tapping sockets</b>		
Class 150	6 CA		with threaded connection G $\frac{1}{2}$ ; for liquids and gases PN 160, for steam PN 100		
Class 300	6 CB		• Opposite one another, straight		A
Class 600	6 CC		• Opposite one another, bent- up, for vertical pipelines		B
<b>8 inch</b>			• Any arrangement of tapping sockets (specify angle in plain text -Z Y02)		G
Class 150	6 EA		With threaded connection $\frac{1}{2}$ -14 NPT male		
Class 300	6 EB		• Opposite one another, straight		Q
Class 600	6 EC		• Opposite one another, bent- up, for vertical pipelines		R
<b>10 inch</b>			• Any arrangement of tapping sockets (specify angle in plain text -Z Y02)		T
Class 150	6 FA		With pipe $\varnothing$ 12 mm for pipe union with ferrule, max. 200 °C permissible		
Class 300	6 FB		• Opposite one another, straight		J
Class 600	6 FC		• Opposite one another, bent- up, for vertical pipelines		K
<b>12 inch</b>			• Any arrangement of tapping sockets (specify angle in plain text -Z Y02)		M
Class 150	6 GA		With welding connection $\varnothing$ 21.3 mm; for liquids and gases PN 100 ... 400, for steam PN 100 or $\varnothing$ 24 mm; for liquids and gases over PN 400, for steam over PN 100		
Class 300	6 GB		• Opposite one another, straight		D
Class 600	6 GC		• Opposite one another, bent- up, for vertical pipelines		E
<b>14 inch</b>			• Any arrangement of tapping sockets (specify angle in plain text -Z Y02)		H
Class 150	6 HA		<b>Shape of orifice disk aper- ture</b>		
Class 300	6 HB		(see figure "Shapes of orifice disk aperture")		
Class 600	6 HC		For flow in one direction		
<b>16 inch</b>			• Orifice plate form A		A
Class 150	6 JA		• Quarter-circle nozzle form B		B
Class 300	6 JB		For flow in both directions		
Class 600	6 JC		• Cylindrical orifice plate form D		D
<b>20 inch</b>			<b>Manufactured according to pressure equipment directive</b>		
Class 150	6 KA		None <sup>1)</sup>		0
Class 300	6 KB		According to Article 3, Para- graph 3 Design data Y31 to Y35 neces- sary		1
Class 600	6 KC		According to category 1, 2, 3 with CE marking and EC dec- laration of conformity Design data Y31 to Y35 neces- sary.		5
<b>Special version</b>					
Specify Order code and plain text	9 AA 0 0	H 1 Y			
Nominal diameter: ..., nominal pressure: ... material no.: ... and material name: ...					
<b>Material for corrosive media</b>					
Orifice plate and tapping socket made of X 2 CrNiMo 17-12-2, material no. 1.4404; permissible operating temp. -10 to +400 °C		2 3			
<b>Material for non-corrosive media</b>					
Orifice plate and tapping socket made of 13 CrMo 4-5, material no. 1.7335; permissible operating temp. -10 to +570, high temperature		2 4			
Orifice plate made of P265GH, material no. 1.0425; tapping sockets made of P235GH/C2, material no. 1.0345; metering edge with X 15 CrNiMn 18-8, material no. 1.4370, deposition welded; permissible operating temper- ature -10 to +400 °C		2 5			

<sup>1)</sup> Only possible outside Europe.

# Flow Measurement

## SITRANS F O delta p - Primary differential pressure devices

### Orifice plate with single tapping

#### Selection and ordering data

##### Further designs

Add **"-Z"** to Article No. and specify Order code(s) and plain text.

**With Siemens calculation protocol** Y21

Specify in plain text: No.: ...  
e. g. no.: 110025240101,  
Attach calculation protocol to the order

**With third-party calculation** Y22

Specify in plain text: No.: ...  
Attach calculation protocol to the order

**Orifice plate without calculation** Y01

Specify in plain text:  
Diameter of orifice disk aperture **d = ... mm**  
Internal diameter of pipe **D=... mm**  
Radius of quarter-circle nozzle **r = ... mm**

**Angle between the tapping sockets** Y02

Specify in plain text: Angle between the tapping sockets ...°

#### Design data according to Pressure equipment directive 97/23/EC

**Name of medium** Y31

Specify in plain text: Medium: .....  
e. g. natural gas

**Aggregate state** Y32

Specify in plain text: Aggregate state: .....  
Liquid or gaseous

**Fluid group** Y33

Specify in plain text: Fluid group: .....  
Group 1: hazardous explosive fluid or  
Group 2: All other fluids

**Max. permissible pressure** Y34

Specify in plain text:  
PS = ... in bar or PSI

**Max. permissible temperature** Y35

Specify in plain text:  
TS = ... in °C or °F

#### Orifice plate degreased

for oxygen measurements

• DN 50 (2") ... DN 150 (6") A12

• DN 200 (8") ... DN 400 (16") A13

• DN 500 (20") ... DN 1000 (40") A14

**Material certificate** C01

Acceptance test certificate to EN 10204-3.1

**Cold water pressure test** D11

1.5 x PN, with acceptance test certificate EN 10204

**Overall length 65 mm** on request

(required for tapping sockets arranged on one side)

**Orifice disk including gasket** on request

**Sealing face of orifice plate with recess or groove** on request

#### Note on ordering

The "calculation protocol" released by the customer with Order code Y21 or Y22 must be attached to the order as an appendix or the statement "orifice plate without calculation" will be made with Order code Y01.

#### Scope of delivery:

One-part orifice plate with tapping sockets

#### Accessories:

See "SITRANS P measuring instruments for pressure".