

Solid Flowmeters



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Solid Flowmeters

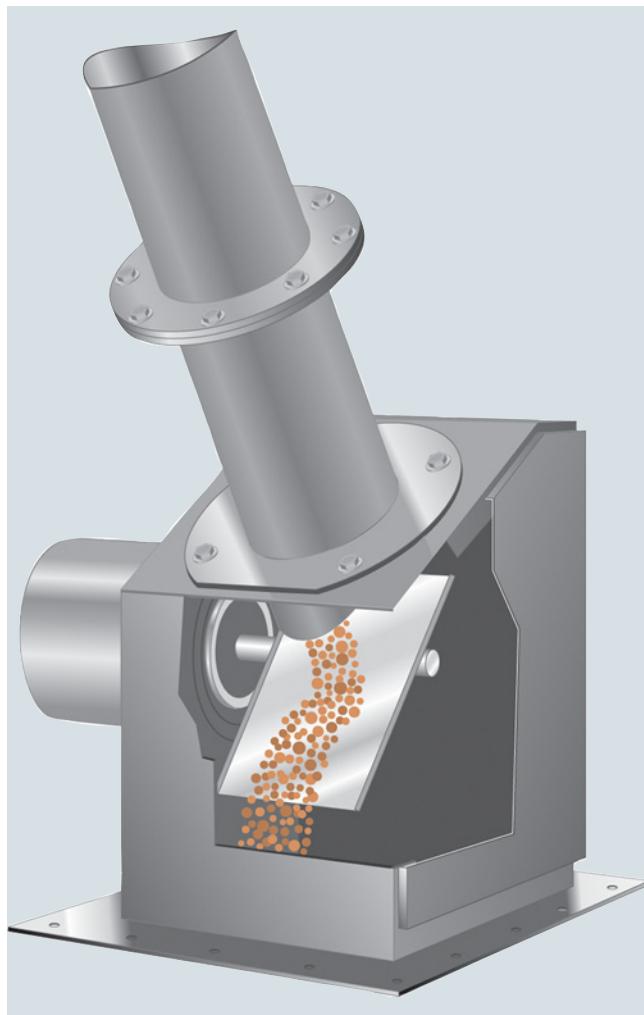
Introduction

Overview

SITRANS WF solids flowmeters monitor the rate of bulk material flow in a process. They continuously measure the impact force of the material under gravity feed conditions, and convert this signal into a flow rate used to control the rate into a process or blending operation. Solids flowmeters can function in stand-alone measuring operations, or they can interface to a facility's process control system using industry standard protocols.

Applications

SITRANS WF flowmeters measure any dry material from powders to granulates. Material densities range from puffed wheat to iron ore, while fluidity covers the spectrum from fluidized powder, such as fly-ash, to sluggish flowing material such as lathe turnings. Typical materials monitored include cement, gravel, coke, coal, minerals, wood chips, cereals, seeds, grains, soybean and rice hulls, unshelled peanuts, starch, sugar, potato flakes, grain tailings and screenings, and plastic pellets.



Solids flowmeter with sensing plate detail

Mode of operation

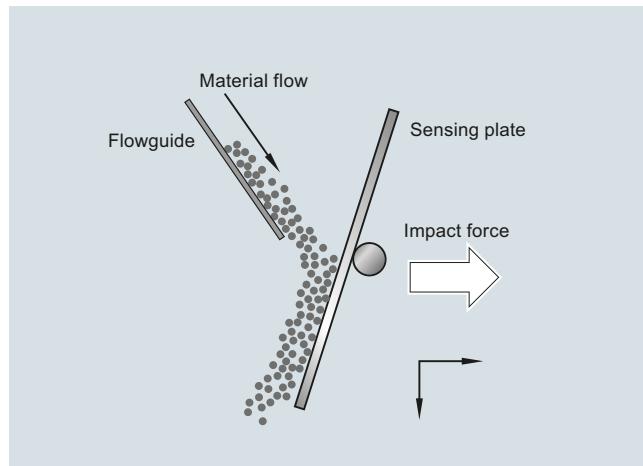
Flowmeters are installed in a gravity fed process. Entering the flowmeter through the flowguide, the material flow produces a mechanical deflection as it strikes the flowmeter's sensing plate. The SITRANS WF flowmeter converts the deflection into an electrical signal that feeds into an accompanying integrator, which instantaneously provides the flow rate and totalizes the weight.

SITRANS WF flowmeters measure only the horizontal force component of material flow striking the sensing plate. The horizontal force is dependent on particle mass and velocity, angle of particle impact against the plate, and the energy absorbing characteristics of the particle. The flowmeters respond to the mass or weight of the material striking the plate.

Because SITRANS WF flowmeter measures only the horizontal force, they are unaffected by vertical force changes caused by material buildup on the non-impact area of the sensing plate. Consequently, there is no zero drift, which in turn eliminates the need for frequent recalibration.

Siemens SITRANS WF product portfolio includes two basic types of impact flowmeters: the linear variable differential transformer (LVDT), and the strain gauge load cell. Each uses a different sensor to convert the horizontal force on the sensing plate to flow rate.

The totally enclosed design of SITRANS WF heavy-duty solids flowmeters eliminates product waste or contamination, and reduces plant maintenance. The dust-tight design creates a healthier work environment, especially when monitoring hazardous substances.



Mode of operation

Technical specifications
Solids flowmeter selection guide

Criteria	SITRANS WF100	SITRANS WF200	SITRANS WF250	SITRANS WF330	SITRANS WF340	SITRANS WF350
Typical industries	Food, grain, milling, animal feed, plastics, glass	Aggregates, grain, cement	Cement, mineral processing	Food, grain, milling, animal feed, chemicals, plastics, glass, cement, mineral processing	Food, grain, milling, animal feed, chemicals, plastics, glass, cement, mineral processing	Cement, mineral processing, mining
Typical applications	Monitoring of food ingredients, pet food blending, plastic pellet production, silica sand in glass making	Grinding mill rejects in cement, load-out of grains and seeds	Cement in aerated gravity conveyor	Fly-ash, lime dosing, cement flow and control in mining, flour stream monitoring	Fly-ash load-out, lime dosing, gypsum flow	Powders and granulates conveyed by aerated gravity conveyors, fly-ash load-out, precipitator dust
Typical capacity	1 ... 200 t/h (4 ... 220 STPH)	200 ... 900 t/h (220 ... 990 STPH)	200 ... 900 t/h (220 ... 990 STPH)	Sensing element dependent, see 'Sensing element' chart, page 6/4.	Sensing element dependent, see 'Sensing element' chart, page 6/4.	Sensing element dependent, see 'Sensing element' chart, page 6/4.
Volumetric capacity	90 m ³ /h (3 178 ft ³ /h)	500 m ³ /h (17 657 ft ³ /h)	600 m ³ /h (21 189 ft ³ /h)	40 t/h: 90 m ³ /h (3 178 ft ³ /h) 300 t/h: 290 m ³ /h (10 241 ft ³ /h)	40 t/h: 96 m ³ /h (3 390 ft ³ /h) 300 t/h: 230 m ³ /h (8 122 ft ³ /h)	40 t/h: 178 m ³ /h (6 286 ft ³ /h) 300 t/h: 545 m ³ /h (19 246 ft ³ /h)
Maximum particle size	13 mm (0.5 inch)	25 mm (1 inch)	25 mm (1 inch)	Sensing element dependent, see 'Sensing element' chart, page 6/4.	Sensing element dependent, see 'Sensing element' chart, page 6/4.	Sensing element dependent, see 'Sensing element' chart, page 6/4.
Ambient temperature	-20 ... +65 °C (-4 ... +150 °F)	-40 ... +65 °C (-40 ... +150 °F)	-40 ... +65 °C (-40 ... +150 °F)	-40 ... +60 °C (-40 ... +140 °F)	-40 ... +60 °C (-40 ... +140 °F)	-40 ... +60 °C (-40 ... +140 °F)
Maximum process temperature	65 °C (150 °F)	100 °C (212 °F)	100 °C (212 °F)	232 °C (450 °F)	232 °C (450 °F)	232 °C (450 °F)
Inlet sizes	100 ... 250 mm (4 ... 10 inch) in universal ANSI/DIN flanges	305 x 533 mm (12 x 21 inch) 305 x 635 mm (12 x 26 inch)	406 x 635 mm (16 x 25 inch) 508 x 940 mm (20 x 37 inch)	Sensing element dependent, see 'Sensing element' chart, page 6/4.	Sensing element dependent, see 'Sensing element' chart, page 6/4.	Sensing element dependent, see 'Sensing element' chart, page 6/4.
Accuracy¹⁾	± 1 % (33 ... 100 % of rate)	± 1 % (33 ... 100 % of rate)	± 1 % (33 ... 100 % of rate)	± 1 % (33 ... 100 % of rate)	± 1 % (33 ... 100 % of rate)	± 1 % (33 ... 100 % of rate)
Repeatability	± 0.2 %	± 0.2 %	± 0.2 %	± 0.2 %	± 0.2 %	± 0.2 %
Options	304 or 316 stainless steel, bead blast finish (1 ... 6 µin, 4 ... 240 µin) construction (meets FDA and USDA requirements for food processing)	304 or 316 stainless steel, bead blast finish (1 ... 6 µin, 4 ... 240 µin) construction (meets FDA and USDA requirements for food processing)	304 or 316 stainless steel, bead blast finish (1 ... 6 µin, 4 ... 240 µin) construction (meets FDA and USDA requirements for food processing)	<ul style="list-style-type: none"> • 304 or 316 stainless steel, bead blast finish (1 ... 6 µin, 4 ... 240 µin) construction (meets FDA and USDA requirements for food processing) • Food grade epoxy coating on sensing head 	<ul style="list-style-type: none"> • 304 or 316 stainless steel, bead blast finish (1 ... 6 µin, 4 ... 240 µin) construction (meets FDA and USDA requirements for food processing) • Food grade epoxy coating on sensing head 	<ul style="list-style-type: none"> • 304 or 316 stainless steel, bead blast finish (1 ... 6 µin, 4 ... 240 µin) construction (meets FDA and USDA requirements for food processing) • Food grade epoxy coating on sensing head
Sensing element	One triple beam parallelogram style, stainless steel, strain gauge load cell	Two triple beam parallelogram style, stainless steel, strain gauge load cells	Two triple beam parallelogram style, stainless steel, strain gauge load cells	Deflection measurement using LVDT (linear variable differential transformer)	Deflection measurement using LVDT (linear variable differential transformer)	Deflection measurement using LVDT (linear variable differential transformer)
Sensing plate	<ul style="list-style-type: none"> • 304 stainless steel • Option: 316 stainless steel 	<ul style="list-style-type: none"> • 304 stainless steel • Option: 316 stainless steel 	<ul style="list-style-type: none"> • 304 stainless steel • Option: 316 stainless steel 	<ul style="list-style-type: none"> • 304 stainless steel • Option: 316 stainless steel 	<ul style="list-style-type: none"> • 304 stainless steel • Option: 316 stainless steel 	<ul style="list-style-type: none"> • 304 stainless steel • Option: 316 stainless steel
Liners	<ul style="list-style-type: none"> • PTFE • Polyurethane 	<ul style="list-style-type: none"> • Polyurethane • Alumina ceramic 	<ul style="list-style-type: none"> • Polyurethane • Alumina ceramic 	<ul style="list-style-type: none"> • Plasma A/R • PTFE • Polyurethane • Alumina ceramic 	<ul style="list-style-type: none"> • Plasma A/R • PTFE • Polyurethane • Alumina ceramic 	<ul style="list-style-type: none"> • Plasma A/R • PTFE • Polyurethane • Alumina ceramic
Approvals	CE , RCM, CSA, FM, ATEX, IEC Ex, EAC	CE , RCM, CSA, FM, ATEX, IEC Ex, EAC	CE , RCM, CSA, FM, ATEX, IEC Ex, EAC	CE , RCM, EAC	CE , RCM, EAC	CE , RCM, EAC

¹⁾ Accuracy subject to: on factory approved installations the flowmeter system's totalized weight will be within the specified accuracy when compared to a known weighed material test sample. The test rate must be within the specified range of the design capacity and held constant for the duration of the test. The minimum material test sample must be equivalent to a sample obtained at the test flow rate for at least ten minutes running time.

Solid Flowmeters

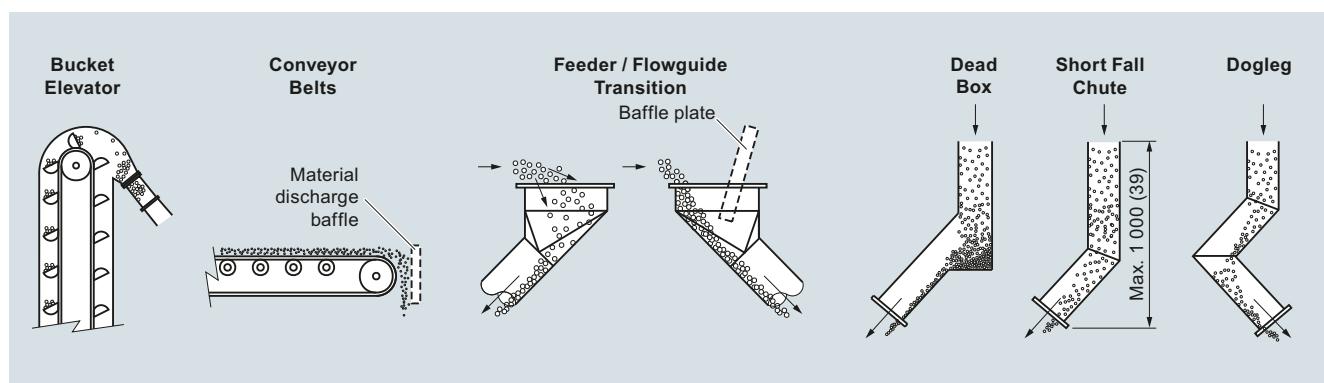
Introduction

Sensing element

	SITRANS WF330	SITRANS WF340	SITRANS WF350
Capacity range			
- SITRANS WFS300	0.2 ... 40 t/h (0.2 ... 44 STPH)	0.2 ... 40 t/h (0.2 ... 44 STPH)	0.2 ... 40 t/h (0.2 ... 44 STPH)
- SITRANS WFS320	20 ... 300 t/h (22 ... 330 STPH)	20 ... 300 t/h (22 ... 330 STPH)	20 ... 300 t/h (22 ... 330 STPH)
Particle size (max.)			
- SITRANS WFS300	12 mm (0.5 inch) 25 mm (1 inch)	12 mm (0.5 inch) 25 mm (1 inch)	3 mm (0.13 inch) 3 mm (0.13 inch)
Inlet sizes			
- SITRANS WFS300	50 ... 250 mm (2 ... 10 inch) (ASME or DIN flanges)	• 76 x 152 mm (3 x 6 inch) • 102 x 254 mm (4 x 10 inch) • 127 x 305 mm (5 x 12 inch)	• 203 x 203 mm (8 x 8 inch) • 203 x 305 mm (8 x 12 inch)
- SITRANS WFS320	150 ... 400 mm (6 ... 16 inch) (ASME or DIN flanges)	• 127 x 406 mm (5 x 16 inch) • 152 x 508 mm (6 x 20 inch)	• 305 x 254 mm (12 x 10 inch) • 305 x 356 mm (12 x 14 inch) • 305 x 508 mm (12 x 20 inch)

Common flowmeter infeed types

A solids flowmeter's performance will be as repeatable and consistent as the flow of material it is measuring. The following arrangements are typical of pre-feed chute configurations used to ensure consistent flow patterns. Arrangements will vary depending on the upstream equipment or chute work. Applications should be reviewed by a Siemens solids flowmeter specialist to achieve best results. During initial setup, use pre-weighing or post-weighing of material samples to calibrate the flowmeter and verify accuracy using the material sample weights.



Solids flowmeters, dimensions in mm (inch)

Overview

SITRANS WF100 flowmeter is a low to medium capacity flowmeter for various product sizes, densities, and fluidities in restricted spaces.

Benefits

- Flowrates from 3 to 200 t/h (4 to 220 STPH)
- Continuous monitoring of the material flow without interrupting the process
- Dust-tight construction: suitable for use in hazardous areas and in washdown applications that require frequent cleaning
- Minimal maintenance or recalibration after the initial installation and material tests

Application

WF100 is unaffected by corrosive, abrasive, or hot materials. Handling various product sizes, densities, and fluidities including fine powders such as sugar, the WF100 helps to improve final product, increase operating efficiency, and realize significant cost savings.

Dry bulk solids enter the flow guide producing a mechanical deflection as they strike the flowmeter sensing plate before continuing through the process un-hindered. The WF100 converts the deflection into an electrical signal that feeds into an accompanying integrator, which instantaneously displays the flow rate and totalizes the weight.

- Key applications: cement, wood chips, cereals, seeds, grains, soybean and rice hulls, unshelled peanuts, starch, sugar, potato flakes, grain tailings and screenings, and plastic pellets

Solid Flowmeters

LVDT flowmeters

SITRANS WF100

Selection and ordering data

SITRANS WF100

Impact solids flowmeter for low to medium capacity applications. Low cost compact unit improves processing, increases efficiency and provides significant cost savings.

↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.

Flowguide size (Universal flat-faced flange fits ASME/DIN flanges)

- 4 inch (100 mm)
Available with fabrication options A ... E and sensing plate options 10 ... 15 only
- 6 inch (150 mm)
Available with fabrication options F ... K and sensing plate options 20 ... 25 only
- 8 inch (200 mm)
Available with fabrication options L ... Q and sensing plate options 30 ... 35 only
- 10 inch (250 mm)
Available with fabrication options R ... V and sensing plate options 40 ... 45 only

Fabrication

- Mild steel, painted 4 inch (100 mm) flowguide
- AISI 304 stainless steel 4 inch (100 mm) flowguide
- AISI 304 stainless steel with PTFE coated infeed
4 inch (100 mm) flowguide
- AISI 316 stainless steel 4 inch (100 mm) flowguide
- AISI 316 stainless steel with PTFE coated infeed
4 inch (100 mm) flowguide
- Mild steel, painted 6 inch (150 mm) flowguide
- AISI 304 stainless steel 6 inch (150 mm) flowguide
- AISI 304 stainless steel with PTFE coated infeed
6 inch (150 mm) flowguide
- AISI 316 stainless steel 6 inch (150 mm) flowguide
- AISI 316 stainless steel with PTFE coated infeed
6 inch (150 mm) flowguide
- Mild steel, painted 8 inch (200 mm) flowguide
- AISI 304 stainless steel 8 inch (200 mm) flowguide
- AISI 304 stainless steel with PTFE coated infeed
8 inch (200 mm) flowguide
- AISI 316 stainless steel 8 inch (200 mm) flowguide
- AISI 316 stainless steel with PTFE coated infeed
8 inch (200 mm) flowguide
- Mild steel, painted 10 inch (250 mm) flowguide
- AISI 304 stainless steel 10 inch (250 mm) flowguide
- AISI 304 stainless steel with PTFE coated infeed
10 inch (250 mm) flowguide
- AISI 316 stainless steel 10 inch (250 mm) flowguide
- AISI 316 stainless steel with PTFE coated infeed
10 inch (250 mm) flowguide

Load cell, stainless steel [17-4 PH (1.4568) construction with 304 (1.4301) stainless steel cover]

- 2 lb (0.9 kg)
- 5 lb (2.3 kg)
- 10 lb (4.5 kg)
- 20 lb (9.1 kg)

Not specified (Only for quotation purposes, not a valid ordering option)

Article No.

7MH7186-
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Article No.

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A

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SITRANS WF100

Impact solids flowmeter for low to medium capacity applications. Low cost compact unit improves processing, increases efficiency and provides significant cost savings.

Sensing plate fabrication

- 4 inch (100 mm) AISI 304 stainless steel
- 4 inch (100 mm) AISI 304 stainless steel with PTFE coating
- 4 inch (100 mm) AISI 304 stainless steel with polyurethane coating
- 4 inch (100 mm) AISI 316 stainless steel
- 4 inch (100 mm) AISI 316 stainless steel with PTFE coating
- 4 inch (100 mm) AISI 316 stainless steel with polyurethane coating
- 6 inch (150 mm) AISI 304 stainless steel
- 6 inch (150 mm) AISI 304 stainless steel with PTFE coating
- 6 inch (150 mm) AISI 304 stainless steel with polyurethane coating
- 6 inch (150 mm) AISI 316 stainless steel
- 6 inch (150 mm) AISI 316 stainless steel with PTFE coating
- 6 inch (150 mm) AISI 316 stainless steel with polyurethane coating
- 8 inch (200 mm) AISI 304 stainless steel
- 8 inch (200 mm) AISI 304 stainless steel with PTFE coating
- 8 inch (200 mm) AISI 304 stainless steel with polyurethane coating
- 8 inch (200 mm) AISI 316 stainless steel
- 8 inch (200 mm) AISI 316 stainless steel with PTFE coating
- 8 inch (200 mm) AISI 316 stainless steel with polyurethane coating
- 10 inch (250 mm) AISI 304 stainless steel
- 10 inch (250 mm) AISI 304 stainless steel with PTFE coating
- 10 inch (250 mm) AISI 304 stainless steel with polyurethane coating
- 10 inch (250 mm) AISI 316 stainless steel
- 10 inch (250 mm) AISI 316 stainless steel with PTFE coating
- 10 inch (250 mm) AISI 316 stainless steel with polyurethane coating

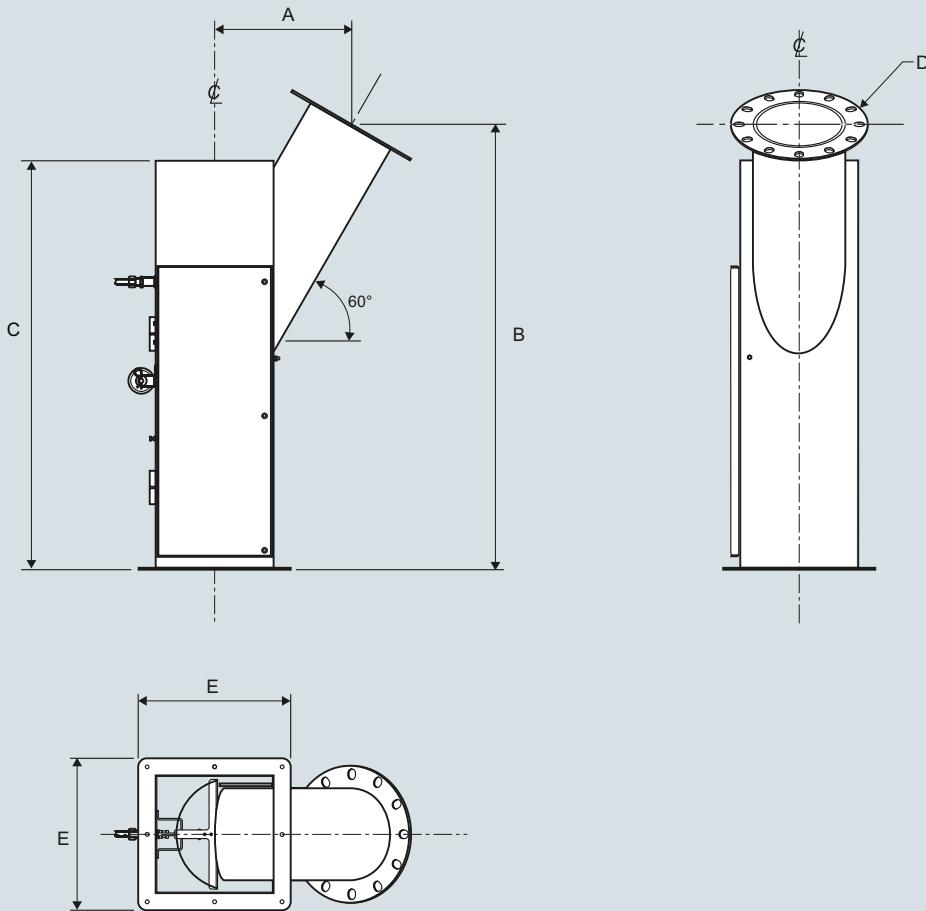
Approvals

- Standard: CE, RCM, EAC, KCC
- CSA/FM Class II, Div. 1, Groups E, F, G and Class III, ATEX II 2D, Ex tD A21 IP65 T70 °C, CE, RCM, IECEx, Ex tD A21 IP65 T70 °C, EAC Ex

Selection and ordering data	Order Code	Article No.
Further designs Please add "-Z" to article no. and specify order code(s).		
Stainless steel tag [69 x 38 mm (2.7 x 1.5 inch)], Measuring-point number/identification (max 27 characters), specify in plain text.	Y15	WF100 10 inch (250 mm) sensing plate 304 PTFE lined 7MH7723-1LA
Application Eng. reference number (max.15 characters), specify in plain text.	Y31	WF100 4 inch (100 mm) sensing plate 316 PTFE lined 7MH7723-1LB
Manufacturer's test certificate: According to EN 10204-2.2	C11	WF100 6 inch (150 mm) sensing plate 316 PTFE lined 7MH7723-1LC
Inspection certificate type 3.1 per EN 10204 Not available with fabrication options A, F, L, R	C12	WF100 8 inch (200 mm) sensing plate 316 PTFE lined 7MH7723-1LD
Instruction manuals All literature is available to download for free, in a range of languages, at http://www.siemens.com/weighing/documentation		WF100 10 inch (250 mm) sensing plate 316 PTFE lined 7MH7723-1LE
Calibration hanger weights	Article No.	WF100 4 inch (100 mm) sensing plate 304 polyurethane lined 7MH7723-1LF
20 g (0.04 lb)	7MH7724-1AC	WF100 6 inch (150 mm) sensing plate 304 polyurethane lined 7MH7723-1LG
50 g (0.1 lb)	7MH7724-1AD	WF100 8 inch (200 mm) sensing plate 304 polyurethane lined 7MH7723-1LH
100 g (0.2 lb)	7MH7724-1AE	WF100 10 inch (250 mm) sensing plate 304 polyurethane lined 7MH7723-1LJ
200 g (0.4 lb)	7MH7724-1AF	WF100 4 inch (100 mm) sensing plate 316 polyurethane lined 7MH7723-1LK
500 g (1.1 lb)	7MH7724-1AG	WF100 6 inch (150 mm) sensing plate 316 polyurethane lined 7MH7723-1LL
1 000 g (2.2 lb)	7MH7724-1AH	WF100 8 inch (200 mm) sensing plate 316 polyurethane lined 7MH7723-1LM
2 000 g (4.4 lb)	7MH7724-1AJ	WF100 10 inch (250 mm) sensing plate 316 polyurethane lined 7MH7723-1LN
5 000 g (11 lb)	7MH7724-1AK	WF100 load cell spare 2 lb PBD-23900176
Note: calibration accessories should be ordered as a separate item on the order.		WF100 load cell spare 5 lb PBD-23900177
Spare parts		WF100 load cell spare 10 lb PBD-23900244
WF100 4 inch (100 mm) sensing plate 304 standard	7MH7723-1KN	WF100 load cell spare 20 lb PBD-23900245
WF100 6 inch (150 mm) sensing plate 304 standard	7MH7723-1KP	WF calibration pulley with hardware and cable spare 7MH7723-1LT
WF100 8 inch (200 mm) sensing plate 304 standard	7MH7723-1KQ	
WF100 10 inch (250 mm) sensing plate 304 standard	7MH7723-1KR	
WF100 4 inch (100 mm) sensing plate 316 standard	7MH7723-1KS	
WF100 6 inch (150 mm) sensing plate 316 standard	7MH7723-1KT	
WF100 8 inch (200 mm) sensing plate 316 standard	7MH7723-1KU	
WF100 10 inch (250 mm) sensing plate 316 standard	7MH7723-1KV	
WF100 4 inch (100 mm) sensing plate 304 PTFE lined	7MH7723-1KW	
WF100 6 inch (150 mm) sensing plate 304 PTFE lined	7MH7723-1KX	
WF100 8 inch (200 mm) sensing plate 304 PTFE lined	7MH7723-1KY	

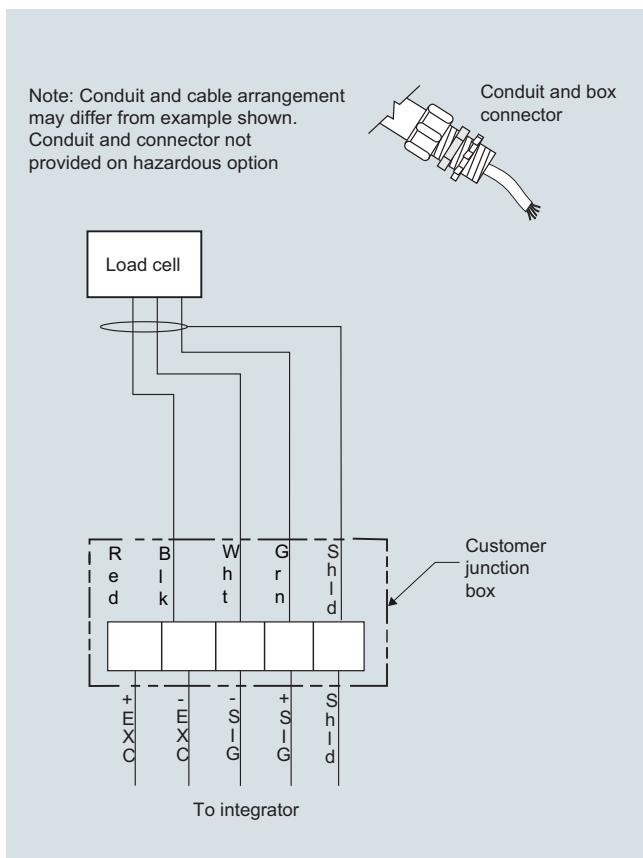
Solid Flowmeters

LVDT flowmeters

SITRANS WF100**Dimensional drawings**

	A	B	C	D (flange)	E	F (x 8)
4 inch (100 mm)	8 inch (203.2 mm)	23.5 inch (596.9 mm)	21.87 inch (555.5 mm)	Ø ASME 4 inch DIN 100 mm	11.25 inch (285.8 mm)	Ø 0.43 inch (11 mm)
6 inch (150 mm)	10 inch (254 mm)	33 inch (838.2 mm)	31.12 inch (790.4 mm)	Ø ASME 6 inch DIN 150 mm	13.35 inch (339.1 mm)	Ø 0.43 inch (11 mm)
8 inch (200 mm)	14 inch (355.6 mm)	46 inch (1 168.4 mm)	42.62 inch (1 082.5 mm)	Ø ASME 8 inch DIN 200 mm	16.5 inch (419.1 mm)	Ø 0.43 inch (11 mm)
10 inch (250 mm)	16 inch (406.4 mm)	52 inch (1 320.8 mm)	48.74 inch (1 238.1 mm)	Ø ASME 10 inch DIN 250 mm	19 inch (482.6 mm)	Ø 0.43 inch (11 mm)

SITRANS WF100, dimensions

Circuit diagrams

SITRANS WF100 connections

Solid Flowmeters

LVDT flowmeters

SITRANS WF200 series

Overview



SITRANS WF200 and WF250 flowmeters are medium to high capacity flowmeters for various product sizes, densities, and fluidities.

Application

Operating with a microprocessor based integrator package, the WF200 series flowmeters display flow rate, totalized flow, and rate alarms. Outputs are 0/4 to 20 mA proportional to rate and contact closure for remote totalization. Dry bulk solids enter the flowmeter before continuing through the process unhindered. The load cells convert the horizontal force of the deflection into an electrical signal. The integrator processes this into flowrate and integrated total weight. The sensing process is immune to the effect of product build-up as only the horizontal force is measured.

With load cells located externally to the process, the WF200 series flowmeters measure high capacities with a maximum rate of 900 t/h (990 STPH). For high capacity aerated gravity conveyor pre-feed, the WF250 has a maximum rate of 900 t/h (990 STPH).

- Key applications: aggregates, grain, cement, mineral processing

Benefits

- For specialized pre-feed applications
- Sensing element mounted outside process
- Flowrates from 200 to 900 t/h (220 to 990 STPH)
- Continuously monitoring of the material flow without interrupting the process
- Dust-tight construction: suitable for use in hazardous areas and in washdown applications that require frequent cleaning
- Minimal maintenance or recalibration after the initial installation and material tests

Selection and ordering data	Article No.	Order Code
SITRANS WF200 series flowmeters SITRANS WF200 and WF250 flowmeters are medium to high capacity flowmeters for various product sizes, densities, and fluidities. WF250 features aerated style designed for air slide gravity conveyors.	7MH7115-  - 0	
↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.		
Model		
<u>SITRANS WF200</u>		
500 t/h maximum design capacity	1	
900 t/h maximum design capacity	2	
<u>SITRANS WF250, aerated style</u>		
500 t/h maximum design capacity	3	
900 t/h maximum design capacity	4	
Construction		
<u>Painted mild steel</u>	A	
304 stainless steel for model option 1	B	
304 stainless steel for model option 2	C	
304 stainless steel for model option 3	D	
304 stainless steel for model option 4	E	
316 stainless steel for model option 1	F	
316 stainless steel for model option 2	G	
316 stainless steel for model option 3	H	
316 stainless steel for model option 4	J	
<u>Sensing plate liner</u>	A	
None (standard 304 stainless steel, 316 for construction options F ... J)		
<u>Polyurethane</u>	B	
For model options 1 and 3	C	
For model options 2 and 4		
<u>Alumina ceramic tiles</u>	D	
For model options 1 and 3	E	
For model options 2 and 4		
Load cell		
50 lb	1	
100 lb	2	
Not specified (for quotation purposes only, not a valid ordering option)	0	
Approvals	1	
CE, RCM, EAC, KCC	2	
CE, RCM, CSA/FM Class II, Div. 1, Groups E, F, G and Class III ATEX II 2D, Ex tD A21 IP65 T70 °C, CE, RCM, IECEx, Ex tD A21 IP65 T70 °C, EAC Ex		
Further designs		
Please add "-Z" to article no. and specify order code(s).		
Stainless steel tag [69 x 38 mm (2.7 x 1.5 inch)], Measuring-point number/identification (max 27 characters), specify in plain text.		Y15
Application Eng. reference number (max.15 characters), specify in plain text.		Y31
Manufacturer's test certificate: According to EN 10204-2.2		C11
Inspection certificate type 3.1 per EN 10204 ¹⁾		C12
Instruction manuals		.
All literature is available to download for free, in a range of languages, at http://www.siemens.com/weighing/documentation		
Calibration hanger weights		Article No.
20 g (0.04 lb)		7MH7724-1AC
50 g (0.1 lb)		7MH7724-1AD
100 g (0.2 lb)		7MH7724-1AE
200 g (0.4 lb)		7MH7724-1AF
500 g (1.1 lb)		7MH7724-1AG
1 000 g (2.2 lb)		7MH7724-1AH
2 000 g (4.4 lb)		7MH7724-1AJ
5 000 g (11 lb)		7MH7724-1AK
Note: calibration accessories should be ordered as a separate item on the order.		

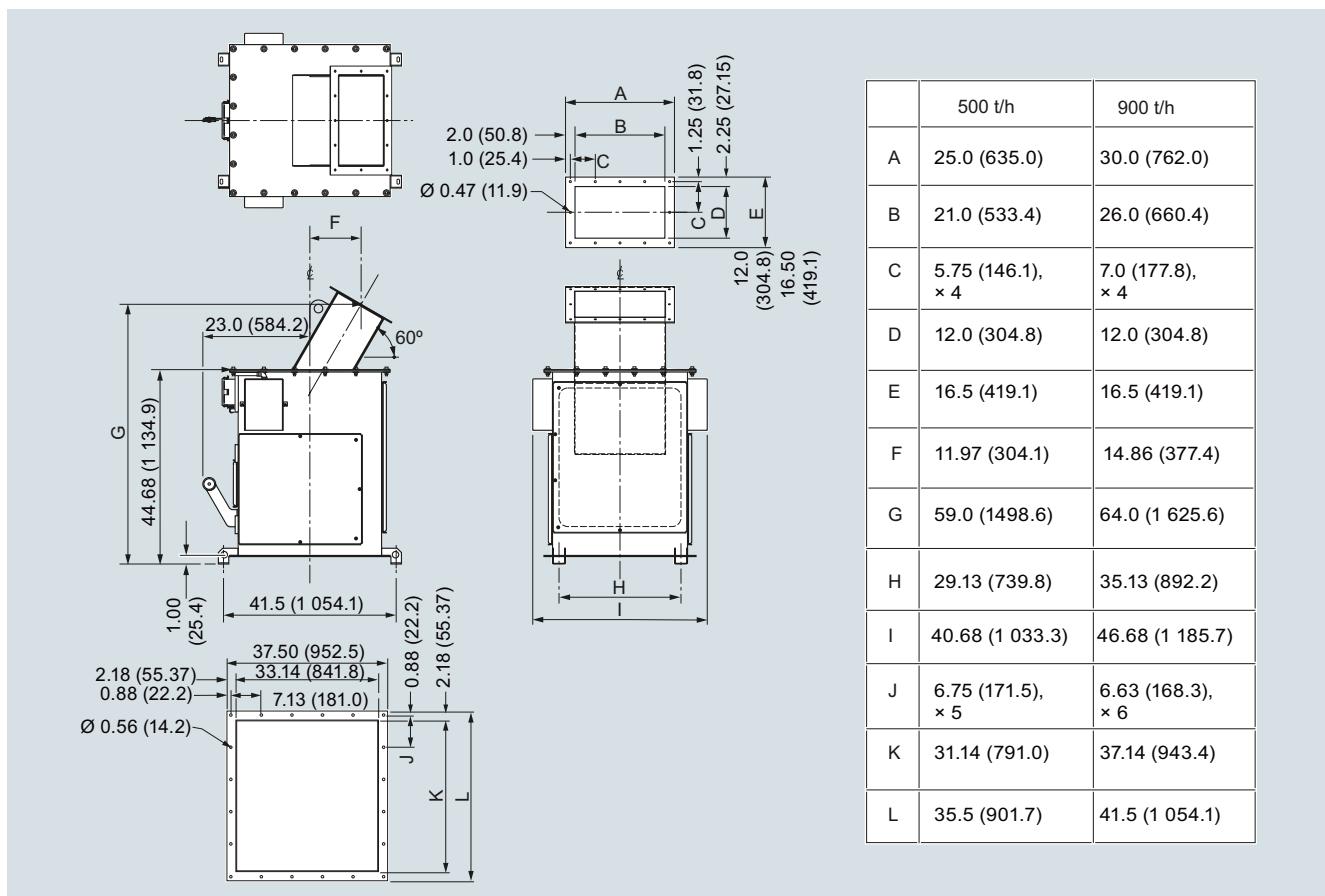
¹⁾ Not available with construction option A.

Solid Flowmeters

LVDT flowmeters

SITRANS WF200 series

Selection and ordering data	Article No.
<i>Spare parts</i>	
Load cell, 50 lb, stainless steel	PBD-23900246
Load cell, 100 lb, stainless steel	PBD-23900247
WF calibration pulley with hardware and cable spare	7MH7723-1LT
WF200 series bearing with plate mount shaft, standard, spare	7MH7723-1LU
WF200 series bearing with plate mount shaft, stainless steel, spare	7MH7723-1LV
WF200 series sensing plate support cables, spare	7MH7723-1LW
WF250 series sensing plate support cables, spare	7MH7723-1LX
WF200 sensing plate 500 TPH 304, standard	7MH7723-1LY
WF200 sensing plate 900 TPH 304, standard	7MH7723-1MA
WF250 sensing plate 500 TPH 304, standard	7MH7723-1MB
WF250 sensing plate 900 TPH 304, standard	7MH7723-1MC
WF200 sensing plate 500 TPH 304, polyurethane lined	7MH7723-1MD
WF200 sensing plate 900 TPH 304, polyurethane lined	7MH7723-1ME
WF250 sensing plate 500 TPH 304, polyurethane lined	7MH7723-1MF
WF250 sensing plate 900 TPH 304, polyurethane lined	7MH7723-1MG
WF200 sensing plate 500 TPH 304, ceramic lined	7MH7723-1MH
WF200 sensing plate 900 TPH 304, ceramic lined	7MH7723-1MJ
WF250 sensing plate 500 TPH 304, ceramic lined	7MH7723-1MK
WF250 sensing plate 900 TPH 304, ceramic lined	7MH7723-1ML
WF200 sensing plate 500 TPH 316, standard	7MH7723-1MM
WF200 sensing plate 900 TPH 316, standard	7MH7723-1MN
WF250 sensing plate 500 TPH 316, standard	7MH7723-1MP
WF250 sensing plate 900 TPH 316, standard	7MH7723-1MQ
WF200 sensing plate 500 TPH 316, polyurethane lined	7MH7723-1MR
WF200 sensing plate 900 TPH 316, polyurethane lined	7MH7723-1MS
WF250 sensing plate 500 TPH 316, polyurethane lined	7MH7723-1MT
WF250 sensing plate 900 TPH 316, polyurethane lined	7MH7723-1MU
WF200 sensing plate 500 TPH 316, ceramic lined	7MH7723-1MV
WF200 sensing plate 900 TPH 316, ceramic lined	7MH7723-1MW
WF250 sensing plate 500 TPH 316, ceramic lined	7MH7723-1MX
WF250 sensing plate 900 TPH 316, ceramic lined	7MH7723-1MY

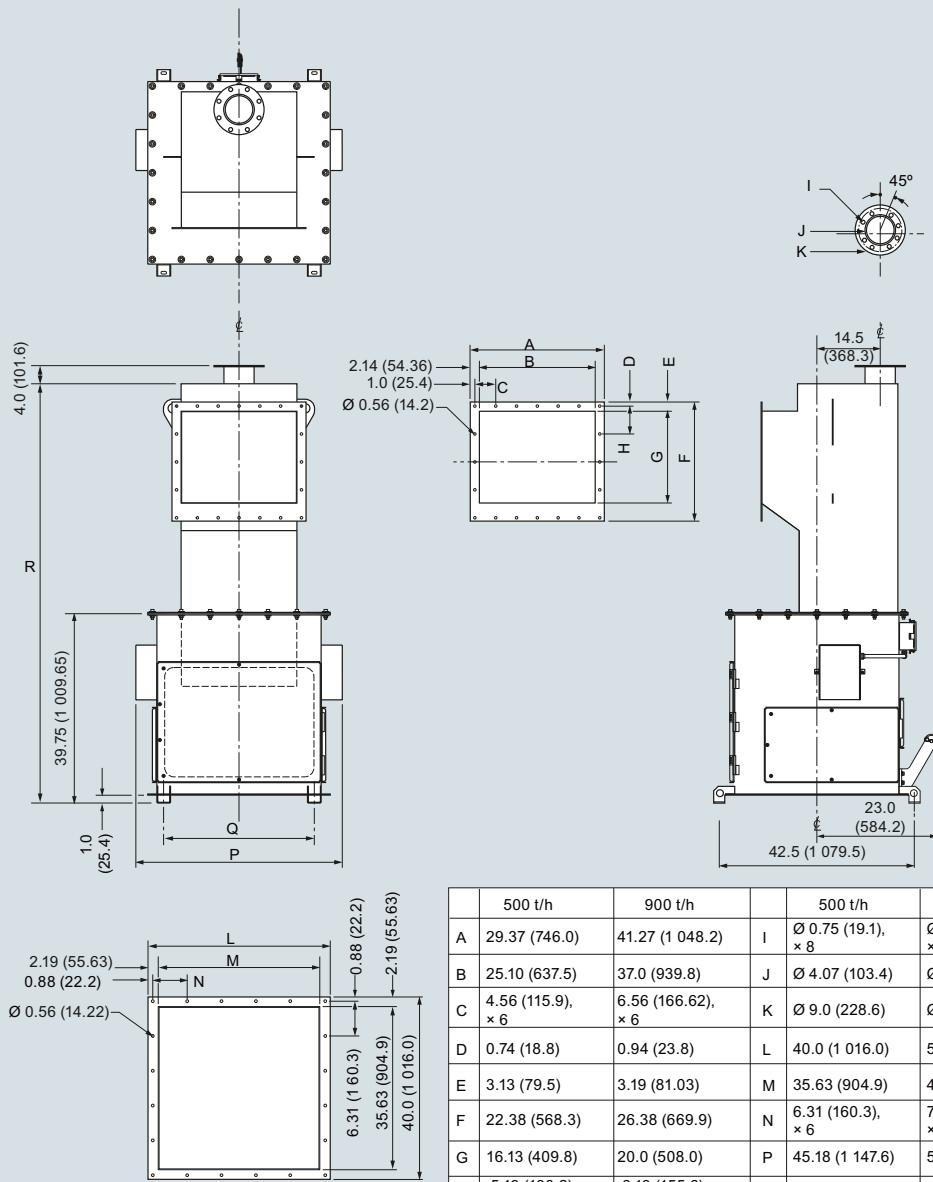
Dimensional drawings


SITRANS WF200, dimensions in inch (mm)

	500 t/h	900 t/h
A	25.0 (635.0)	30.0 (762.0)
B	21.0 (533.4)	26.0 (660.4)
C	5.75 (146.1), x 4	7.0 (177.8), x 4
D	12.0 (304.8)	12.0 (304.8)
E	16.5 (419.1)	16.5 (419.1)
F	11.97 (304.1)	14.86 (377.4)
G	59.0 (1498.6)	64.0 (1 625.6)
H	29.13 (739.8)	35.13 (892.2)
I	40.68 (1 033.3)	46.68 (1 185.7)
J	6.75 (171.5), x 5	6.63 (168.3), x 6
K	31.14 (791.0)	37.14 (943.4)
L	35.5 (901.7)	41.5 (1 054.1)

Solid Flowmeters

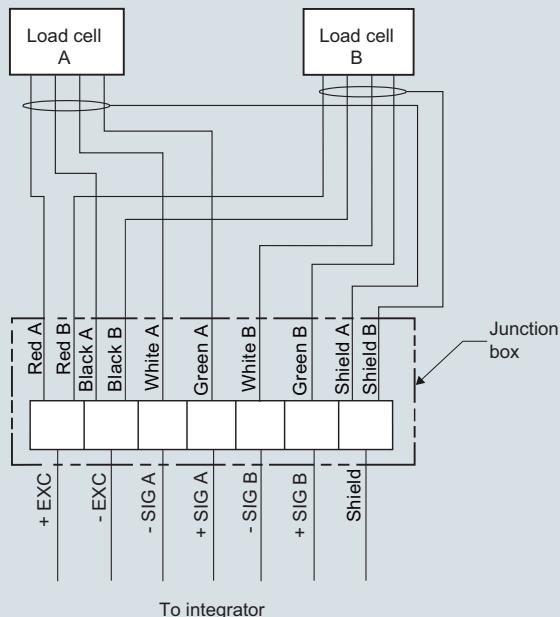
LVDT flowmeters

SITRANS WF200 series

SITRANS WF250, dimensions in inch (mm)

Circuit diagrams

Note: conduit and cable arrangement
may differ from example shown.
Conduit and connector not
provided on hazardous option



SITRANS WF200 series connections

Solid Flowmeters

LVDT flowmeters

SITRANS WF300 series

Overview



SITRANS WF300 series are low to medium capacity flowmeters for various product sizes, densities, and fluidities.

Application

With weighing mechanics located externally, the WF300 series solids flowmeters are unaffected by corrosive, abrasive, or hot materials. Handling a wide range of product sizes, densities, and fluidities including fine powders such as cement, they operate at process temperatures to 230 °C (450 °F). The flowmeters help to improve final product, increase operating efficiency, and realize significant cost savings.

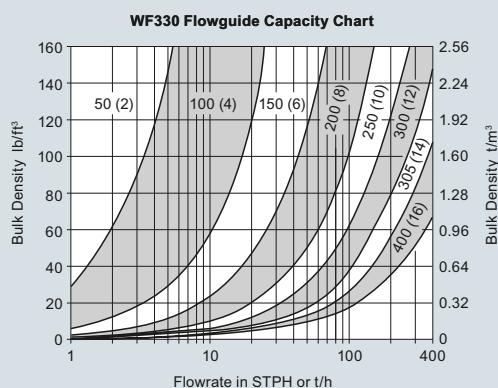
Operating with the appropriate SITRANS WFS sensing head and a micro-processor-based integrator package, the WF300 series flowmeters provide a display of the flow rate, totalized flow, and alarms. Outputs are 0/4 to 20 mA proportional to rate, and open collector output for remote totalization.

Dry bulk solids enter the flow guide producing a mechanical deflection as they strike the flowmeter sensing plate before continuing through the process unhindered. The LVDT in the sensing head converts the deflection of the horizontal force into an electrical signal. The integrator processes this signal into a display of flowrate and integrated total weight. The weighing process is immune to the effect of product build-up as only the horizontal force is measured.

SITRANS WF330 flowmeters are totally enclosed, with external weighing mechanics, operating with corrosive, abrasive or hot materials. SITRANS WF350 series operates with aerated gravity conveyors, and includes integral vents and baffles for air separation. For applications with little available headroom, the SITRANS WF340 series flowmeters provide the answer.

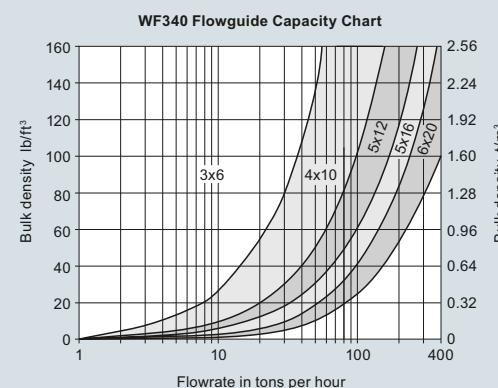
Benefits

- For specialized pre-feed applications
- Sensing element mounted outside process
- Flowrates from 0.2 to 300 t/h (0.2 to 330 STPH)
- Continuously monitoring of the material flow without interrupting the process
- Dust-tight construction: suitable for use in hazardous areas and in washdown applications that require frequent cleaning
- Minimal maintenance or recalibration after the initial installation and material tests

Characteristic curves


Flowrate in STPH or t/h (use highest applicable flowrate for size selection)
 Example: 25 t/h of material at 1.4 t/m³, the selection is a 150 mm flowguide.
 Dimensions are provided as examples only.

SITRANS WF330 flowguide capacity chart



Should the material bulk density and flowrate be near a flowguide upper limit, choose the next larger flowguide.

SITRANS WF340 flowguide capacity chart

Solid Flowmeters

LVDT flowmeters

SITRANS WF300 series

Selection and ordering data

Article No.

Order Code

SITRANS WF330

Low to medium capacity solids flowmeters for various product sizes, densities, and fluidities, particularly fine powders. A sensing plate, sensing head and integrator are required to complete the system.

↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.

7MH7102-

0

Model

Base mount, 40 t/h (44 STPH) maximum design capacity

1

Y15

Side mount, 40 t/h (44 STPH) maximum design capacity

2

Y31

Base mount, 300 t/h (330 STPH) maximum design capacity

3

C11

C12

Flowguide size

No flowguide

A

2 inch ASME flange pattern¹⁾

B

4 inch ASME flange pattern¹⁾

C

6 inch ASME flange pattern²⁾

D

8 inch ASME flange pattern²⁾

E

10 inch ASME flange pattern²⁾

F

12 inch ASME flange pattern³⁾

G

14 inch ASME flange pattern³⁾

H

16 inch ASME flange pattern³⁾

J

DN 50 flange pattern¹⁾

K

DN 100 flange pattern¹⁾

L

DN 150 flange pattern²⁾

M

DN 200 flange pattern²⁾

N

DN 250 flange pattern²⁾

P

DN 300 flange pattern³⁾

Q

DN 350 flange pattern³⁾

R

DN 400 flange pattern³⁾

S

Flowguide construction

No flowguide

A

Mild steel, C5-M rated polyester painted

B

Mild steel, epoxy painted with zinc primer¹⁾

C

Mild steel, epoxy painted with zinc primer³⁾

D

304 (1.4301) stainless steel¹⁾

E

304 (1.4301) stainless steel³⁾

F

316 (1.4401) stainless steel¹⁾

G

316 (1.4401) stainless steel³⁾

H

Cabinet construction

Mild steel, C5-M rated polyester painted

1

Mild steel, epoxy painted with zinc primer¹⁾

2

Mild steel, epoxy painted with zinc primer³⁾

3

304 (1.4301) stainless steel¹⁾

4

304 (1.4301) stainless steel³⁾

5

316 (1.4401) stainless steel¹⁾

6

316 (1.4401) stainless steel³⁾

7

Further designs

Please add "-Z" to Article No. and specify order code(s).

Stainless steel tag [69 x 38 mm (2.7 x 1.5 inch)], Measuring-point number/identification (max. 27 characters), specify in plain text.

Y15

Application Eng. reference number (max. 15 characters), specify in plain text.

Y31

Manufacturer's test certificate:
According to EN 10204-2.2

C11

Inspection certificate type 3.1 per EN 10204⁴⁾

C12

Note: not available with cabinet construction option 1

Instruction manuals

All literature is available to download for free, in a range of languages, at

<http://www.siemens.com/weighing/documentation>

¹⁾ For versions 1 and 2 only

²⁾ For versions 1, 2 or 3

³⁾ For version 3 only

⁴⁾ Not available with cabinet construction options 1, 2, 3

Selection and ordering data	Article No.	Article No.	
<i>Spare parts</i>			
<u>40 TPH, mild steel flowguide</u>		<u>300 TPH, 316 (1.4401) stainless steel flowguide</u>	
2 inch ASME	PBD:20377-111	6 inch ASME	PBD:20388-115
4 inch ASME	PBD:20377-211	8 inch ASME	PBD:20388-215
6 inch ASME	PBD:20377-311	10 inch ASME	PBD:20388-315
8 inch ASME	PBD:20377-411	12 inch ASME	PBD:20388-415
10 inch ASME	PBD:20377-511	14 inch ASME	PBD:20388-515
<u>40 TPH, mild steel-epoxy flowguide</u>		16 inch ASME	PBD:20388-615
2 inch ASME	PBD:20377-112	<u>40 TPH, mild steel flowguide</u>	
4 inch ASME	PBD:20377-212	2 inch DIN	PBD:20377-121
6 inch ASME	PBD:20377-312	4 inch DIN	PBD:20377-221
8 inch ASME	PBD:20377-412	6 inch DIN	PBD:20377-321
10 inch ASME	PBD:20377-512	8 inch DIN	PBD:20377-421
<u>40 TPH, 304 (1.4301) stainless steel flowguide</u>		10 inch DIN	PBD:20377-521
2 inch ASME	PBD:20377-114	<u>40 TPH, 304 (1.4301) stainless steel flowguide</u>	
4 inch ASME	PBD:20377-214	2 inch DIN	PBD:20377-122
6 inch ASME	PBD:20377-314	4 inch DIN	PBD:20377-222
8 inch ASME	PBD:20377-414	6 inch DIN	PBD:20377-322
10 inch ASME	PBD:20377-514	8 inch DIN	PBD:20377-422
<u>40 TPH, 316 (1.4401) stainless steel flowguide</u>		10 inch DIN	PBD:20377-522
2 inch ASME	PBD:20377-115	<u>40 TPH, 316 (1.4401) stainless steel flowguide</u>	
4 inch ASME	PBD:20377-215	2 inch DIN	PBD:20377-124
6 inch ASME	PBD:20377-315	4 inch DIN	PBD:20377-224
8 inch ASME	PBD:20377-415	6 inch DIN	PBD:20377-324
10 inch ASME	PBD:20377-515	8 inch DIN	PBD:20377-424
<u>300 TPH, mild steel flowguide</u>		10 inch DIN	PBD:20377-524
6 inch ASME	PBD:20388-111	<u>40 TPH, 316 (1.4401) stainless steel flowguide</u>	
8 inch ASME	PBD:20388-211	2 inch DIN	PBD:20377-125
10 inch ASME	PBD:20388-311	4 inch DIN	PBD:20377-225
12 inch ASME	PBD:20388-411	6 inch DIN	PBD:20377-325
14 inch ASME	PBD:20388-511	8 inch DIN	PBD:20377-425
16 inch ASME	PBD:20388-611	10 inch DIN	PBD:20377-525
<u>300 TPH, mild steel-epoxy flowguide</u>		<u>300 TPH, mild steel flowguide</u>	
6 inch ASME	PBD:20388-112	6 inch DIN	PBD:20388-121
8 inch ASME	PBD:20388-212	8 inch DIN	PBD:20388-221
10 inch ASME	PBD:20388-312	10 inch DIN	PBD:20388-321
12 inch ASME	PBD:20388-412	12 inch DIN	PBD:20388-421
14 inch ASME	PBD:20388-512	14 inch DIN	PBD:20388-521
16 inch ASME	PBD:20388-612	16 inch DIN	PBD:20388-621
<u>300 TPH, 304 (1.4301) stainless steel flowguide</u>		<u>300 TPH, mild steel-epoxy flowguide</u>	
6 inch ASME	PBD:20388-114	6 inch DIN	PBD:20388-122
8 inch ASME	PBD:20388-214	8 inch DIN	PBD:20388-222
10 inch ASME	PBD:20388-314	10 inch DIN	PBD:20388-322
12 inch ASME	PBD:20388-414	12 inch DIN	PBD:20388-422
14 inch ASME	PBD:20388-514	14 inch DIN	PBD:20388-522
16 inch ASME	PBD:20388-614	16 inch DIN	PBD:20388-622

Solid Flowmeters

LVDT flowmeters

SITRANS WF300 series

Selection and ordering data	Article No.
<u>300 TPH, 304 (1.4301) stainless steel flowguide</u>	
6 inch DIN	PBD:20388-124
8 inch DIN	PBD:20388-224
10 inch DIN	PBD:20388-324
12 inch DIN	PBD:20388-424
14 inch DIN	PBD:20388-524
16 inch DIN	PBD:20388-624
<u>300 TPH, 316 (1.4401) stainless steel flowguide</u>	
6 inch DIN	PBD:20388-125
8 inch DIN	PBD:20388-225
10 inch DIN	PBD:20388-325
12 inch DIN	PBD:20388-425
14 inch DIN	PBD:20388-525
16 inch DIN	PBD:20388-625
Gasketing	
40 TPH, gasket	PBD:22600493
300 TPH, gasket	PBD:22600494

Selection and ordering data	Article No.	Order Code
SITRANS WF340 Compact vertical flow, low to medium-capacity solid flowmeters for various product sizes, densities, and fluidities, particularly fine powders. A sensing plate, sensing head and integrator are required to complete the system. ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.	7MH7104-  0	
Version Base mount, 40 t/h (44 STPH) max. design capacity Side mount, 40 t/h (44 STPH) max. design capacity Base mount, 300 t/h (330 STPH) max. design capacity	1 2 3	Y15 Y31 C11 C12
Flowguide size No flowguide (5 x 16 inch model) 3 x 6 inch (76 x 152 mm) ¹⁾ 4 x 10 inch (102 x 254 mm) ¹⁾ 5 x 12 inch (127 x 305 mm) ¹⁾ 5 x 16 inch (127 x 406 mm) ²⁾ 6 x 20 inch (152 x 508 mm) ²⁾ No flowguide (WF340-300 6 x 20 inch model)	A B C D E F G	Instruction manual All literature is available to download for free, in a range of languages, at http://www.siemens.com/weighing/documentation
Flowguide construction No flowguide Mild steel, C5-M rated polyester painted 304 (1.4301) stainless steel ¹⁾ 304 (1.4301) stainless steel ²⁾ 316 (1.4401) stainless steel ¹⁾ 316 (1.4401) stainless steel ²⁾ Mild steel, C5-M rated polyester painted with PTFE liner Mild steel, C5-M rated polyester painted with abrasion resistant liner 304 (1.4301) stainless steel, with PTFE liner ¹⁾ 304 (1.4301) stainless steel, with PTFE liner ²⁾ Mild steel, epoxy paint with zinc primer ¹⁾ Mild steel, epoxy paint with zinc primer ²⁾ Other flowguide materials available upon request	A B C D E F G H J K L M	
Cabinet construction Mild steel, painted 304 (1.4301) stainless steel ¹⁾ 304 (1.4301) stainless steel ²⁾ 316 (1.4401) stainless steel ¹⁾ 316 (1.4401) stainless steel ²⁾ Mild steel, epoxy paint with zinc primer ¹⁾ Mild steel, epoxy paint with zinc primer ²⁾	1 2 3 4 5 6 7	

¹⁾ For versions 1 and 2 only²⁾ For version 3 only³⁾ Not available with cabinet construction option 1

Solid Flowmeters

LVDT flowmeters

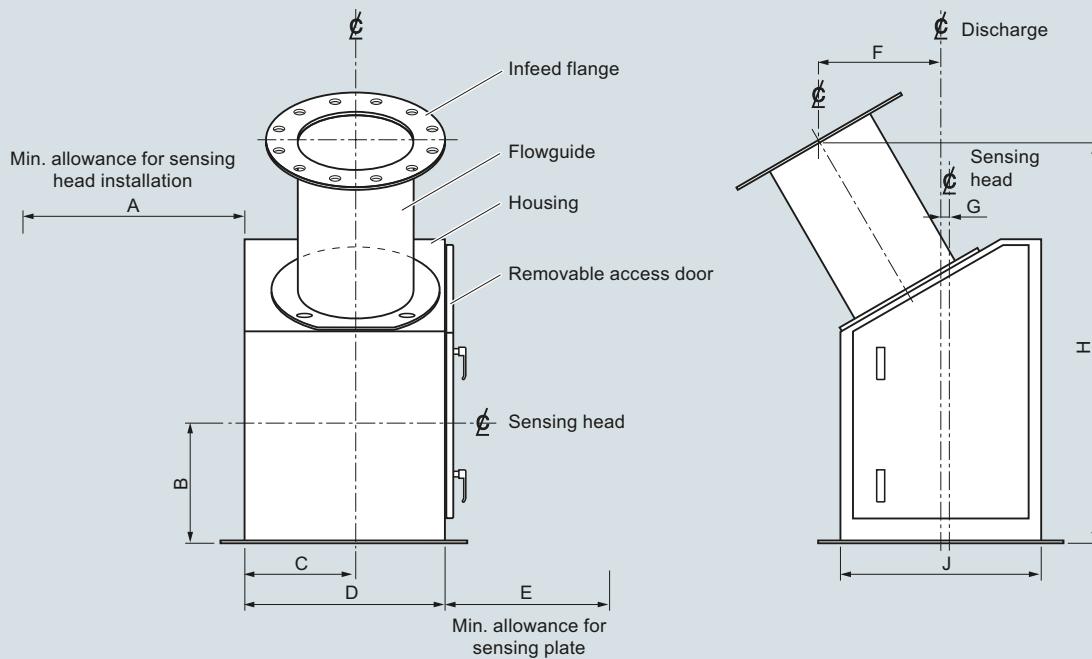
SITRANS WF300 series

Selection and ordering data	Article No.	Article No.
Spare parts		
<u>40 TPH, mild steel flowguide</u>		
3 x 6 inch	PBD:20401-100	<u>300 TPH, 304 (1.4301) stainless steel flowguide</u>
4 x 10 inch	PBD:20395-100	5 x 16 inch
5 x 12 inch	PBD:20405-100	PBD:20455-30
<u>40 TPH, mild steel-epoxy flowguide</u>		<u>6 x 20 inch</u>
3 x 6 inch	PBD:20401-200	PBD:20458-30
4 x 10 inch	PBD:20395-200	<u>300 TPH, 304 (1.4301) stainless steel-PTFE</u>
5 x 12 inch	PBD:20405-200	<u>flowguide</u>
<u>40 TPH, 304 (1.4301) stainless steel flowguide</u>		5 x 16 inch
3 x 6 inch	PBD:20401-300	PBD:20455-40
4 x 10 inch	PBD:20395-300	<u>6 x 20 inch</u>
5 x 12 inch	PBD:20405-300	<u>300 TPH, 316 (1.4401) stainless steel flowguide</u>
<u>40 TPH, 316 (1.4401) stainless steel flowguide</u>		5 x 16 inch
3 x 6 inch	PBD:20401-400	PBD:20455-50
4 x 10 inch	PBD:20395-400	<u>6 x 20 inch</u>
5 x 12 inch	PBD:20405-400	<u>300 TPH, mild steel-PTFE flowguide</u>
<u>40 TPH, mild steel-PTFE flowguide</u>		5 x 16 inch
3 x 6 inch	PBD:20401-500	PBD:20455-60
4 x 10 inch	PBD:20395-500	<u>6 x 20 inch</u>
5 x 12 inch	PBD:20405-500	<u>300 TPH, mild steel-AR flowguide</u>
<u>40 TPH, 304 (1.4301) stainless steel-PTFE</u>		5 x 16 inch
<u>flowguide</u>		PBD:20455-70
3 x 6 inch	PBD:20401-600	<u>6 x 20 inch</u>
4 x 10 inch	PBD:20395-600	PBD:20458-70
5 x 12 inch	PBD:20405-600	
<u>40 TPH, mild steel-AR flowguide</u>		Gasketing
3 x 6 inch	PBD:20401-700	40 TPH, gasket
4 x 10 inch	PBD:20395-700	<u>300 TPH, gasket</u>
5 x 12 inch	PBD:20405-700	• 5 x 16 inch
<u>300 TPH, mild steel flowguide</u>		• 6 x 20 inch
5 x 16 inch	PBD:20455-10	
6 x 20 inch	PBD:20458-10	
<u>300 TPH, mild steel-epoxy flowguide</u>		
5 x 16 inch	PBD:20455-20	
6 x 20 inch	PBD:20458-20	

Selection and ordering data	Article No.	Order Code
SITRANS WF350 Low to medium capacity flowmeters for powders conveyed by aerated gravity conveyors. A sensing plate, sensing head and integrator are required to complete the system. ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.	7MH7106- 	
Version 40 t/h (44 STPH) maximum design capacity 300 t/h (330 STPH) maximum design capacity	1 2	Y15 Y31
Flowguide size 8 inch (203 mm), 40 t/h (0.2 to 44 STPH) version 10 inch (254 mm), 300 t/h 12 inch (305 mm), 40 t/h (0.2 to 44 STPH) version 14 inch (356 mm), 300 t/h 20 inch (508 mm), 300 t/h	B C D E F B D E	C11 C12
Flowguide construction Mild steel, C5-M rated polyester painted 304 (1.4301) stainless steel 316 (1.4401) stainless steel	1 3 4 1 2	
Cabinet construction Mild steel, C5-M rated polyester painted 304 (1.4301) stainless steel 316 (1.4401) stainless steel	1 3 4 1 2	
Venting flange ASME flange pattern DIN flange pattern		
Further designs Please add "-Z" to article no. and specify order code(s). Stainless steel tag [69 x 38 mm (2.7 x 1.5 inch)], Measuring-point number/identification (max. 27 characters), specify in plain text.		
Application Eng. reference number (max.15 characters), specify in plain text.		
Manufacturer's test certificate: According to EN 10204-2.2 Inspection certificate type 3.1 per EN 10204 Not available with cabinet construction option 1		
Instruction manuals All literature is available to download for free, in a range of languages, at http://www.siemens.com/weighing/documentation		
Spare parts		
40 TPH, mild steel flowguide		
8 inch		
12 inch		
40 TPH, 304 (1.4301) stainless steel flowguide		
8 inch		
12 inch		
40 TPH, 316 (1.4401) stainless steel flowguide		
8 inch		
12 inch		
300 TPH, mild steel flowguide		
10 inch		
14 inch		
20 inch		
300 TPH, 304 (1.4301) stainless steel flowguide		
10 inch		
14 inch		
20 inch		
40 TPH, 316 (1.4401) stainless steel flowguide		
10 inch		
14 inch		
20 inch		
Gasketing		
40 TPH, gasket		
300 TPH, gasket		

Solid Flowmeters

LVDT flowmeters

SITRANS WF300 series**Dimensional drawings**

Model	A	B	C	D	E	F	G	H	J
40 t/h (44 STPH)	686 (27)	356 (14)	254 (10)	457 (18)	610 (24)	279 (11)	25 (1)	914 (36)	457 (18)
300 t/h (330 STPH)	1 042 (41)	457 (18)	305 (12)	610 (24)	610 (24)	330 (13)	38 (1.5)	1 270 (50)	610 (24)

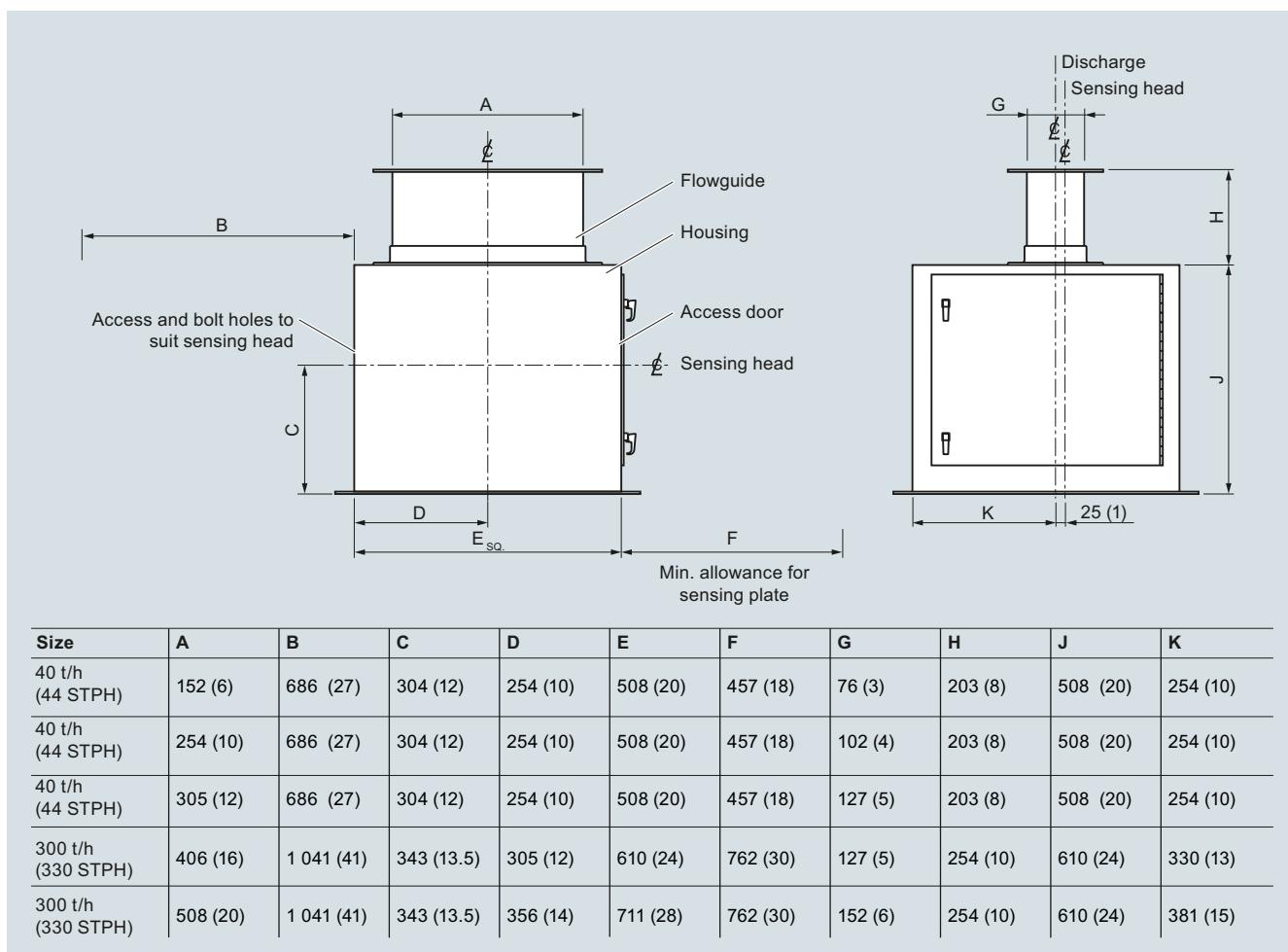
40 t/h version inlet sizes

51 (2) | 102 (4) | 152 (6) | 203 (8) | 254 (10)

300 t/h version inlet sizes

152 (6) | 203 (8) | 254 (10) | 305 (12) | 356 (14) | 406 (16)

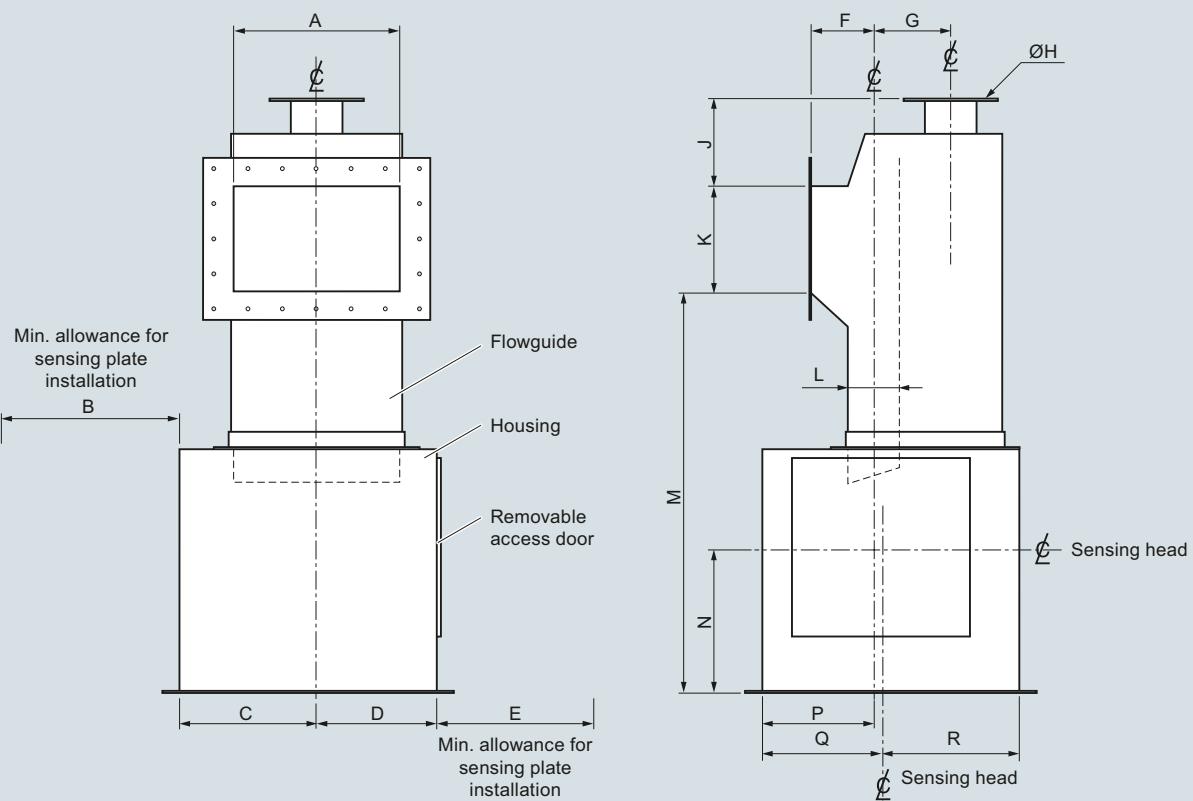
SITRANS WF330, dimensions in mm (inch)



SITRANS WF340, dimensions in mm (inch)

Solid Flowmeters

LVDT flowmeters

SITRANS WF300 series

Size	A	B	C	D	E	F	G	H
40 t/h (44 STPH)	203 (8)	686 (27)	305 (12)	254 (10)	711 (28)	127 (5)	203 (8)	102 (4)
40 t/h (44 STPH)	305 (12)	686 (27)	305 (12)	254 (10)	711 (28)	127 (5)	203 (8)	102 (4)
300 t/h (330 STPH)	254 (10)	1 041 (41)	406 (16)	356 (14)	889 (35)	191 (7.5)	229 (9)	152 (6)
300 t/h (330 STPH)	356 (14)	1 041 (41)	406 (16)	356 (14)	889 (35)	191 (7.5)	229 (9)	152 (6)
300 t/h (330 STPH)	508 (20)	1 041 (41)	406 (16)	356 (14)	889 (35)	191 (7.5)	229 (9)	152 (6)

Size	J	K	L	M	N	P	Q	R
40 t/h (44 STPH)	229 (9)	203 (8)	76 (3)	914 (36)	305 (12)	229 (9)	229 (9)	330 (13)
40 t/h (44 STPH)	229 (9)	203 (8)	102 (4)	914 (36)	305 (12)	229 (9)	229 (9)	330 (13)
300 t/h (330 STPH)	254 (10)	305 (12)	127 (5)	1 168 (46)	419 (16.5)	330 (13)	356 (14)	406 (16)
300 t/h (330 STPH)	254 (10)	305 (12)	152 (6)	1 168 (46)	419 (16.5)	330 (13)	356 (14)	406 (16)
300 t/h (330 STPH)	254 (10)	305 (12)	178 (7)	1 168 (46)	419 (16.5)	330 (13)	356 (14)	406 (16)

SITRANS WF350, dimensions in mm (inch)

Overview

SITRANS WFS300 and WFS320 sensing heads are out-of-the process sensing elements for SITRANS WF300 series solids flowmeters.

Benefits

- Easy installation with modular assembly
- $\pm 1\%$ accuracy (or better) with high repeatability
- Totally enclosed, dust-tight, flow metering of bulk solids
- Sensing mechanism is outside the process, protected from contamination
- No zero drift, due to unique sensing mechanism
- Low maintenance; only the sensing plate is in the process
- No restriction of product flow

Application

SITRANS WFS300 and WFS320 sensing heads are used in applications such as product rationing, batch load-out, and process feed rate control, the WFS series of sensing heads has been field-proven in thousands of applications with some units providing over a quarter century of reliable performance.

The WFS sensing heads use only the horizontal force created by impact of product upon the sensing plate and then apply the horizontal deflection to a highly reliable linear variable differential transformer (LVDT).

Friction-less pivots exclude the vertical force from the sensing process and the LVDT travel range is controlled by a coil spring selected for the specified full-scale flow rate. A viscous fluid damper provides mechanical damping in the event of pulsating flows.

The LVDT converts the horizontal movement, proportional to the impact forces into an electrical signal, which is converted by the integrator to time-based flow rate indication and totaling. This method of sensing material flow has been proven best in thousands of applications all over the world.

Solid Flowmeters

Sensing heads

SITRANS WFS300 series sensing heads

Technical specifications

Sensing heads	WFS300	WFS320
Mode of operation		
Measuring principle	Deflection measurement using LVDT (linear variable differential transformer)	
Typical application	For use in all WF300 series flowmeters	
Flow input		
Maximum particle size	13 mm (0.5 inch)	25 mm (1 inch)
Minimum flow rate	0 ... 0.2 t/h (0 ... 0.2 STPH)	0 ... 20 t/h (0 ... 22 STPH)
Maximum flow rate	0 ... 40 t/h (0 ... 44 STPH)	0 ... 300 t/h (0 ... 330 STPH)
Performance		
Accuracy ¹⁾	± 1 % or better of full scale, higher accuracy with linearizing features offered by integrators	
Repeatability	± 0.2 %	
Specified range	33 ... 100 %	
Medium conditions		
Ambient temperature		
• Without internally mounted LVDT card	-40 ... +60 °C (-40 ... +140 °F)	-40 ... +60 °C (-40 ... +140 °F)
• With optional internally mounted LVDT card	-40 ... +50 °C (-40 ... +122 °F)	-40 ... +50 °C (-40 ... +122 °F)
Maximum product temperature	232 °C (450 °F)	232 °C (450 °F)
Design		
Options		
<ul style="list-style-type: none"> • Epoxy paint coating of external aluminum casting surfaces • Internally mounted LVDT conditioner card for use with SF500 integrator • Externally mounted LVDT conditioner card in NEMA 4 (IP65) enclosure for use with Milltronics SF500 or SIWAREX FTC integrator when sensing head is mounted in hazardous areas or with high ambient temperatures 		
Approvals		
	CE, RCM, CSA, FM, EAC, KCC, ATEX, IEC Ex, EAC Ex	CE, RCM, CSA, FM, EAC, KCC, ATEX, IEC Ex, EAC Ex

¹⁾ Accuracy subject to: On factory approved installations the flowmeter system's totalized weight will be within the specified accuracy when compared to a known weighed material test sample. The test rate must be within the specified range of the design capacity and held constant for the duration of the test. The minimum material test sample must be equivalent to a sample obtained at the test flow rate for at least ten minutes running time.

SITRANS WFS300 series sensing heads

Selection and ordering data	Article No.	Order Code
SITRANS WFS300 sensing head Out-of-the-process sensing element for 40 t/h (44 STPH) solids flowmeters. A flowguide, sensing plate and integrator are required to complete the system. Order flowguide, sensing plate and integrator separately. ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.	7MH7110- 	
Mounting Base Side Base, explosion proof, CSA/FM Class I, Div. 1, Groups C and D; Class II, Div. 1, Groups E, F and G, ATEX II 2D - Ex tb IIIC T70 °C Db IP64, ATEX II 3D, Ex tc IIIB T70 °C Dc IP5X, IECEx FMG 13.0016X, Ex nA IIC T6 Gc, Ex tb IIIC T70 °C Db IP64, EAC Ex, RCM, EAC, KCC Side, explosion proof, CSA/FM Class I, Div. 1 Groups C and D; Class II, Div. 1, Groups E, F and G, ATEX II 2D - Ex tb IIIC T70 °C Db IP64, ATEX II 3D, Ex tc IIIB T70 °C Dc IP5X, IECEx FMG 13.0016X, Ex nA IIC T6 Gc, Ex tb IIIC T70 °C Db IP64, EAC Ex, RCM, EAC, KCC Note: Externally mounted LVDT Conditioner in NEMA 4 enclosure required for use with SF500 or SIWAREX FTC and mounting options 3 and 4. See optional equipment.	0 1 3 4 A B C D E F G H J K L M N P Q R	Further designs Please add "-Z" to article no. and specify order code(s). Stainless steel tag [69 x 38 mm (2.7 x 1.5 inch)], Measuring-point number/identification (max. 27 characters), specify in plain text. Y15 Application Eng. reference number (max. 15 characters), specify in plain text. Y31 Manufacturer's test certificate: According to EN 10204-2.2 C11 Instruction manuals All literature is available to download for free, in a range of languages, at http://www.siemens.com/weighing/documentation
Range (Range spring size/leaf spring thickness/viscosity of damping fluid) C2/A2/1 000 C3/A2/1 000 C4/A2/1 000 C5/A2/1 000 C6/A2/1 000 C7/A2/1 000 C8/A2/3 000 C9/A2/3 000 C10/A2/3 000 C11/A3/5 000 C12/A3/5 000 C13/A3/5 000 C14/A3/5 000 C0/A2/500 C0/A3/500 C10/A3/3 000	A B C D E F G H J K L M N P Q R	Calibration hanger weights 20 g (0.04 lb) 50 g (0.1 lb) 100 g (0.2 lb) 200 g (0.4 lb) 500 g (1.1 lb) 1 000 g (2.2 lb) 2 000 g (4.4 lb) 5 000 g (11 lb) Note: calibration accessories should be ordered as a separate item on the order.
Gasketing Silicone Silicone, light duty PTFE	A B E	
Coating (process side only) None, standard aluminum Epoxy - white/aluminum, external castings only	0 1	
Sensing head mounted LVDT conditioner None ¹⁾ Included, required for use with SF500 or SIWAREX FTC integrator ²⁾	0 1	

¹⁾ For use with Compu Series integrators or when externally mounted LVDT conditioner required.²⁾ Applicable for mounting options 0 and 1 only.

Solid Flowmeters

Sensing heads

SITRANS WFS300 series sensing heads

Selection and ordering data	Article No.
<i>Spare parts</i>	
LDVT conditioner in NEMA 4 enclosure (to interface SF500 or SIWAREX FTC and LVDT sensor)	7MH7723-1AJ
Silicone inner diaphragm	7MH7723-1DN
Silicone outer diaphragm	7MH7723-1DP
PTFE inner diaphragm	7MH7723-1AL
PTFE outer diaphragm	7MH7723-1AM
LVDT transformer and core, standard spare	7MH7723-1DS
Encapsulated LVDT replacement kit	7MH7723-1DE
Damping fluid, 1 000 CS, 1 lb bottle	7MH7723-1EU
Damping fluid, 3 000 CS, 1 lb bottle	7MH7723-1EV
Damping fluid, 5 000 CS, 1 lb bottle	7MH7723-1EW
Range spring assembly, C2	7MH7723-1EX
Range spring assembly, C3	7MH7723-1EY
Range spring assembly, C4	7MH7723-1FA
Range spring assembly, C5	7MH7723-1FB
Range spring assembly, C6	7MH7723-1FC
Range spring assembly, C7	7MH7723-1FD
Range spring assembly, C8	7MH7723-1FE
Range spring assembly, C9	7MH7723-1FF
Range spring assembly, C10	7MH7723-1FG
Range spring assembly, C11	7MH7723-1FH
Range spring assembly, C12	7MH7723-1FJ
Range spring assembly, C13	7MH7723-1FK
Range spring assembly, C14	7MH7723-1FL
Leaf spring, A2, kit	7MH7723-1BN
Leaf spring, A3, kit	7MH7723-1BP
WFS300 calibration wheel kit	7MH7723-1KB
Circuit card, LVDT, conditioner	7MH7723-1ET
WFS300 replacement O-ring kit	7MH7723-1DC
Side mount gasket replacement	7MH7723-1FT

SITRANS WFS300 series sensing heads

Selection and ordering data	Article No.	Order Code
SITRANS WFS320 sensing head Out-of-the-process sensing element for use with 300 t/h (330 STPH) flowmeters. A flowguide, sensing plate and integrator are required to complete the system. Order flowguide, sensing plate and integrator separately. ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.	7MH7112- 	
Classification Non-hazardous Hazardous, CSA/FM Class I, Div.1, Groups C and D; Class II, Div. 1, Groups E, F and G, ATEX II 2D - Ex tb IIIC T70 °C Db IP64, ATEX II 3D, Ex tc IIIB T70 °C Dc IP5X, IECEx FMG 13.0016X, Ex nA IIC T6 Gc, Ex tb IIIC T70 °C Db IP64, EAC Ex	1 2	Further designs Please add "-Z" to article no. and specify order code(s). Stainless steel tag [69 x 38 mm (2.7 x 1.5 inch)], Measuring-point number/identification (max. 27 characters), specify in plain text. Application Eng. reference number (max.15 characters), specify in plain text. Manufacturer's test certificate: According to EN 10204-2.2
Note: Externally mounted LVDT conditioner in NEMA 4 enclosure required for use with SF500 or SIWAREX FTC and classification option 2. See calibration hanger weights.		Instruction manual All literature is available to download for free, in a range of languages, at http://www.siemens.com/weighing/documentation
Range (range spring size/viscosity of damping fluid) D1/1 000 Position 1 D1/1 000 Position 2 D1/1 000 Position 3 D2/1 000 Position 1 D2/1 000 Position 2 D2/1 000 Position 3 D3/3 000 Position 1 D3/3 000 Position 2 D3/3 000 Position 3 D4/5 000 Position 1 D4/5 000 Position 2 D4/5 000 Position 3 D5/5 000 Position 1 D5/5 000 Position 2 D5/5 000 Position 3 Gasketing Silicone PTFE Other gasketing available upon request Coating (process side only) None, standard aluminum Epoxy - white/aluminum, external castings only Other coatings available upon request. Sensing head mounted LVDT conditioner None ¹⁾ Included, required for use with SF500 or SIWAREX FTC integrator ²⁾	A B C D E F G H J K L M N P Q A D 0 1 0 1	Calibration hanger weights 20 g (0.04 lb) 50 g (0.1 lb) 100 g (0.2 lb) 200 g (0.4 lb) 500 g (1.1 lb) 1 000 g (2.2 lb) 2 000 g (4.4 lb) 5 000 g (11 lb) Note: calibration accessories should be ordered as a separate item on the order. Spare parts LVDT conditioner in NEMA 4 enclosure to interface SF500 and LVDT sensor Silicone inner diaphragm Silicone outer diaphragm PTFE inner diaphragm PTFE outer diaphragm LVDT transformer and core, standard spare Encapsulated LVDT replacement kit Damping fluid, 1 000 CS, 1 lb bottle Damping fluid, 3 000 CS, 1 lb bottle Damping fluid, 5 000 CS, 1 lb bottle Range spring assembly, D1 Range spring assembly, D2 Range spring assembly, D3 Range spring assembly, D4 Range spring assembly, D5 Leaf spring kit Circuit card, LVDT, conditioner WFS320 calibration wheel kit WFS320 replacement o-ring kit WFS320 Taper Pin, spare

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¹⁾ For use with Compu series integrators or when externally mounted LVDT conditioner required. See Note under Classification.

2) Available with classification option 1 only.

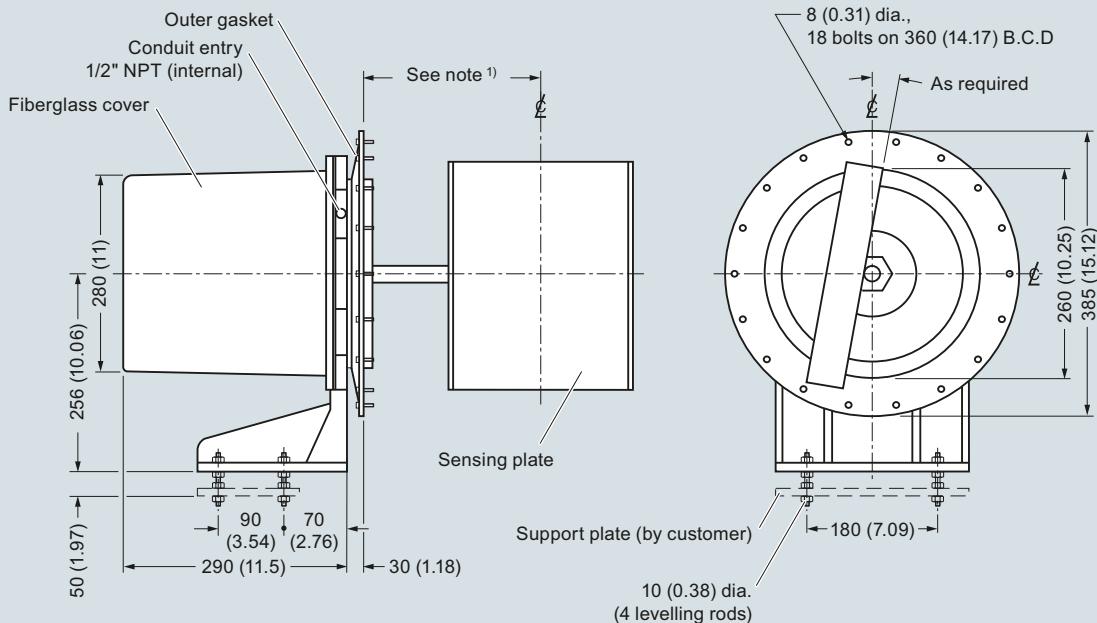
Solid Flowmeters

Sensing heads

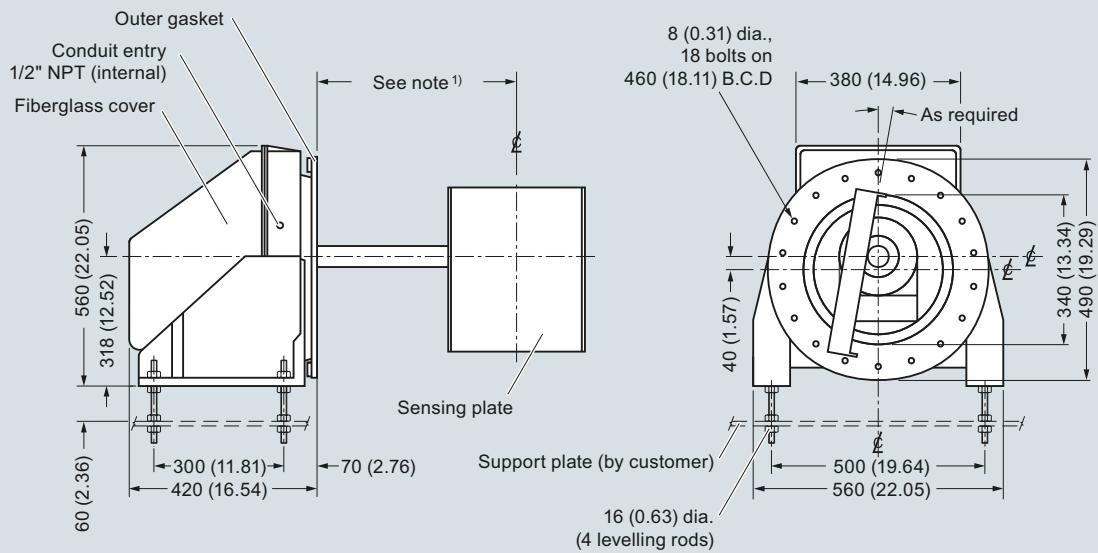
SITRANS WFS300 series sensing heads

Dimensional drawings

WFS300 Sensing Head



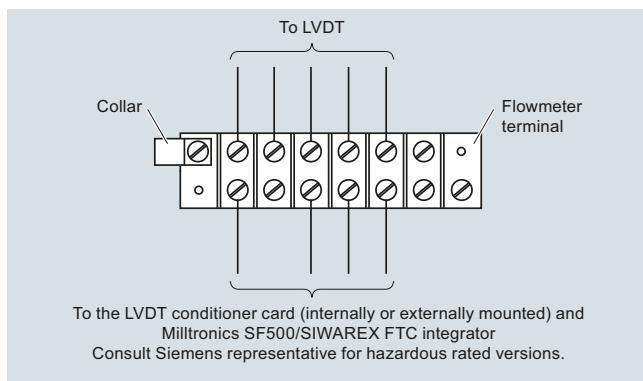
WFS320 Sensing Head



Notes:

- 1) Refer to flowmeter drawing for sensing head mounting hole to flowguide centerline dimension.
- 2) Sensing head support plate should be rigid and independent of flowmeter housing.
- 3) Ensure outer gasket seals dust tight to flowmeter housing wall.

SITRANS WFS300 sensing heads, dimensions in mm (inch)

Circuit diagrams

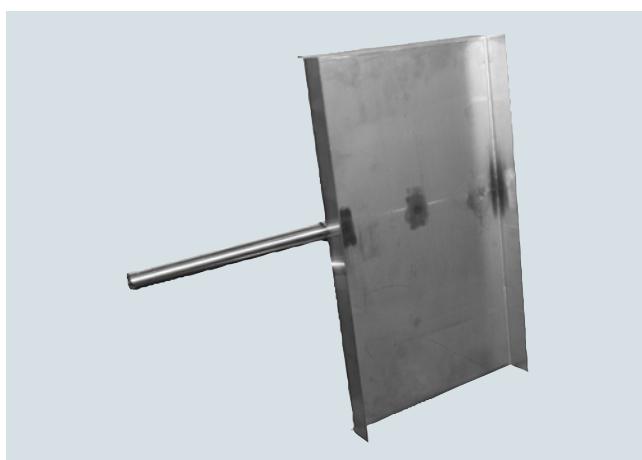
SITRANS WFS300 sensing heads connections

Solid Flowmeters

Sensing plates

SITRANS flowmeter sensing plates

Overview



The sensing plate transfers the impact force to the sensing head of the flowmeter.

Selection and ordering data

Article No.

SITRANS flowmeter sensing plates

The sensing plate transfers the impact force to the sensing head of the flowmeter

↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.

Version

WF330, 40 t/h, base mount or side mount

1

WF340, 40 t/h, base mount or side mount

3

WF350, 40 t/h, base mount or side mount

4

WF330, 300 t/h

5

WF340, 300 t/h

6

WF350, 300 t/h

7

C-40

8

Plate size

18 x 10 inch (457.2 x 254 mm), for version option 1 with 2, 4 or 6 inch (50.8, 101.6 or 152.4 mm) flowguide¹⁾

A

20 x 12 inch (508 x 304.8 mm), for version option 1 with 8 inch (203.2 mm) flowguide¹⁾

B

20 x 14 inch (508 x 355.6 mm), for version option 1 with 10 inch (254 mm) flowguide¹⁾

C

22 x 12 inch (558.8 x 304.8 mm), for version option 5 with 6 or 8 inch (152.4 or 203.2 mm) flowguide¹⁾

D

24 x 16 inch (609.6 x 406.4 mm), for version option 5 with 10 or 12 inch (254 or 304.8 mm) flowguide¹⁾

E

24 x 20 inch (609.6 x 508 mm), for version option 5 with 14 or 16 inch (355.6 or 406.4 mm) flowguide¹⁾

F

12 x 12 inch (304.8 x 304.8 mm), for version option 4 with 8 inch (203.2 mm) flowguide²⁾

G

16 x 14 inch (406.4 x 355.6 mm), for version option 4 with 12 inch (304.8 mm) flowguide²⁾

H

¹⁾ See 7MH7102, page 6/18.

²⁾ See 7MH7106, page 6/23.

³⁾ See 7MH7104, page 6/21.

⁴⁾ Available as spare part only.

⁵⁾ Available with flowmeter version 1 ... 4 and 8 only.

⁶⁾ Available with flowmeter version 5 ... 7 only.

⁷⁾ Available with flowmeter version 1 ... 4 only.

⁸⁾ Available with flowmeter version 1, 2 and 3 only.

⁹⁾ Maximum material temperature: 85 °C (185 °F).

Selection and ordering data

Article No.

SITRANS flowmeter sensing plates

The sensing plate transfers the impact force to the sensing head of the flowmeter

7MH7114-



14 x 18 inch (355.6 x 457.2 mm), for version option 7 with 10 inch (254 mm) flowguide²⁾

J

18 x 20 inch (457.2 x 508 mm), for version option 7 with 14 inch (355.6 mm) flowguide²⁾

K

24 x 22 inch (609.6 x 558.8 mm), for version option 7 with 20 inch (508 mm) flowguide²⁾

L

12 x 10 inch (304.8 x 254 mm), for version option 3 with 3 x 6 inch (76.2 x 152.4 mm) flowguide³⁾

M

14 x 14 inch (355.6 x 355.6 mm), for version option 3 with 4 x 10 inch (101.6 x 254 mm) flowguide³⁾

N

16 x 16 inch (406.4 x 406.4 mm), for version option 3 with 5 x 12 inch (127 x 304.8 mm) flowguide³⁾

P

18 x 20 inch (457.2 x 508 mm), for version option 6 with 5 x 16 inch (127 x 406.4 mm) flowguide³⁾

Q

20 x 24 inch (508 x 609.6 mm), for version option 6 with 6 x 20 inch (152.4 x 508 mm) flowguide³⁾

R

12 x 12 inch (304.8 x 304.8 mm), for C-40 with 6 inch (152.4 mm) flowguide⁴⁾

S

12 x 14 inch (304.8 x 355.6 mm), for C-40 with 10 inch (254 mm) flowguide⁴⁾

T

Plate material

304 (1.4301) stainless steel⁵⁾

A

304 (1.4301) stainless steel⁶⁾

B

316 (1.4401) stainless steel⁷⁾

C

316 (1.4401) stainless steel⁶⁾

D

304 (1.4301) stainless steel, heavy-duty⁷⁾

E

304 (1.4301) stainless steel, heavy-duty⁶⁾

F

316 (1.4401) stainless steel, light-duty⁸⁾

G

316 (1.4401) stainless steel, heavy-duty⁷⁾

H

316 (1.4401) stainless steel, heavy-duty⁶⁾

J

Plate liner

No liner

1

Polyurethane⁷⁾

2

Polyurethane⁶⁾ 9)

3

PTFE⁷⁾

4

PTFE⁶⁾

5

Alumina ceramic tiles⁷⁾

6

Alumina ceramic tiles⁶⁾

7

Plasma A/R⁷⁾

8

Plasma A/R⁶⁾

0

Further designs

Order Code

Please add "-Z" to article no. and specify order code(s).

Inspection certificate type 3.1 per EN 10204

C12

Instruction manuals

All literature is available to download for free, in a range of languages, at

<http://www.siemens.com/weighing/documentation>

Selection and ordering data

Flowmeter spare load cells

**Millflo flowmeters
stainless steel, with
hardware**

1 lb (0.5 kg)	Article No. Replace with 2 lb
2 lb (0.9 kg)	PBD-23900176
5 lb (2.3 kg)	PBD-23900177
10 lb (4.6 kg)	7MH7725-1AA
20 lb (9.2 kg)	7MH7725-1AB



**Millflo L, M, and MA
series flowmeters
stainless steel, with
hardware**

50 lb (22.7 kg)	7MH7725-1AC
100 lb (45.4 kg)	7MH7725-1AD



Solid Flowmeters

Notes

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