Solids Flowmeters

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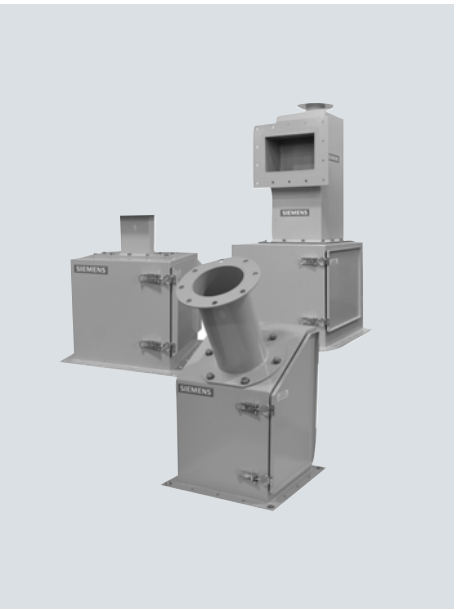
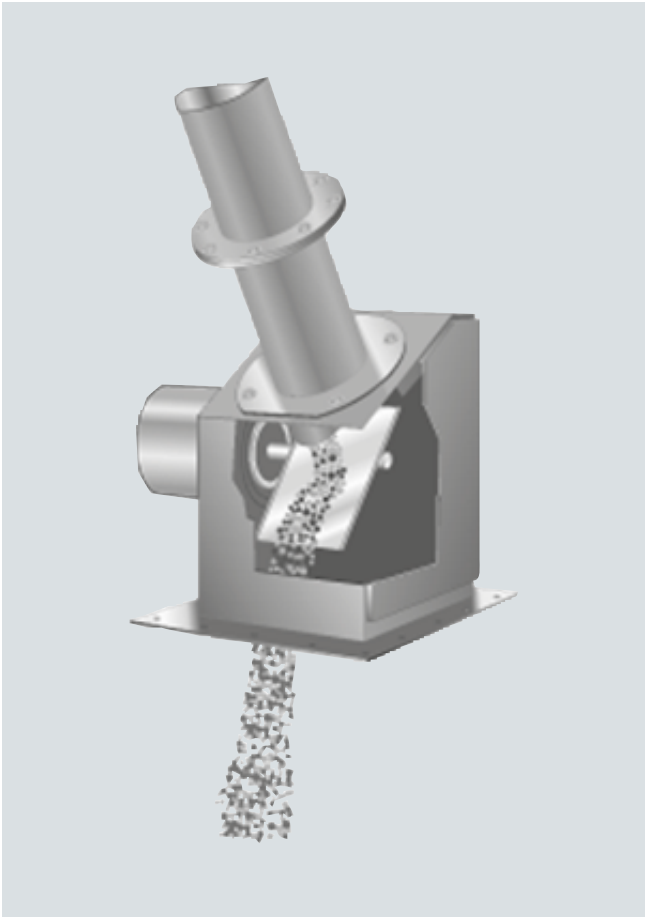


Overview

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

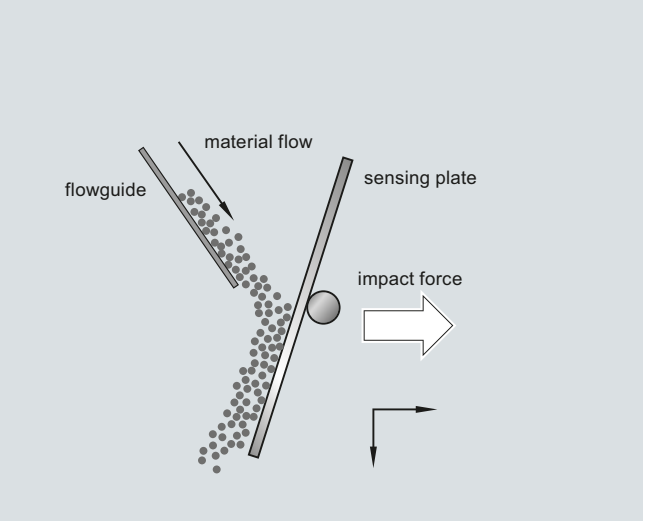
Flowmeters are installed in a gravity fed process. Entering the flowmeter through the flowguide, the material flow produces a mechanical deflection as it strikes the flowmeter's sensing plate. The SITRANS WF flowmeter converts the deflection into an electrical signal that feeds into an accompanying integrator,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

Mode of operation (continued)

SIEMENS

Solids Flowmeter Application Questionnaire

Customer information

Contact: _____ Prepared By: _____

Company: _____ Date: _____

Address: _____ Notes on the Application: _____

City: _____ Country: _____ _____

State/Province: _____ Zip/Postal Code: _____ _____

Phone: ( ) _____ E-mail: _____ Fax: ( ) _____

Material Information

Material being measured: _____ **Particle size:** _____ mm / inch / mesh

Bulk density: _____ kg/m^3 or lb/ft^3 **Moisture content:** _____ %

Angle of repose: _____ degrees **Is material aerated?** _____ Yes _____ No

Material temperature: _____ °C/°F

Material properties: ☐ Hygroscopic ☐ Corrosive ☐ Easily aerated ☐ Abrasive ☐ Other _____

Material flow characteristics: ☐ Smooth ☐ Sluggish ☐ Sticky/Clumping ☐ Other _____

Application Information

(Supply sketch where possible showing pre-feed and out-feed device dimensions) Sketch attached ☐

Feed rate: _____ maximum t/hr or kg/hr or lb/hr or LTPH or STPH

_____ normal t/hr or kg/hr or lb/hr or LTPH or STPH

_____ minimum t/hr or kg/hr or lb/hr or LTPH or STPH

Accuracy required: + / - _____ %

Pre-feed type: ☐ Rotary valve ☐ Belt ☐ Screw ☐ Vibratory pan ☐ Aerated gravity conveyor ☐ Bucket elevator ☐ Other (specify) _____

Flow rate: ☐ Constant ☐ Variable ☐ Pulsing **Flowmeter will discharge into:** _____

Headroom available: _____ ft / m **Temperature at flowmeter:** ____ max. ____ min.°C/°F

Sensing plate subjected to air flow: ☐ None ☐ Some **Material test can be performed:** ☐ Yes ☐ No

Estimated distance from pre-feed discharge to flowmeter: _____ mm / inches

Electrical classification in flowmeter environment: _____

Integrator Requirements

(indicate all that apply) **Power available:** _____

Inputs required:	**Outputs required:**	**Communications:**
☐ 4 to 20 mA(specify) _____	☐ 4 to 20 mA	☐ AB Remote I/O
☐ PID	☐ PID	☐ DeviceNet
☐ LVDT	☐ Remote totalizer	☐ PROFIBUS DP
☐ Load Cells (#):_____	☐ Relays (#): _____	☐ RS-232/RS-485 Modbus

Products suggested: _____

Preferred Construction *(flowguide and sensing plate enclosure)*: ☐ Painted mild steel ☐ 304 SS ☐ 316 SS ☐ Other (specify) _____

www.siemens.com/processautomation

Form# 2-772R4

Solids Flowmeter Application Questionnaire

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	3 … 200 t/h (4 … 220 STPH)	200 … 900 t/h (220 … 990 STPH)	200 … 900 t/h (220 … 990 STPH)	Sensing element dependent, see chart "Sensing element".	Sensing element dependent, see chart "Sensing element".	Sensing element dependent, see chart "Sensing element".
Volumetric capacity	444 m^3/h (15680 ft^3/h)	2000 m^3/h (70629 ft^3/h)	2000 m^3/h (70629 ft^3/h)	40 t/h: 90 m^3/h (3178 ft^3/h) 300 t/h: 290 m^3/h (10241 ft^3/h)	40 t/h: 96 m^3/h (3390 ft^3/h) 300 t/h: 230 m^3/h (8122 ft^3/h)	40 t/h: 73 m^3/h (2578 ft^3/h) 300 t/h: 283 m^3/h (10000 ft^3/h)
Maximum particle size	13 mm (0.5 inch)	25 mm (1 inch)	25 mm (1 inch)	Sensing element dependent, see chart "Sensing element".	Sensing element dependent, see chart "Sensing element".	Sensing element dependent, see chart "Sensing element".
Maximum process temperature	+65 °C (+150 °F)	+100 °C (+212 °F)	+100 °C (+212 °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 chart "Sensing element".	Sensing element dependent, see chart "Sensing element".	Sensing element dependent, see chart "Sensing element".
Accuracy[1)]	± 1 % (33 … 100 % of rate)	-	-	-	-	-
Repeatability	± 0.2 %	-	-	-	-	-
Options	304 or 316 stainless steel construction (meets FDA and USDA requirements for food processing)	304 or 316 stainless steel construction (meets FDA and USDA requirements for food processing)	304 or 316 stainless steel construction (meets FDA and USDA requirements for food processing)	• 304 or 316 stainless steel construction (meets FDA and USDA requirements for food processing) • Food grade epoxy coating on Sensing head	• 304 or 316 stainless steel construction (meets FDA and USDA requirements for food processing) • Food grade epoxy coating on Sensing head	• 304 or 316 stainless steel construction (meets FDA and USDA requirements for food processing) • Food grade epoxy coating on Sensing head
Sensing element	One triple beam parallogram style, stainless steel, strain gauge load cell	Two triple beam parallogram style, stainless steel, strain gauge load cells	Two triple beam parallogram style, stainless steel, strain gauge load cells	Deflection measurement using LVDT (linear variable differential transformer)		
Sensing plate	• 304 stainless steel • option: 316 stainless steel	• 304 stainless steel • option: 316 stainless steel	• 304 stainless steel • option: 316 stainless steel	• 304 stainless steel • option: 316 stainless steel	• 304 stainless steel • option: 316 stainless steel	• 304 stainless steel • option: 316 stainless steel
Liners	Liner options • PTFE • Polyurethane	Liner options • Polyurethane • Alumina ceramic	Liner options • Polyurethane • Alumina ceramic	• Plasma A/R • PTFE • Polyurethane • Alumina ceramic	• Plasma A/R • PTFE • Polyurethane • Alumina ceramic	• Plasma A/R • PTFE • Polyurethane • Alumina ceramic
Approvals	CE , C-TICK, CSA, FM, ATEX, IEC Ex	CE , C-TICK, CSA, FM, ATEX, IEC Ex	CE , C-TICK, CSA, FM, ATEX, IEC Ex	CE , C-TICK	CE , C-TICK	CE , C-TICK,

[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.

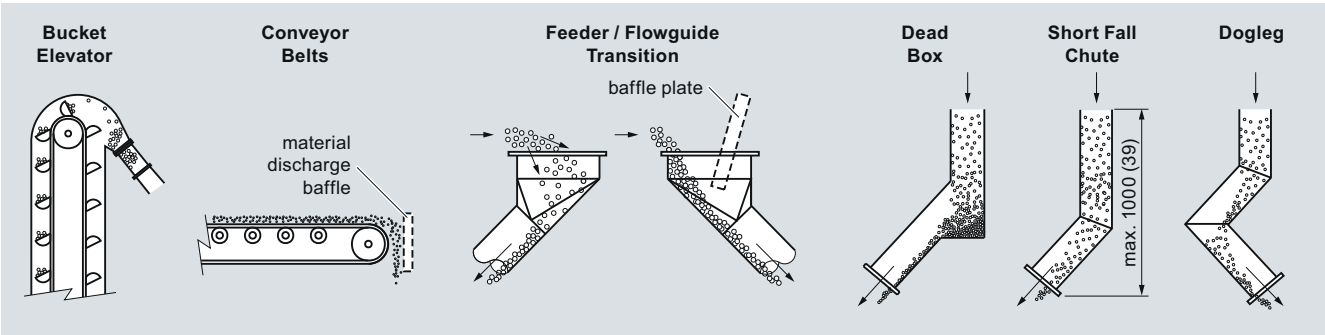
Technical specifications (continued)

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)	12 mm (0.5 inch)	3 mm (0.13 inch)
• SITRANS WFS320	25 mm (1 inch)	25 mm (1 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.



Dimensions in mm (inch)

SITRANS WF100

Overview

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

Benefits

- Flowrates from 1 to 200 t/h (1 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
- Plastic pellets

Selection and Ordering data

Order No.

SITRANS WF100 C) **7MH7186-**
Impact solids flowmeter for low to medium capacity applications. Low cost compact unit improves processing, increases efficiency and provides significant cost savings.

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

4 inch (100 mm)[1]	1
6 inch (150 mm)[2]	2
8 inch (200 mm)[3]	3
10 inch (250 mm)[4]	4

Fabrication

Mild steel, painted 4 inch (100 mm) flowguide	A
AISI 304 stainless steel 4 inch (100 mm) flowguide	B
AISI 304 stainless steel with PTFE coated infeed 4 inch (100 mm) flowguide	C
AISI 316 stainless steel 4 inch (100 mm) flowguide	D
AISI 316 stainless steel with PTFE coated infeed 4 inch (100 mm) flowguide	E
Mild steel, painted 6 inch (150 mm) flowguide	F
AISI 304 stainless steel 6 inch (150 mm) flowguide	G
AISI 304 stainless steel with PTFE coated infeed 6 inch (150 mm) flowguide	H
AISI 316 stainless steel 6 inch (150 mm) flowguide	J
AISI 316 stainless steel with PTFE coated infeed 6 inch (150 mm) flowguide	K
Mild steel, painted 8 inch (200 mm) flowguide	L
AISI 304 stainless steel 8 inch (200 mm) flowguide	M
AISI 304 stainless steel with PTFE coated infeed 8 inch (200 mm) flowguide	N
AISI 316 stainless steel 8 inch (200 mm) flowguide	P
AISI 316 stainless steel with PTFE coated infeed 8 inch (200 mm) flowguide	Q
Mild steel, painted 10 inch (250 mm) flowguide	R
AISI 304 stainless steel 10 inch (250 mm) flowguide	S
AISI 304 stainless steel with PTFE coated infeed 10 inch (250 mm) flowguide	T
AISI 316 stainless steel 10 inch (250 mm) flowguide	U
AISI 316 stainless steel with PTFE coated infeed 10 inch (250 mm) flowguide	V

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

2 lb (0.9 kg)	A
5 lb (2.3 kg)	B
10 lb (4.5 kg)	C
20 lb (9.1 kg)	D
Not specified (Only for quotation purposes, not a valid ordering option)	X

Order No.

SITRANS WF100 C) **7MH7186-**
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	1 0
4 inch (100 mm) AISI 304 Stainless steel with PTFE coating	1 1
4 inch (100 mm) AISI 304 Stainless steel with polyurethane coating	1 2
4 inch (100 mm) AISI 316 Stainless steel	1 3
4 inch (100 mm) AISI 316 Stainless steel with PTFE coating	1 4
4 inch (100 mm) AISI 316 Stainless steel with polyurethane coating	1 5
6 inch (150 mm) AISI 304 Stainless steel	2 0
6 inch (150 mm) AISI 304 Stainless steel with PTFE coating	2 4
6 inch (150 mm) AISI 304 Stainless steel with polyurethane coating	2 5
6 inch (150 mm) AISI 316 Stainless steel	2 0
6 inch (150 mm) AISI 316 Stainless steel with PTFE coating	2 4
6 inch (150 mm) AISI 316 Stainless steel with polyurethane coating	2 5
8 inch (200 mm) AISI 304 Stainless steel	3 0
8 inch (200 mm) AISI 304 Stainless steel with PTFE coating	3 1
8 inch (200 mm) AISI 304 Stainless steel with polyurethane coating	3 2
8 inch (200 mm) AISI 316 Stainless steel	3 3
8 inch (200 mm) AISI 316 Stainless steel with PTFE coating	3 4
8 inch (200 mm) AISI 316 Stainless steel with polyurethane coating	3 5
10 inch (250 mm) AISI 304 Stainless steel	4 0
10 inch (250 mm) AISI 304 Stainless steel with PTFE coating	4 1
10 inch (250 mm) AISI 304 Stainless steel with polyurethane coating	4 2
10 inch (250 mm) AISI 316 Stainless steel	4 3
10 inch (250 mm) AISI 316 Stainless steel with PTFE coating	4 4
10 inch (250 mm) AISI 316 Stainless steel with polyurethane coating	4 5

Approvals

Standard: CE, C-TICK	0
CSA/FM Class II, Div. 1, Groups E, F, G and Class III ATEX II 2D, Ex tD A21 IP65 T70 °C, CE, C-TICK, IECEx, Ex tD A21 IP65 T70 °C	1

Further designs

	Order Code
Please add "**-Z**" to Order No. and specify Order code(s).	
Stainless Steel tag [69 x 38 mm (2.7 x 1.5 inch)], Measuring-point number/identification (max 16 characters), specify in plain text.	**Y15**
Manufacturer's Test Certificate: According to EN 10204-2.2	**C11**
Inspection Certificate Type 3.1 per EN 10204	**C12**

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SITRANS WF100

Selection and Ordering data (continued)

		Order No.
SITRANS WF100 Impact solids flowmeter for low to medium capacity applications. Low cost compact unit improves processing, increases efficiency and provides significant cost savings.	C)	**7MH7186-** ■■■■■ - ■ **A**
Instruction manual		
English	C)	**7ML1998-5NB01**
German	C)	**7ML1998-5NB31**
Note: The instruction manual should be ordered as a separate item on the order.		
Additional instruction manuals		
Solids Flowmeter Application Guide, English	C)	**7ML1998-5GK01**
Solids Flowmeter Application Guide, German	C)	**7ML1998-5GK31**
This device is shipped with the Siemens Milltronics manual CD containing the complete instruction manual library.		
Spare parts		
WF100 4 inch (100 mm) sensing plate 304 standard		**7MH7723-1KN**
WF100 6 inch (150 mm) sensing plate 304 standard		**7MH7723-1KP**
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**

		Order No.
SITRANS WF100 Impact solids flowmeter for low to medium capacity applications. Low cost compact unit improves processing, increases efficiency and provides significant cost savings.	C)	**7MH7186-** ■■■■■ - ■ **A**
WF100 10 inch (250 mm) sensing plate 304 PTFE lined		**7MH7723-1LA**
WF100 4 inch (100 mm) sensing plate 316 PTFE lined		**7MH7723-1LB**
WF100 6 inch (150 mm) sensing plate 316 PTFE lined		**7MH7723-1LC**
WF100 8 inch (200 mm) sensing plate 316 PTFE lined		**7MH7723-1LD**
WF100 10 inch (250 mm) sensing plate 316 PTFE lined		**7MH7723-1LE**
WF100 4 inch (100 mm) sensing plate 304 polyurethane lined		**7MH7723-1LF**
WF100 6 inch (150 mm) sensing plate 304 polyurethane lined		**7MH7723-1LG**
WF100 8 inch (200 mm) sensing plate 304 polyurethane lined		**7MH7723-1LH**
WF100 10 inch (250 mm) sensing plate 304 polyurethane lined		**7MH7723-1LJ**
WF100 4 inch (100 mm) sensing plate 316 polyurethane lined		**7MH7723-1LK**
WF100 6 inch (150 mm) sensing plate 316 polyurethane lined		**7MH7723-1LL**
WF100 8 inch (200 mm) sensing plate 316 polyurethane lined		**7MH7723-1LM**
WF100 10 inch (250 mm) sensing plate 316 polyurethane lined		**7MH7723-1LN**
WF100 load cell spare 2 lb		**7MH7723-1LP**
WF100 load cell spare 5 lb		**7MH7723-1LQ**
WF100 load cell spare 10 lb		**7MH7723-1LR**
WF100 load cell spare 20 lb		**7MH7723-1LS**
WF100 load cell spare 2 lb CSA, FM, ATEX, IEC Ex		**7MH7725-1EU**
WF100 load cell spare 5 lb CSA, FM, ATEX, IEC Ex		**7MH7725-1EV**
WF100 load cell spare 10 lb CSA, FM, ATEX, IEC Ex		**7MH7725-1EW**
WF100 load cell spare 20 lb CSA, FM, ATEX, IEC Ex		**7MH7725-1EX**
WF calibration pulley with hardware and cable spare		**7MH7723-1LT**

[1] Available with fabrication options A to E and sensing plate options 10 to 15 only

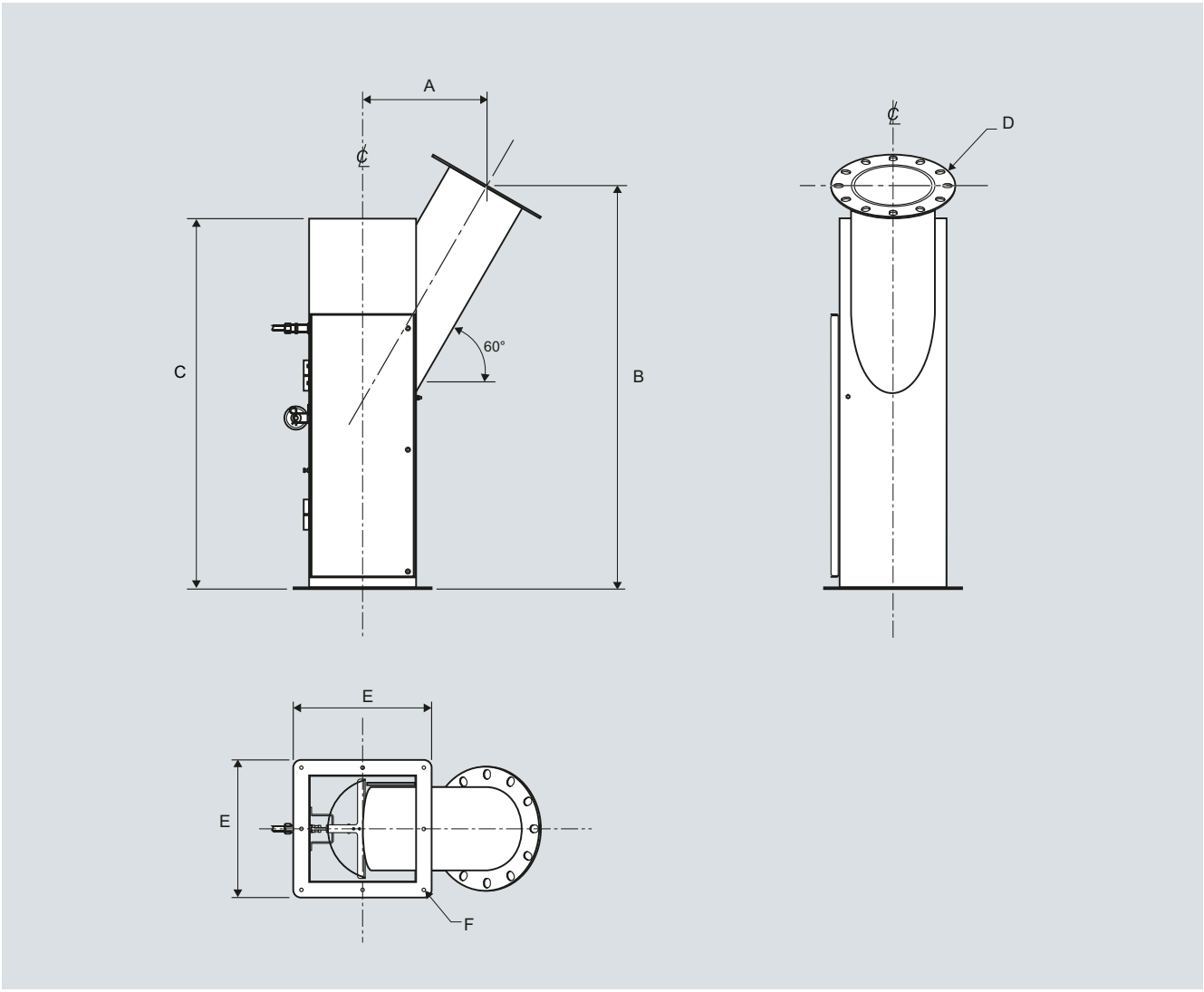
[2] Available with fabrication options F to K and sensing plate options 20 to 25 only

[3] Available with fabrication options L to Q and sensing plate options 30 to 35 only

[4] Available with fabrication options R to V and sensing plate options 40 to 45 only

C) Subject to export regulations AL: N, ECCN: EAR99.

Dimensional drawings

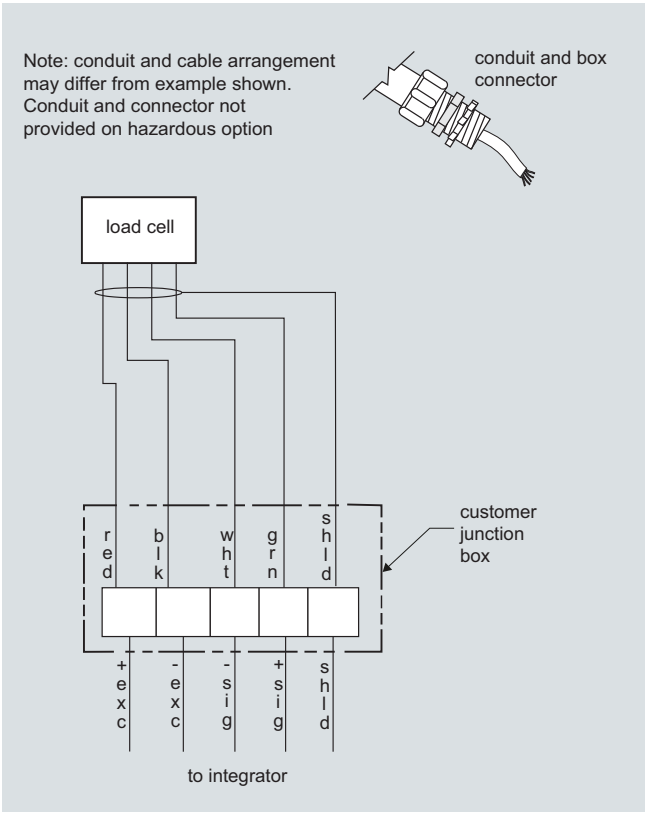


WF100 dimensions

	A	B	C	D (flange)	E	F (8 places)
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 (1168.4 mm)	42.62 inch (1082.5 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 (1320.8 mm)	48.74 inch (1238.1 mm)	Ø ASME 10 inch DIN 250 mm	19 inch (482.6 mm)	Ø 0.43 inch (11 mm)

SITRANS WF100

Schematics



WF100 connections

Overview

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

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

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

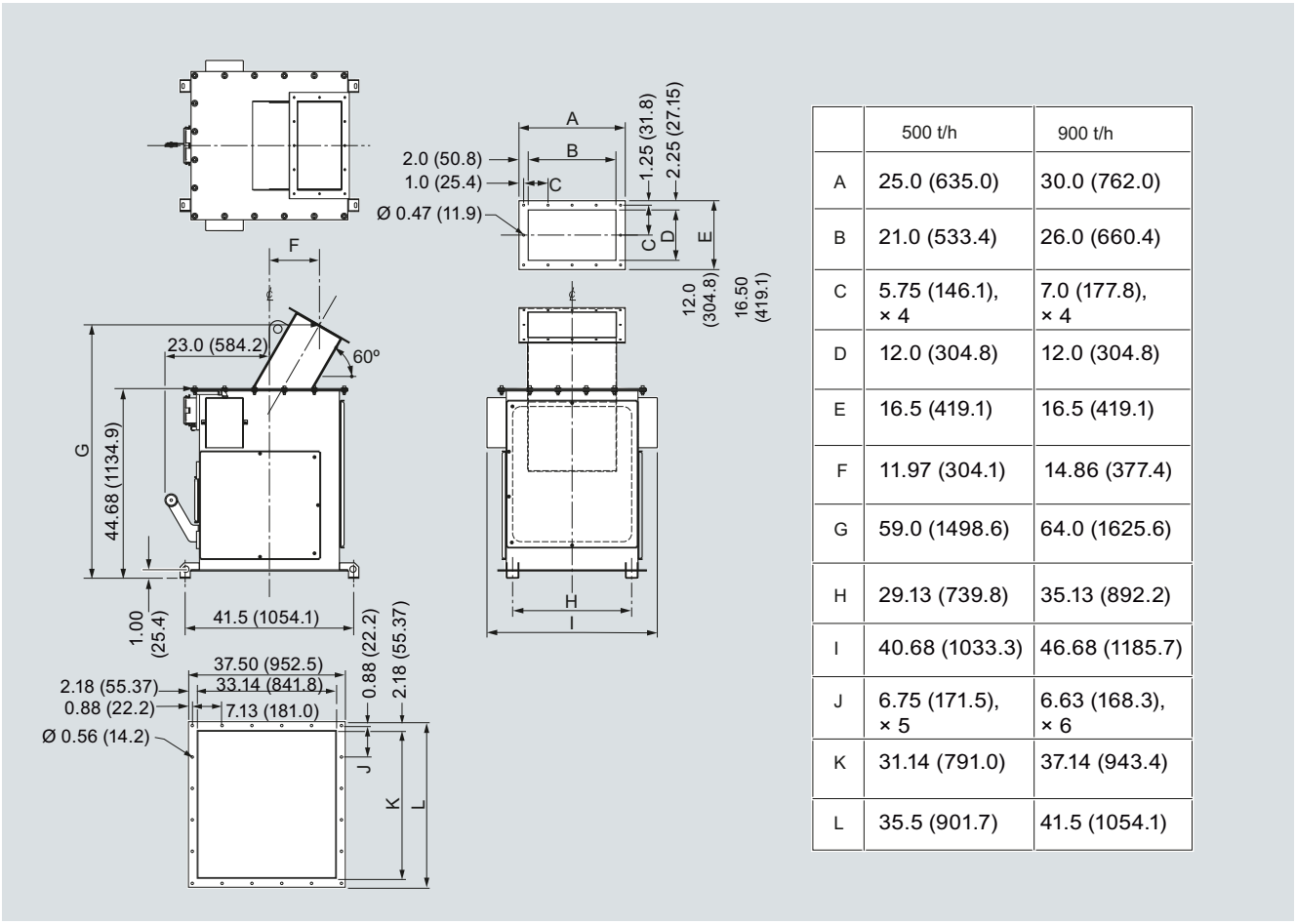
SITRANS WF200

Selection and Ordering data

		Order No.
SITRANS WF200 series flowmeters	C)	**7MH7115-**
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.		■■■■■ - **0**
Model		
SITRANS WF200		
500 t/h maximum design capacity		**1**
900 t/h maximum design capacity		**2**
SITRANS WF250, aerated style		
500 t/h maximum design capacity		**3**
900 t/h maximum design capacity		**4**
Construction		
Painted mild steel		**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**
Sensing plate liner		
None (standard 304 stainless steel, 316 for construction options F to J)		**A**
Polyurethane		
For model options 1 and 3		**B**
For model options 2 and 4		**C**
Alumina ceramic tiles		
For model options 1 and 3		**D**
For model options 2 and 4		**E**
Load cell		
50 lb		**1**
100 lb		**2**
Not specified (for quotation purposes only, not a valid ordering option)		**0**
Approvals		
CE, C-TICK		**1**
CSA/FM Class II, Div. 1, Groups E, F, G and Class III ATEX II 2D, Ex tD A21 IP65 T70 °C, CE, C-TICK, IEC Ex, Ex tD A21 IP65 T70 °C		**2**
Further designs		Order Code
Please add "**-Z**" to Order No. and specify Order code(s).		
Stainless Steel tag [69 x 38 mm (2.7 x 1.5 inch)], Measuring-point number/identification (max 16 characters), specify in plain text.		**Y15**
Manufacturer's Test Certificate: According to EN 10204-2.2		**C11**
Inspection Certificate Type 3.1 per EN 10204		**C12**
Instruction manual		Order No.
English	C)	**7ML1998-5NC01**
German	C)	**7ML1998-5NC31**
Note: The instruction manual should be ordered as a separate item on the order.		
Additional instruction manuals		
Solids Flowmeter Application Guide, English	C)	**7ML1998-5GK01**
Solids Flowmeter Application Guide, German	C)	**7ML1998-5GK31**
This device is shipped with the Siemens Milltronics manual CD containing the complete instruction manual library.		

		Order No.
SITRANS WF200 series flowmeters	C)	**7MH7115-**
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.		■■■■■ - **0**
Spare parts		
Load cell, 50 lb, stainless steel	C)	**7MH7725-1AC**
Load cell, 100 lb, stainless steel	C)	**7MH7725-1AD**
Load cell, 50 lb, stainless steel, CSA/FM/ATEX/IEC EX	C)	**7MH7725-1DT**
Load cell, 100 lb, stainless steel, CSA/FM/ATEX/IEC EX	C)	**7MH7725-1DU**
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**

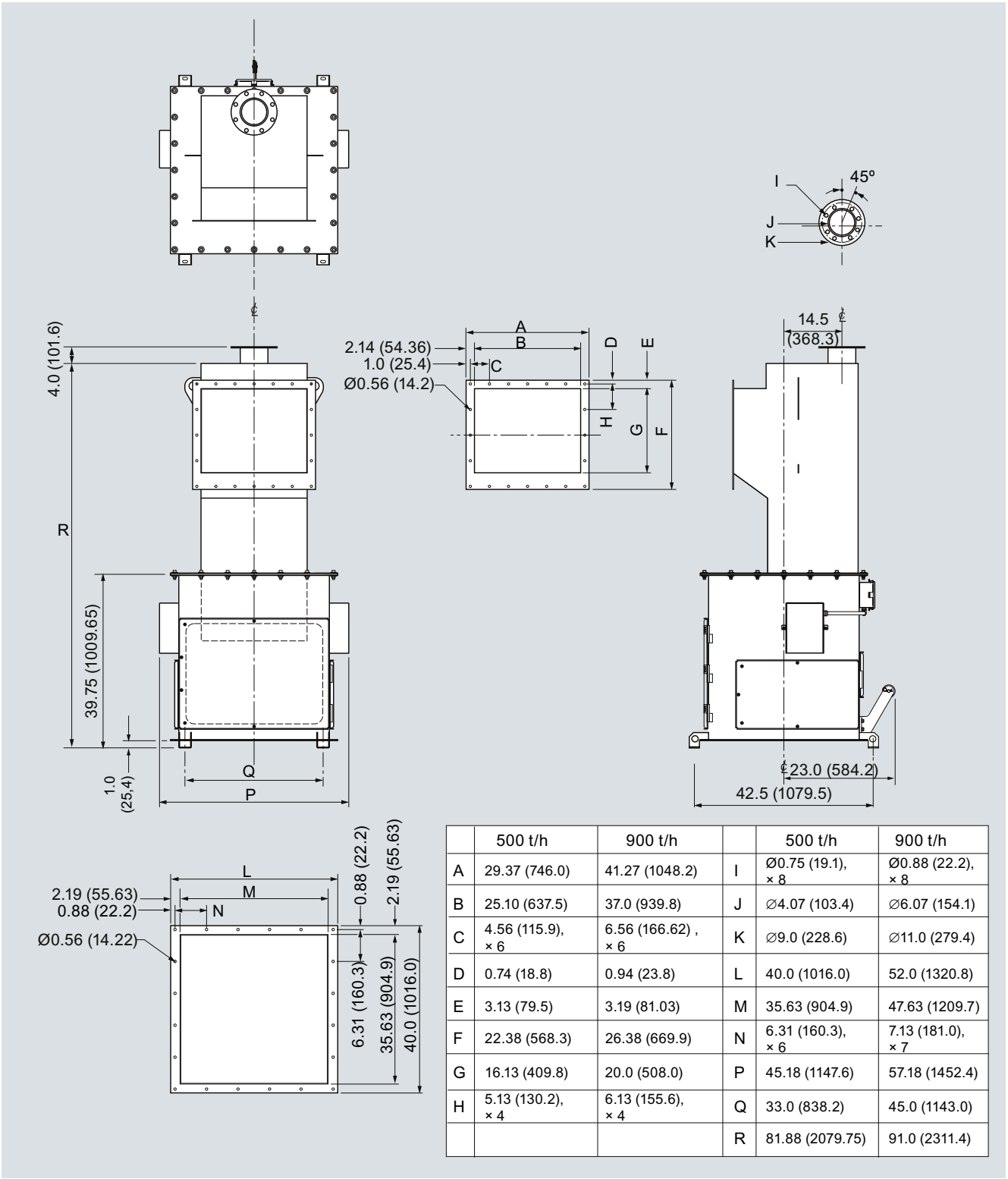
Dimensional drawings



	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), × 4	7.0 (177.8), × 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 (1625.6)
H	29.13 (739.8)	35.13 (892.2)
I	40.68 (1033.3)	46.68 (1185.7)
J	6.75 (171.5), × 5	6.63 (168.3), × 6
K	31.14 (791.0)	37.14 (943.4)
L	35.5 (901.7)	41.5 (1054.1)

WF200, dimensions in inch (mm)

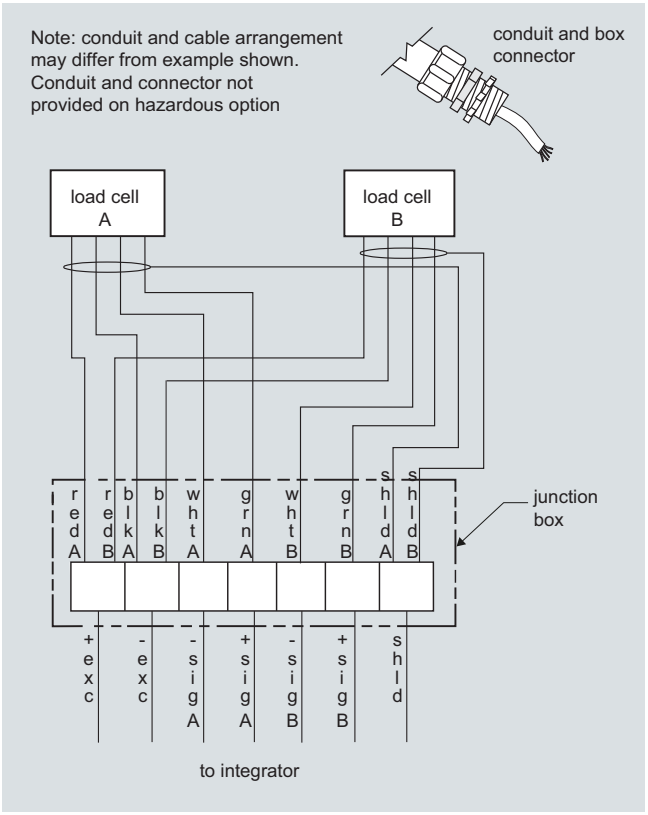
Dimensional drawings (continued)



	500 t/h	900 t/h		500 t/h	900 t/h
A	29.37 (746.0)	41.27 (1048.2)	I	Ø0.75 (19.1), × 8	Ø0.88 (22.2), × 8
B	25.10 (637.5)	37.0 (939.8)	J	∅4.07 (103.4)	∅6.07 (154.1)
C	4.56 (115.9), × 6	6.56 (166.62) , × 6	K	∅9.0 (228.6)	∅11.0 (279.4)
D	0.74 (18.8)	0.94 (23.8)	L	40.0 (1016.0)	52.0 (1320.8)
E	3.13 (79.5)	3.19 (81.03)	M	35.63 (904.9)	47.63 (1209.7)
F	22.38 (568.3)	26.38 (669.9)	N	6.31 (160.3), × 6	7.13 (181.0), × 7
G	16.13 (409.8)	20.0 (508.0)	P	45.18 (1147.6)	57.18 (1452.4)
H	5.13 (130.2), × 4	6.13 (155.6), × 4	Q	33.0 (838.2)	45.0 (1143.0)
			R	81.88 (2079.75)	91.0 (2311.4)

WF250, dimensions in inch (mm)

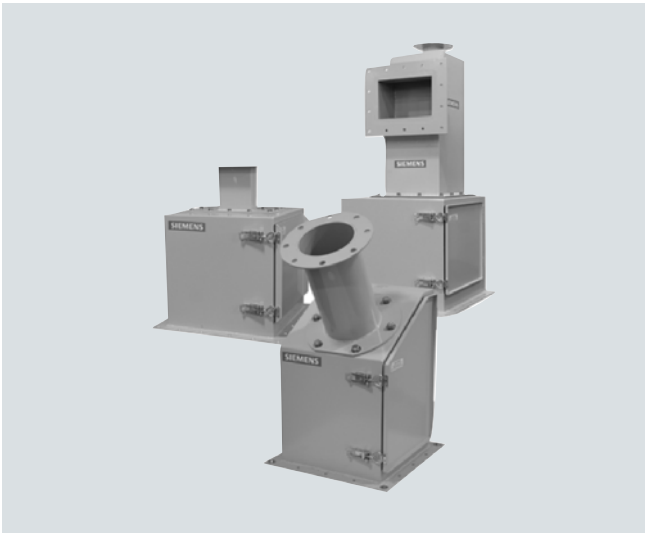
Schematics



WF200 and WF250 connections

SITRANS WF300 series

Overview



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

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

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.

Selection and Ordering data

Order No.

SITRANS WF330 C) **7MH7102-**

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. ■■■■ **0**

Version	
Base mount, 40 t/h (44 STPH) maximum design capacity	**1**
Side mount, 40 t/h (44 STPH) maximum design capacity	**2**
Base mount, 300 t/h (330 STPH) maximum design capacity	**3**
Flowguide size	
No flowguide	**A**
2 inch ASME flange pattern[1]	**B**
4 inch ASME flange pattern[1]	**C**
6 inch ASME flange pattern[2]	**D**
8 inch ASME flange pattern[2]	**E**
10 inch ASME flange pattern[2]	**F**
12 inch ASME flange pattern[3]	**G**
14 inch ASME flange pattern[3]	**H**
16 inch ASME flange pattern[3]	**J**
DN 50 flange pattern[1]	**K**
DN 100 flange pattern[1]	**L**
DN 150 flange pattern[2]	**M**
DN 200 flange pattern[2]	**N**
DN 250 flange pattern[2]	**P**
DN 300 flange pattern[3]	**Q**
DN 350 flange pattern[3]	**R**
DN 400 flange pattern[3]	**S**
Flowguide construction	
No flowguide	**A**
Mild steel, polyester painted	**B**
Mild steel, epoxy painted with zinc primer[1]	**C**
Mild steel, epoxy painted with zinc primer[3]	**D**
304 (1.4301) stainless steel[1]	**E**
304 (1.4301) stainless steel[3]	**F**
316 (1.4401) stainless steel[1]	**G**
316 (1.4401) stainless steel[3]	**H**
Cabinet construction	
Mild steel, polyester painted	**1**
Mild steel, epoxy painted with zinc primer[1]	**2**
Mild steel, epoxy painted with zinc primer[3]	**3**
304 (1.4301) stainless steel[1]	**4**
304 (1.4301) stainless steel[3]	**5**
316 (1.4401) stainless steel[1]	**6**
316 (1.4401) stainless steel[3]	**7**

Further designs	Order Code
Please add "**-Z**" to Order No. and specify Order code(s).	
Stainless Steel tag [69 x 38 mm (2.7 x 1.5 inch)], Measuring-point number/identification (max. 16 characters), specify in plain text.	**Y15**
Manufacturer's Test Certificate: According to EN 10204-2.2	**C11**
Inspection Certificate Type 3.1 per EN 10204	**C12**

Order No.

SITRANS WF330 C) **7MH7102-**

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. ■■■■ **0**

Instruction manual	
English	C) **7ML1998-5CT01**
German	C) **7ML1998-5CT31**
French	C) **7ML1998-5CT11**

Note: The instruction manual should be ordered as a separate item on the order.

Additional instruction manuals	
Solids Flowmeter Application Guide, English	C) **7ML1998-5GK01**
Solids Flowmeter Application Guide, German	C) **7ML1998-5GK31**

This device is shipped with the Siemens Milltronics manual CD containing the complete instruction manual library.

[1] For version 1 and 2 only.
[2] For version 1, 2 or 3.
[3] For version 3 only.
C) Subject to export regulations AL: N, ECCN: EAR99.

SITRANS WF340 C) **7MH7104-**

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. ■■■■ **0**

Version	
Base mount, 40 t/h (44 STPH) max. design capacity	**1**
Side mount, 40 t/h (44 STPH) max. design capacity	**2**
Base mount, 300 t/h (330 STPH) max. design capacity	**3**
Flowguide size	
No flowguide (5 x 16 inch model)	**A**
3 x 6 inch (76 x 152 mm)[1]	**B**
4 x 10 inch (102 x 254 mm)[1]	**C**
5 x 12 inch (127 x 305 mm)[1]	**D**
5 x 16 inch (127 x 406 mm)[2]	**E**
6 x 20 inch (152 x 508 mm)[2]	**F**
No flowguide (WF340-300 6 x 20 inch model)	**G**
Flowguide construction	
No flowguide	**A**
Mild steel, polyester painted	**B**
304 (1.4301) stainless steel[1]	**C**
304 (1.4301) stainless steel[2]	**D**
316 (1.4401) stainless steel[1]	**E**
316 (1.4401) stainless steel[2]	**F**
Mild steel, polyester painted with PTFE liner	**G**
Mild steel, polyester painted with abrasion resistant liner	**H**
304 (1.4301) stainless steel, with PTFE liner[1]	**J**
304 (1.4301) stainless steel, with PTFE liner[2]	**K**
Mild steel, epoxy paint with zinc primer[1]	**L**
Mild steel, epoxy paint with zinc primer[2]	**M**

Other flowguide materials available upon request

6

Selection and Ordering data (continued)

		Order No.
SITRANS WF340	C)	**7MH7104-**
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.		■■■■ **0**
Cabinet construction		
Mild steel, painted		**1**
304 (1.4301) stainless steel[1)]		**2**
304 (1.4301) stainless steel[2)]		**3**
316 (1.4401) stainless steel[1)]		**4**
316 (1.4401) stainless steel[2)]		**5**
Mild steel, epoxy paint with zinc primer[1)]		**6**
Mild steel, epoxy paint with zinc primer[2)]		**7**
Further designs		Order Code
Please add "**-Z**" to Order No. and specify Order code(s).		
Stainless Steel tag [69 x 38 mm (2.7 x 1.5 inch)], Measuring-point number/identification (max 16 characters), specify in plain text.		**Y15**
Manufacturer's Test Certificate: According to EN 10204-2.2		**C11**
Inspection Certificate Type 3.1 per EN 10204		**C12**
Instruction manual		Order No.
English	C)	**7ML1998-5CU01**
German Note: The instruction manual should be ordered as a separate line on the order.	C)	**7ML1998-5CU31**
Additional instruction manuals		
Solids Flowmeter Application Guidelines, English	C)	**7ML1998-5GK01**
Solids Flowmeter Application Guidelines, German	C)	**7ML1998-5GK31**
This device is shipped with the Siemens Milltronics manual CD containing the complete instruction manual library.		

[1)] For versions 1 and 2 only.

[2)] For version 3 only.

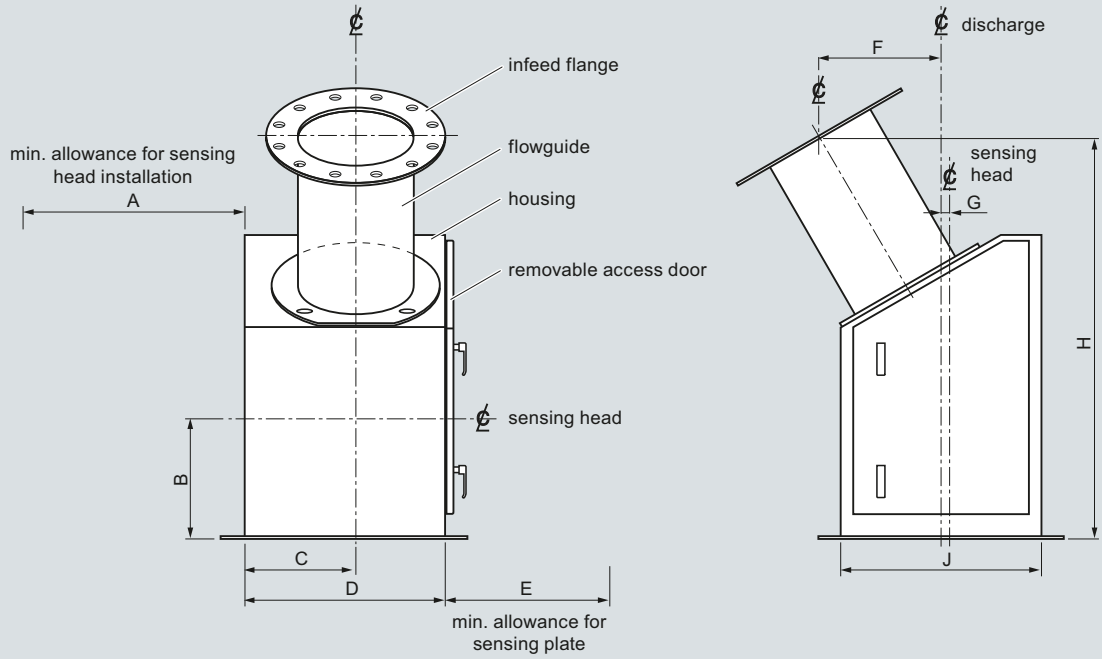
C) Subject to export regulations AL: N, ECCN: EAR99.

		Order No.
SITRANS WF350	C)	**7MH7106-**
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.		■■■■■
Version		
40 t/h (44 STPH) maximum design capacity		**1**
300 t/h (330 STPH) maximum design capacity		**2**
Flowguide size		
8 inch (203 mm), 40 t/h (0.2 to 44 STPH) version		**B**
10 inch (254 mm), 300 t/h		**C**
12 inch (305 mm), 40 t/h (0.2 to 44 STPH) version		**D**
14 inch (356 mm), 300 t/h		**E**
20 inch (508 mm), 300 t/h		**F**
Flowguide construction		
Mild steel, polyester painted		**B**
304 (1.4301) stainless steel		**D**
316 (1.4401) stainless steel		**E**
Cabinet construction		
Mild steel, polyester painted		**1**
304 (1.4301) stainless steel		**3**
316 (1.4401) stainless steel		**4**
Venting flange		
ASME flange pattern		**1**
DIN flange pattern		**2**
Further designs		Order Code
Please add "**-Z**" to Order No. and specify Order code(s).		
Stainless Steel tag [69 x 38 mm (2.7 x 1.5 inch)], Measuring-point number/identification (max 16 characters), specify in plain text.		**Y15**
Manufacturer's Test Certificate: According to EN 10204-2.2		**C11**
Inspection Certificate Type 3.1 per EN 10204		**C12**
Instruction manual		Order No.
English	C)	**7ML1998-5CV01**
German Note: The instruction manual should be ordered as a separate item on the order.	C)	**7ML1998-5CV31**
Additional instruction manuals		
Solids Flowmeter Application Guide, English	C)	**7ML1998-5GK01**
Solids Flowmeter Application Guide, German	C)	**7ML1998-5GK31**
This device is shipped with the Siemens Milltronics manual CD containing the complete instruction manual library.		

C) Subject to export regulations AL: N, ECCN: EAR99.

Dimensional drawings

SITRANS WF330 series



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)	1042 (41)	457 (18)	305 (12)	610 (24)	610 (24)	330 (13)	38 (1.5)	1270 (50)	610 (24)

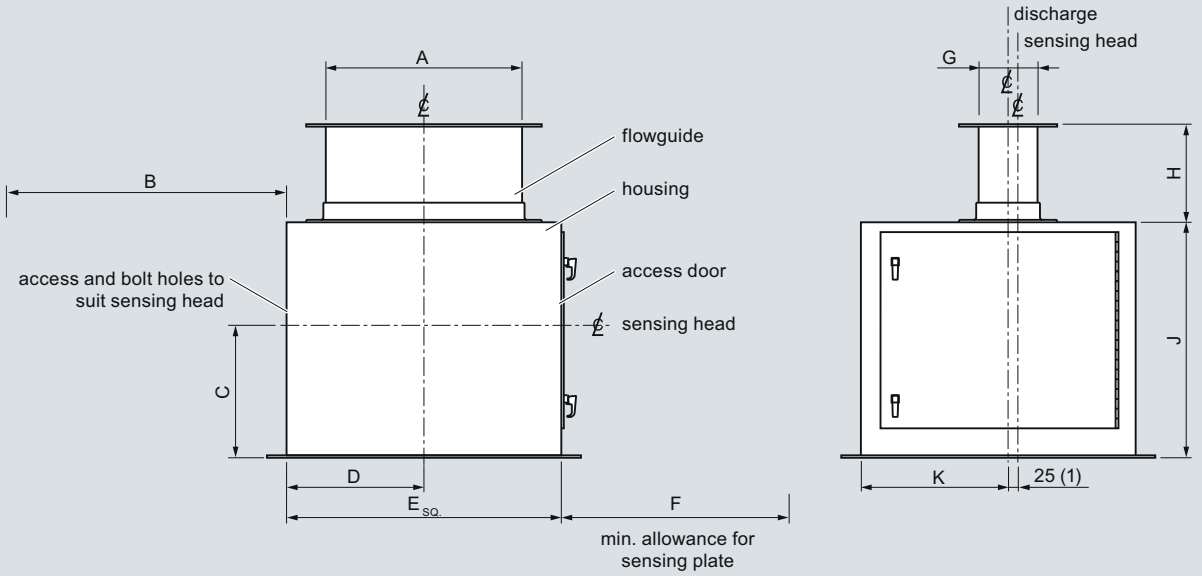
40 t/h version inlet sizes				
51 (2)	102 (4)	152 (6)	203 (8)	254 (10)

300 t/h version inlet sizes					
152 (6)	203 (8)	254 (10)	305 (12)	356 (14)	406 (16)

SITRANS WF330 series, dimensions in mm (inch)

Dimensional drawings (continued)

SITRANS WF340 series

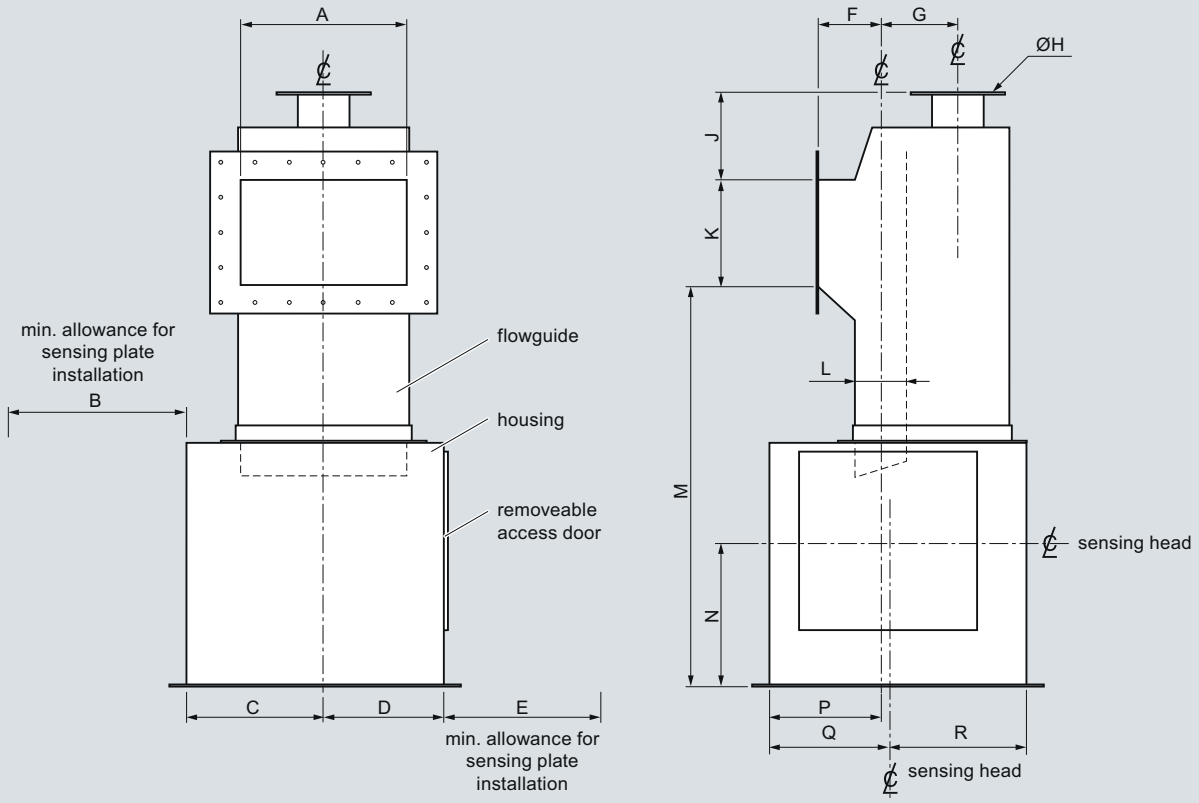


Size	A	B	C	D	E	F	G	H	J	K
40 t/h (44 STPH)	152 (6)	686 (27)	304 (12)	254 (10)	508 (20)	457 (18)	76 (3)	203 (8)	508 (20)	254 (10)
40 t/h (44 STPH)	254 (10)	686 (27)	304 (12)	254 (10)	508 (20)	457 (18)	102 (4)	203 (8)	508 (20)	254 (10)
40 t/h (44 STPH)	305 (12)	686 (27)	304 (12)	254 (10)	508 (20)	457 (18)	127 (5)	203 (8)	508 (20)	254 (10)
300 t/h (330 STPH)	406 (16)	1041 (41)	343 (13.5)	305 (12)	610 (24)	762 (30)	127 (5)	254 (10)	610 (24)	330 (13)
300 t/h (330 STPH)	508 (20)	1041 (41)	343 (13.5)	356 (14)	711 (28)	762 (30)	152 (6)	254 (10)	610 (24)	381 (15)

SITRANS WF340 series, dimensions in mm (inch)

Dimensional drawings (continued)

SITRANS WF350 series



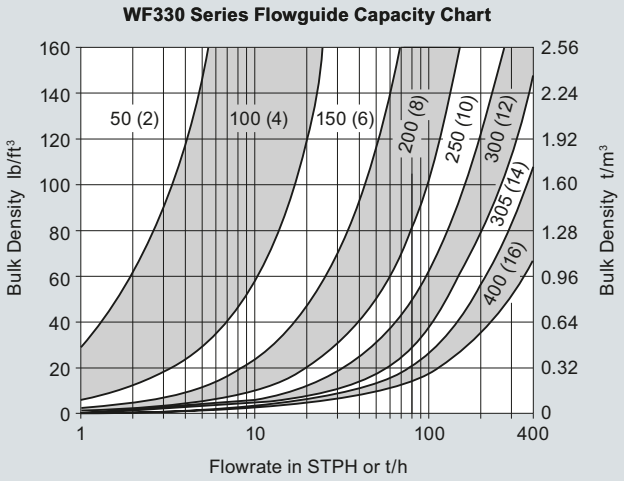
Size	A	B	C	D	E	F	G	H
40 t/h (44 STPH)	203 (8)	686 (27)	305 (12)	254 (10)	711 (28)	127 (5)	203 (8)	102 (4)
40 t/h (44 STPH)	305 (12)	686 (27)	305 (12)	254 (10)	711 (28)	127 (5)	203 (8)	102 (4)
300 t/h (330 STPH)	254 (10)	1041 (41)	406 (16)	356 (14)	889 (35)	191 (7.5)	229 (9)	152 (6)
300 t/h (330 STPH)	356 (14)	1041 (41)	406 (16)	356 (14)	889 (35)	191 (7.5)	229 (9)	152 (6)
300 t/h (330 STPH)	508 (20)	1041 (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)	1168 (46)	419 (16.5)	330 (13)	356 (14)	406 (16)
300 t/h (330 STPH)	254 (10)	305 (12)	152 (6)	1168 (46)	419 (16.5)	330 (13)	356 (14)	406 (16)
300 t/h (330 STPH)	254 (10)	305 (12)	178 (7)	1168 (46)	419 (16.5)	330 (13)	356 (14)	406 (16)

SITRANS WF350 series, dimensions in mm (inch)

Characteristic curves

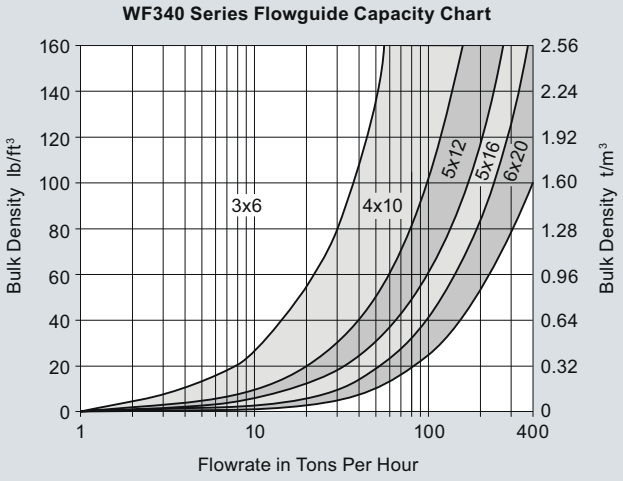
SITRANS WF330 series



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 series flowguide capacity chart

SITRANS WF340 series



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

SITRANS WF340 series flowguide capacity chart

SITRANS WFS300 series sensing heads

Overview

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

Benefits

- Easy installation with modular assembly
- ± 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 totalling. This method of sensing material flow has been proven best in thousands of applications all over the world.thousands of applications all over the world.

Technical specifications

	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 %	± 0.2 %
Specified range	33 … 100 %	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	Aluminum body, fiberglass cover, 304 (1.4306) stainless steel sensing plate	
Options	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, C-TICK, CSA, FM	CE, C-TICK, CSA, FM

1) Accuracy subject to: On factory approved installations the flowmeter system's totalilzed 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

		Order No.
SITRANS WFS300 Sensing Head	C)	**7MH7110-**
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.		■■■■■
Mounting		
Base		**0**
Side		**1**
Base, CSA/FM Class I, Div 1 Groups C and D; Class II, Div 1 Groups E, F and G		**3**
Side, CSA/FM Class I, Div 1 Groups C and D; Class II, Div 1 Groups E, F and G		**4**
Note: Externally mounted LVDT Conditioner in NEMA 4 enclosure required for use with SF500 or SIWAREX FTC and mounting option 3 and 4. See optional equipment.		
Range (Range spring size/leaf spring thickness/ viscosity of damping fluid)		
C2/A2/1000		**A**
C3/A2/1000		**B**
C4/A2/1000		**C**
C5/A2/1000		**D**
C6/A2/1000		**E**
C7/A2/1000		**F**
C8/A2/3000		**G**
C9/A2/3000		**H**
C10/A2/3000		**J**
C11/A3/5000		**K**
C12/A3/5000		**L**
C13/A3/5000		**M**
C14/A3/5000		**N**
C0/A2/500		**P**
C0/A3/500		**Q**
C10/A3/3000		**R**
Gasketing		
Silicone		**A**
Silicone, light duty		**B**
PTFE		**E**
Coating (process side only)		
None, standard aluminum		**0**
Epoxy - white/aluminum, external castings only		**1**
Sensing head mounted LVDT conditioner		
Not required[1)]		**0**
Required for use with SF500 or SIWAREX FTC integrator[2)]		**1**
Further designs		Order Code
Please add "**-Z**" to Order No. and specify Order code(s).		
Stainless Steel tag [69 x 38 mm (2.7 x 1.5 inch)], Measuring-point number/identification (max 16 characters), specify in plain text.		**Y15**
Manufacturer's Test Certificate: According to EN 10204-2.2		**C11**

		Order No.
SITRANS WFS300 Sensing Head	C)	**7MH7110-**
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.		■■■■■
Instruction manual		Order No.
English	C)	**7ML1998-5CW01**
German	C)	**7ML1998-1CW31**
French	C)	**7ML1998-5CW11**
Solids flowmeter Application Guidelines, English	C)	**7ML1998-5GK01**
Solids flowmeter Application Guidelines, German	C)	**7ML1998-5GK31**
Note: The instruction manual should be ordered as a separate item on the order.		
This device is shipped with the Siemens Milltronics manual CD containing the complete instruction manual library.		
Calibration hanger weights		
20 g (0.04 lb)	C)	**7MH7724-1AC**
50 g (0.1 lb)	C)	**7MH7724-1AD**
100 g (0.2 lb)	C)	**7MH7724-1AE**
200 g (0.4 lb)	C)	**7MH7724-1AF**
500 g (1.1 lb)	C)	**7MH7724-1AG**
1000 g (2.2 lb)	C)	**7MH7724-1AH**
2000 g (4.4 lb)		**7MH7724-1AJ**
5000 g (11 lb)		**7MH7724-1AK**

Selection and Ordering data (continued)

		Order No.
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.	C)	**7MH7110-** ■■■■■
Spare Parts		
LDVT conditioner in NEMA 4 enclosure (to interface SF500 or Siwarex FTC and LVDT sensor)	C)	**7MH7723-1AJ**
Silicone inner diaphragm	F)	**7MH7723-1DN**
Silicone outer diaphragm	F)	**7MH7723-1DP**
PTFE inner diaphragm	F)	**7MH7723-1AL**
PTFE outer diaphragm	F)	**7MH7723-1AM**
LVDT transformer and core, standard spare		**7MH7723-1DS**
Encapsulated LVDT replacement kit	C)	**7MH7723-1DE**
LVDT transformer and core, standard spare		**7MH7723-1DS**
Damping fluid, 1000 CS, 1 lb bottle	C)	**7MH7723-1EU**
Damping fluid, 3000 CS, 1 lb bottle	C)	**7MH7723-1EV**
Damping fluid, 5000 CS, 1 lb bottle	C)	**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**
Circuit card, LVDT, internal mount	C)	**7MH7723-1ET**
WFS300 replacement o-ring kit	F)	**7MH7723-1DC**

1) For use with Compu Series integrators or when externally mounted LVDT conditioner required. See Note under Mounting on page 6/24.

2) Applicable for mounting options 0 and 1 only.

C) Subject to export regulations AL: N, ECCN: EAR99.

F) Subject to export regulations AL: 9I999, ECCN: N.

SITRANS WFS300 series sensing heads

Selection and Ordering data (continued)

		Order No.
SITRANS WFS320 Sensing Head	C)	**7MH7112-**
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.		■■■■■
Classification		
Non-hazardous		**1**
Hazardous, CSA/FM Class I, Div 1 Groups C and D; Class II, Div 1 Groups E, F and G, 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.		**2**
Range (range spring size/viscosity of damping fluid)		
D1/1000 Position 1		**A**
D1/1000 Position 2		**B**
D1/1000 Position 3		**C**
D2/1000 Position 1		**D**
D2/1000 Position 2		**E**
D2/1000 Position 3		**F**
D3/3000 Position 1		**G**
D3/3000 Position 2		**H**
D3/3000 Position 3		**J**
D4/5000 Position 1		**K**
D4/5000 Position 2		**L**
D4/5000 Position 3		**M**
D5/5000 Position 1		**N**
D5/5000 Position 2		**P**
D5/5000 Position 3		**Q**
Gasketing		
Silicone		**A**
PTFE Other gasketing available upon request		**D**
Coating (process side only)		
None, standard aluminum		**0**
Epoxy - white/aluminum, external castings only Other coatings available upon request.		**1**
Sensing head mounted LVDT conditioner		
Not required[1]		**0**
Required for use with SF500 or Siwarex FTC integrator[2]		**1**
Further designs		Order Code
Please add "**-Z**" to Order No. and specify Order code(s).		
Stainless Steel tag [69 x 38 mm (2.7 x 1.5 inch)], Measuring-point number/identification (max 16 characters), specify in plain text.		**Y15**
Manufacturer's Test Certificate: According to EN 10204-2.2		**C11**

		Order No.
SITRANS WFS320 Sensing Head	C)	**7MH7112-**
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.		■■■■■
Instruction manual		
English	C)	**7ML1998-5CX01**
German	C)	**7ML1998-1CX31**
Note: Instruction Manual should be ordered as a separate item on the order.		
This device is shipped with the Siemens Milltronics manual CD containing the complete instruction manual library.		
Calibration hanger weights		
20 g (0.04 lb)	C)	**7MH7724-1AC**
50 g (0.1 lb)	C)	**7MH7724-1AD**
100 g (0.2 lb)	C)	**7MH7724-1AE**
200 g (0.4 lb)	C)	**7MH7724-1AF**
500 g (1.1 lb)	C)	**7MH7724-1AG**
1000 g (2.2 lb)	C)	**7MH7724-1AH**
2000 g (4.4 lb)		**7MH7724-1AJ**
5000 g (11 lb)		**7MH7724-1AK**
Spare Parts		
LVDT conditioner in NEMA 4 enclosure to interface SF500 and LVDT sensor)	C)	**7MH7723-1AJ**
Silicone inner diaphragm	F)	**7MH7723-1DQ**
Silicone outer diaphragm	F)	**7MH7723-1DR**
PTFE inner diaphragm	F)	**7MH7723-1BA**
PTFE outer diaphragm	F)	**7MH7723-1BB**
LVDT transformer and core, standard spare		**7MH7723-1DS**
Encapsulated LVDT replacement kit	C)	**7MH7723-1DE**
Damping fluid, 1000 CS, 1 lb bottle	C)	**7MH7723-1EU**
Damping fluid, 3000 CS, 1 lb bottle	C)	**7MH7723-1EV**
Damping fluid, 5000 CS, 1 lb bottle	C)	**7MH7723-1EW**
Range spring assembly, D1		**7MH7723-1FM**
Range spring assembly, D2		**7MH7723-1FN**
Range spring assembly, D3		**7MH7723-1FP**
Range spring assembly, D4		**7MH7723-1FQ**
Range spring assembly, D5	C)	**7MH7723-1GJ**
Leaf spring kit, 4 required	C)	**7MH7723-1BQ**
Circuit card, LVDT, internal mount	C)	**7MH7723-1ET**
WFS320 replacement o-ring kit	F)	**7MH7723-1DD**
WFS320 Taper Pin, spare		**7MH7723-1GD**

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

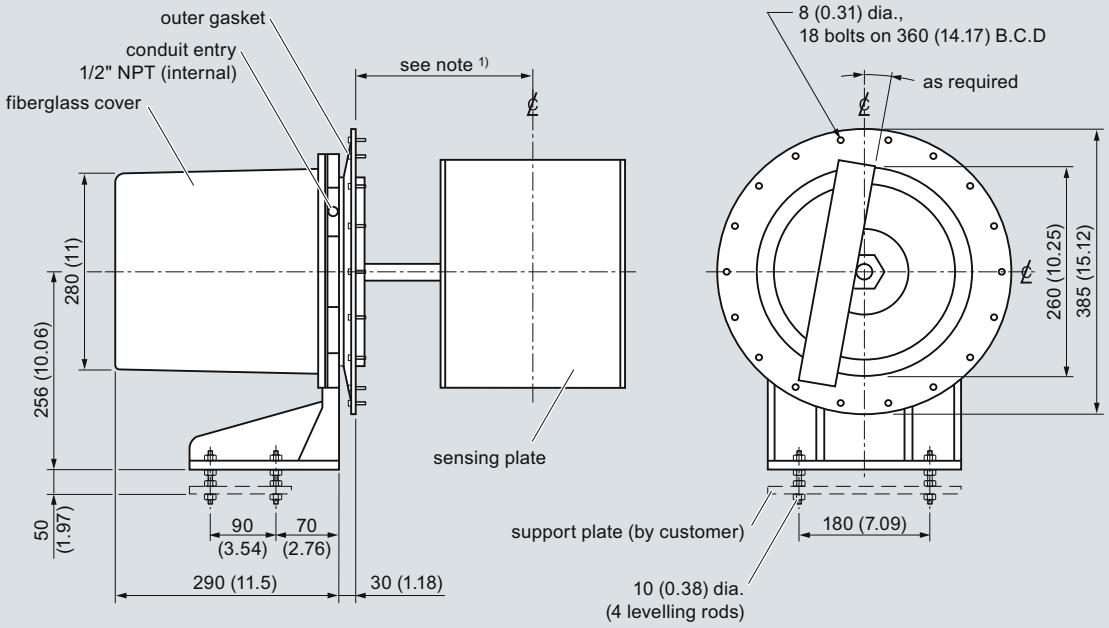
[2] Available with classification option 1 only

C) Subject to export regulations AL: N, ECCN: EAR99.

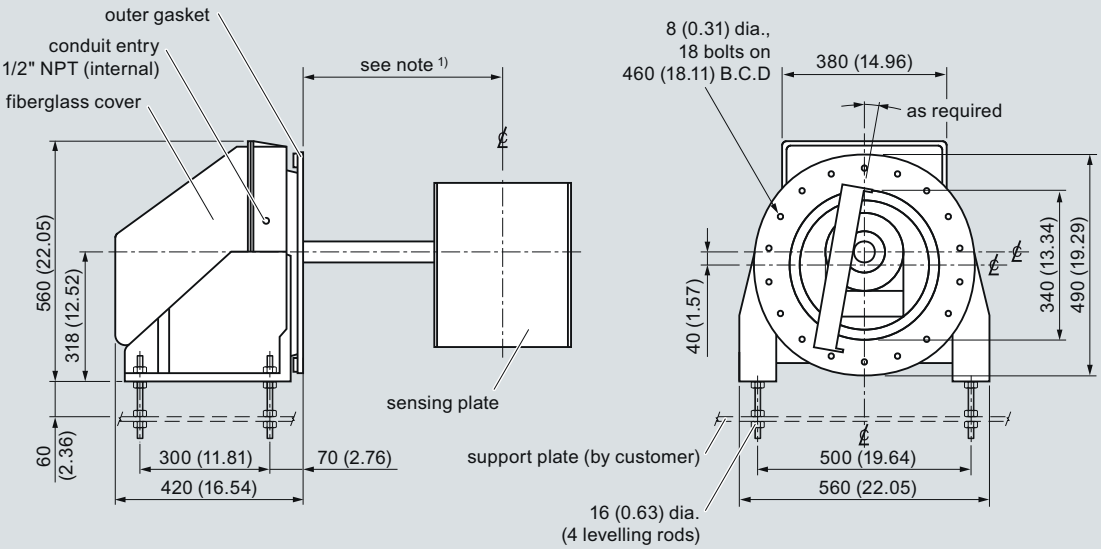
F) Subject to export regulations AL: 9I999, ECCN: N.

Dimensional drawings

WFS300 Sensing Head



WFS320 Sensing Head



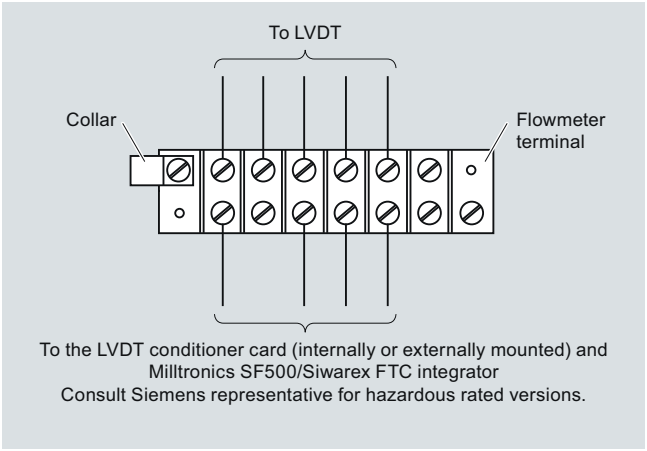
Notes:

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.

WFS300 series sensing head dimensions in mm (inch)

SITRANS WFS300 series sensing heads

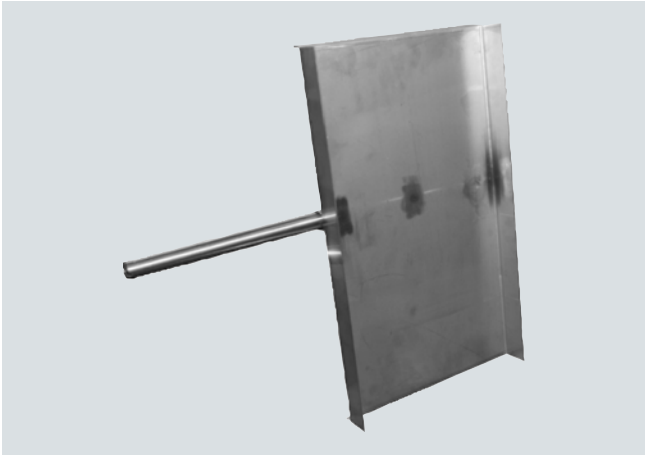
Schematics



SITRANS WFS300 series connections

SITRANS Flowmeter sensing plates

Overview



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

Selection and Ordering data

		Order No.
SITRANS Flowmeter Sensing Plates The sensing plate transfers the impact force to the sensing head of the flowmeter.	C)	**7MH7114-** ■■■■ **0**
Version		
WF330, 40 t/h, base mount or sid emount		**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) flowguide[1)]		**A**
20 x 12 inch (508 x 304.8 mm), for version option 1 with 8 inch (203.2 mm) flowguide[1)]		**B**
20 x 14 inch (508 x 355.6 mm), for version option 1 with 10 inch(254 mm) flowguide[1)]		**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) flowguide[1)]		**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) flowguide[1)]		**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) flowguide[1)]		**F**
12 x 12 inch (304.8 x 304.8 mm), for version option 4 with 8 inch (203.2 mm) flowguide[2)]		**G**
16 x 14 inch (406.4 x 355.6 mm), for version option 4 with 12 inch (304.8 mm) flowguide[2)]		**H**
14 x 18 inch (355.6 x 457.2 mm), for version option 7 with 10 inch (254 mm) flowguide[2)]		**J**
18 x 20 inch (457.2 x 508 mm), for version option 7 with 14 inch (355.6 mm) flowguide[2)]		**K**
24 x 22 inch (609.6 x 558.8 mm), for version option 7 with 20 inch (508 mm) flowguide[2)]		**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) flowguide[3)]		**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) flowguide[3)]		**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) flowguide[3)]		**P**
18 x 20 inch (457.2 x 508 mm), for version option 6 with 5 x 16 inch (127 x 406.4 mm) flowguide[3)]		**Q**
20 x 24 inch (508 x 609.6 mm), for version option 6 with 6 x 20 inch (152.4 x 508 mm) flowguide[3)]		**R**
12 x 12 inch (304.8 x 304.8 mm), for C-40 with 6 inch (152.4 mm) flowguide[4)]		**S**
12 x 14 inch (304.8 x 355.6 mm), for C-40 with 10 inch (254 mm) flowguide[4)]		**T**
Plate material		
304 (1.4301) stainless steel[5)]		**A**
304 (1.4301) stainless steel[6)]		**B**
316 (1.4401) stainless steel[7)]		**C**
316 (1.4401) stainless steel[6)]		**D**
304 (1.4301) stainless steel, heavy-duty[7)]		**E**
304 (1.4301) stainless steel, heavy-duty[6)]		**F**
316 (1.4401) stainless steel, light-duty[8)]		**G**
316 (1.4401) stainless steel, heavy-duty[7)]		**H**
316 (1.4401) stainless steel, heavy-duty[6)]		**J**
Plate liner		
No liner		**1**
Polyurethane[7)]		**2**
Polyurethane[6)]		**3**
PTFE[7)]		**4**
PTFE[6)]		**5**
Alumina ceramic tiles[7)]		**6**
Alumina ceramic tiles[6)]		**7**
Plasma A/R[7)]		**8**
Plasma A/R[6)]		**0**
Further designs Please add "**-Z**" to Order No. and specify Order code(s).		Order Code
Inspection Certificate Type 3.1 per EN 10204		**C12**
Instruction manual		Order No.
Solids Flowmeter Application Guidelines, English	C)	**7ML1998-5GK01**
Solids Flowmeter Application Guidelines, German	C)	**7ML1998-5GK31**

Note: Instruction Manual should be ordered as a separate item on the order.

This device is shipped with the Siemens Milltronics manual CD containing the complete instruction manual library.

1) See 7MH7102, page 6/17.
2) See 7MH7106, page 6/18.
3) See 7MH7104, page 6/18.
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.

C) Subject to export regulations AL: N, ECCN: EAR99.

6

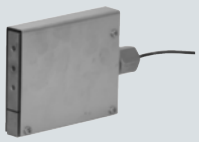
Sensing plates

SITRANS Flowmeter sensing plates

Selection and Ordering data (continued)

Flowmeter spare load cells

		Order No.
Millflo flowmeters stainless steel, with hardware		
1 lb (0.5 kg)		**Replace with 2 lb**
2 lb (0.9 kg)	C)	**PBD-23900176**
5 lb (2.3 kg)	C)	**PBD-23900177**
10 lb (4.6 kg)	C)	**7MH7725-1AA**
20 lb (9.2 kg)	C)	**7MH7725-1AB**



Millflo L, M, and MA series flowmeters stainless steel, with hardware		
50 lb (22.7 kg)	C)	**7MH7725-1AC**
100 lb (45.4 kg)	C)	**7MH7725-1AD**

Millflo 304 stainless steel sensing plates		
100 mm (4 inch)		**PBD-25570-1AA0**
150 mm (6 inch)		**PBD-25570-2AA0**
200 mm (8 inch)		**PBD-25570-3AA0**
250 mm (10 inch)		**PBD-25570-4AA0**
250 mm (10 inch) light duty		**PBD-25570-5AA0**
300 mm (12 inch)		**PBD-25570-6AA0**

Millflo 304 stainless steel, PTFE coated sensing plates		
100 mm (4 inch)		**PBD-25570-1BA0**
150 mm (6 inch)		**PBD-25570-2BA0**
200 mm (8 inch)		**PBD-25570-3BA0**
250 mm (10 inch)		**PBD-25570-4BA0**
250 mm (10 inch) light duty		**PBD-25570-5BA0**
300 mm (12 inch)		**PBD-25570-6BA0**

	Order No.
Millflo 304 stainless steel, polyurethane lined sensing plates	
100 mm (4 inch)	**PBD-51027413**
150 mm (6 inch)	**PBD-51027371**
200 mm (8 inch)	**PBD-51027463**
250 mm (10 inch)	**PBD-51027486**
300 mm (12 inch)	**PBD-51027369**
Millflo 316L stainless steel sensing plates	
100 mm (4 inch)	**PBD-25570-1AB0**
150 mm (6 inch)	**PBD-25570-2AB0**
200 mm (8 inch)	**PBD-25570-3AB0**
250 mm (10 inch)	**PBD-25570-4AB0**
250 mm (10 inch) light duty	**PBD-25570-5AB0**
300 mm (12 inch)	**PBD-25570-6AB0**
Millflo 316L stainless steel, PTFE coated sensing plates	
100 mm (4 inch)	**PBD-25570-1BB0**
150 mm (6 inch)	**PBD-25570-2BB0**
200 mm (8 inch)	**PBD-25570-3BB0**
250 mm (10 inch)	**PBD-25570-4BB0**
250 mm (10 inch) light duty	**PBD-25570-5BB0**
300 mm (12 inch)	**PBD-25570-6BB0**

C) Subject to export regulations AL: N, ECCN: EAR99.