

# SIEMENS

## SITRANS

### Flowmeters SITRANS WF200 and WF250

#### Operating Instructions




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7MH7115-.....-

## Legal information

### Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

 <b>DANGER</b>
indicates that death or severe personal injury <b>will</b> result if proper precautions are not taken.
 <b>WARNING</b>
indicates that death or severe personal injury <b>may</b> result if proper precautions are not taken.
 <b>CAUTION</b>
indicates that minor personal injury can result if proper precautions are not taken.
<b>NOTICE</b>
indicates that property damage can result if proper precautions are not taken.


If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

### Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

### Proper use of Siemens products

Note the following:

 <b>WARNING</b>
Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

### Trademarks

All names identified by ® are registered trademarks of Siemens AG. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

### Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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**Note**

The Siemens flowmeter system is to be used only in the manner outlined in these operating instructions, otherwise protection provided by equipment may be impaired.

- It is your responsibility to read these operating instructions before installing and starting up any component of the system to which the flowmeter is being applied.
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**Note****For industrial use only**

This product is intended for use in industrial areas. Operation of this equipment in a residential area may cause interference to several frequency based communications.

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These operating instructions cover only solids flowmeter installation, operation, and maintenance procedures. Integrator operating instructions are available for download from our website:


Siemens weighing (<http://www.siemens.com/weighing>)

Follow these operating instructions for quick, trouble-free installation, and maximum accuracy and reliability of your flow system.

We always welcome suggestions and comments about manual content, design, and accessibility. Please direct your comments to:

Technical publications ([pi-documentation-service.industry@siemens.com](mailto:pi-documentation-service.industry@siemens.com))

## Safety notes

 <b>CAUTION</b>
<p>Correct, reliable operation of the product requires proper transport, storage, positioning and assembly as well as careful operation and maintenance. Only qualified personnel should install or operate this instrument.</p>

### Note

Alterations to the product, including opening or improper repairs of the product, are not permitted.

If this requirement is not observed, the CE and UKCA mark and the manufacturer's warranty will expire.

## 2.1 Installation in hazardous areas

<b>SIEMENS</b>	
SITRANS WF200 SOLIDS FLOWMETER	
7MHxxxx-xxxxx-xxxx-x	
Y31: FSG-XXXXXXXXXXXX	
Serial #: GYZ / A1034567	
Input: 15 V === Maximum	
Enclosure: IP65 (Load Cells)	
Cable Entry: 2 x 1/2" NPT	
Ambient Temp.: -40°C to 65°C	
	CLASS II, DIV. 1, GROUPS E, F, G CLASS III
	IECEX SIR 11.0167X
	Ex tb IIIC T80°C Db IP65
	II 2 D
	Ex tb IIIC T80°C Db IP65
	Sira 11ATEX9367X
	CSAE 21UKEX9105X
	 
	№ ЕАЭС RU C- DE.ВН02.В.00542/20 ОС ВСИ «ВНИИФТРИ» Ex tb IIIC T80°C Db X
	 
Do Not Disassemble When An Explosive Dust Atmosphere Is Present. Ne pas démonter en présence d'une atmosphère poussiéreuse explosive.	
Siemens Canada Limited, Ontario, Canada, K9J 6X7 Assembled in Canada with domestic and imported parts	

2.1 Installation in hazardous areas



**Note**

**Nameplate**

The nameplate shown is a typical example. Please check the nameplate on your device for your specific device configuration.

**Instructions specific to hazardous area installations**

(Reference European ATEX Directive 2014/34/EU, Annex II, 1/0/6)

The following instructions apply to equipment covered by certificate number SIRA11ATEX9367X, and CSAE 21UKEX9105X:

1. For use and assembly, refer to the main instructions.
2. The equipment is certified for use as Category 2D equipment and may be used in hazardous zones 21 and 22 with dusts.
3. This equipment has a maximum surface temperature of T80 °C (in a 65 °C ambient). Refer to the applicable code of practice for selection of this equipment with respect to specific dust ignition temperatures.
4. The equipment is certified for use in an ambient temperature range of -40 °C to 65 °C.
5. If the conductors of the attached cable are terminated in the hazardous area, appropriate explosion protection ('Ex') methods should be used that meet the requirements of European Directive 2014/34/EU for Group II, Category 2D.
6. The equipment has not been assessed as a safety related device (as referred to by Directive 2014/34/EU Annex II, clause 1.5).

7. Installation and inspection of this equipment shall be carried out by suitably trained personnel in accordance with the applicable code of practice.
8. Repair of this equipment shall be carried out by suitably trained personnel in accordance with the applicable code of practice.
9. Components to be incorporated into or used as replacements in the equipment shall be fitted by suitably trained personnel in accordance with the manufacturer's documentation.
10. If the equipment is likely to come into contact with aggressive substances, then it is the responsibility of the user to take suitable precautions that prevent it from being adversely affected, thus ensuring that the type of protection is not compromised. Aggressive substances: e.g. acidic liquids or gases that may attack metals or solvents that may affect polymeric materials. Suitable precautions: e.g. regular checks as part of routine inspections or establishing from the material's data sheet that it is resistant to specific chemicals

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**Note**

The flowmeter construction materials include: mild steel (polyester power coat painted) or stainless steel, nonurethane encapsulant, silicone rubber seals, and NBR/SBR rubber gaskets.

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11. Product marking shall include the warning: Do not disassemble when an explosive dust atmosphere is present.

**Conditions for safe use**

- The equipment shall be installed such that the supply cable is protected from mechanical damage. The cable shall not be subjected to tension or torque. If the cable is to be terminated within an explosive atmosphere, then appropriate protection of the free end of the cable shall be provided.
- The equipment shall be bonded to earth using an approved type of metal conduit and conduit fittings.
- The equipment shall be supplied with an input voltage not exceeding 15 V.

## Description

SITRANS WF200 and WF250 flowmeters are medium- to high-capacity for various product sizes, densities, and fluidities. Solids flowmeters improve processing, increase operating efficiency, and help provide significant cost savings.

Operating with a microprocessor-based Siemens integrator, the Milltronics SF500 displays flowrate, 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 flowguide producing a mechanical deflection as they strike the flowmeter sensing plate before continuing through the process unhindered. Two strain gauge load cells convert the horizontal force of the deflection into an electrical signal. The integrator processes this to display the flowrate and integrated total weight. The process is immune to the effect of product build-up as only horizontal force is measured.

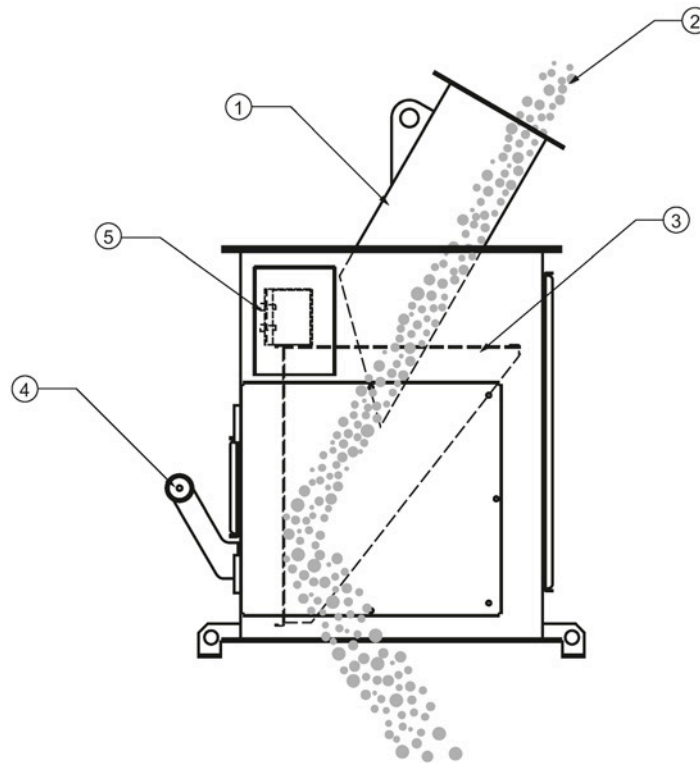
WF200 and WF250 feature simple operation, and fast and accurate flow response. WF200 and WF250 are accurate and repeatable force sensors and their performance depends on the consistent flow of material and the quality of the installation.



## Components

Siemens flowmeters react to the horizontal component of force created by the impact of material on the sensing plate. Siemens flowmeters consist of two physical components:

- the housing which includes the flowguide and the outlet: supports the sensing assembly and guides the material flow
- the sensing assembly which includes the sensing plate and the load cell(s)



- ① Flow guide
- ② Material
- ③ Sensing plate
- ④ Calibration pulley
- ⑤ Load cell (comes with cover)

## Horizontal sensing plate

The material travels down the flowguide, striking the sensing plate and discharging through the outlet. The force exerted on the sensing plate has both a vertical and horizontal component. The design of the load cell is such that it reacts to the horizontal component only; the vertical component is ignored.

The sensing plate is displaced proportionally to the material flow and is not susceptible to material build-up, so long as it does not bridge across to the housing. Positive displacement of the load cell is limited by the positive stop incorporated in the design of the load cell.

The displacement of the load cell is sensed by its strain gauges. These convert the excitation signal from the electronic integrator to produce a signal proportional to material flow.

## Applications

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### Note

For best performance and limited maintenance requirements, keep in mind material compatibility and flow patterns.

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## Ideal material characteristics

- low cohesion (flows well through chutes, similar to a liquid)
- low adhesion (does not stick to surfaces)
- low abrasion (will not wear out chutes, flowguide, or sensing plate)
- low causticity (will not damage internal flowmeter components)

## Location

Materials with low moisture content generally have excellent flow and adhesion characteristics. In processes where material moisture content varies, select a flowmeter location where the moisture content is lowest.

## Linings

- Sensing plate abrasion resistant linings are often used for aggregates, barley, corn, soybeans, wheat, and material with similar hardness and particle mass. Abrasive materials are best monitored at low velocity.

## Material feed

### Ideal material in-feed characteristics

- Constant and relatively low material velocity
- Uniform material flowrate (not pulsing)
- Negligible air flow through the flowmeter
- Flowguide 17 to 50% full during operation

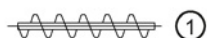
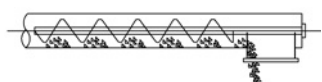
## Feed conditions

- A gravity-fed flowmeter generally provides accurate readings.
- A mechanically fed flowmeter may not provide a consistent feed, affecting flowmeter performance. A consistent feed provides the most accurate readings.

- A reverse flowguide transition is preferred for high or variable velocity feeder material discharges.
- Use a suitable flowmeter discharge chute so that material cannot backup into the flowmeter housing.

### 3.1 Material feed examples

#### Screw conveyor



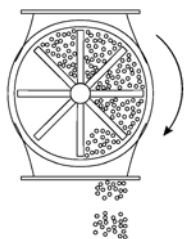
① short pitch



② double flight

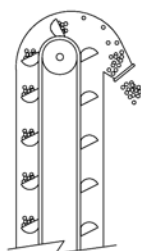
- most common type of material feeder
- short pitch and/or double flight screws preferred to reduce the batch size (and increase the frequency) of the material discharge pulse, or cut back the flights of a standard screw so it ends before the discharge opening
- use reverse flowguide transition for variable operating speeds or constant speeds above 40 rpm

#### Rotary feeder



- provides an air seal between the upstream and/or downstream process, and the flowmeter
- required if the material is pneumatically conveyed or flowmeter/process isolation is required
- use reverse flowguide transition for variable operating speeds or constant speeds above 10 rpm

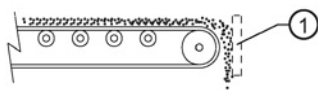
#### Bucket elevators



- commonly used for grain applications
- feeder discharge damping required when slow elevators (typically chain drive) produce heavily pulsing material discharge
- use deadbox if required to reduce material velocity from fast elevators (typically re-inforced belt drive)

3.1 Material feed examples

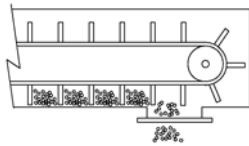
**Conveyor belt**



① material discharge baffle

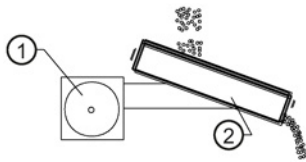
- produces a non-pulsing material discharge
- reverse flowguide transition (and/or material discharge baffle) often required for variable belt speeds or constant speeds in excess of 1 m/s (200 feet/minute)

**Drag conveyor**



- operates at a constant (and relatively low) velocity
- reverse flowguide transition not normally required but use feeder discharge damping or a discharge baffle to minimize the pulsing material discharge

**Vibratory feeder**



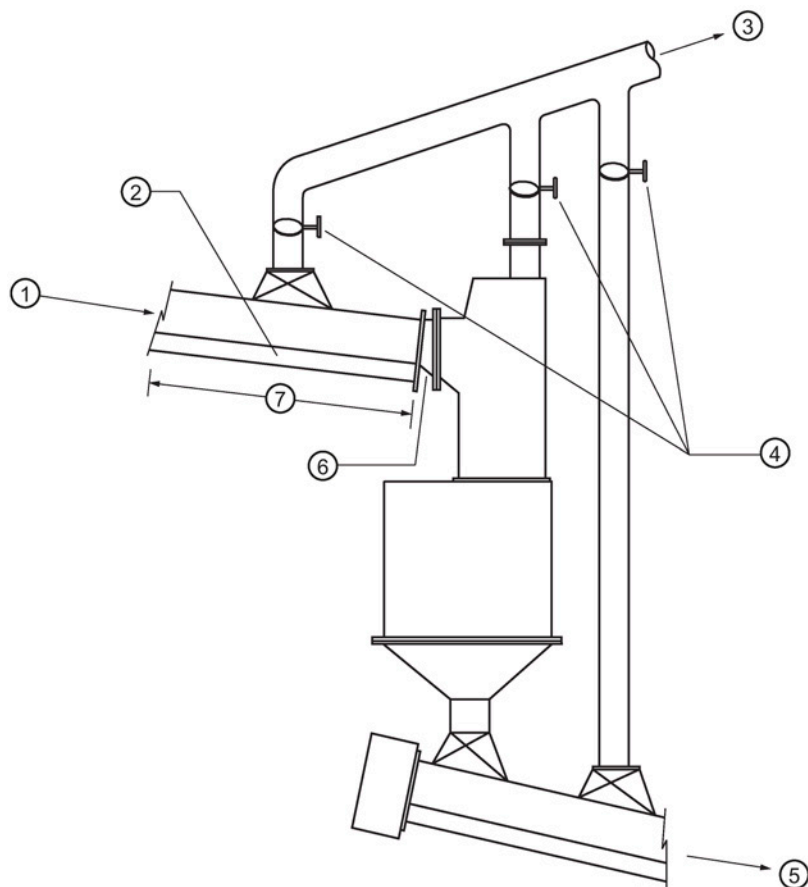
① motor  
② vibrating pan

- produces a non-pulsing material discharge
- use reverse flowguide transition for variable speed varieties

**Aerated gravity conveyor**

SITRANS WF250 and SITRANS WF350 are specifically designed for use with aerated gravity conveyors. The constant velocity and non-pulsing material discharge of an aerated gravity conveyor are considered ideal for accurate, repeatable performance. The conveyor discharge/flowmeter infeed transition chute should be as short as possible and at the same angle as the flowmeter flowguide. Fabricate the transition chute so the conveyor aeration chamber is not vented directly into the flowmeter.

Make sure the flowmeter discharge chute is large enough so material cannot back up into the flowmeter housing.



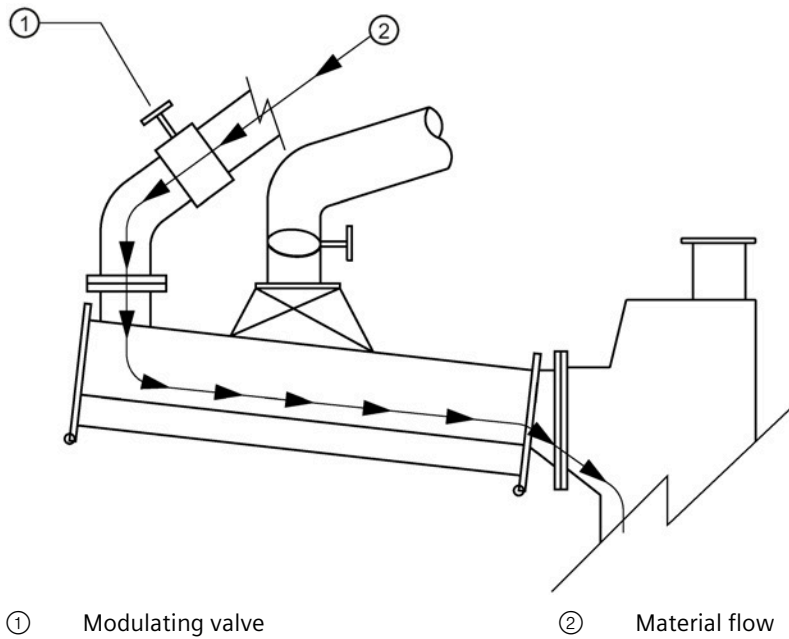
- |   |                   |   |                        |
|---|-------------------|---|------------------------|
| ① | Material in       | ⑤ | Material out           |
| ② | Aeration chamber  | ⑥ | Transition by customer |
| ③ | To dust collector | ⑦ | 2 m (6 ft.) minimum    |
| ④ | Tuning gates      |   |                        |

A mechanical or automatic modulating valve may be required for:

- material flowrate control
- pulsing conveyor infeed damping

If a modulating valve is used, reverse the direction of material flow after the valve and before the material enters the aerated gravity conveyor.

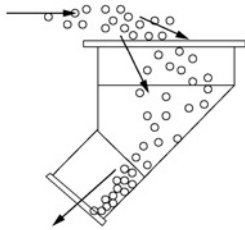
3.1 Material feed examples



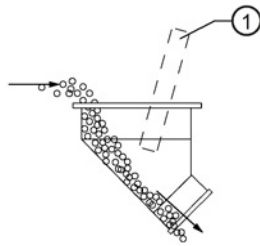
**Flowmeter in-feed chutes**

The flowmeter in-feed chute delivers the material from the bin or feeder discharge to the flowmeter flowguide. The ideal in-feed chute pre-conditions the material flow to minimize the effect of abrasion, velocity variation, feeder discharge trajectory variation, and pulsing.

**Feeder/flowguide transition**



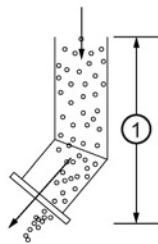
- reverse flowguide transition reverses direction of the bin or feeder material discharge before the material enters the flowmeter flowguide
- reversing direction forces the material into a desirable flow pattern rather than permitting material to be flung from the feeder, directly into the flowguide
- transition is especially important for high or variable speed feeders



① baffle plate

- forward flowguide transition maintains the material in the same direction between the bin or feeder discharge and the flowmeter flowguide
- transition is acceptable for a low and constant velocity feeder
- if a forward flowguide transition must be used for a high or variable speed feeder application, install a baffle plate

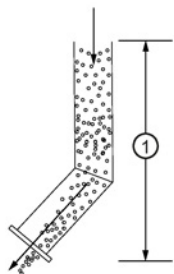
### Short fall chute



① &lt; 0.6 m (2 ft)

- material in-feed chute where the bin or feeder discharge to flowmeter flowguide fall is less than 0.6 m (2 ft)
- material velocity due to gravity minimized
- chute centreline and angle should coincide with that of the flowguide, for a distance greater than or equal to the flowguide diameter (before the flowguide inlet)

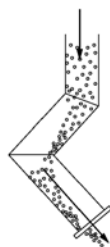
### Long fall chute



① &gt; 0.6 m (2 ft)

- material in-feed where the bin or feeder discharge/flowguide fall is more than 0.6 m (2 ft)
- less desirable than the short fall chute because material velocity is greater, increasing flowmeter component abrasion
- greater distances after chute angle changes required to settle material into desirable flow patterns

### Dogleg



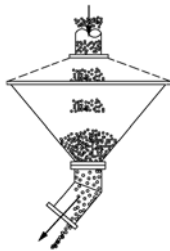
- used to reduce the detrimental effect of high or variable material velocity, especially when using a long fall chute
- for abrasive materials, line the chute with an abrasion resistant material, or use an in-feed deadbox

### Deadbox

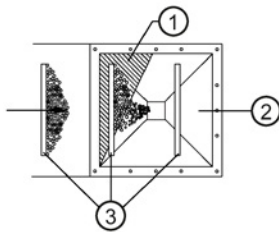


- installed where the chute angle changes. This will cause the material to impact upon itself, rather than the chute surface.
- used when the feeder discharge velocity is high, variable, where long fall chute angles change, and if the material is particularly abrasive

### Pulsing feeder discharge damping



- install a temporary holding bin to receive pulsing material discharge from a feeder. Then the material is gravity fed from the bin to the flowmeter flowguide.
- provide manual or automatic control to ensure the holding bin is neither emptied nor overfilled while the feeder is in operation.
- bin could also be used for the integrator on-line calibration, (if so equipped). Refer to the integrator instruction manual for bin requirements.



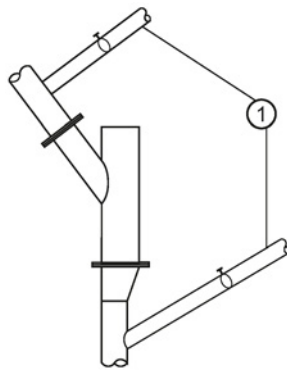
Top view

- ① baffle
- ② conveyor discharge
- ③ slats

- for drag conveyors, use a baffle plate installed at the conveyor discharge to reduce the heavy material pulsing associated with this type of feeder



### In-feed/discharge air pressure



① to common dust collector

- Vent the in-feed and discharge chutes to a common dust collector if a material in-feed/discharge differential air pressure is anticipated and rotary airlock feeders are not used.
- A tuning gate can be installed in each vent to balance the air pressure.
- If a dust collector is not used, an air bypass chute can be installed between the flowmeter in-feed and discharge chutes.

## Installing/Mounting

** CAUTION**

Installation shall be performed only by qualified personnel in accordance with local governing regulations.

### Preparation

Prepare the site in accordance to the Siemens installation drawing(s) that are available for download from our website: Siemens weighing (<http://www.siemens.com/weighing>). If there is confusion or doubt to do with the installation, please consult your Siemens representative.

** CAUTION**

When unpacking the flowmeter, avoid subjecting the unit to mechanical shock. Excessive mechanical shock can cause damage to the housing or load cell/sensing plate assembly.

The flowmeter is shipped assembled with the sensing plate arrested to prevent damage to the load cells.

The flowmeter should be visually inspected for shipping damage. If damage is suspected, contact your Siemens representative and the shipping carrier.

** CAUTION**

When handling the flowmeter, ensure the shipping stops are in place to secure the sensing plate.

Never subject the flowmeter to shock by hitting it when trying to position it.

** WARNING****Welding**

Use extreme caution when arc welding in the area of the flowmeter to ensure that no welding current flows through the flowmeter, risking destruction of the load cell(s).

## Load cell handling

 <b>WARNING</b>
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Negative displacement on the load cell can functionally destroy the load cell. When handling the load cell, care must be taken not to force the gap open.
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## Installation

1. Set the flowmeter housing in place ensuring that the flowguide and outlet gaskets are correctly located (gaskets supplied by customer).
2. The housing must be vertical within 1° in two planes 90° apart.

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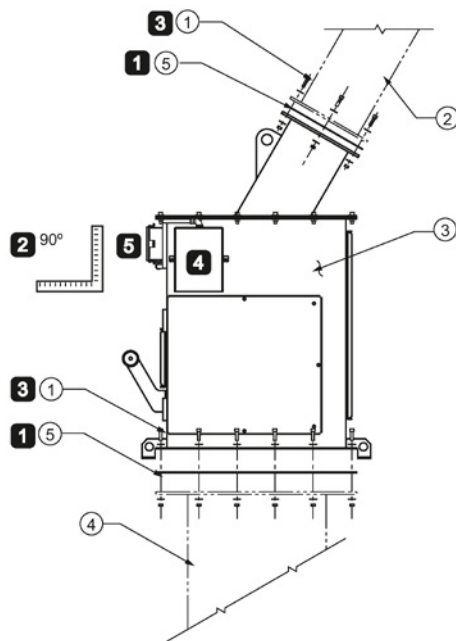
### Note

If the chute below the discharge cannot support the weight of the flowmeter a separate support structure should be connected to the mount pads of the flowmeter enclosure.

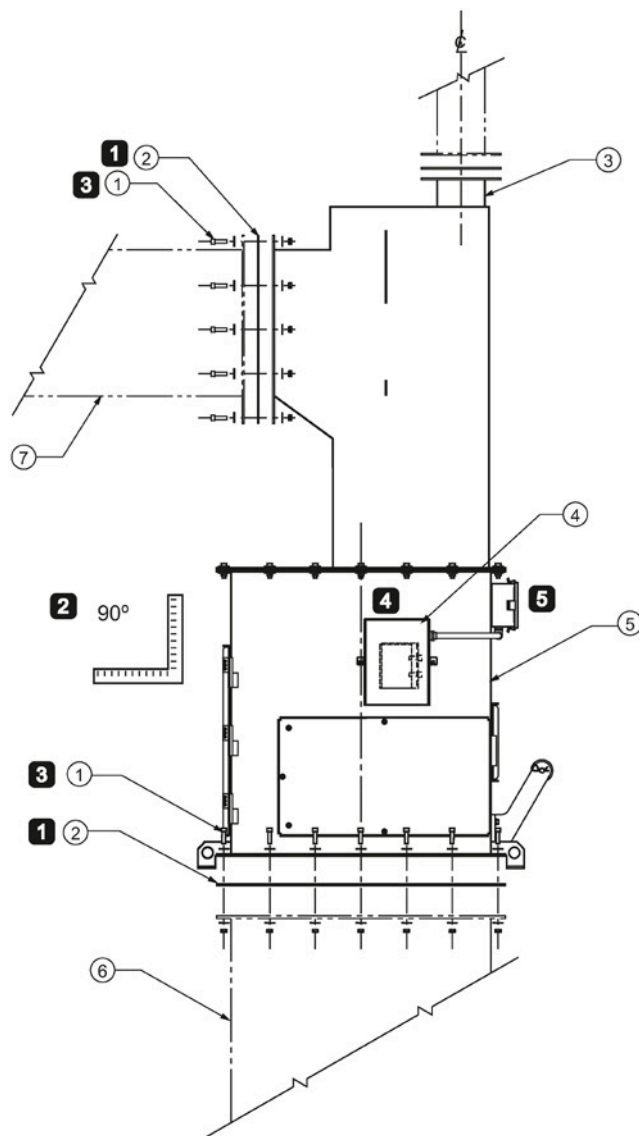
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3. Bolt the flowguide and outlet flanges to the process piping.
4. For WF250 applications a third port on the top of the flowmeter should have a de-dust connection installed to create a negative pressure to help separate the air from material flow.
5. Remove the shipping stops.
6. Ensure the sensing plate support cables are engaged in the mount brackets. These cables are part of the sensing parallelogram and support structure.

7. Connect the unit to the integrator.

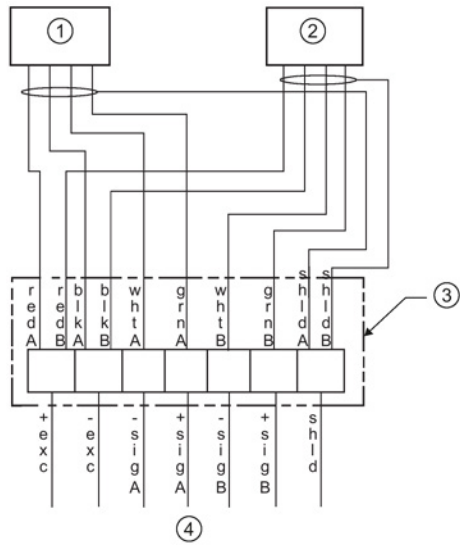


- ① Mounting hardware
- ② Infeed (customer supplied)
- ③ WF200 flowmeter
- ④ Discharge (customer supplied)
- ⑤ Gasket



- ① Mounting hardware
- ② Gasket
- ③ Dust collection port
- ④ Load cell (comes with cover)
- ⑤ WF250 flowmeter
- ⑥ Discharge (customer supplied)
- ⑦ Infeed (customer supplied)

## Connecting



- ① Load cell A
- ② Load cell B
- ③ Junction box (not provided on hazardous option)
- ④ To integrator

Load cell	WF200 and WF250	Milltronics Integrator	SIWAREX FTC
A	RED	+ EXC	+ EXC
	BLK	- EXC	- EXC
	WHT	- SIG 'A'	- SIG
	GRN	+ SIG 'A'	+ SIG
	SHIELD	SHIELD	SHIELD
B	RED	+ EXC	+ EXC
	BLK	- EXC	- EXC
	WHT	- SIG 'B'	- SIG
	GRN	+ SIG 'B'	+ SIG
	SHIELD	SHIELD	SHIELD

## Commissioning

After all parts of the flowmeter system have been properly installed and connected, the flowmeter system and integrator must be calibrated. The calibration is done using the test weight(s) initially, however material tests are recommended to achieve the greatest accuracy. Refer to the integrator instruction manual for programming and calibration details and for information about material tests. All operating instructions are available for download from our website:

Siemens weighing (<http://www.siemens.com/weighing>)

### Test rate

The test rate is the material flowrate represented by the test weight. The test weight is used to simulate the horizontal forces of the material hitting the sensing plate.

### Calculating the test weight and test rate

Select the test weight to represent a calibration point of 60 to 80% of the design flowrate based on the flowmeter calibration constant of 45 g/T/H (tons per hour).

$$\text{Test weight} = \text{Design flowrate} \times \text{Calibration point} \times \text{Calibration constant}$$

$$\text{Test rate} = \text{Test weight} \div \text{Calibration constant}$$

Figure 6-1 The calibration constant represents an average of a range of values covering various material flow arrangements and materials handled by the flowmeter. It is an approximate value to be used in the calculation of the test rate. Through the running of material tests, the test rate may be factored to obtain an optimum value which should lie in the range of 50 to 100% of the design rate. The test rate should never exceed 100% of the design rate.

### For example:

If the design flowrate is 500 T/H, then:

$$\begin{aligned} \text{Test weight 60\%} &= 500 \text{ t/h} \times 60\% \times 45 \text{ g/t/h} \\ &= 13500 \text{ g} \end{aligned}$$

$$\begin{aligned} \text{Test weight 80\%} &= 500 \text{ t/h} \times 80\% \times 45 \text{ g/t/h} \\ &= 18000 \text{ g} \end{aligned}$$

Therefore the test weight should be between 13500 and 18000 g.

If an available test weight of 15000 g is used, then:

$$\begin{aligned}\text{Test rate} &= 15000 \text{ g} \div 45 \text{ g t/h} \\ &= 333.33 \text{ t/h}\end{aligned}$$

Perform the zero calibration as described in the Calibration section of the integrator manual.

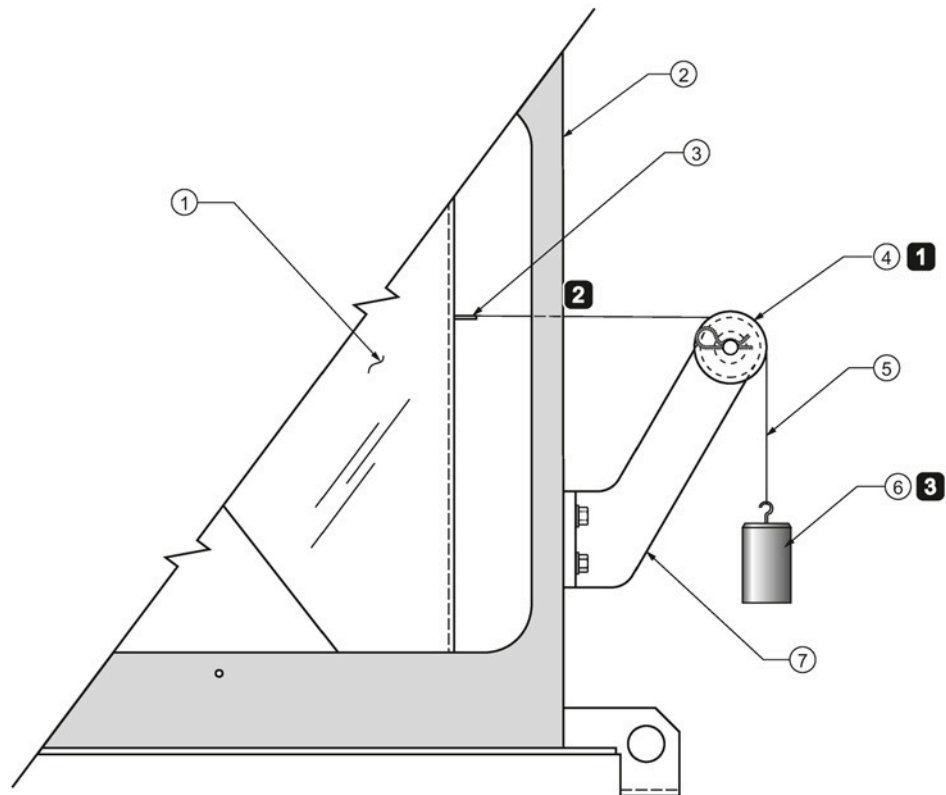
After the completion of the zero calibration, a span calibration, as described in the integrator instruction manual, can be performed with the test weight(s) applied.

## Span

1. Install the calibration pulley to the bracket on the flowmeter housing.
2. Remove the calibration cover from the enclosure.
3. Hang the test weight over the calibration pulley using the test weight cable secured to the back of the sensing plate.
4. Perform the span calibration as described in the calibration section of the integrator instruction manual.



5. After the span calibration has been completed, remove the test weight and pulley and store them.
6. Replace the enclosure cover.



- ① Sensing plate
- ② Enclosure
- ③ Hook
- ④ Calibration pulley
- ⑤ Cable
- ⑥ Test weight
- ⑦ Calibration bracket (mounted on enclosure)

## Material Test

Calibration of the flowmeter by test weight is not a dynamic simulation and yields only an approximate span calibration. Effective material flow, friction, and velocity can only be reproduced by running actual material tests.

At least two 5 minute samples should be taken to ensure repeatability. Refer to material test and subsequent factoring of the flowmeter sections of the integrator manual.

## Re-rating

Consult your local Siemens representative for re-rating.

# Service and maintenance

## Periodic recalibration

If the flowmeter is properly installed, the zero and span calibrations will require limited attention. However, to maintain the flowmeter's accuracy, redo the zero and span calibration periodically. The frequency of recalibration is dependent on the application in which the flowmeter is being used and the severity of its operating conditions. Perform frequent recalibrations initially and note the deviations, then reduce the frequency as time and experience dictate.

Refer to the Programming and calibration sections of the integrator manual.

## System checks

 **WARNING**

On hazardous approved flowmeters the load cell has an extra protective cover that protects the electronic circuitry within the cell. Periodically clean the gap between the cover and the cell to ensure material does not build up and reduce or stop deflection of the sensing plate.

If material sticks to the sensing plate, clean the impingement area regularly. If sticking of the material persists, contact your Siemens representative.

Check for material bridging across the load cell or sensing plate to the housing which can restrict the movement of either component.

 **WARNING**

Do not strike the flowmeter, its components, or adjacent piping to dislodge material.

Check for wearing of the sensing plate. If wear is excessive contact your Siemens representative.

## Cleaning

The flowmeter's access door seal is removable for quick and easy cleaning.

 **CAUTION**

Spraying the load cell directly with high pressure may damage the load cell.

## Spare parts

The following are the recommended spare parts. As each may be available in more than one option, consult Siemens for assistance in ordering spare parts. In all correspondence please quote the serial number of the unit for which the parts are required.

- Load cell
- Sensing plate
- Sensing plate support shaft bellows
- Sensing plate support shaft bearings
- Sensing plate support cables

## Replacing a load cell

Remove the load cell cover from the housing for replacement or maintenance:

1. Open the access doors on the enclosure.
2. Dis-connect the load cell.
3. Remove the bearing mount hardware from the load cell mount
4. Allow the sensing plate support shaft to rest on the bottom of the opening into the enclosure

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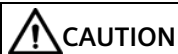
### Note

The bearings are self aligning spherical roller style which allow for minimal movement

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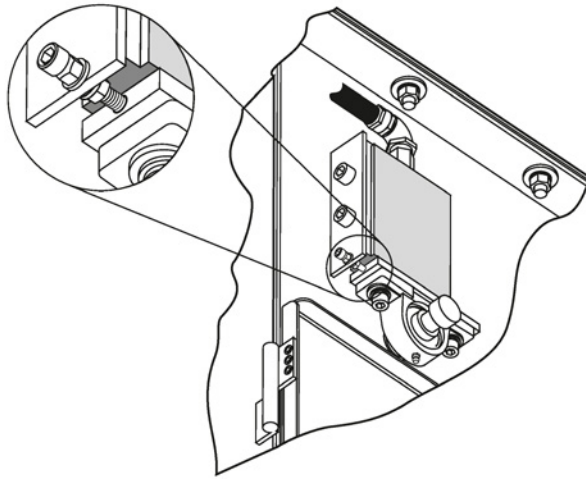
5. Remove load cell mounting screws (4 places), and then remove load cell and pull cable through conduit.
6. Repeat steps in reverse for loadcell replacement

## Installing the shipping stop



When moving the unit reinstall the shipping stop to prevent damage to the load cell/sensing plate assembly.

1. With the sensing plate resting in its static position, insert shipping bolt as shown.
2. Tighten the nuts against the mount plate to secure the bolt in place.



### Unit repair and excluded liability

All changes and repairs must be done by qualified personnel and applicable safety regulations must be followed. Please note the following:

- The user is responsible for all changes and repairs made to the device.
- All new components must be provided by the Siemens Milltronics Process Instruments Inc.
- Only repair faulty components.
- Do not re-use faulty components.

## Technical specifications

### Accuracy

± 1 % of full scale, higher accuracy with linearizing function of integrator

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.

### Load cell

construction	17-4 PH (1.4568) stainless steel construction with 304 (1.4301) stainless steel cover.
degree of protection	IP67 rated
excitation	10 V DC nominal, 15 V DC maximum
output	2 mV/V excitation at rated load cell capacity
non-linearity	0.02% of rated output
hysteresis	0.02% of rated output
non-repeatability	0.01% of rated output
capacity	50, 100 lb
overload	safe 150% of rated capacity ultimate 300% of rated capacity
temperature	-40 to 75°C (-40 to 167°F) operating range -18 to 65°C (0 to 150°F) compensated

### Nominal sizes

WF200	500 tph, 900 tph
WF250	500 tph, 900 tph

### Flow rate

200 to 900 t/h (220 to 990 STPH)	
----------------------------------	--

### Volumetric capacity

500 tph: 450 m <sup>3</sup> /hr (16,000 ft <sup>3</sup> /hr)	
900 tph: 820 m <sup>3</sup> /hr (29,000 ft <sup>3</sup> /hr)	

**Product**

fine powder to 25 mm (1")	
---------------------------	--

**Operating temperature**

-40 to 65 °C (-40 to 150 °F)	
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**Material temperature**

-40 to 150 °C (-40 to 300 °F)	
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**Repeatability**

0.2%	
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**Construction**

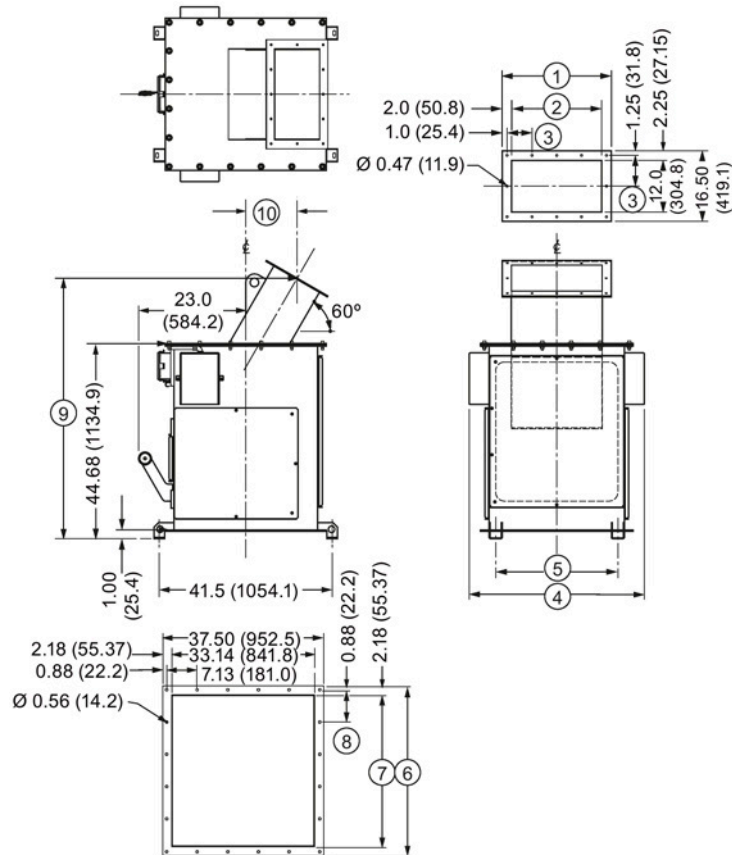
assembly	all welded housing and flowguide
material	mild steel, polyester powder painted
gasketing	FDA approved silicone
sensing plate	304 (1.4301) stainless steel

**Approvals**

US/Canada	CSA/FM Class II, Div. 1, Groups E, F, G and Class III
Europe	ATEX II 2D Ex tb IIIC T80°C Db IP65 CE
UK	UKEX II 2D Ex tb IIIC T80°C Db IP65 UKCA
International	IECEX Ex tb IIIC T80°C Db IP65
Australia	RCM
Russia	Ex tb IIIC T80°C Db X

## Dimension drawings

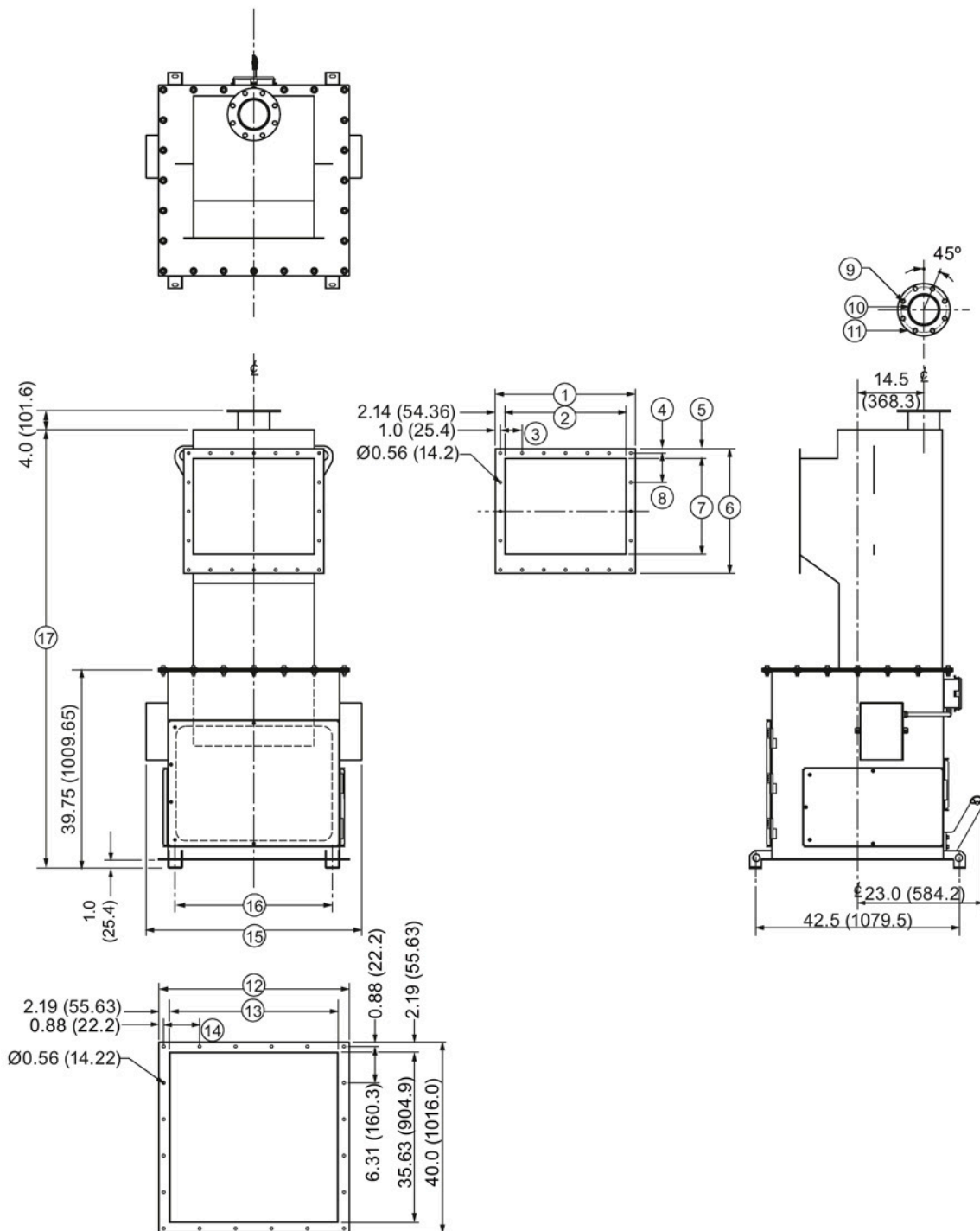
### 9.1 SITRANS WF200 Dimensions



	500 t/h	900 t/h
①	25.0 (635.0)	30.0 (762.0)
②	21.0 (533.4)	26.0 (660.4)
③	5.75 (146.1), 4 places	7.0 (177.8), 4 places
④	40.68 (1033.3)	46.68 (1185.7)
⑤	29.13 (739.8)	35.13 (892.2)
⑥	35.5 (901.7)	41.5 (1054.1)
⑦	31.14 (791.0)	37.14 (943.4)
⑧	6.75 (171.5), 5 places	6.63 (168.3), 6 places
⑨	59.0 (1498.6)	64.0 (1625.6)
⑩	11.97 (304.1)	14.86 (377.4)

Dimensions in inch (mm)

## 9.2 SITRANS WF250 Dimensions



	500 t/h	900 t/h
①	29.37 (746.0)	41.27 (1048.2)
②	25.10 (637.5)	37.0 (939.8)
③	4.56 (115.9), 6 places	6.56 (166.62), 6 places



④	0.74 (18.8)	0.94 (23.8)
⑤	3.13 (79.5)	3.19 (81.03)
⑥	22.38 (568.3)	26.38 (669.9)
⑦	16.13 (409.8)	20.0 (508.0)
⑧	5.13 (130.2), 4 places	6.13 (155.6), 4 places
⑨	Ø0.75 (19.1), 8 places	Ø0.88 (22.2), 8 places
⑩	Ø4.07 (103.4)	Ø6.07 (154.1)
⑪	Ø9.0 (228.6)	Ø11.0 (279.4)
⑫	40.0 (1016.0)	52.0 (1320.8)
⑬	35.63 (904.9)	47.63 (1209.7)
⑭	6.31 (160.3), 6 places	7.13 (181), 7 places
⑮	45.18 (1147.6)	57.18 (1452.4)
⑯	33.0 (838.2)	45.0 (1143.0)
⑰	81.88 (2079.75)	91.0 (2311.4)

Dimensions in inch (mm)

# Product documentation and support

## A.1 Product documentation

Process instrumentation product documentation is available in the following formats:

- Certificates (<http://www.siemens.com/processinstrumentation/certificates>)
- Downloads (firmware, EDDs, software) (<http://www.siemens.com/processinstrumentation/downloads>)
- Catalog and catalog sheets (<http://www.siemens.com/processinstrumentation/catalogs>)
- Manuals (<http://www.siemens.com/processinstrumentation/documentation>)

You have the option to show, open, save, or configure the manual.

- "Display": Open the manual in HTML5 format
- "Configure": Register and configure the documentation specific to your plant
- "Download": Open or save the manual in PDF format
- "Download as html5, only PC": Open or save the manual in the HTML5 view on your PC

You can also find manuals with the Mobile app at Industry Online Support (<https://support.industry.siemens.com/cs/ww/en/sc/2067>). Download the app to your mobile device and scan the device QR code.

### Product documentation by serial number

Using the PIA Life Cycle Portal, you can access the serial number-specific product information including technical specifications, spare parts, calibration data, or factory certificates.

#### Entering a serial number

1. Open the PIA Life Cycle Portal (<https://www.pia-portal.automation.siemens.com>).
2. Select the desired language.
3. Enter the serial number of your device. The product documentation relevant for your device is displayed and can be downloaded.

To display factory certificates, if available, log in to the PIA Life Cycle Portal using your login or register.

#### Scanning a QR code

1. Scan the QR code on your device with a mobile device.
2. Click "PIA Portal".

To display factory certificates, if available, log in to the PIA Life Cycle Portal using your login or register.

## A.2 Technical support

### Technical support

If this documentation does not completely answer your technical questions, you can enter a Support Request (<http://www.siemens.com/automation/support-request>).

For help creating a support request, view this video here ([www.siemens.com/opensr](http://www.siemens.com/opensr)).

Additional information on our technical support can be found at Technical Support (<http://www.siemens.com/automation/csi/service>).

### Service & support on the Internet

In addition to our technical support, Siemens offers comprehensive online services at Service & Support (<http://www.siemens.com/automation/serviceandsupport>).

### Contact

If you have further questions about the device, contact your local Siemens representative at Personal Contact (<http://www.automation.siemens.com/partner>).

To find the contact for your product, go to "all products and branches" and select "Products & Services > Industrial automation > Process instrumentation".

Contact address for business unit:

Siemens AG  
Digital Industries  
Process Automation  
Östliche Rheinbrückenstr. 50  
76187 Karlsruhe, Germany

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