

Instruction Manual • February 2004



milltronics

A SERIES

SIEMENS

Safety Guidelines

Warning notices must be observed to ensure personal safety as well as that of others, and to protect the product and the connected equipment. These warning notices are accompanied by a clarification of the level of caution to be observed.

Qualified Personnel

This device/system may only be set up and operated in conjunction with this manual. Qualified personnel are only authorized to install and operate this equipment in accordance with established safety practices and standards.

Warning: This product can only function properly and safely if it is correctly transported, stored, installed, set up, operated, and maintained.

Note: Always use product in accordance with specifications.

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While we have verified the contents of this manual for agreement with the instrumentation described, variations remain possible. Thus we cannot guarantee full agreement. The contents of this manual are regularly reviewed and corrections are included in subsequent editions. We welcome all suggestions for improvement.

Technical data subject to change.

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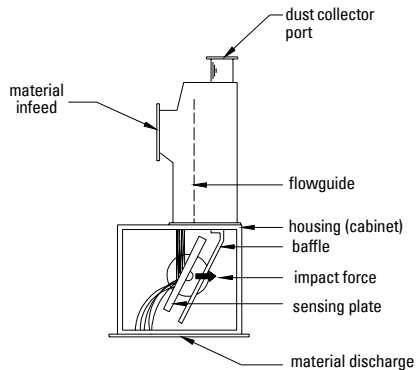
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Milltronics A Series Solids Flowmeters

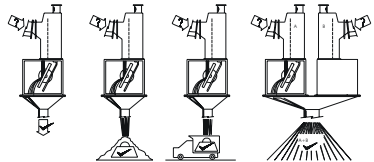
Milltronics A Series solids flowmeters are heavy-duty low- to medium-capacity flowmeters for light density powders conveyed by aerated gravity conveyors.

The A-40 flowmeter is equipped with an ILE-37 sensing head and is suitable for material flowrates up to 40 t/h (44 STPH). The A-300 flowmeter, with an ILE-61 sensing head, is suitable for up to 300 t/h (330 STPH).



The flowmeter sensing head LVDT output signal is processed by the integrator (ordered separately) to:

- monitor material flow
- maintain accurate material inventory
- provide batch control for process or loadout purposes¹
- control the ratio of materials in continuous blending processes¹



The following components complete each Milltronics A Series flowmeter system.

- A series flowmeter housing (cabinet) and flowguide
- ILE-37 or ILE-61 sensing head (ordered separately)
- stainless steel sensing plate (ordered separately)
- electronic flowmeter integrator (ordered separately)

The Manual

This instruction manual covers the installation, operation and maintenance of the A Series solids flowmeter.

Please refer to this manual for proper installation and operation of any component of the system to which the A Series is being applied. Adhering to the installation and operating procedures will ensure a quick, trouble-free installation and allow for the maximum accuracy and reliability of your weighing system. Because the A Series is used in conjunction with an integrator and sensing head, refer to the instruction manuals for those devices as well.

If you have any questions, comments, or suggestions about the manual contents, please email us at techpubs@siemens-milltronics.com.

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¹ additional equipment required

Specifications

Model

- A-40
- A-300

Product

- fine powder up to 3 mm (0.13")

Product Temperature

- -40 to 232 °C (-40 to 450 °F)
- -40 to 400 °C (-40 to 750 °F) (optional)

Ambient Temperature

- -40 to 60 °C (-40 to 140 °F)

Accuracy

- $\pm 1\%$, 33 to 100 % of design capacity; extended accuracy range with linearization function of integrator

Repeatability

- $\pm 0.2\%$

Capacity Range

- A-40: 0.2 to 40 t/h (0.2 to 44 STPH)
- A-300: 20 to 300 t/h (22 to 330 STPH)

Construction

- painted mild steel flowguide and sensing plate housing and AISI 304 (1.4306) stainless steel sensing plate
- optional special materials and coatings for flowguide and sensing plate
- A-40: ILE-37¹ sensing head (base mount), cast aluminum with fibreglass cover
- A-300: ILE-61 sensing head, cast aluminum with fibreglass cover

Approvals

- CSA certified, general purpose (sensing head)
- CE²

Options

- 304 (1.4301) or 316 (1.4404) stainless steel housing and flowguide assembly
- PTFE or Abrasion Resistant flowguide lining
- CSA Class I, Groups C and D; Class II, Groups E, F, and G (sensing head)

1. The ILE-37 is available in side mount version (supported by the housing) or base mount version (supported separately from the housing).

2. EMC performance available upon request.

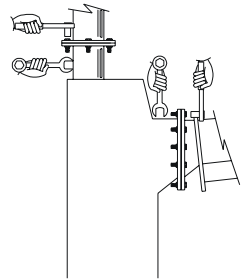
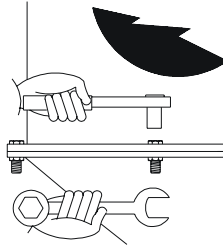
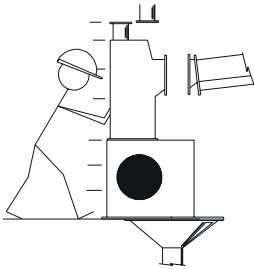
Installation

Location

Install Milltronics A Series solids flowmeter in an area that is suitable for the system approval rating. Maintain sufficient clearance to permit: opening the housing door for sensing plate access and removing the sensing head rear cover for calibration purposes.

1. Position the flowmeter into the desired location.
2. If necessary, shim the housing base to level.
3. Fasten the housing discharge to the downstream material chute.
4. Fasten the flowguide to the conveyor/flowguide transition chute.
5. Fasten the dust collector port to the dust collector pipe.
6. Refer ILE-37 or ILE-61 sensing head instruction manuals for sensing head installation, levelling, sensing plate installation, and integrator interconnection instructions.
7. Tune the dust collector port air volume to match that of the aerated gravity conveyor exhaust port, and the downstream dust collector port.

Note: Ensure sufficient mechanical support is provided for the flowmeter and chutework.



Applications

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

Materials

Material characteristics for best results:

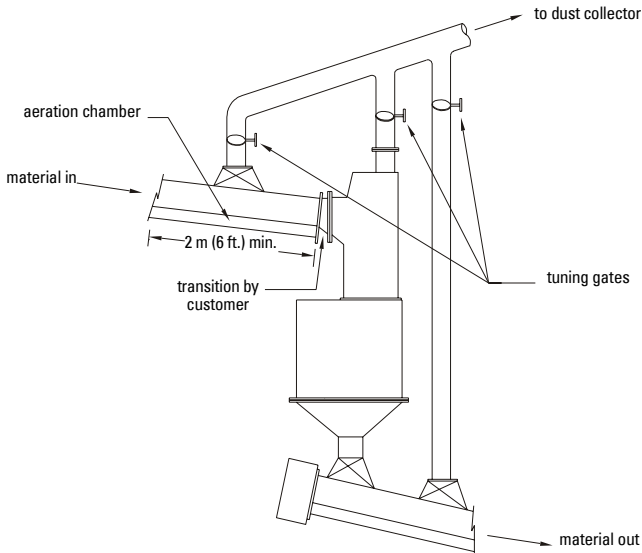
- low cohesion (flows well in aerated state, similar to a liquid)
- low adhesion (does not stick to surfaces)
- low abrasion (will not wear out chutes, flowguide or sensing plate)
- low causticity (will not damage internal flowmeter components)

Materials such as powdered alumina, limestone, and finished cement are ideally suited to aerated gravity conveyor and A Series flowmeter applications.

Material Feed

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.

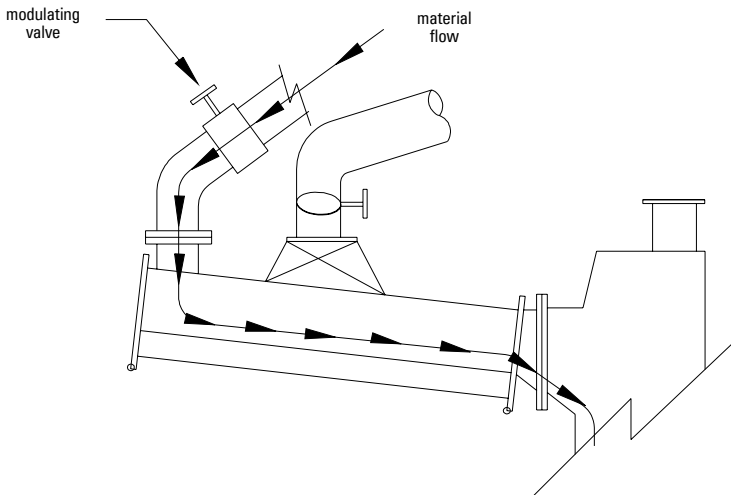
Make sure the the flowmeter discharge chute is large enough so material cannot back up into the flowmeter housing.



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.



Maintenance

Checks

If material sticks to the sensing plate, incorporate a program to ensure that the impingement area remains clean. If sticking persists, contact your Siemens Milltronics representative.

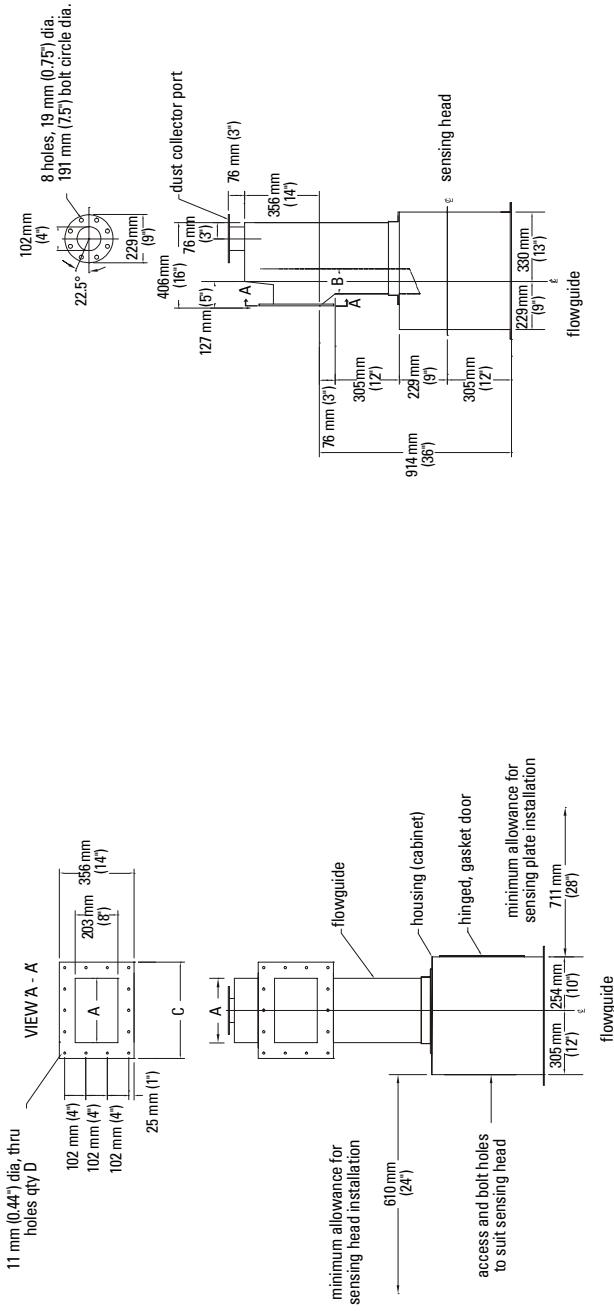
Check for wearing of the sensing plate. If wear is excessive, contact your Siemens Milltronics representative.

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:

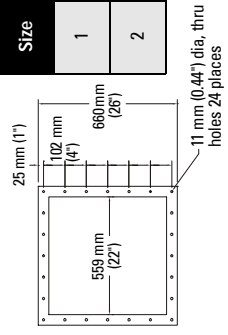
- The user is responsible for all changes and repairs made to the device.
- All new components must be provided by Siemens Milltronics Process Instruments Inc.
- Restrict repair to faulty components only
- Do not re-use faulty components.

A-40 Outline & Mounting

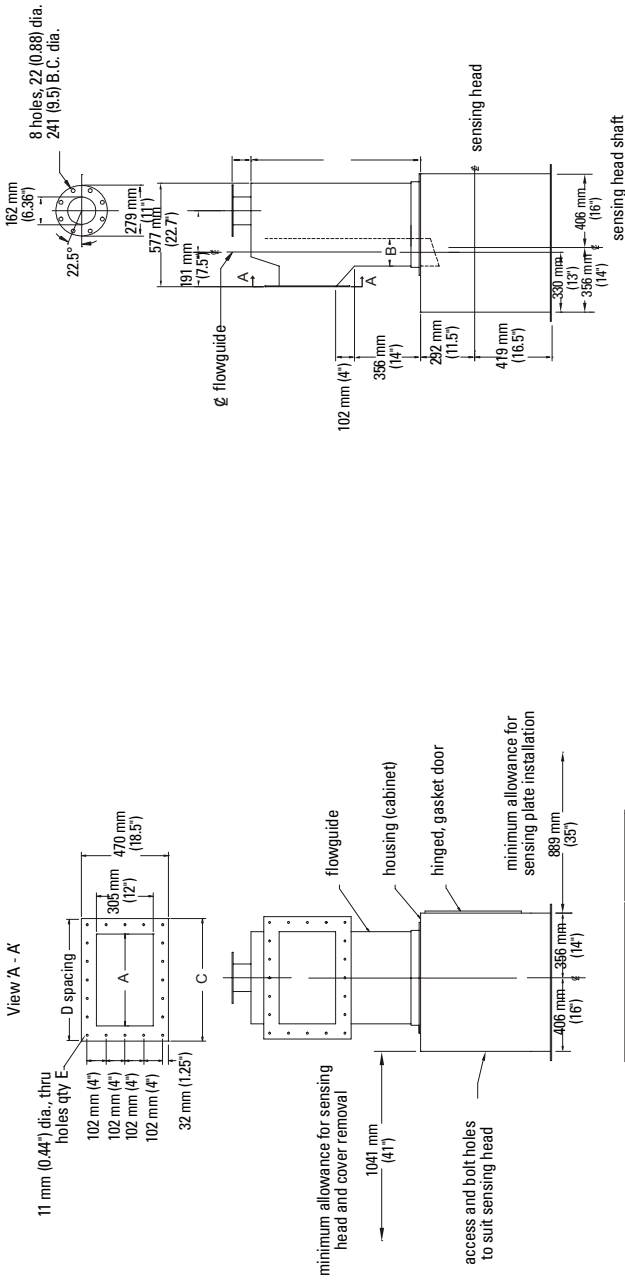


Notes:
 1. Mild steel or stainless construction.
 2. Sensing head support should be rigid and independent of housing.

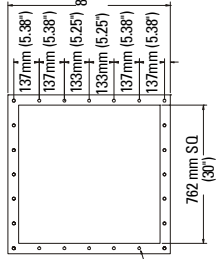
Size	A	B	C	D	Max. flow @ 50 pcf (0.8 t/m ³)
1	203 mm (8")	76 mm (3")	356 mm (14")	12	20 t/h (22 STPH)
2	305 mm (12")	102 mm (4")	457 mm (18")	14	40 t/h (44 STPH)



A-300 Outline & Mounting



Size	A	B	C	D	E	Max. Flow @ 50 pcf (0.8 l/m ³)
1	254 mm (10")	127 mm (5")	419 mm (16.5")	4 @ 90 mm (4 @ 3.5")	16	80 t/h (88 STPH)
2	356 mm (14")	152 mm (6")	521 mm (20.5")	4 @ 114 mm (4 @ 4.5")	16	160 t/h (176 STPH)
3	508 mm (20")	178 mm (7")	673 mm (26.5")	6 @ 102 mm (6 @ 4")	20	300 t/h (330 STPH)



Notes:

1. Mild steel or stainless construction.
2. Sensing head support should be rigid and independent of housing.

14 mm (0.56") dia. thru holes 24 places

Notes

Notes



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