

### Technical Introduction

S123 loss-in-weight feeder is suitable for metered feeding of Granule or Powder or Premixture material of Granule and powder.

S123 systems is suitable for continuous production processes. Such as mixing granulation, food and chemical production processes.

The optimized modular design can be fed both as a volumetric feed and as a Metered Loss-in-Weight feed material, so that the whole system can better adapt as per customer' s processing process formula changes.

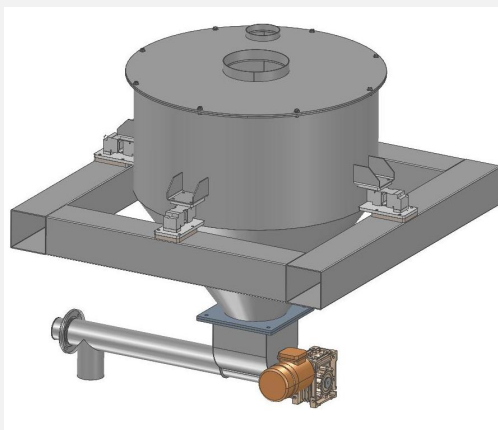
Based on the Loss-in-Weight principle, the S123 continuously monitors the flow rate and motor speed of the raw material and double closed-loop control, ensuring that the typical accuracy value is better than  $\pm 0.25\%$ .

The S123 silo is made of stainless steel and the part in contact with the raw material is mirror polished. It' s simple, quick disassembly and easy removal feature takes a very few minutes to clean material in the equipment, which reduces the cleaning time to minimum.

S123 comes with optimize design that provide different types of Single screws to push various sizes and characteristics of Granule. The horizontal mechanical stirring module of the feeder can solve the problem of raw materials with high viscosity and difficult flow

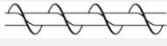

S123 reducer adopts the latest optimized design of high-precision gear transmission, which is suitable for screw and horizontal agitator. The link provides integrated power to both mechanisms.

S123 has obtained the European CE safety design standard certification, electronic controller has undergone strict EMC Standard test.



### Screw and Feeding range

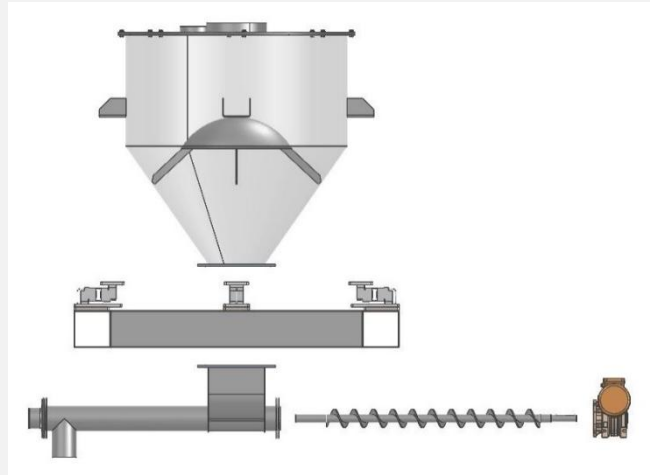
Note: The correct selection of screw is based on specific raw materials and has been fully tested to confirm. Different raw material characteristics determine the actual feeding range. If you need a specific and accurate feeding range, please provide us with raw materials, we can test and conform in our laboratory. The feeding data in the following table is a theoretical reference value and can only be used as a reference for selection.

	Single Concave Screw 	Single Concave Screw 		Screw Speed Range
Diameter	100*100mm	120*120mm		
Big Pitch	600 – 6000 dm <sup>3</sup> /h	900-9000 dm <sup>3</sup> /h		14 – 140 Rev/min

Material	Screw	400	500	600	800	1000	2000	3000	4000	5000	Kg/h	
PE, PP	100100A											
PET, PC	100100A											

## Standard Structure

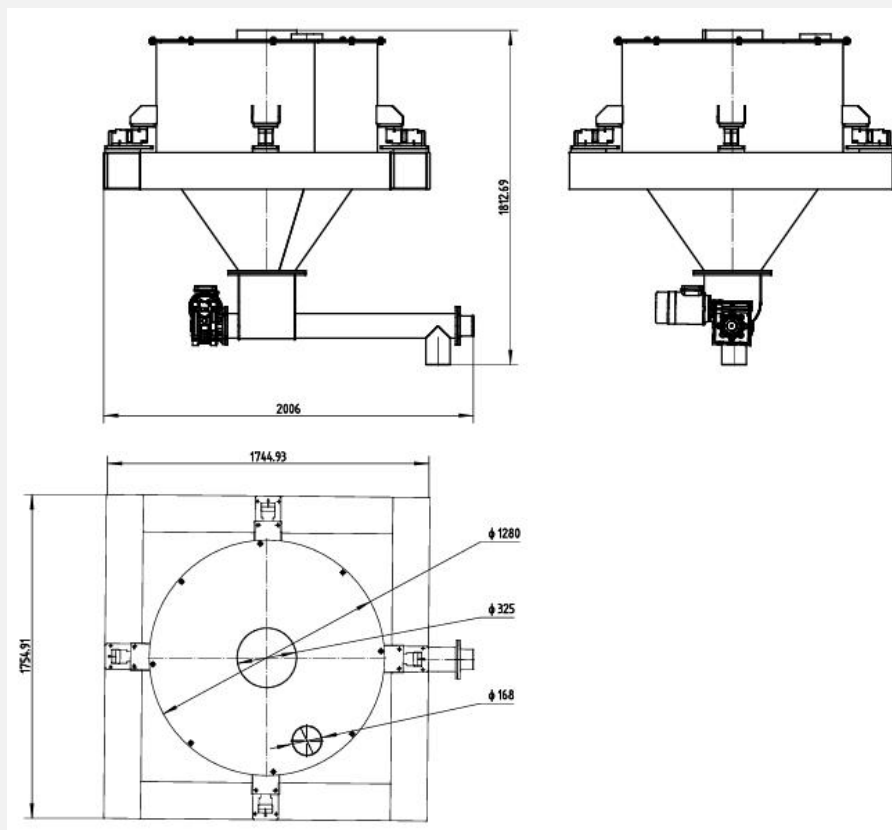
<b>Inlet Soft Connector:</b>	D325mm Silicone Material
<b>Dosing Hopper:</b>	1000L SUS304 (Standard)
<b>Single Screw:</b>	316 Material, D100 – 120mm
<b>Motor:</b>	2.2Kw AC motor (Standard)
<b>Weighing Unit:</b>	3000kg FTD Digital transmitter
<b>Feed Tube:</b>	D133mm
<b>Outlet Soft Connector:</b>	D133mm 硅胶材质



## Design parameters

<b>Material :</b>	4K Stainless Steel Mirror
<b>Sealing Parts:</b>	Silicone or PTFE
<b>Material Temperature :</b>	≤160°C (Standard)
<b>Ambient Temperature :</b>	0°C-50°C
<b>Ambient Humidity :</b>	≤80%
<b>Protection Class :</b>	IP54
<b>Power Supply :</b>	380V±10%, AC, 3P, 50Hz
<b>Loading Power</b>	2.2Kw AC (Max.)
<b>Weight :</b>	800kg
<b>Exterior Color :</b>	RAL7035

## Mechanical Drawing



### Non-Standard Design

Silo Material	Available in stainless steel 316 with mirror polished interior
Explosion-Proof Design	Zone 21, Dust Explosion Proof, EXII DBT4 (Explosion Motor, Explosion load cell)

### Paid Spare Parts List

Material Name	Model Specifications	Part code
Inlet Soft Connector	D325mm/ Silicone	413ISC00168S001I01
Outlet Soft Connector	D132mm/ Silicone	413ISC00114S001I02
Exhaust Bag	HP168E-240-1PP	4110HP00168E2401PP
AC Motor	MS100L 4B14/50Hz 2.2kw	4300GR002200B14
Inverter	DV1-345D0NB-C20CX1	4400ID002200001
LIW Control Panel	EC-LW	4110ECLW0STM32000I02

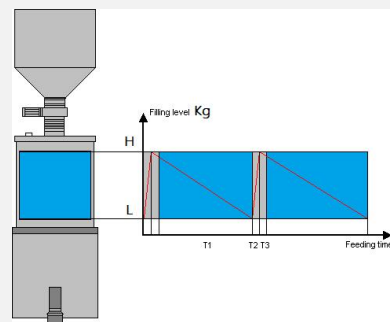
### Associated Configuration

7" HMI Operation Controller	M240 HMI Operation Controller
12" HMI Operation Controller	M280 HMI Operation Controller
Communication Module	TS180 Modbus RTU ->Profinet
Refill Valve	ISVD300 - 300mm Slide Valve
Refill Pipe	IDO325-100 – 325mm/L1M

### Loss-In-Weight-Refill Control Time

Typical Refill Number as below form:

Typical Maximum Capacity	6000Kg/hr
Diameter of Refill valve	300mm Slide Valve
Volume of Dosing Hopper	1000L
Bulk Density	0.7kg/l
Typical Refill Weight	560Kg
Refill Number	≤15 times/hr



## Feeding Accuracy

Sampling Measurement	Usually take 15 samples and 60s for one sample (If need Special Requirement, please reference below accuracy form for 5s/10s/15s/30s)
Feeding Range	15: 1 Times Screw
Linear Accuracy	±0.25%-0.5% at 60sec
Repeatability Accuracy	≤0.5% at 2 Sigma, Flow Characteristics of Material Determine Repeatability Accuracy

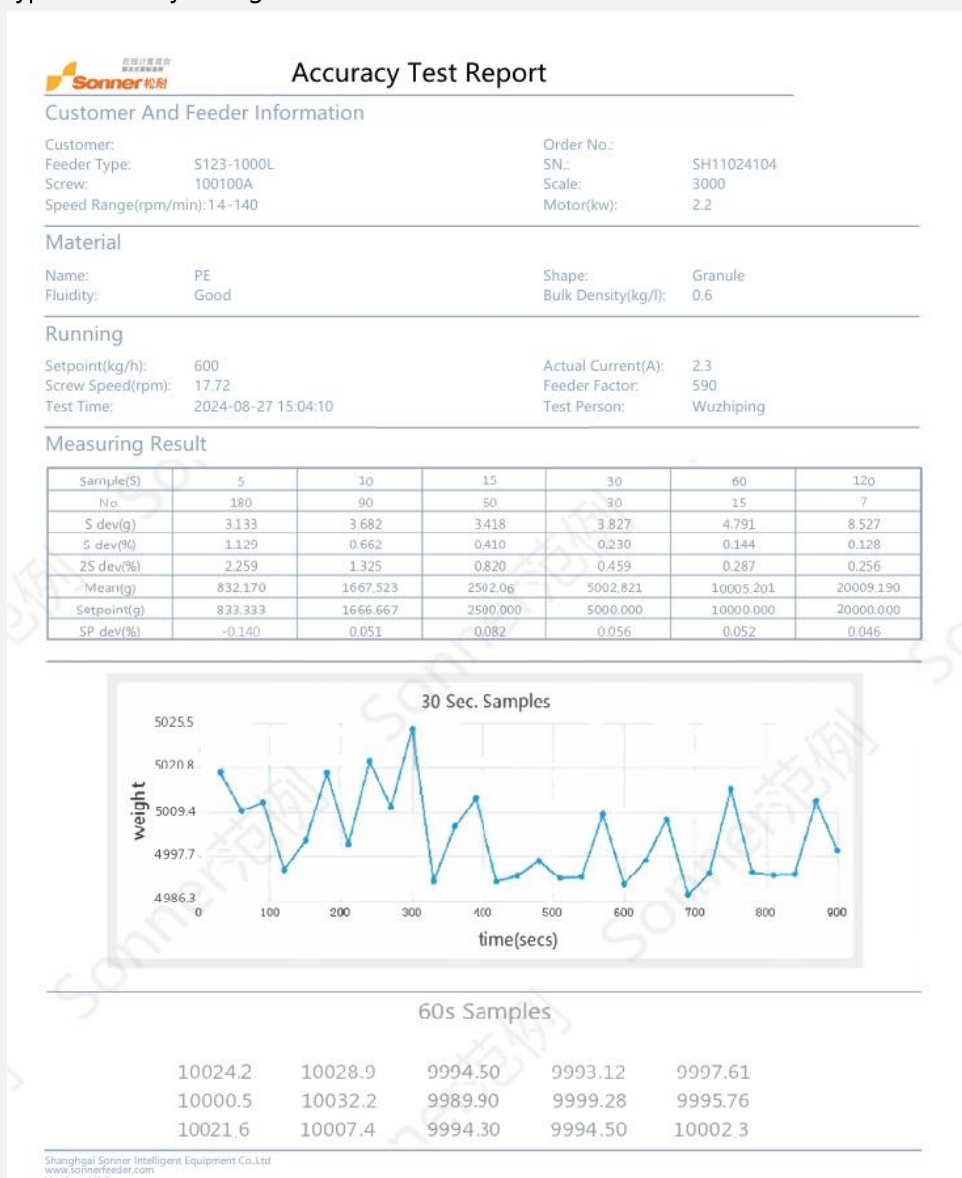
### Repeatability Accuracy:

It is based on the standard sample variance, which describes the flowrate of the screw feeder in a period of time and the discrete situation of several flow samples in each sampling period. It is one of the important indicators to describe the repeatability error of the screw feeder. The repetition error can be quantified based on the standard deviation.

### Linear Accuracy:

It describes the accuracy of each operating point with in the operating range of the feeder from the minimum federate to the maximum feed rate. That is the error between the actual feeding amount and the set amount in the whole range. Smaller the error higher is the linear accuracy of the feeder.

SFE123-100100A Typical Accuracy Testing Table



## Weighing Accuracy

Weigh Module	SP12-3000
Load cell Range	750Kg*4
Protection Class	IP65
Comprehensive Error	< $\pm 0.03\%$
Weighing Resolution	1: 4'000'000
Operating Temperature	-10 to +60 °C
Weight Signal Output	Digital Output Signal Via RS485
Baud Rate Range	9600 – 38400 baud
Sampling time	6ms – 4500ms programmable
Voltage	24VDC
Communication distance	< 500m
Operational characteristics	10ms dynamic weighing scanning cycle; 32-bit DSP high-precision weight calculation
Interference characteristics	Intelligent assessment of impact disturbance, the impact of continuous vibration disturbance on feeding operation
Suspension characteristics	Double shock absorber anti-mechanical interference design

The second generation of Sonner has completely independent intellectual property rights of weighing technology, based on 32-bit. DSP arithmetic function chip circuit design and perfect dynamic scale. Weighing software provides customers with highly dynamic weighing technology.

