

High accuracy micro feeders

MCPI *Fine dosing*[®] Opti-feeder FD- SPA

(A Class: resolution : 0.01 g - 3A Class: resolution : 1 mg - 4A Class: resolution : 0.1 mg)



Micro feeders *Fine dosing* SPA are probably the first on the market to reach such levels of excellence in term of accuracy, short dosing time and flexibility.

The patented principle of extraction is able to create high density shear forces to cut bonds existing between the particles of powder. Hence the size of agglomerates is reduced, and the output flow of powder is steady. This condition is a key for the control of flow rate and to reach high level of accuracy.

The ingredient is dosed in a small swivelling bowl fitted on an accurate load cell. Sensitive parts as motor reducer and scale are installed in a protective casing.

The integrated batch controller optimizes coarse and fine feeding with automatic tolerance control.

Fine dosing concept allows a ratio between coarse/ fine feeding over 100. This figure is a key point to reach fast dosing process and accuracy.

In automatic version, feeding is made in a weighed bowl, at the end of dosing stage the bowl rotate 360°. The ingredient is then emptied to the application point.

The ingredient can be, as well, feed directly in the final container or box, positioned (manually or automatically) on the scale.

Fine dosing FD SP A – 1110

M.C.P.I. - SAS

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Design of these feeders is made in agreement with drug and food industries requests for cleaning.

Technical data :

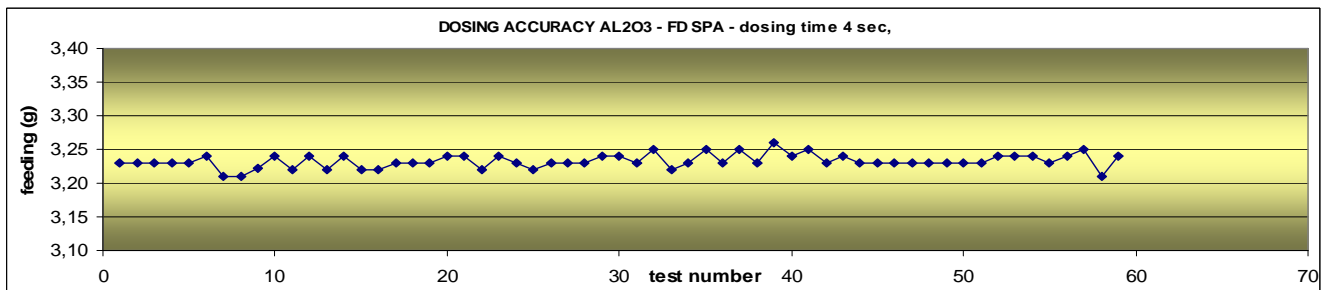
Dosing accuracy	Standard deviation from 1 mg depend on application parameters...
Load cell	A class : Analogical load cell, min interval 0.01 g 3A class : Numerical load cell, min interval 1mg 4 A class : Numerical load cell, min interval 0.1 mg
Min dosing time	From 3".
Min set point	From : 10 mg (4A class)
Cleaning	A complete emptying can be achieved Fast second outlet of ingredient (with larger flow rate is propose as option). Dismantling for cleaning in few seconds,
Discharge	A second outlet of ingredient is provided, the discharge in the opposite direction as feeding.
Control parameters	With adjustment of the outlet section, frequencies (coarse and fine feeding), preset point (commutation from coarse to fine feeding)
Rules	CE, GMP.



Some results .

FD-SPA- A

Type of ingredient	Set point	Dosing time	Standard deviation
Tomato seeds	0.09 g	5.5 sec	0.02 g
TiO2	1 g	6.2 sec	0.03 g
Ceramic Powder	3.2 g	5.5 sec	0.03 g
Mg Stearate	7 g	6 sec	0.03 g
Mineral pigment	500 g	21 sec	0.3 g



FD-SP A- 3A

Type of ingredient	Set point	Dosing time	Standard deviation
Carbon	6 g	9.0 sec	0.02 g
Pyrite	5 g	7.0 sec	7 mg
Semolina	0.15 g	4 sec	8 mg
Semolina	0.45 g	4.5 sec	8 mg
Pyrotechnic powder (100 µm)	1.0 g	5 sec	9 mg
Ceramic Powder	3.2 g	5.5 sec	8 mg
Ceramic Powder	9 g	10 sec	0.02 g
Aluminum powder	12 g	8 sec	7 mg

FD-SP Ac- 4A

Type of ingredient	Set point	Dosing time	Standard deviation
Lactose	10 mg	5 sec	0.8 mg
Lactose	25 mg	7 sec	0.8 mg
Lactose	50 mg	9 sec	1 mg
Talc	25 mg	9 sec	1.6 mg
Mg Stearate	25 mg	10 sec	1.2 mg
Semolina	75 mg	10 sec	0.8 mg

FD SPA-A process application : Weighing in a weighed swivelling bowl



Rotation of weighed bowl with 2 combined movements (for a perfect emptying).





Feeling of pots, for pharmaceutical industry, the pot is laid manually on the balance.



Filling of syringe for pharma industry: set point ~30 g, standard deviation < 0.02 g.

Process controller with colour touch screen, dedicated to powder feeding: Easy and simple to operate, 2 coarse flows + 1 fine flow, memorization of 100 recipes, memorization of 800 000 feeding results (transfer on USB key).



FD SPA-3A : table machine for accurate filling



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FD SPAc- 4A :

The micro feeder **MCPI Fine dosing® SPAc** is probably the more accurate powder feeder in the market...

Beyond performances, a particular care has been paid, from design to construction stages, to offer a unique feeder with great flexibility and full hygienic concept, including easy and fast dismounting.

