

## KTW NovoDoser (Liquid Nitrogen Dosing System)

A new generation liquid nitrogen doser with frost-free operation, food grade austenitic stainless-steel material, hygienic wash-down design in compliance with stringent HACCP requirements.



### How it works

LN2 is supplied to the doser by a vacuum-insulated pipe and flows into the dosing head. Sensor will detect the container and send pulses to the controller. Controller will command the dosing head to dispense the required amount of LN2 into the container. LN2 droplets quickly evaporate and expand 700X into gaseous N2 equivalent, filling the container headspace with inert N2 gas at the desired pressure.

### Applications

- ✓ **Container Rigidity** – Enhance bottle or can's strength and eliminate paneling especially in hot filling process.
- ✓ **Container Light-weighting** – Reduce packaging cost and environmental carbon footprint.
- ✓ **Oxygen Exclusion** – Reduce residual oxygen in product headspace to prevent oxidation to the product.
- ✓ **Extend Product Shelf Life** – N2 in product packaging can extend product shelf life longer.
- ✓ **Replace traditional MAP** – Increase inerting efficiency and effectiveness compared to inert gas flushing in MAP.
- ✓ **Nitro-infused Beverage** – Nitro-infusion gives the drink its thick and creamy texture, enhanced mouthfeel, and flavor.

### Ergonomic Features & Benefits

- ✓ **Frost-free Nozzle** – Self-generating GN2 for dosing head blanketing
- ✓ **Accurate dose weight** – Deliver accurate dosing  $\pm 1\%$
- ✓ **Lowest LN2 Consumption** – Discrete dosing, for speed up to 2000 containers per minute
- ✓ **Lowest LN2 Losses** – Proprietary vacuum insulation with lowest heat leak 0,1 LPH
- ✓ **Minimized Product Splash** – Lowest dose pressure in its class, 0,02 bar
- ✓ **Sub-cooled LN2** – Ensuring constant LN2 density for accurate dosing
- ✓ **Corrosion Resistant** – 316L material grade of construction for doser body
- ✓ **Highest Hygiene Design** – All external surface has rounded corners and sloped design for easy wash-down
- ✓ **Lowest Maintenance** – Ultra long-life cycle dosing valve > 60 million; and IP 65 rated sensors & electrical cables
- ✓ **Ease of Installation** – Compact size for easy installation in limited space
- ✓ **Applications Flexibility** – Compatible with soft-dose and micro-dose technology for hot fill, powder, and granular applications
- ✓ **Multi-lingual HMI** – German, English, Spanish, etc
- ✓ **5 Years Vacuum Warranty** – Lowest cost of ownership

## NovoDoser Specifications

Model	LP	HP
Material	Stainless Steel 300 Series	Stainless Steel 300 Series
Head Pressure	0,02 bar	0,01 – 0,03 bar
Nozzle Blanketing	Self Generate N2	Self Generate N2
Steady State Consumption	< 0.1 liter/hour	< 0.1 liter/hour
Body Dimension	37"H x 5"W (930 x 129mm)	42"H x 5"W (1100 x 129mm)
Dosing Head Dimension	EA Head 9,5"H x 2"W (241 x 50mm)	ES Head 14" x 2,5"W (356 x 64mm)
Dosing Head Arm Reach	18" (457mm)	18" (457mm)
Weight	14kg	20kg
Utilities:		
Liquid Nitrogen Supply	1,5 bar	6,0 bar
Gaseous N2	4,1 – 6,9 bar	4,1 – 6,9 bar
Electrical	110-220VAC	110-220VAC

## Controller Specifications

Model	500FD	800SC	2000DSC
PLC Platform	Siemens S7-1200	Siemens S7-1200	Siemens S7-1200
HMI (LCD touchscreen)	4,3" Color	4,3" Color	7,0" Color
Dose Duration, 1ms interval	18 to 1500 ms	10 to 1500 ms	5 to 1500 ms
Dose Volume, mg/dose	10 to 1400	10 to 1400	5 to 1400
Dose Accuracy	± 2%	± 2%	± 1%
Max. Discrete Dosing	500 CPM	800 CPM	2000 CPM
Fixed Delay	✓	✓	✓
Speed Compensation		✓	✓
Dose Compensation		✓	✓
Dynamic Dose	✓		
Encoder Compatible			✓
Nozzle Pre-Cooling	Manual	Manual	Automatic
Dose Head Purging	Optional (Manual)	✓	✓
Nozzle Defrost	Optional (Manual)	Automatic	Automatic
User's Filler Signal Interface			Optional
Modbus RTU User Interface	✓	✓	✓
Mobile Remote Monitoring (Wi-Fi / Lan)			✓
Smart Maintenance			✓
Overall Equipment Effectiveness	✓	✓	✓
Recipe Storage	5	5	12
Dosing Head	Bimba / EA	Bimba / EA	EA / ES
Certifications	CE, IP65	CE, IP65	CE, IP66

### Manufacturer:

Cryogenic Specialty Manufacturing  
 Kuala Lumpur, Malaysia  
[www.csm-cryogenic.com](http://www.csm-cryogenic.com)

### Authorized Distributor:

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