Fully digital controlled dispenser

Super Σ CM IV

The pinnacle of Air Pulse dispenser, soaring to further height.

NEW

Super Σ CM IV V2   REMAIN: 9999.000   SHOT: 000001234

ECO

50.0 kPa
-0.30 kPa
1.000 sec.

CH. 001 : Work_01

SHOT

AIR OUT

USB-1   USB-2

MUSASHI ENGINEERING, INC.
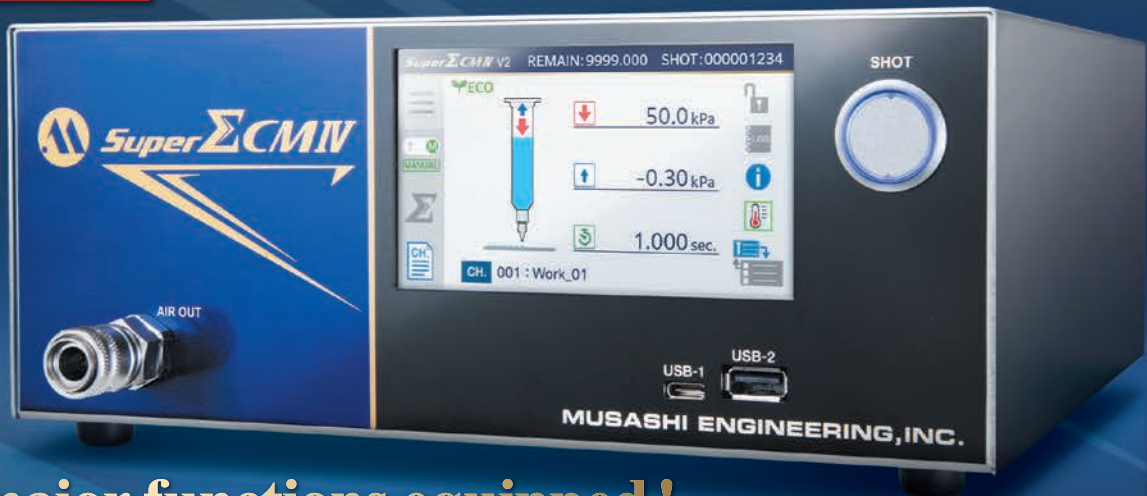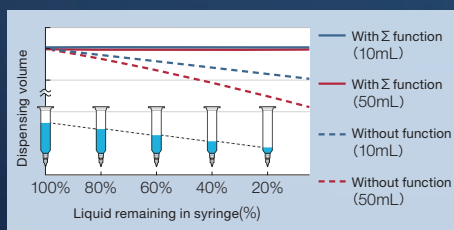
Σ 3 major functions equipped !

1. Automatic correction of volume reduction

Compensates for the decrease in dispensing volume due to the effect of the difference in hydraulic head. Stable, high-precision dispensing is achieved through a single syringe.
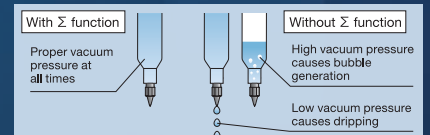
UP Improved detection accuracy of the hydraulic head difference, enabling more precise corrections.

Dispensing volume

— With Σ function (10mL)
— With Σ function (50mL)
--- Without function (10mL)
--- Without function (50mL)

100% 80% 60% 40% 20%
Liquid remaining in syringe(%)

2. Automatic vacuum correction

Constantly adjusting to the optimal vacuum pressure to prevent dripping and enhance dispensing accuracy stability.
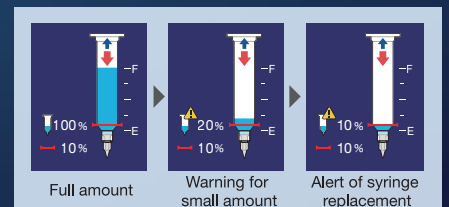
UP Improved stability and responsiveness of the vacuum pressure, reducing the effect of interval time.

With Σ function	Without Σ function
Proper vacuum pressure at all times	High vacuum pressure causes bubble generation
	Low vacuum pressure causes dripping

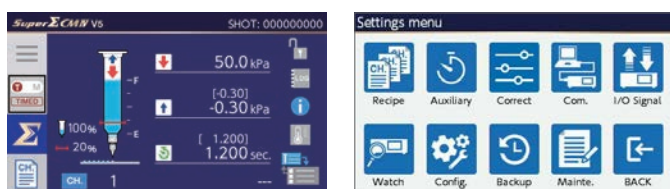### 3. Automatic low liquid remaining alarm

High-precision detection and monitoring of liquid remaining in the syringe.

UP Improved detection accuracy just before material depletion. Enabling two-stage remaining amount warnings.

100%
10%
Full amount

20%
10%
Warning for small amount

10%
10%
Alert of syringe replacement

User-friendly

NEW Equipped with a 4.3 inch touch panel

Super Σ CM IV V5   SHOT: 000000000

50.0 kPa
[-0.30] -0.30 kPa
[1.200] 1.200 sec.
100%
20%
CH. 1

Settings menu
Recipe Auxiliary Correct Com. I/O Signal
Watch Config. Backup Mainte. BACK

Intuitive understanding of more information through an excellent user interface. Easy configuration through touchscreen.

Compact and energy-saving

NEW ECO mode

ECO

Reducing air consumption during operation.
Over 90% reduction in air consumption during standby (when vacuum is off).

NEW Sleep mode

Reducing power and air consumption during temporary machine suspension.
Up to 25% reduction in standby power consumption
(screen darkens, SHOT not available).

Compact design   30% reduction in the volume of the casing (compared to our previous models).

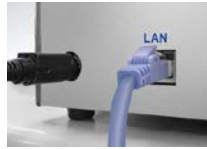# Contribution to smart factory integration

Quality and production status visualization and troubleshooting analysis through remote operation.

Production control
Equipped with log, self-diagnosis, emergency stop
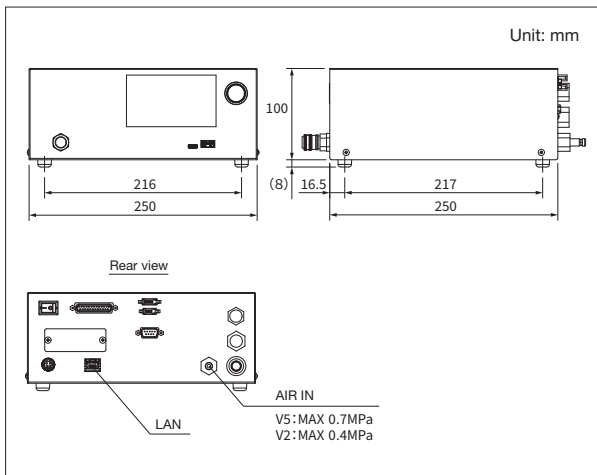
Network connection compatible
Equipped with LAN port
(Ethernet compatible)

PC communication
Equipped with USB ports
(Type-C and Type-A compatible)

External dimensions

Unit: mm

216
250
100
(8) 16.5 217
250

Rear view

LAN

AIR IN
V5: MAX 0.7MPa
V2: MAX 0.4MPa

High-precision Peltier type temperature control system

PELTIER mini
TCU-05MINI

Cooperation

Dispenser operation screen

Centralized management through cooperation with temperature controller

Centralized management of operations and control through cooperation with SuperΣCMIV.

Specifications

Product name	Fully digital controlled dispenser			
Model	S-SIGMA-CM4-CTR			
	-V5-N	-V5-P	-V2-N	-V2-P
Dispensing system	Air-pulse system			
Control system	Micro-computer controlled electro/pneumatic type			
Pneumatic control circuit	Air-pulse stabilization circuit PAT.			
Display	4.3-inch color touchscreen (Japanese/English/Chinese)			
Dispensing modes	Timed mode, manual mode			
Dispensing pressure regulating range	30.0 to 500.0 kPa		5.0 to 200.0 kPa	
Dispensing time setting range	0.001 to 9999.999 s			
Vacuum pressure setting range	0.00 to -5.00 kPa			
Major functions	Automatic correction of volume reduction, Automatic prevention of dripping, Automatic remaining volume warning, Alpha correction, Delta correction, Remaining volume display correction, Vacuum pressure correction, Dispensing counter, Stopwatch, Interval dispensing, Dispensing condition correction, Auto-increment, Auto-slope, Express shot, Date and time✳1, Operation history, Dispensing pressure monitoring, Self-diagnosis, ECO mode, Sleep mode, I/O function allocation, Password lock, Unit switching (kPa/bar), Solenoid valve alarm, Solenoid valve error, Supply air pressure error, Exhaust error, Vacuum pressure error, Channel copy, Parameter backup			
Channel number	400 CH			
Expandability	USB host	Type-A ×1 port (for mass storage device connection)			
	USB device	Type-C ×1 port (for PC connection)			
	LAN	RJ45 ×1 port (10BASE-T/100BASE-TX)			
	RS-232C	D-Sub9-pin (plug) ×1 port			
	Equipment integration	e-CON (4-pin socket) ×1 port (temperature controller)			
External input/output signal D-Sub	Connector	D-Sub25-pin (socket)			
	Rated	24V, 10mA or less			
	Input (Photo coupler)	24V common	GND common	24V common	GND common
		Dispensing, Channel switching, Dispensing mode switching, Channel selection, Active dispensing (Channel preset, Channel step, Sleep, Counter clear, Other allocation possible)			
	Output (Open Collector)	GND common	24V common	GND common	24V common
		Power-on, Ready, Dispensing, Dispensing cycle, Remaining amount warning, Solenoid valve alarm, Errors (Dispensing completed, Alarm, Pressure switch, Auto-increment completed, Other allocation possible)			
Supply pressure range	200 to 700 kPa		200 to 400 kPa	
Supply power ✳2	Connector	ACAT-4 dedicated connector, e-CON (3-pin socket)			
	Rated voltage	DC 24V ±10%			
	Power consumption	26 W			
Usage environment (indoor use only)	Temp	Operating: 15 to 35°C, Non-operating: 1 to 60°C			
	Humidity	Operating: 30 to 75%, Non-operating: 30 to 80% (no condensation in either state)			
	Altitude	2,000 m or below			
External dimensions (excluding protrusions)	W250×D250×H108 mm			
Weight	4.0 kg			
Compatible standards	EU RoHS2, CE marking (EMC directive)			
Other options	AC Adapter (ACAT-4), Hand Switch (LS-2T-DSUB25-1.5M, LS-3T-DSUB25-1.5M), Foot Switch (FS/W-2-DSUB25-2.0M), various connection cables, etc.			

✳1 Date/time data is saved by built-in lithium coin battery (primary battery)
✳2 The AC adapter is not included in the product. Power should be supplied by one of the following methods.
・Using our ACAT-4 (input rating AC100-240V 50/60Hz).
・Using SELV power supply compliant with the LVD conformity standard of CE marking. (Applicable plug: e-CON 3-pin)

Application

Ag paste dispensing for die bonding

Solder paste dispensing to lead frame

UV dispensing for fixing the automotive camera lens.

World Leading Dispenser
MUSASHI ENGINEERING, INC.

BRANCH JAPAN ≫ TOKYO, OSAKA, NAGOYA, SENDAI, FUKUOKA, SAITAMA, NAGANO, EAST-KANTO, AKITA, KANAZAWA
GERMANY, SINGAPORE, THAILAND, INDONESIA, KOREA, TAIWAN
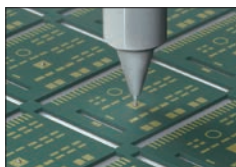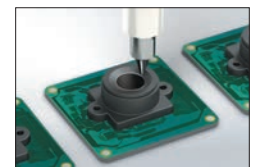CHINA ≫ HONG KONG, SHANGHAI, SHENZHEN, TIANJIN, SUZHOU