MUSASHI ENGINEERING, INC.

Accelonix
keeping you ahead.

High-precision digital dispenser

ML-6000X /
ML-6000X Pro

New Generation *Digital Dispenser Unveiled!*

ML-6000X

SHOT

T
P
V
WORK 1   CH.   T/M

POWER
ON
OFF

PRESS.ADJ. MAX 0.7MPa

VAC.ADJ.

AIR OUT

0.200 s
74 kPa
- 0.0 kPa

NEW

High grade model

VAC.ADJ.

ML-6000X Pro

AIR OUT

0.150 s
100 kPa
- 0.0 kPa

1 CH   TIMED

v5   CH.   T/M

SHOT

POWER
ON
OFF

MUSASHI ENGINEERING, INC.

Features of next-generation dispenser

Excellent Dispensing Capability

Installed with air-pulse stabilizing circuit (PAT.). Elimination of dispensing volume fluctuation, implementation of excellent dispensing accuracy.
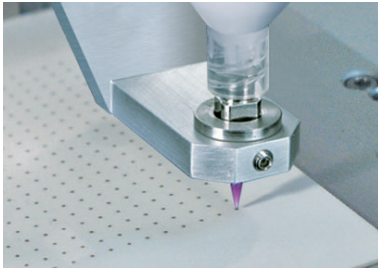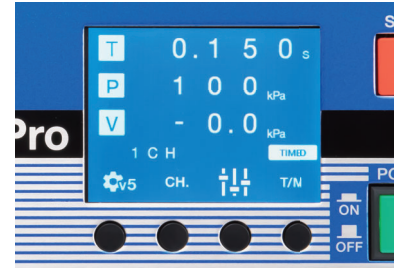

Next-generation Functions

Simplified Log function (Parameters recording: various dispensing pressure, dispensing time, channel, dispensing mode).

Other Enhanced Features | Simplified remaining volume detection / Interval function / Channels registration / Channels switching / Error output / Alarm output

User-friendly

2.4 inch Color graphic LCD display for easy setting & operation
Multi-language support (JPN, ENG, CHN).

- **Correspond to Industry 4.0, various abnormal error output.**　**Simplified Log function.**
- **Simplified remaining volume detection function.**　**Channels can be registered by a variety.**
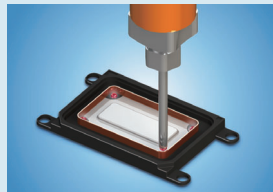- **Lineup of general purpose and high resolution vacuum specification.**

Features of ML-6000X Pro
- **Pressure setting can be set from the device side.**
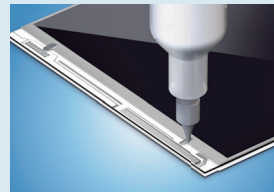- **Dispensing pressure can be selected from 2 types.**

Dispensing Application

Dispensing UV on Camera Module

Speaker Vibration Membrane Attachment

Dispensing Ag Paste on Touch Panel

Pressure Sensor Potting

ML-5000XII / ML-6000X Series comparison

Item		ML-5000X II (conventional model)	ML-6000X	ML-6000X Pro V5	ML-6000X Pro V2
Dispensing performance	Pressure range	5 to 700 kPa	5 to 700 kPa	30 to 500 kPa	5 to 200 kPa
	Dispensing volume precision	±2.01%	±1.96%	±1.86%	±1.72%
	Dispensing pressure control system	Manual control	Manual control	Automatic control	
Operation interface	Display — Display type	7-segment LED	2.4 inch color LCD		
	Display — Displayable information	Numbers	Icons, letters, numerical value		
	Display — Supported languages	—	Japanese / English / Chinese		
	Operation	Digi-switch	Mechanical switch		
I / O interface	Metal connector	●	● (Conversion option)		
	D-sub I / O	—	●		
Data communications	RS-232C	—	●		
Power	Input form	AC power cord	AC adapter		
	Supports 24V DC input	—	●		
Function	Discharge condition management — Channel number	—	100 ch		
	Discharge condition management — Name registration	—	●		
	Production control	—	●		
	Auto-increment — Auto-increment	—	—	●	
	Auto-increment — Auto-slope	—	—	●	
	others — Interval dispensing	—	●		
	others — Pressure unit switching (kPa / bar)	—	●		
	others — I / O check mode	—	●		

Compact size

conventional model

188mm　188mm

180mm　185mm

ML-6000X Series

Improved display visibility

conventional model
4-digit LED digital display

ML-6000X Series
2.4 inch color graphic LCD

Specification

Description	High Precision Digital Dispenser					
Model	ML-6000X-CTR-N-VHR	ML-6000X-CTR-N-GP	ML-6000XP-CTR-V5-N-VHR	ML-6000XP-CTR-V2-N-VHR	ML-6000XP-CTR-V5-N-GP	ML-6000XP-CTR-V2-N-GP
Dispense method	Air-pulse type					
Control system	Microprocessor digital control system					
Display	2.4 inch color graphic LCD					
Dispensing mode	Timed mode, manual mode					
Dispensing pressure adjustment range	5.0 to 700.0 kPa		30.0 to 500.0 kPa	5.0 to 200.0 kPa	30.0 to 500.0 kPa	5.0 to 200.0 kPa
Dispensing time setting range	0.001 to 99.999 sec, 0.01 to 999.99 sec, 0.1 to 9, 999.9 seconds (Enable to switch digits by Icon Keys)					
Vacuum pressure setting range	0 to -20.0 kPa (with air supply of 600 kPa)		0 to -20.0 kPa (with air supply of 600 kPa)	0 to -10.0 kPa (with air supply of 400 kPa)	0 to -20.0 kPa (with air supply of 600 kPa)	0 to -10.0 kPa (with air supply of 400 kPa)
Vacuum pressure control system	Precision needle valve (Approx. -1 kPa per a turn)	Standard needle valve (Approx. -4 kPa per a turn)	Precision needle valve (Approx. -1 kPa per a turn)		Standard needle valve (Approx. -4 kPa per a turn)	
Main function	Operation history, Dispensing shot counter, Residue alarm, Pressure error, Solenoid valve alarm, Channel registration, Channel switching, Channel copy, Key lock, Interval dispensing, Display language switching, Manual/Timed mode switching, Stopwatch		Operation history, Dispensing shot counter, Residue alarm, Pressure error, Solenoid valve alarm, Channel registration, Channel switching, Channel copy, Key lock, Interval dispensing, Display language switching, Manual/Timed mode switching, Stopwatch, Auto-increment function, Auto-slope function			
The number of channels	100 CH					
RS-232C serial communication	1 port					
External input/output signal (D-sub I/O) — Connector	D-sub25 (socket)					
External input/output signal (D-sub I/O) — Input	Optocoupler input DC12 V, 5 mA Dispensing, preset, dispensing enabled, step, dispensing mode switching					
External input/output signal (D-sub I/O) — Output	Optocoupler open collector output DC24V, 10mA or below Dispensing completion, solenoid valve alarm, power on, ready, In-dispensing, alarm, error		Optocoupler open collector output DC24V, 10mA or below Dispensing completion, solenoid valve alarm, power on, ready, In-dispensing, alarm, error, auto-increment completion			
Source pressure — Connection specifications	One-touch joint for OD 6 mm					
Source pressure — Range	Max. 800 kPa (Dispensing pressure + 100 kPa or more)		Max. 800 kPa (Dispensing pressure + 100 kPa or more)	Max. 400 kPa (Dispensing pressure + 100 kPa or more)	Max. 800 kPa (Dispensing pressure + 100 kPa or more)	Max. 400 kPa (Dispensing pressure + 100 kPa or more)
Rated current and frequency	When supplying from DC24 V DSUB 25 pin, When supplying from a DC12 V DC jack * 1 * 2					
Power consumption	12 W					
Usage environment (indoor only)	Temperature: 15 to 35°C, Humidity: 30 to 75% (without condensation), Altitude: below 2,000 m					
Storage environment	Temperature: 1 to 60°C, Humidity: 30 to 80% (without condensation)					
Storage environment	W180×D185×H83 mm					
Weight	2.2 kg	2.1 kg	2.2 kg		2.0 kg	
Compatible specification	EU RoHS2, CE marking (EMC directive)					
Options	Handy switch, Foot switch, Syringe stand, various connection cables, etc.					

* 1 The AC adapter is not included in the product.
* 2 Use one of the following methods to supply power.
・Use our ACAT-2 (input rating AC100-240V 50 / 60Hz).
・Use an AC adapter that conforms to EN-62368-1: 2014. (Compatible plug φ5.5 × 2.1 L = 9.5, Center Plus)
・Use a SELV power supply that meets the CE marking LVD matching standard.

External dimensions diagram

Unit: mm

ML-6000X High resolution vacuum specification

ML-6000X General specification

ML-6000X Pro High resolution vacuum specification

ML-6000X Pro General specification

AIR IN One-touch joint for OD 6 mm

Rear view
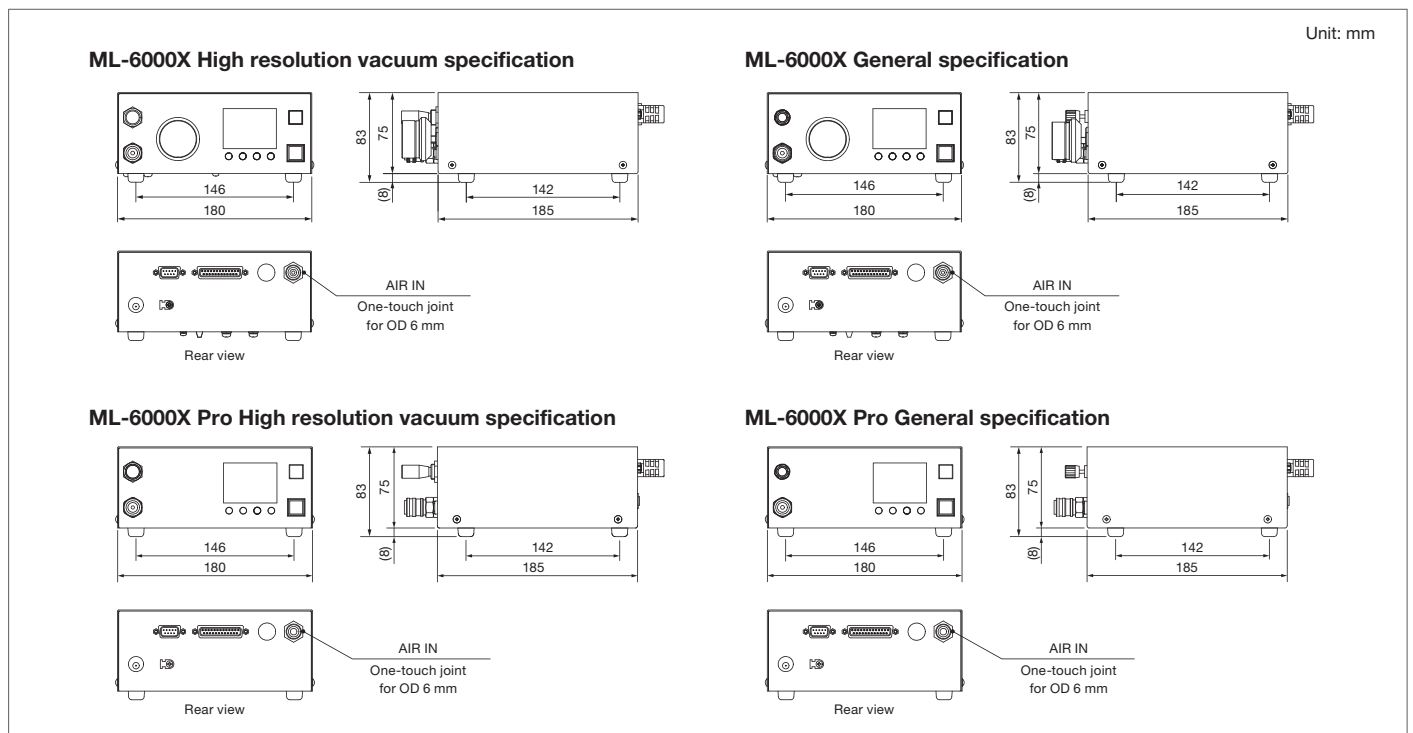
System configuration

Syringe

Cartridge

Desktop and gantry robots

FA dispense machine

Peripheral equipment / options

Temperature control system

High precision dispensing of high-viscosity materials is achieved, even if material viscosity is changed by environmental temeratures.

Syringe centrifugal bubble eliminator

Bubbles are eliminated just by placing syringes and pressing the switch. Equipped with abnormal vibration detection function.

Simple syringe filling unit

Quick and easy syringes filling with small volumes from fluid material containers, without bubbles.

Handy switch

Handy switches that is fit on the tip of syringe to control dispensing ON/OFF for manual application. The soft touch switch operation offers precise dispensing control and less nozzle off-target.

Foot switch

This switch is used to control dispensing ON/OFF with your foot.

Handy switch compatible Syringe stand

These stands are used for holding the syringe during and after operation.

Model: ❶SYS-5B for 5 mL /❷SYS-10B for 10 mL
❸SYS-20B for 20 mL /❹3SYS-30B for 30 mL
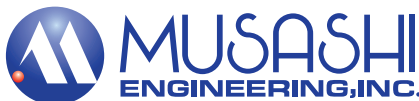❺SYS-50B for 50 mL