

**Burette Unit**

***EBU***

# **User Manual**

Please read this manual thoroughly in advance for the best performance of the equipment.

**KEM** KYOTO ELECTRONICS  
MANUFACTURING CO., LTD.  
<http://www.kyoto-kem.com>





AN 59-\*\*\*\*\* Ver.00



## Important:












You must observe the following rules in order to prevent physical or property damage of yourself as well as of the others.

## Meaning of Symbols




	<b>Warning</b>	Danger of severe injury or possible death
	<b>Caution</b>	Risk of physical or property damage
		This symbol means Prohibition.
		This symbol means Mandatory.

## Place for Installation

Use the devices indoors, and avoid a place under any of the following conditions to avoid malfunction.

 <b>Caution</b>		
 Operation of devices with strong electric motors using common power source	 Near strong magnetic/electric field  Under direct sun light	 Corrosive gas atmosphere
 Heavily loaded and fluctuated or near power source or magnetic field	 Excessive range of temperature other than specified	 Ambient humidity exceeding 85%RH 
 Under vibration	 Location with large temperature difference	

## Other Cautions

 <b>Caution</b>	
 Do not attempt overhaul or repair the unit by unauthorized person except authorized by KEM. Danger of electric shock, fire or malfunction.	 Do not use the unit in a way other than specified. Danger of fire, electric shock or malfunctioning of the unit.

## Supported standards

### 1. FCC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

#### FCC NOTICE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

#### FCC WARNING

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

### 2. Supported IC Tag

You can use the tag corresponding to the ISO/IEC18000-3 (Mode1) and ISO/IEC15693.

IC Tag	Maker
Tag-it	Texas Instrumrnts

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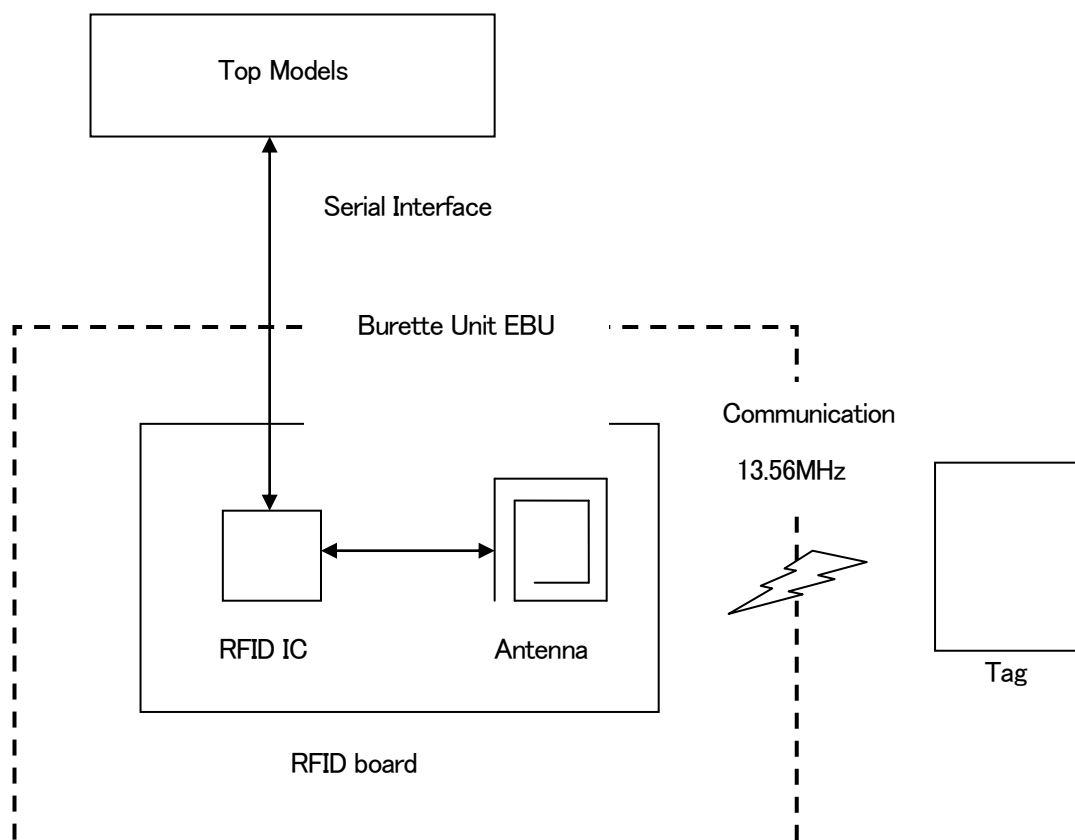


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# 1. Preparations for measurement

## 1-1. Summary

This equipment is the RFID reader-writer module of the electromagnetic induction type which can read and write data in the IC tag in a non-contact by using a frequency of 13.56MHz. It allows you to communicate with the IC tag that corresponds to the standard ISO/IEC15693, of ISO/IEC16000-3 (Mode1).

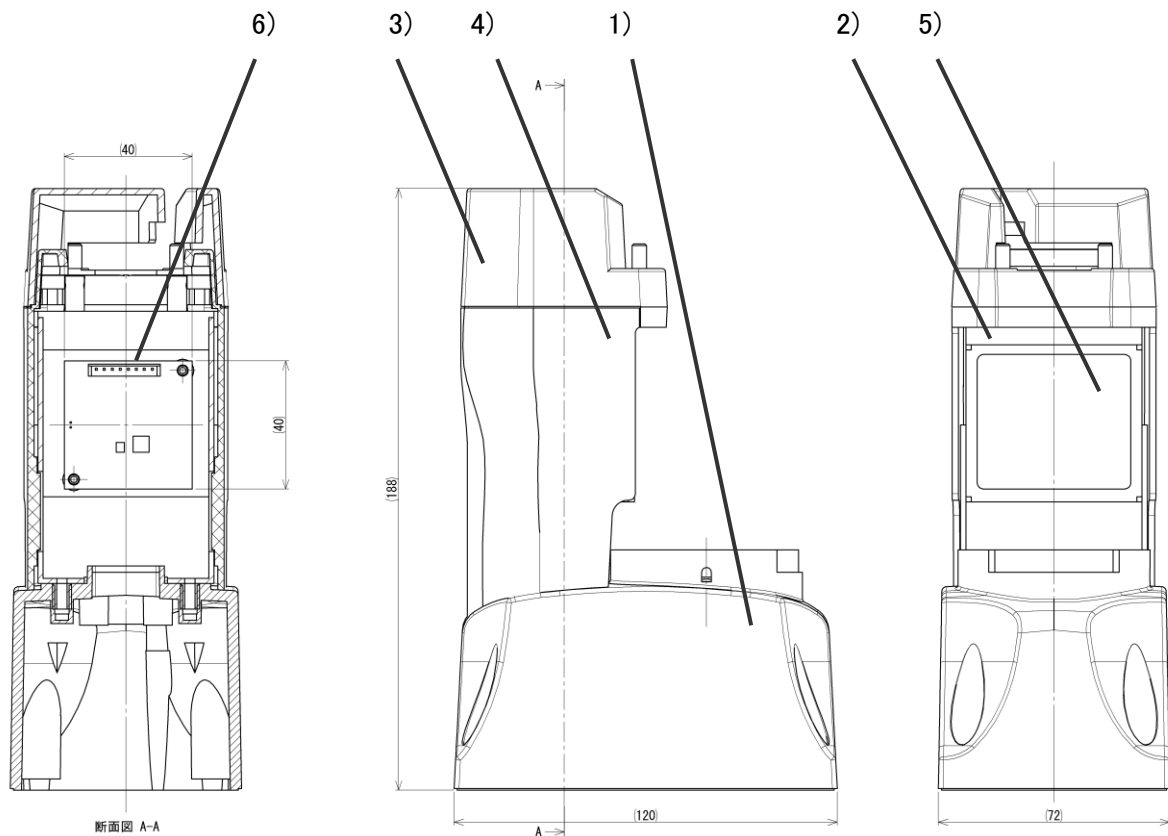


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## 2. Parts configuration and each function

### 2-1. Appearance and Name

#### <Main unit>



- 1) Burette stand
- 2) Mounting base
- 3) Cover
- 4) Motor cover
- 5) Seal
- 6) Interface cable connector

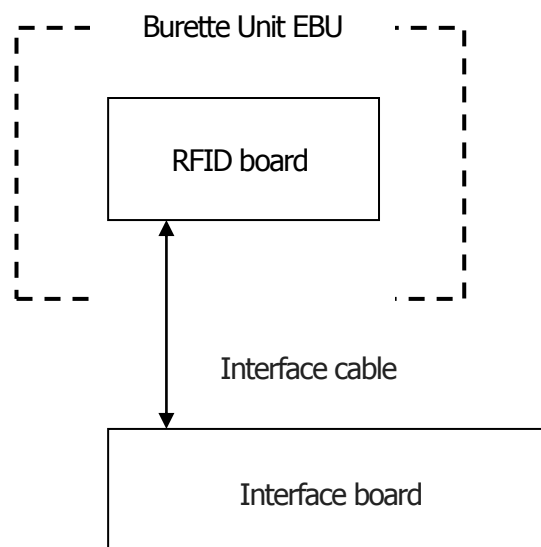


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## 3. Basic operation

### 3-1. Installation and connection

This equipment connect with the interface board of our products.



<Interface board>

Part Number	Part Description
12-05136	Main board
12-05310	Driver board

<Connection>

Connector type: EH connector B8B-EH (JST)

Pin Number	Signal Description
1	IRQ
2	SS
3	DIN
4	DOUT
5	CLK
6	EN
7	VCC(3.3V)
8	GND

## 4. Specification

### 4-1. Specification

Specification	Contents	
Type	Burette Unit	
Model	EBU	
RF Specifications	Transmit frequency	13.56MHz
	Modulation scheme	ASK modulation
	Transmission output	100mW
	Supported IC Tag	ISO/IEC 15693、ISO/IEC18000-3 (Mode1)
Ambient conditions	Temperature	: 5 to 35°C
	Humidity	: 85%RH or below (no condensation)
Power supply	DC3.3V 150mA (MAX)	
Dimensions	120 (W) × 72 (D) × 188 (H) mm	
Weight	Approx. 0.2kg	
Supported standards	FCC	FCC Part15 SubpartC FCC ID : 2ABSVBU01

## 5. Warranty and After-sales Service

### 1. Warranty Period

Three (3) years from the date of receipt of this product or the date of installation by KEM service personnel or by authorized personnel.

### 2. Warranty Details, After-sales Service

This product passed the strict inspections of KEM and, except for consumables, KEM warrants this product, under normal use, for three (3) years from the date of receipt of this product or the date of installation by KEM service personnel or by authorized personnel. (Parts and consumables will be supplied for at least seven (7) years after discontinuation of this product.)

Should an initial failure occur during the warranty period, KEM will decide whether to replace the product or to correct defects.

This product can be repaired at user's site by KEM service personnel or by authorized personnel. Note that secondhand or pre-owned products are not covered by warranty.

### 3. Exclusion

Warranty shall be void where:

- any part is replaced or any repair or remodeling is performed by unauthorized personnel;
- unauthorized service parts, spare parts and/or consumables are used;
- the user does not follow the instructions for installation, correct use, maintenance and/or storage, resulting in malfunction;
- the user does not follow the ranges and/or conditions stated in the product brochure, flyer or specifications;
- periodic checks and/or maintenance is not performed;
- breakage and/or malfunction is caused by careless handling such as, but not limited to, exposing to or submerging in water, or dropping down;
- breakage and/or malfunction is caused by excessive force applied to glassware or plastics;
- malfunction or leakage is caused by sample properties (corrosively, solid materials, etc.);
- malfunction is caused by any device, part and/or chemical other than those supplied by KEM;
- overuse has led to fatigue or wear of parts;
- items are consumables or wearing parts;
- this product has been moved or transported to another place once accepted and installed;
- breakage and/or malfunction is caused by conditions beyond control of KEM including, but not limited to Acts of God such as fire, earthquake, lightning strike, flood, etc.;
- parts including, but not limited to the touch screen LCD, are broken due to improper or inadequate handling such as spilling chemicals;
- items are consumables, accessories or wearing parts, or parts which are in direct contact with samples and/or reagents and are considered consumables due to normal wear.

KEM is also unable to offer warranty and related services of repairs and maintenance checks of any kind once specifications, capability, features and/or

functions of this product as well as its parts are changed, altered or remodeled by unauthorized personnel.

#### **4. Disclaimer**

KEM is not held liable, during or after the warranty period, regardless of whether loss or damage is caused by any event beyond control of KEM, or it is the user's opportunity loss and/or lost earnings caused by failure or malfunction of KEM products, or with or without predictability of KEM, for loss or damage resulting from a particular reason, secondary loss or damage, accident compensation, damage to products other than those supplied by KEM, and any other incidental compensation. KEM is also not held liable for physical and/or economic loss or damage resulting from the use of KEM products, or loss of stored data during repair or servicing of such product.