

## Specifications of new stepper motor controller RE-C200, RE-C201 for Ring Pump RP-HX & RP-TX

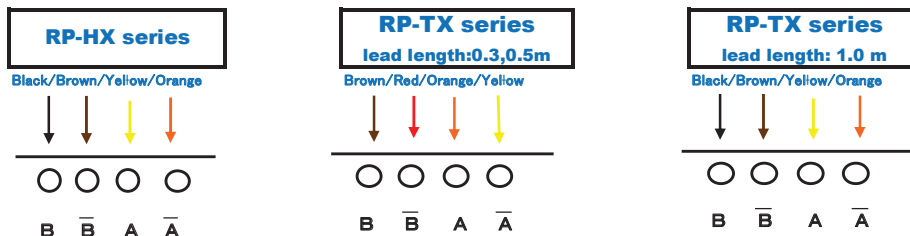
<b>Product name</b>	Low voltage bipolar stepper motor controller
<b>Model number</b>	RE-C200 : Master controller unit RE-C201 : Slave controller unit
<b>Applicable pumps</b>	Ring Pump RP-HX series Ring Pump RP-TX series
<b>Drive voltage</b>	RP-HX VM-4.3V(Default VM) / VM-2.6V RP-TX VM-2.6V only
<b>Input voltage</b>	RE-C200 : DC5V 0.5A (USB supply) RE-C201 : DC5V 3.0A (AC-DC Adaptor : Accessory)
<b>Control method</b>	Voltage drive method for bipolar coil.
<b>Excitation method</b>	1/4 Microstep drive method.
<b>Motor speed</b>	1 to 2,000 PPS (4Hz to 8,000Hz) Digital frequency division.
<b>Function</b>	Various controls using PC software 1. SINGLE-MODE                   ⇒ <b>See attachment</b> 2. PROGRAM-MODE

**Connection terminal RE-C200**   Size : 100 x 100 x 35mm



- ① Motor connection terminal (CH1) : B/B<sup>-</sup>/A/A<sup>-</sup>
- ② USB : USB mini-Type B terminal (connected to PC with cable bundled.)
- ③ Power : LED indicating USB connection
- ④ I2C : OUT terminal for connection with slave unit RE-C201

**Pump wiring to motor connection terminal**



**Connection terminal RE-C201**   Size : 100 x 160 x 45mm



- ① Address switching SW (A : CH2 to CH5) - (B : CH6 to CH9)
- ②-⑤ Motor connection terminal (4CH) : B/B<sup>-</sup>/A/A<sup>-</sup>
- ⑥ I2C : IN terminal for connection with main unit RE-C200 (I2C connection cable)
- ⑦ DC-IN terminal for connection with AC-DC adaptor bundled.
- ⑧ Power : LED indicating power on.
- ⑨ I2C : OUT terminal for connection with slave unit RE-C201

- Accessories**
- RE-C200 : ①Type\_A-mini\_B USB cable  
              ②USB memory (PC software)
  - RE-C201: ①AC-DC adaptor  
              ②I2C connection cable

## Motor speed(PPS) and motor rotation by each model

### RP-HX series

<b>Motor speed</b> PPS	1	5	10	50	100	200	300	400	500	750	1000	1500	2000
<b>Motor rotation</b> rpm	0.06	0.30	0.60	3.00	6.00	12.00	18.00	24.00	30.00	45.00	60.00	-	-

### RP-TX series

<b>Motor speed</b> PPS	1	5	10	50	100	200	300	400	500	750	1000	1500	2000
<b>Motor rotation</b> rpm	0.02	0.11	0.22	1.10	2.21	4.42	6.63	8.84	11.05	16.57	22.10	33.15	44.20

### RP-HX-D20 Motor Type (custom products)

<b>Motor speed</b> PPS	1	5	10	50	100	200	300	400	500	750	1000	1500	2000
<b>Motor rotation</b> rpm	0.03	0.15	0.29	1.46	2.93	5.85	8.78	11.71	14.63	21.95	29.27	-	-

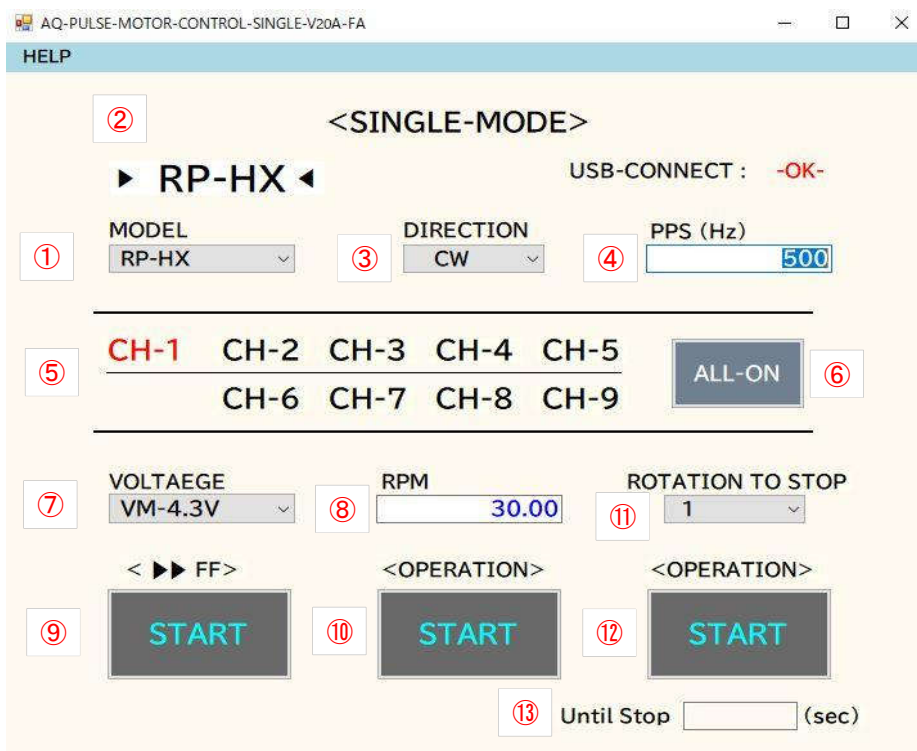
### Special notes

- Please refer to the "Motor speed(PPS) & Discharge amount" characteristics for the discharge amount.  
(Explained in attachment to product shipment data)
- Use the specified control within the range where step-out (motor stop) does not occur.

## Single Mode Operation

Up to 9 Single operations are possible.

\*Connect 2 slave units to the main units. Each slave unit can control up to 4 pumps.

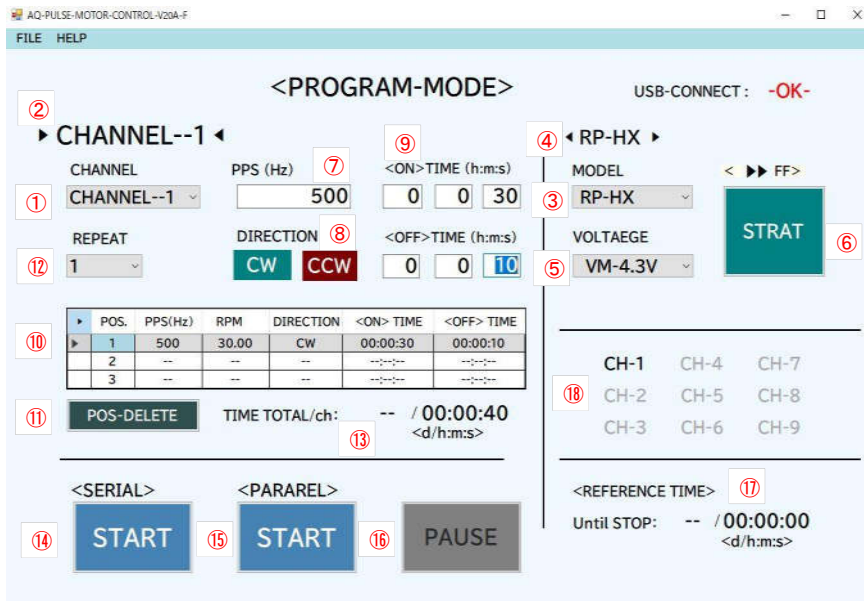


- ① **Select pump**  
 Select by click "v"  
 RP-HX series (Default indication)  
 RP-TX series  
 RP-HX-D20 Motor Type (custom model)
- ② **Model is selected**
- ③ **Select rotation direction**  
 Select by click "v"  
 CW (Default indication)  
 CCW
- ④ **Input motor speed**  
 PPS value            1-2,000pps (Integral value)
- ⑤ **Selector of pump and CH**  
 CH1 : Main unit    (Can be connected with 2 slave units)  
 Each slave unit can control up to 4 pumps.
- ⑥ **Selector of pump and CH**  
 Specify ALL-ON/OFF
- ⑦ **Select VM**  
 RP-HX  
 Select by click "v"  
 VM-4.3V (Default VM) / VM-2.6V  
 RP-TX  
 VM-2.6V only
- ⑧ **Motor RPM**  
 Indicated automatically calculated motor RPM by designated PPS.
- ⑨ **Fast-forward operation**  
 Send liquid or air in the pump tubing by higher speed.
- ⑩ **Designated PPS motion**  
 START/STOP motion by designated PPS.
- ⑪ **Select number of time of rotation to stop**  
 Select by click "v"  
 Select 1 to 15 rotations ⇒ eg. Select "3" = Pump stops after 3 rotations.
- ⑫ **START/STOP selector of designated rotation**  
 START motion for ROTATION TO STOP (⑪) START ⇒ Stops automatically.
- ⑬ **Time (second) to automatic stop (Explained in ⑪ and ⑫ above)**  
 Indicate approx. time (second) until automatic stop after clicking START ⑫.

## Program Mode Operation

Up to 9 Single operations are possible.

\*Connect 2 slave units to the main units. Each slave unit can controle up to 4 pumps.



### <Default setting>

- ① Select CHANNEL  
Select by click "v"  
Selectable from CH1 to CH9.
- ② CHANNEL is displayed  
\*Select the applicable pump connected to the displayed CHANNEL.
- ③ Select pump  
Select by click "v"  
RP-HX series (Default indication)  
RP-TX series  
RP-HX-D20 Motor Type (custom model)
- ④ Applicable pump is displayed
- ⑤ Select VM  
RP-HX  
Select by click "v"  
VM-4.3V(Default VM) / VM-2.6V  
RP-TX  
VM-2.6V only
- ⑥ Fast-forward operation  
START/STOP for optimal high-speed operation by the applicable pump.  
\*START to supply by FF with each pumps which connected to each CHANNEL.  
Click STOP when solution is delivered to the tip of the tube.

### <Program setting>

- ① Select channel Select by click "v"  
Selectable from CH1 to CH9
- ② CHANNEL is displayed  
\* Set the operating conditions for the pump connected to the displayed CHANNEL.
- ⑦ Input motor speed by PPS value  
1-2,000pps (Integrate value)
- ⑧ Select rotation direction  
Select CW/CCW
- ⑨ ON/OFF time Set ON (start) time and OFF (stop) time.  
It can be set from 00h 00m 01s to 24h 00m 00s.
- ⑩ Setting table (POS) PPS & RPM ⑧ Rotation direction ⑨ ON (start) time & OFF (stop) time are reflected in POS.  
Table setting from POS1 to POS3 is possible.
- ⑪ POS-DELETE Can be cleared after selecting POS1 to POS2. (for re-entering settings)
- ⑫ REPEAT Specified the number of repeat for setting table POS1 to POS3.  
Select by click "v"  
1 to 99 REPEAT time can be selected. (default value is "1")
- ⑬ TIME-TOTAL Grand total operation time which are setting from POS1 to POS3 of all CHANNELs ON/OFF of number of repeat.  
Conditions : ( 24h x3POS) x99 repeat
- ⑭ Serial Operation  
eg. CH1 setting operation complete ⇒ CH2 setting operation complete ⇒ CH3 .....
- ⑮ Pararel operation Start all the selected channels at the same time and stop when the operation is complete.
- ⑯ Pause Pause during START operation.
- ⑰ REFERENCE TIME Grand total time until stop  
\*Serial operation ⇒ Until all channel is completed.  
\*Pararel operation ⇒ Until the longest time channel is completed.

### ⑩ Operation mode display

- 1. Designated channel is shown in black and undesignated channel remains in grey.
- 2. When designated channel is in operation, channel number is blinking in green.
- 3. When designated channel is not in operation, channel number is blinking in red.

### <Special notes>

- START/PAUSE "START" and "STOP" change by every click. / "PAUSE" and "RESTART" change by every click.
- ⑬ REFERENCE TIME Even if becomes the timer "0" after completion of total time of operation, "STOP" to "START" is returned after 5 to 15 sec. for internal processing such as confirmation of each CHANNEL stop.

When the timer shows "0" at the completion of "Total Time of Operation", it takes 5 to 15 seconds until "STOP" changes to "START" for the internal processing such as confirmation of each channel to be stopped.

## Program Mode Operation

Up to 9 Single operations are possible.

\*Connect 2 slave units to the main units. Each slave unit can control up to 4 pumps.

**FILE**

① ALL-RESET  
② OPEN-FILE  
③ SAVE-FILE  
④ EXIT

**FILE** **HELP**

ALL-RESET  
OPEN-FILE  
SAVE-FILE  
EXIT

**<PROGRAM-MODE>** USB-CONNECT: **-OK-**

▶ **CHANNEL--1** ◀

CHANNEL: CHANNEL--1 PPS (Hz): 0 <ON>TIME (h:m:s): 0 0 0

REPEAT: 1 DIRECTION: CW CCW <OFF>TIME (h:m:s): 0 0 0

▶	POS.	PPS(Hz)	RPM	DIRECTION	<ON> TIME	<OFF> TIME
	1	--	--	--	--:--:--	--:--:--
	2	--	--	--	--:--:--	--:--:--
	3	--	--	--	--:--:--	--:--:--

POS-DELETE TIME TOTAL/ch: -- / 00:00:00 <d/h:m:s>

<SERIAL> <PARAREL>

START START PAUSE

◀ **RP-HX** ▶

MODEL: RP-HX < >>> FF>

VOLTAEGE: VM-4.3V **STRAT**

CH-1 CH-4 CH-7  
CH-2 CH-5 CH-8  
CH-3 CH-6 CH-9

<REFERENCE TIME>  
Until STOP: -- / 00:00:00 <d/h:m:s>

- ① **ALL-RESET** All programed contents are cleared.
- ② **OPEN-FILE** Open the programed and stored file.
- ③ **SAVE-FILE** Save the programed file.
- ④ **EXIT** Exit.

**HELP**

① MANUAL  
② VERSION

**FILE** **HELP**

MANUAL  
VERSION

**<PROGRAM-MODE>** USB-CONNECT: **-OK-**

▶ **CHANNEL--1** ◀

CHANNEL: CHANNEL--1 PPS (Hz): 0 <ON>TIME (h:m:s): 0 0 0

REPEAT: 1 DIRECTION: CW CCW <OFF>TIME (h:m:s): 0 0 0

▶	POS.	PPS(Hz)	RPM	DIRECTION	<ON> TIME	<OFF> TIME
	1	--	--	--	--:--:--	--:--:--
	2	--	--	--	--:~:~	--:~:~
	3	--	--	--	--:~:~	--:~:~

POS-DELETE TIME TOTAL/ch: -- / 00:00:00 <d/h:m:s>

<SERIAL> <PARAREL>

START START PAUSE

◀ **RP-HX** ▶

MODEL: RP-HX < >>> FF>

VOLTAEGE: VM-4.3V **STRAT**

CH-1 CH-4 CH-7  
CH-2 CH-5 CH-8  
CH-3 CH-6 CH-9

<REFERENCE TIME>  
Until STOP: -- / 00:00:00 <d/h:m:s>

- ① **MANUAL** Manual of software in Japanese and in English
- ② **VERSION** Version of the program