



MQL SEMI-DRY INTERNAL APPLICATOR

# EcoBooster

THROUGH-SPINDLE ADVANCED MQL TECHNOLOGY

## INSTRUCTIONS - SETTING PRESSURE SWITCH -

Type of pressure switch vary on manufacturing date of EcoBooster



ISE40  
(SMC)



MPS-P33  
(CONVUM)



ISE80  
(SMC)



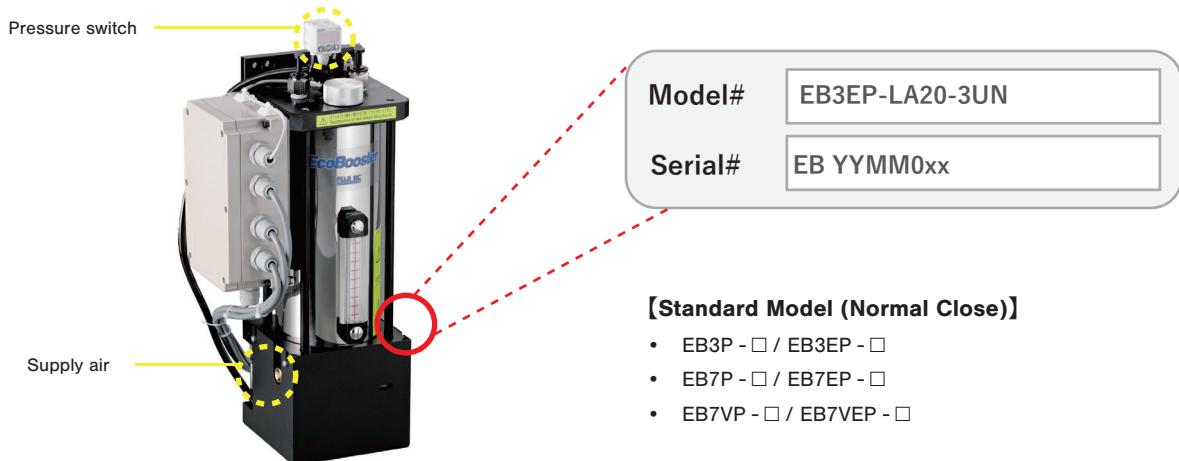
ISE20  
(SMC)

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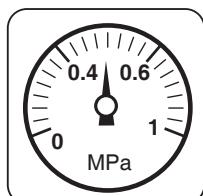


## Check EB Model and type of pressure switch (EB Standard model)

### 1 Check Model # and serial # of EcoBooster



### 2 Check air pressure being supplied to EcoBooster



**Supply air :** \_\_\_\_\_ MPa (※Setting value of the switch vary on supplied air.)

Feature :

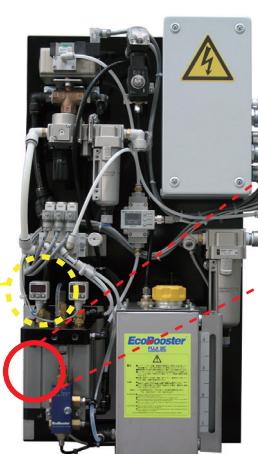
EcoBooster atomizes the Blube lubricant into micro-droplets, that carry near sonic velocity to the cutting edge with 0.25MPa dropped. The switch keeps pressure balance between applicator inside and outside.

### 3 Check type of pressure switch



## Check EB Model and type of pressure switch (EB Special model)

Supply air



To P10



EB Standard model (normal close) EB3P/3EP/7P/7EP/7VP/7VEP

## Setting values of pressure switches (EB Standard)

## ISE40/MPS-P33



ISE40



MPS-P33

		Output	EB Model
ISE40-W1-30L-M	MPS-P33RC-NGAT	NPN	P/EP
ISE40-W1-70L-M	MPS-P33RC-PGAT	PNP	EP

## Set value

Air Supply	Acceleration-air OUT1 n_1	n_2	Mist-air control OUT2 n_3	n_4
0.4MPa	0.190	0.170	0.200	0.185
0.5MPa	0.240	0.220	0.250	0.235
0.6MPa	0.340	0.320	0.350	0.335
0.7MPa	0.440	0.420	0.450	0.435
0.8MPa	0.540	0.520	0.550	0.535

## Supported model

EB3x [24VDC] [100/200VAC]	EB7x(※1) - [100/200VAC]	EB7x(※2) [24VDC] -
○	○	○
○	○	○
○	○	○
○	○	○
		○

(※1) Model  
EB7P-S1/2-  
EB7EP-D1/2  
EB7VP-SB1/2  
EB7VEP-BL-1/2□

(※2) Model  
EB7P-S3-  
EB7EP-D3  
EB7VP-SB3  
EB7VEP-BL-3□

## ISE80/ISE20



ISE80

ISE20

		Output	EB Model
ISE80-CO01L-A-M	ISE20C-X-M-C01L-W	NPN	P/EP
ISE80-CO01L-B-M	ISE20C-Y-M-C01L-W	PNP	EP

## Set value

Air Supply	Acceleration-air OUT1 n_1	H_1	Mist-air control OUT2 n_2	H_2
0.4MPa	0.170	0.020	0.185	0.015
0.5MPa	0.220	0.020	0.235	0.015
0.6MPa	0.320	0.020	0.335	0.015
0.7MPa	0.420	0.020	0.435	0.015
0.8MPa	0.520	0.020	0.535	0.015

## Supported model

EB3x 3P/3EP [100/200VAC]	EB7x(※1) - [100/200VAC]	EB7x(※2) [24VDC] -
○	○	○
○	○	○
○	○	○
○	○	○
		○

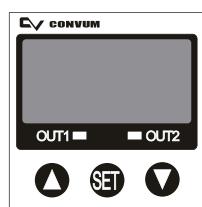
(※1) Model  
EB7P-S1/2-  
EB7EP-D1/2  
EB7VP-SB1/2  
EB7VEP-BL-1/2□

(※2) Model  
EB7P-S3-  
EB7EP-D3  
EB7VP-SB3  
EB7VEP-BL-3□



EB Standard model (normal close) EB3P/3EP/7P/7EP/7VP/7VEP

## SETTING : ISE40 / MPS-P33



ISE40                    MPS-P33                    Output                    EB Model  
 ISE40-W1-30L-M      MPS-P33RC-NGAT      NPN                  P/EP  
 ISE40-W1-70L-M      MPS-P33RC-PGAT      PNP                  EP

## Set value of ISE40/MPS-P33

Air Supply	Acceleration-air OUT1 n_1	n_2	Mist-air control OUT2 n_3	n_4
0.4MPa	0.190	0.170	0.200	0.185
0.5MPa	0.240	0.220	0.250	0.235
0.6MPa	0.340	0.320	0.350	0.335
0.7MPa	0.440	0.420	0.450	0.435
0.8MPa(※3)	0.540	0.520	0.550	0.535

(※3)EB7x24VDC ONLY

## HOW to set ISE40/MPS-P33

1 Press (SET) button (less than 2 seconds)

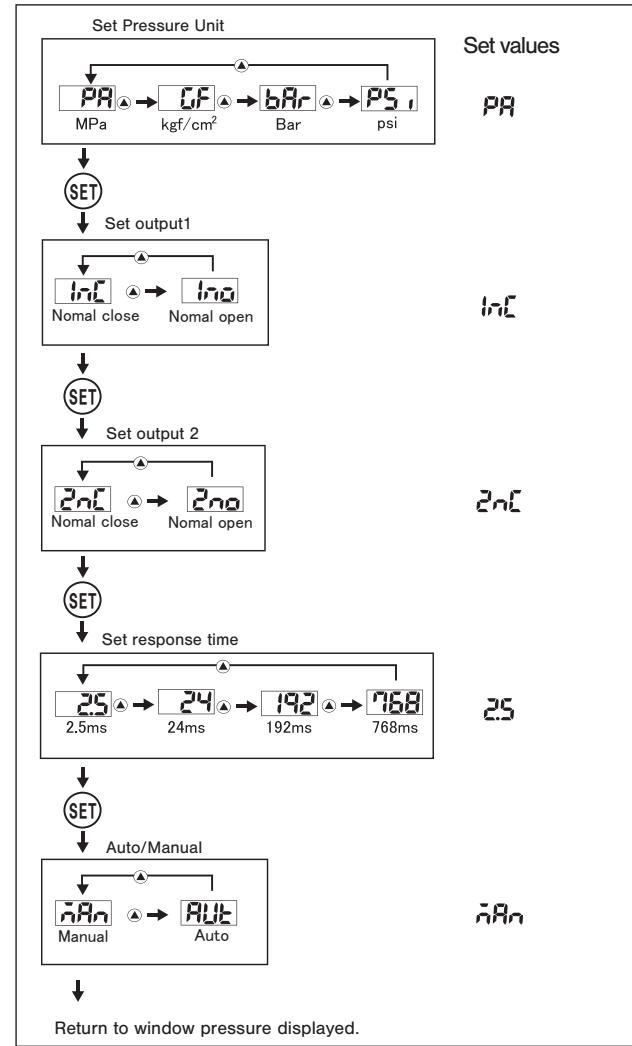
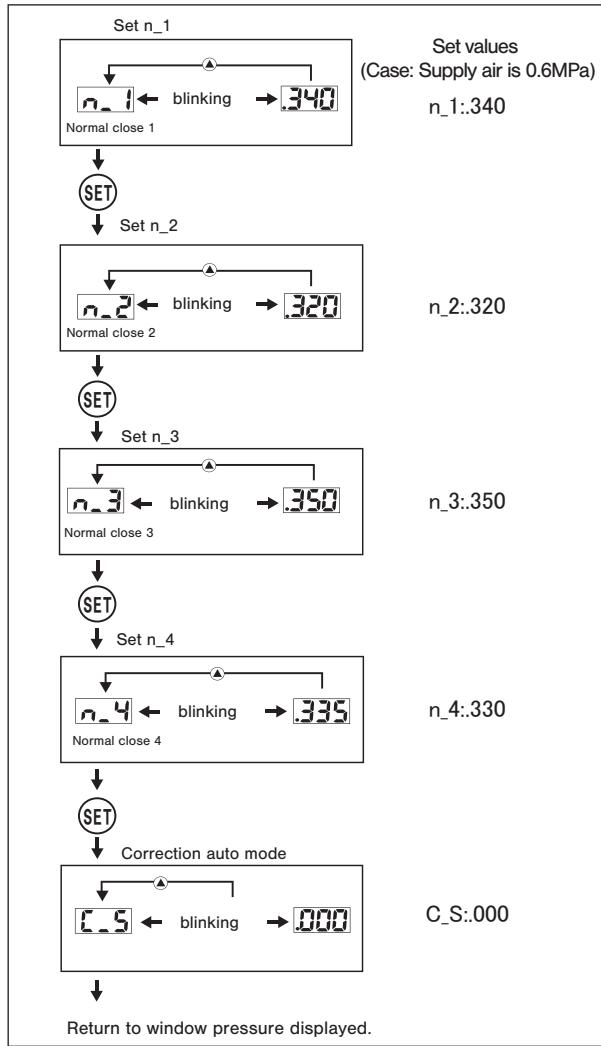
2 Confirm n\_ displayed

Yes

3A Set(n\_)

No

3B Pressure Unit(MPa) / Output: Normal close(n\_) / Response time (2.5ms) / Manual



3A                    Press SET button  
 Confirm n\_ displayed



EB Standard model (normal close) EB3P/3EP/7P/7EP/7VP/7VEP

## SETTING : ISE80



ISE80	Output	EB Model
ISE80-CO01L-A-M	NPN	P/EP
ISE80-CO01L-B-M	PNP	EP

## Set value of ISE80

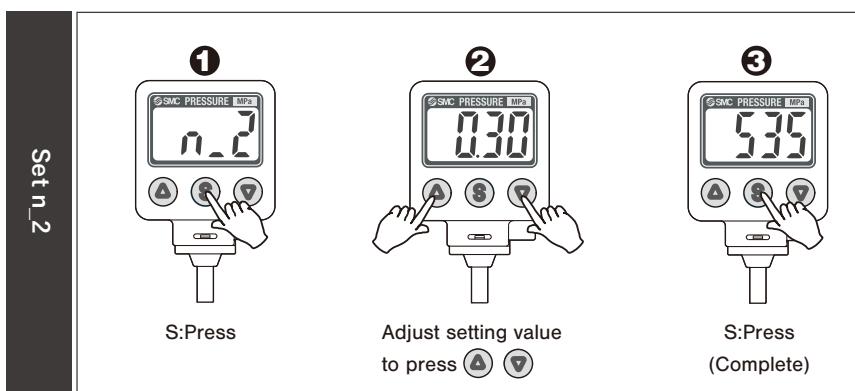
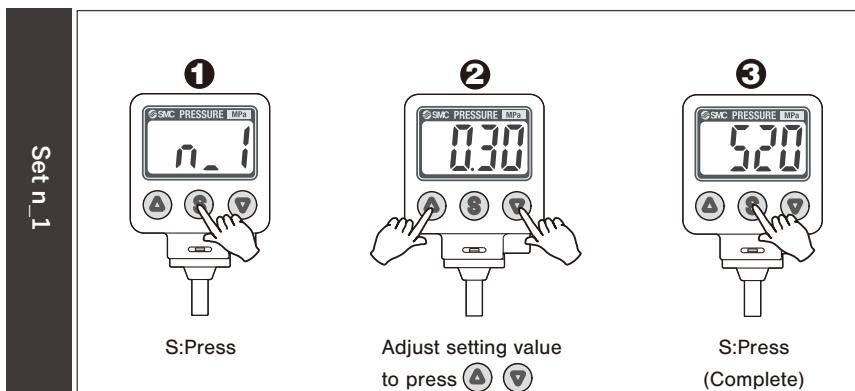
Air Supply	Acceleration-air OUT1 n_1	H_1	Mist-air control OUT2 n_2	H_2
0.4MPa	0.170	0.020	0.185	0.015
0.5MPa	0.220	0.020	0.235	0.015
0.6MPa	0.320	0.020	0.335	0.015
0.7MPa	0.420	0.020	0.435	0.015
0.8MPa(※3)	0.520	0.020	0.535	0.015

(※3)EB7x24VDC ONLY

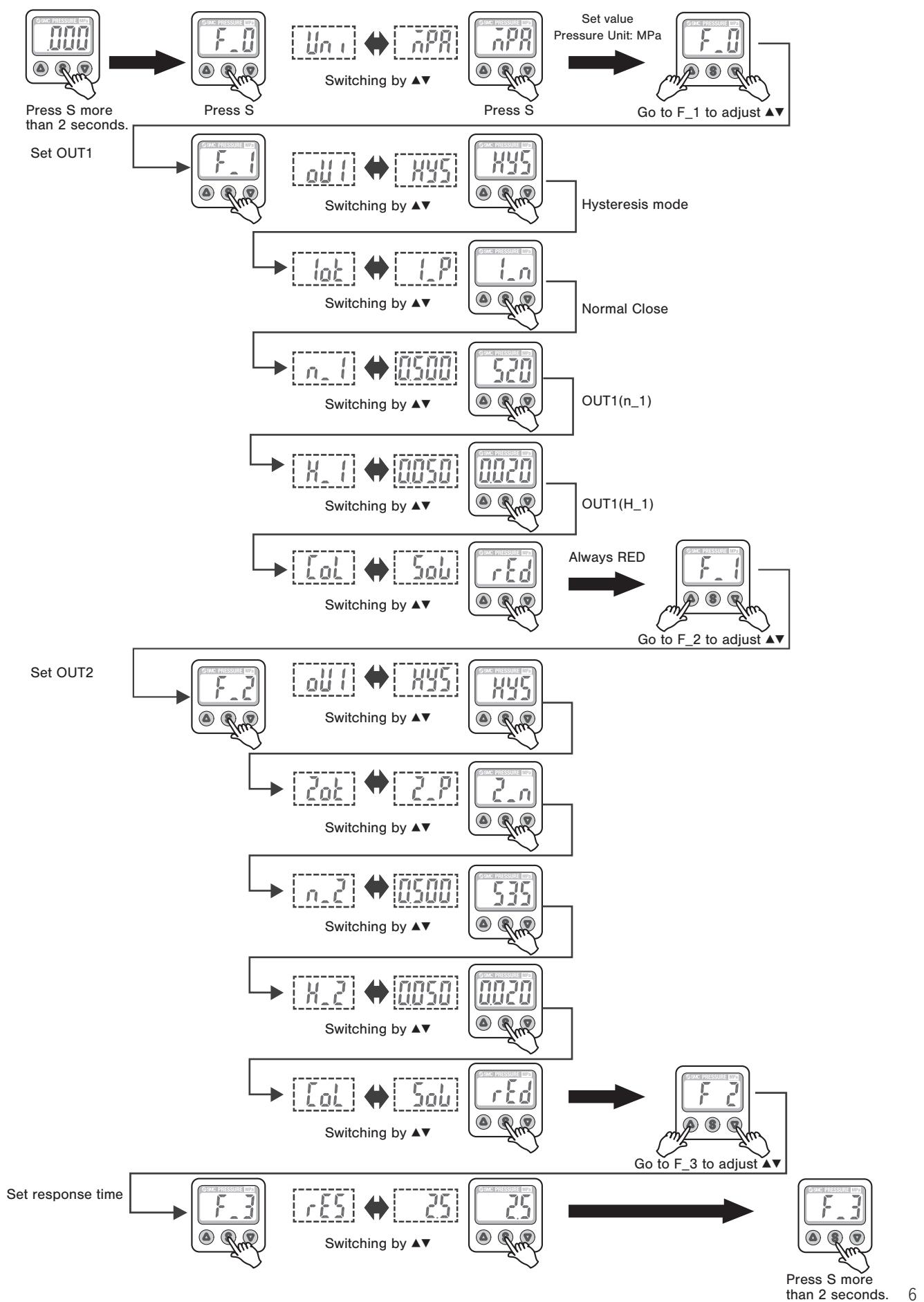
## HOW to set ISE80 (Measurement mode) ※Case: Supply air is 0.8MPa



Items	Set value of function mode
Pressure (n_)	n_1,n_2
Pressure Unit	MPa
Output mode	HYS
Normal close	_n
Hysteresis (H_)	H_1,H_2
Display color	rEd



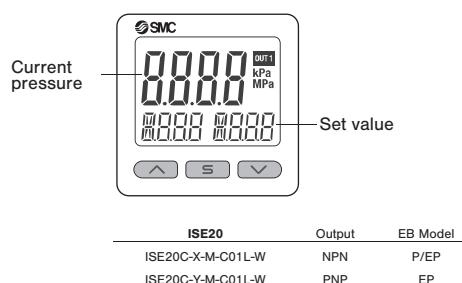
## How to set ISE80 (Function Mode) ☺Case: Supply air is 0.8MPa





EB Standard model (normal close) EB3P/3EP/7P/7EP/7VP/7VEP

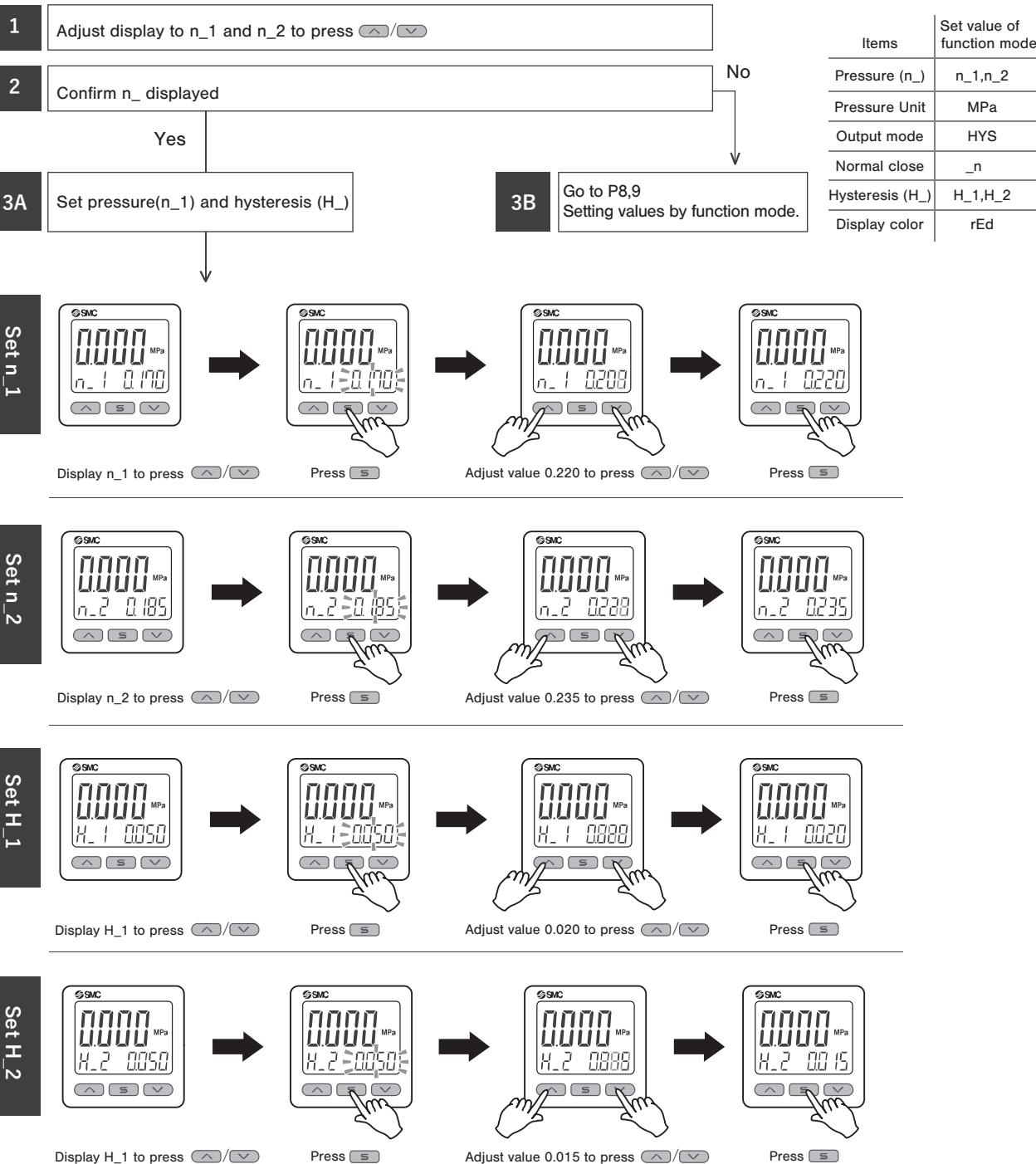
## SETTING : ISE20



Set value of ISE20				
Air Supply	Acceleration-air OUT1 n_1 H_1	Mist-air control OUT2 n_2 H_2		
0.4MPa	0.170	0.020	0.185	0.015
0.5MPa	0.220	0.020	0.235	0.015
0.6MPa	0.320	0.020	0.335	0.015
0.7MPa	0.420	0.020	0.435	0.015
0.8MPa(※3)	0.520	0.020	0.535	0.015

(※3)EB7x24VDC ONLY

## How to set ISE20 (Measurement mode) ※Case: Supply air is 0.4MPa



## SETTING ISE20 (Function mode)

※ Case: Supply air is 0.4MPa

Mode	Display	Operation procedure
Preparation, measurement mode		Connect 12 to 24 VDC power supply. Go to measurement mode.
Function selection mode		Hold down the \$ button for at least 3 seconds, but no more than 5 seconds [F 0] will be shown on the main display. Release the button when [F 0] is displayed to return to function selection mode.
Display unit settings		Display [F 0] by pressing the ▲ or ▼ button in function selection mode. Press the \$ button once. Go to display unit settings.
		Press the ▲ or ▼ button to change the value on the right side of the sub screen (see left).
		Press the \$ button once. Return to function selection mode.
Setting output mode for OUT1		Display [F 1] by pressing the ▲ or ▼ button in function selection mode. Press the \$ button once. Go to output mode settings for OUT1.
		Press the ▲ or ▼ button to change the value on the right side of the sub screen (see left).
Setting of nomal/reversed output for OUT1		Press the \$ button once. Go to normal/reversed output settings for OUT1.
		Press the ▲ or ▼ button to change the value on the right side of the sub screen (see left).
Entering the set value [n_1] for OUT1		Press the \$ button once. Go to the setting of set value [n_1] for OUT1.
		Press the ▲ or ▼ button to change the set value on the right side of the sub display (see left).
Setting of hysteresis [H_1] for OUT1		Press the \$ button once. Go to hysteresis [H_1] settings for OUT1.
		Press the ▲ or ▼ button to change the set value on the right side of the sub display (see left).
Setting response time for OUT1		Press the \$ button once. Go to response time settings for OUT1.
		Press the ▲ or ▼ button to change the value on the right side of the sub screen (see left).

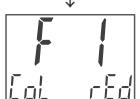
## SETTING ISE20 (Function mode)

※ Case: Supply air is 0.4MPa

Display color settings



Press the  $\odot$  button once.  
Go to display color settings.



Press the  $\blacktriangle$  or  $\blacktriangledown$  button to change the value on the right side of the sub screen (see left).



Press the  $\odot$  button once.  
Return to function selection mode.

Setting output mode for OUT2

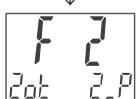


Display [F 2] by pressing the  $\blacktriangle$  or  $\blacktriangledown$  button in function selection mode.  
Press the  $\odot$  button once.  
Go to output mode settings for OUT2.

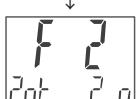


Press the  $\blacktriangle$  or  $\blacktriangledown$  button to change the value on the right side of the sub screen (see left).

Setting of nomal/reversed output for OUT2



Press the  $\odot$  button once.  
Go to normal/reversed output settings for OUT2.



Press the  $\blacktriangle$  or  $\blacktriangledown$  button to change the value on the right side of the sub screen (see left).

Entering the set value [n\_2] for OUT2

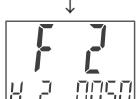


Press the  $\odot$  button once.  
Go to the setting of set value [n\_2] for OUT2.

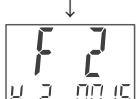


Press the  $\blacktriangle$  or  $\blacktriangledown$  button to change the set value on the right side of the sub display (see left).

Setting of hysteresis [H\_2] for OUT2

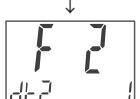


Press the  $\odot$  button once.  
Go to hysteresis [H\_2] settings for OUT2.

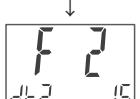


Press the  $\blacktriangle$  or  $\blacktriangledown$  button to change the set value on the right side of the sub display (see left).

Setting response time for OUT2

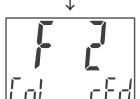


Press the  $\odot$  button once.  
Go to response time settings for OUT2.



Press the  $\blacktriangle$  or  $\blacktriangledown$  button to change the value on the right side of the sub screen (see left).

Display color settings



Press the  $\odot$  button once.  
Move to display colour settings; this is the same as that of OUT1, which has already been set.



Press the  $\odot$  button once.  
Return to function selection mode.

Measurement mode



Hold the  $\odot$  button for 2 second or longer.  
Return to measurement mode.

Zero-clear

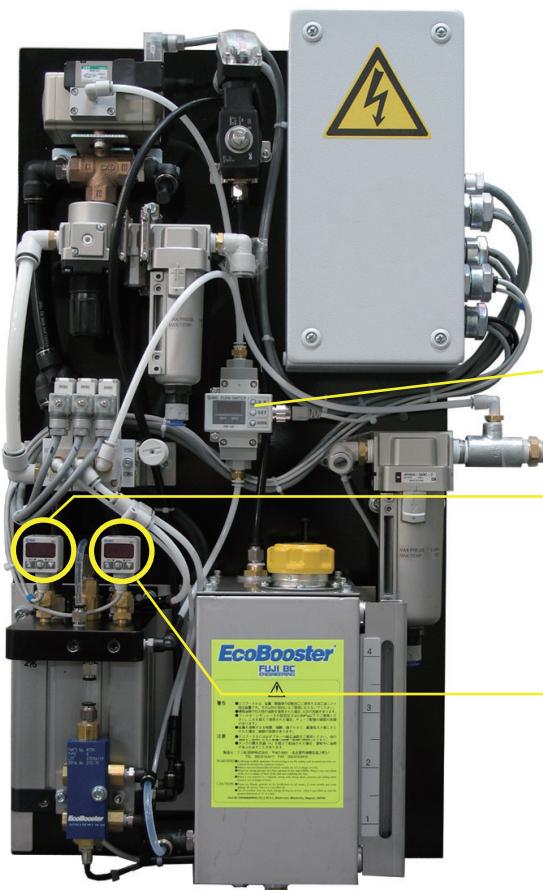


Press the  $\blacktriangle$  and  $\blacktriangledown$  buttons simultaneously for around 1 second under atmospheric pressure.  
This will reset the displayed value to zero.

EB Special model (normal open) EB7AEP-□□□ / EB3EP-436 / EB7EP-437



## EB Special model (normal open) EB7AEP-□□□ / EB3EP-436 / EB7EP-437



■ Please be sure to check EB7AEP model number.  
Specifications would vary on model number which offers fully made to order.

■ Customizing settings for customer fields.  
Pre-configured value before shipment vary on EB model.

Digital flow switch

### Check air flow rate of mist-air

Pressure switch

### Control inner pressure of the applicator inside

Pressure switch

### Check mist-air pressure

## Digital flow switch (※)



Error detection (lower limit)

p_1	p_2	p_3	p_4
16.5	16.0	-	-

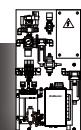
(※)Please be sure to check model number.

Specifications would vary on model number.

## Pressure switch (ISE40/MPS-P33/ISE80/ISE20)

- 1 Press (SET)/(S) button (less than 2 seconds)
- 2 Confirm p\_ displayed
- 3 Set values of pressure switches respectively to refer below table and setting value on page 11.

Pressure Switch	How to set	Set value
ISE40/MPS-P33	P4	P11
ISE80	P5,6	P11
ISE20	P7 ~ 9	P11



EB Special model (normal open) EB7AEP-□□□ / EB3EP-436 / EB7EP-437

## Setting values of pressure switches (EB Special model)

### ISE40 / MPS-P33(※)

ISE40-W1-30/70L-M  
(SMC)MPS-P33RC-P/NGAT  
(CONVUM)

~ FEB. 2016

Items	SET(more than 2secs)
Pressure	p_1 ~ p_4
Pressure Unit	MPa
Normal open	p_-
Response time	2.5ms
Auto/Manual	Manual

#### <Control inner pressure of the applicator inside>

Air Supply	Aceleration-air OUT1	Mist-air control OUT2		
	<b>p_1</b>	<b>p_2</b>	<b>p_3</b>	<b>p_4</b>
0.4MPa	0.190	0.170	0.200	0.185
0.5MPa	0.240	0.220	0.250	0.235
0.6MPa	0.340	0.320	0.350	0.335
0.7MPa	0.440	0.420	0.450	0.435
<b>0.8MPa</b>	<b>0.540</b>	<b>0.520</b>	<b>0.550</b>	<b>0.535</b>

#### <Check mist-air pressure>

Air Supply	Error detect (lower limit)	Error detect (operating range)		
	<b>p_1</b>	<b>p_2</b>	<b>p_3</b>	<b>p_4</b>
<b>0.8MPa</b>	<b>0.750</b>	<b>0.700</b>	<b>1.000</b>	<b>0.500</b>

### ISE80 / ISE20 (※)



ISE80-C01L-A/B-M



ISE20C-X/Y-M-C01L-W

FEB. 2016 ~

APR. 2021 ~

Items	Set value of function mode (more than 2secs)
Pressure (n_-)	p_1,p_2
Pressure Unit	MPa
Output mode	HYS
Normal open	p_-
Hysteresis (H_-)	H_1,H_2
Display color	rEd

#### <Control inner pressure of the applicator inside>

Air Supply	Aceleration-air OUT1	Mist-air control OUT2		
	<b>p_1</b>	<b>H_1</b>	<b>p_2</b>	<b>H_2</b>
0.4MPa	0.170	0.020	0.185	0.015
0.5MPa	0.220	0.020	0.235	0.015
0.6MPa	0.320	0.020	0.335	0.015
0.7MPa	0.420	0.020	0.435	0.015
<b>0.8MPa</b>	<b>0.540</b>	<b>0.020</b>	<b>0.550</b>	<b>0.015</b>

#### <Check mist-air pressure>

Air Supply	Error detect (lower limit)	Error detect (operating range)		
	<b>p_1</b>	<b>H_1</b>	<b>p_2</b>	<b>H_2</b>
<b>0.8MPa</b>	<b>0.750</b>	<b>0.050</b>	<b>1.000</b>	<b>0.500</b>

(※)Please be sure to check model number. Specifications would vary on model number.

## **EcoBooster**

Advanced and clean technology to provide lubrication and protection precisely through spindle, which offers high quality, performance and sustainable productivity.

## **フジBC技研 株式会社**

本社／〒467-0851 愛知県名古屋市瑞穂区塩入町3-1  
TEL (052) 824-7784 FAX (052) 819-5474

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**FUJI BC ENGINEERING CO., LTD.**  
3-1, SHIOIRI-CHO, MIZUHO-KU, NAGOYA, 467-0851 JAPAN  
PHONE:+81-52-824-7784 FAX:+81-52-819-5474

※性能向上のため、予告なく外観及び仕様を変更する場合があります。あらかじめご了承ください。