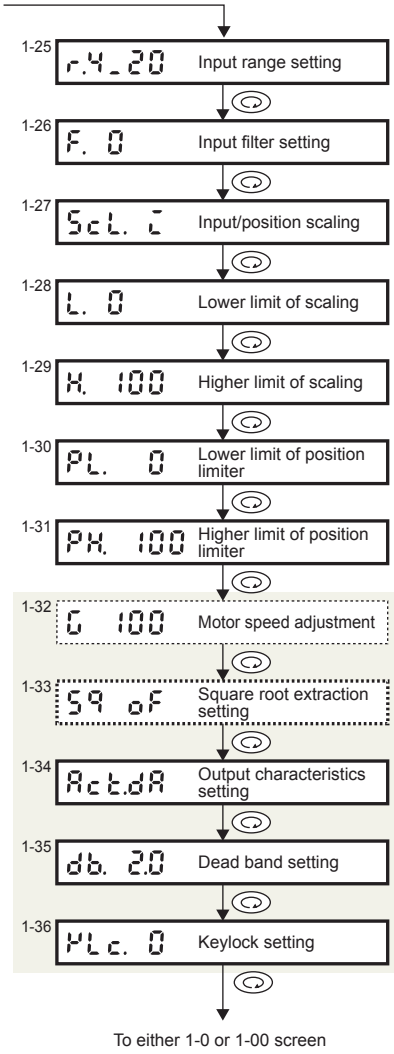
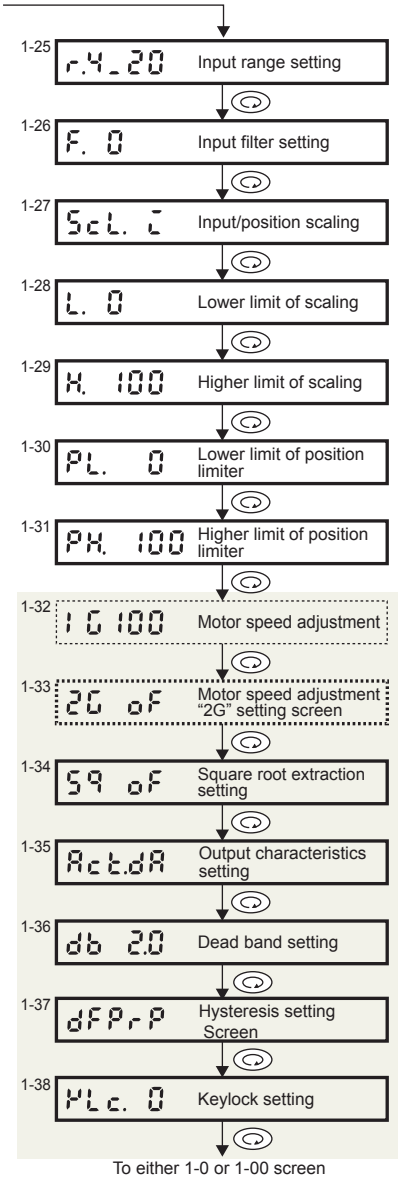
EM70 series instruction manual errata

Description	Incorrect	Correct
Parameter Flow From 1-25 onward		
Explanation of Screen and Parameter Setting Screen Group 1 and Parameter Setting	1-1 ～ 1-36	1-1 ～ 1-38
	Modified parameter flow is described in following pages.	

Key Operation

The ▲ and ▼ keys are used for selection on a screen and an item or a numerical value is registered by means of the ENT key. To return to the preceding setting screen, press the MAN/AUTO key. When the DISP key is pressed, the 1-0 or 1-00 basic screen is returned.

Screen Group 1

1-0 automatic adjustment screen or 1-00 manual adjustment screen is the starting screen.

On each of the following screens, a value within a setting range or an item from those displayed is selected and set.

(3) Event Setting

1-1 E1no

Event 1 type setting screen

Initial value: no

Select from the following types shown on the screen.
- no : No setting (initial value)
- LP : Lower limit side degree of opening
- HP : Higher limit side degree of opening
- LC : Lower limit side input
- HC : Higher limit side input
- Au : Automatic
- oR : Manual
- PE : degree of opening error
- CE : Input error
- LE : Control loop error

Note: However, a set value is initialized when the type of event is changed.

1-2 E1d0.1

Event 1 hysteresis setting screen

Initial value: 0.1%
Setting range: 0.1~5.0%

Select a value within the setting range.

①Setting is possible only when the event is higher and lower limit alarm. (LP, HP, LC, HC)

1-3 E1oF

Event 1 stand-by action setting screen

Initial value: oF

Select either of the following:
- on : With stand-by action
- oF : Without stand-by action

①Setting is possible only when the event is higher and lower than the limit alarm. (LP, HP, LC, HC)

1-4 E2no

Event 2 type setting screen

Initial value: no

①The same as event 1.

1-5 E2d0.1

Event 2 hysteresis setting screen

Initial value: 0.1%
Setting range: 0.1~5.0%

①The same as event 1.

1-6 E2oF

Event 2 stand-by action setting screen

Initial value: oF

Select either of the following:
- on : With stand-by action
- oF : Without stand-by action

①The same as event 1

to the 1-7 screen

1-7 E3no

Event 3 type setting screen

Initial value: no

①The same as event 1.

1-8 E3d0.1

Event 3 hysteresis setting screen

Initial value: 0.1%
Setting range: 0.1~5.0%

①The same as event 1.

1-9 E3oF

Event 3 stand-by action setting screen

Initial value: oF

Select either of the following shown on the screen:
- on : With stand-by action
- oF : Without stand-by action

①The same as event 1

(4) Setting of Motor Action at the Time of Position Error

1-10 PE.StP

Screen for setting motor action at the Time of position error

Initial value: StP

Select from the following shown on the screen:
- StP : Motor stop
- cLS : Motor close
- oPn : Motor open

①Position error: When the value of position is less than the set range of position errors (Po_LL) and when the value of position is more than the set range of position errors (Po_HH).
②During manual operation, action setting upon occurrence of a position error is not valid since manual operation is given the first priority.
③In case of SSR position error output, the motor speed is put in action.

(5) Screen for Setting Motor Action Time at the time of Position Error

1-11 t. 300

Screen for setting motor action time at the time of position error

Initial value: 300 seconds
Setting range: 1~300 seconds

Set a time within the setting range.

①Setting is possible only when "open" or "close" has been set against position degree.
②Control output will output for each setting time.

(6) Setting of Motor Action at the Time of Input Error

1-12 CE.InP

Screen for setting motor action at the time off input error

Initial value: InP

Select from the following shown on the screen:
- InP : Action in response to abnormal input signal
- StP : Motor stop
- Pr : Motor to be adjusted to set degree of opening

①Input error: An input error means that input data is below -10% (In-LL displayed) or above 110% (In-HH).
②During manual operation, suspension of operation and control with present value of position, input error is not dealt with.

to the 1-13 screen

(7) Setting of Position at the Time of Input Error

1-13 Pr. 0

Screen for setting degree of opening against input error

Initial value: 0%
Setting range: 0~100%

Set a value within the setting range.

①Setting is possible only when a value of position is selected as the setting for input error.
②The set value of position is limited by higher/lower limit position limiters.

(8) Analog Output Setting

1-14 AN. P

Analog output setting screen

Initial value: P

Select from the following shown on the screen:
In : Input is output.
P : Position is output.

Note: When analog output is changed on this screen, higher and lower limit values of analog output are initialized.

1-15 AL. 0

Lower limit side analog output setting screen

Initial value: 0%
Setting range: 0~100%

Inversed scale is possible
(lower limit value ≠ higher limit value, though).

1-16 AH. 100

Higher limit side analog output setting screen

Initial value: 100%
Setting range: 0~100%

Inversed scale is possible
(lower limit value ≠ higher limit value, though).

(9) Communication Setting

For the communication mode, please refer to the communication instruction manual provided separately.

1-17 Con. L

Communication setting screen

Initial value: L

Select from the following:
L : Communication local mode (initial value)
C : Communication mode

①Key operation can make a change only from the communication mode to the communication local mode.
②In communication mode, keylock is effective on all the setting screens except manual operation.

1-18 Adr. 1

Communication address setting screen

Initial value: 1
Setting range: 1~99

①In case a plurality of controllers are linked for communication, addresses need to be set individually.

to the 1-19 screen

1-19 b.1200

Communication rate setting screen

Initial value: 1200

Set a value from the following shown on the screen:
1200 : 1200 bps (initial value)
2400 : 2400 bps
4800 : 4800 bps
9600 : 9600 bps
19.2K : 19200 bps

①The speed of communication should be set correspondingly to that of the host computer.
②Pressing the (ENT) key for 3 seconds changes the present speed of communication forcibly to interrupt communication and to change to the local mode. To restart communication, the speed should be set correspondingly to that of the host computer.

1-20 dt.7E1

Communication data format setting screen

Initial value: 7E1

Select from the following:

7E1 : 7E1
7E2 : 7E2
7n1 : 7N1
7n2 : 7N2
8E1 : 8E1
8E2 : 8E2
8n1 : 8N1
8n2 : 8N2

①The length of data bits, parity and the length of stop bits are set.

1-21 CtL. 1

Communication control code setting screen

Initial value: 1
Setting range: 1, 2 and 3

Select from the following shown on the screen:
1 : STX_ETX_CR
2 : STX_ETX_CRLF
3 : @_:_CR

①A communication control code is set.

1-22 bCC. 1

Communication BCC check setting screen

Initial value: 1
Setting range: 1, 2, 3 and 4

Select from the following shown on the screen:
1 : ADD
2 : ADD_two' s cmp
3 : XOR
4 : None

¨ A BCC processing method to be used in BCC checking is selected.

1-23 n. EEP

Communication memory mode setting screen

Initial value: EEP

Select from the following shown on the screen:
EEP : EEPROM (initial value)
Data is written in memory.
rAn : RAM
Data is written in RAM.

to the 1-24 screen

1-24

dL. 20

Communication delay time setting screen

Initial value: 20
Setting range: 0~100

①A delay time from receiving a communication command to carrying out transmission is set.
②Delay time = Set value of communication delay time ×0.25 msec.

(10) Input Range Setting

1-25

r.4_20

Input range setting screen

Initial value:
4_20 in the case of current input
0_10 in the case of voltage input

Select one from the following types of current input.

4_20 : 4~20mA (initial value)
0_20 : 0~20mA

Select one from the following types of voltage input.

0_10 : 0~10V (initial value)
0_5 : 0~5V
1_5 : 1~5V

(11) Input Filter Setting

1-26

F. 0

Input filter setting screen

Initial value: 0 second
Setting range: 0~99 seconds

①A time constant of primary delay filter is set.
②The influence of noise contained in control input signal is mitigated and control is stabilized.

(12) Setting of Input Scaling/Position Scaling

1-27

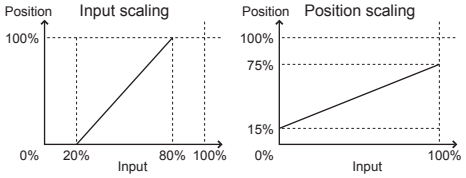
ScL. C

Screen for setting input scaling/degree of opening scaling

Initial value: C

Select from the following shown on the screen:
C: Input scaling (initial value)
P: Scaling of degree of opening

①When the setting of input scaling or scaling of the degree of opening is changed, lower and higher limit values of the scaling are initialized.



②Input scaling: Higher and lower limit values of input are set respectively against 0% and 100% positions.
③Position scaling: Higher and lower limit positions are set respectively against 0% and 100% inputs.

1-28

L. 0

Scaling lower limit setting screen

Initial value: 0%
Setting range: −10~109%

(lower limit < higher limit)

to the 1-29 screen

1-29

H. 100

Scaling higher limit setting screen

Initial value: 100%
Setting range: −9~110%

(lower limit < higher limit)

(13) Position Limiter Setting

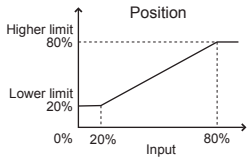
1-30

PL. 0

Screen for setting lower limit value of position limiter

Initial value: 0%
Setting range: 0~99%

(lower limit < higher limit)



1-31

PH. 100

Screen for setting higher limit side value of position limiter

Initial value: 100%
Setting range: 1~100%

(lower limit < higher limit)

Position limiter is effective except during manual operation and position abnormality.
Preset values of position through external operating input and preset values of position at the time of input error also become effective.

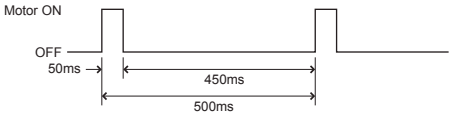
(14) Motor Action Time Setting

Motor speed adjustment setting screen

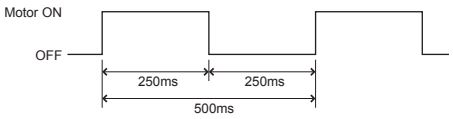
Initial value: 100%
Setting range: 10~100%

①The motor speed is adjustable when SSR output is selected.
②When the motor speed is adjusted, control is carried out with a set cycle time (initial value: 500 msec.) as one cycle.

¥ In the case of 10% selected on the motor speed adjustment screen:



¥ Motor action time set at 50%



(15) Setting of Square Root Extraction Function

1-32

1G. 100

Motor speed adjustment “1G” setting screen
Initial value: 100%
Setting range: 10—100%

When voltage / current input (automatic operation) is selected , motor speed adjustment is carried out with the parameter “1G”.

to the 1-33 screen

1-33

2G oF

Motor speed adjustment "2G" setting screen
Initial value: oF
Setting range: oF, 10—100%

When DI preset Value operation is selected, motor speed adjustment is carried out with the parameter "2G".
If set to "oF ", motor speed adjustment is carried out with the parameter "1G".

1-34

59 oF

Screen for setting square root extraction function

Initial value: oF

Select from the following shown on the screen:
on : With square root extraction
oF : Without square root extraction

Control is carried out by calculating opening/closing degrees, using the square of input as a target position value.

(16) Output Characteristics Setting

1-35

Act.dA

Output characteristics setting screen

Initial value: dA

Select from the following shown on the screen:
dA : Direct characteristics (initial value)
rA : Reverse characteristics

①Direct characteristics (DA): Control is carried out in the state that the direction in which input increases and decreases is the same as the direction in which the value of position increases and decreases.
②Reverse characteristics (RA): Control is carried out in the state that the direction in which input increases and decreases is opposite to the direction in which the value of position increases and decreases.

Note: In case rA is selected for external input, setting is not possible and the screen is for monitoring only.

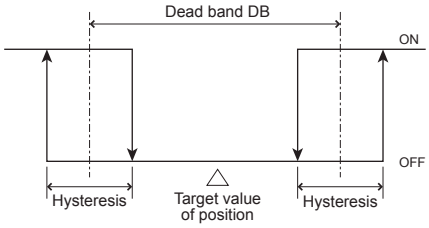
(17) Dead Band (insensitive area) Setting

1-36

db. 2.0

Dead band setting screen

Initial value: 2.0%
Setting range: 0.2~10.0%



①In case the control motor has higher inertia, hunting (opening and closing are repeated without stopping) may be caused. To prevent this, set a larger value for dead band.
When control of high precision is needed, a smaller value should be set for dead band.
You must be very careful since smaller dead band tends to result in hunting.
②Hysteresis: One fourth of dead band.
The minimum value of hysteresis is 0.2%.

to the 1-37 screen

1-37

dFPrP

Hysteresis setting screen
Initial value: PrP
Setting range: PrP, 0.0—5.0%

When set to "PrP", hysteresis is fixed to 1/4 of dead band.
If dead band is less than 0.8%, hysteresis is fixed to 0.2%.

(18) Keylock Setting

1-38

PLc. 0

Keylock setting screen

Initial value: 0
Setting range: 0, 1, 2 and 3

Select from the following shown on the screen:
0 : Without keylock (initial value)
1 : Keylock of screen groups 1 and 2
2 : All keylock except manual operation
3 : All keylock (In case manual operation is set before setting keylock, however, operation by ▲ and ▼ keys is possible.)

To the 1-0 automatic adjustment screen or 1-00 manual adjustment screen.

7-5. Explanation of Screen Group 2 (Special Screen Group) and Setting

Data in this screen group should be set only by one with thorough knowledge of the EM70 series and the system. Generally, the instrument is usable without changing the initial values in this screen group.
In the screen group 2 (special screen group), setting and reading through communication is not possible.

Pressing the ENT key continuously for 5 seconds on the 0-0 basic screen calls the 2-0 screen of screen group 2 (special screen group).
To return to the 0-0 basic screen, press the DISP key on the 2-0 screen.
The screen group 2 comprises 4 special screens, of which the sequence is shown in the following.

Key Operation Method

Press the ⟲ key to proceed to the next screen. Use the ▲ and ▼ keys for selection and the ENT key for registration on each setting screen. While selection is going on by the use of the ▲ and ▼ keys, the decimal point on the lower right side of the numerical value blinks. The blinking stops upon registration of the selection. When the DISP key is pressed on any screen except the 2-0 screen, the 2-0 screen returns onto display.

continued to top of next page