

EP series

PLC USER'S MANUAL

- ◆ Before using EP series PLC, please read this user's manual in detail.
- ◆ Input power of EP series PLC is DC 24V. When connect the wiring, please turn off power.
- ◆ This panel is protected against water, but it is not protected against oil or corrosion liquid. When using it, please avoid using sharp goods to scrape the panel.
- ◆ When fix the panel, please use a steady which is attached by original manufacturer. To avoid the case is damaged, please do not lock the screw too tight.

Introduction

- ◆ EP series is programmable logic controller (PLC) with human machine interface (HMI). LCM is 128x64 dots. It can display 8X4 words in Chinese or 16X8 letters in English.
- ◆ If do not use HMI programming software, user also can use PLC's program to control screen to display Ascii code English letter.
- ◆ About PLC's commands, please refer to Ex1, Ex2 series user's manual.
- ◆ The programming software of HMI is EpEditor.
- ◆ The programming software of PLC is ExEditor.
- ◆ Real Time Clock function inside
- ◆ If expanding I/O points to EP314 is needed, please select Remote I/O module. About wiring diagram, please refer to Application Example on LIYAN's web

- Item No. -

Ep1n314R

- R: Relay output, T: Transistor output
- I/O points (8IN/6OUT)
- 3 inches display screen
- Series (Ep1n, Ep2n)

EP300

- No input / output points
- 3 inches display screen
- Series

- EP314 I/O interface circuit diagram -

◆ Input Specification

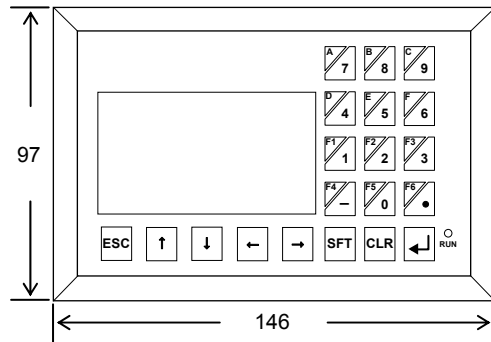
Item	DC input (Sink) NPN	DC input (Source) PNP
Circuit		
Input voltage	DC24V+10%, -15%	DC24V+10%, -15%
Input current	7mA / DC24V	7mA / DC24V
Impedance	3.3 KΩ	3.3 KΩ
Response time	About 10 ms (X00~X07 High Speed)	About 10 ms (X00~X07 High Speed)
Input pattern	No voltage contact or NPN open collector	No voltage contact or PNP open collector
Circuits isolation	Photo coupler	Photo coupler

◆ Output Specification

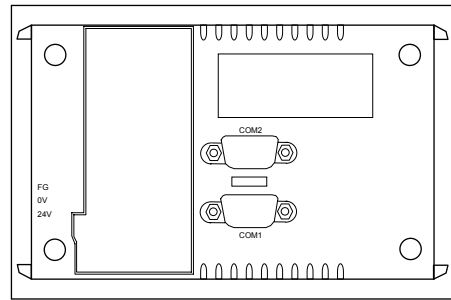
Item	Relay output	Transistor output
Circuit		
Load voltage	Under DC30V	DC5V ~ 30V
Rated current	2A / 1 point	0.5A / 1 point
Rated capacity	100W	12W
Response time	About 10ms	Under 1 ms
Circuits isolation	Machine isolation	Photo coupler

Dimensions

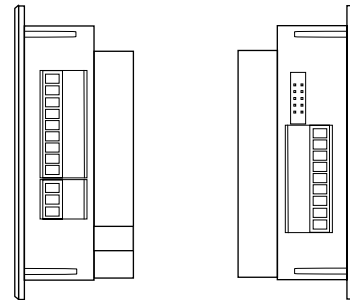
◆ Front view, unit : mm



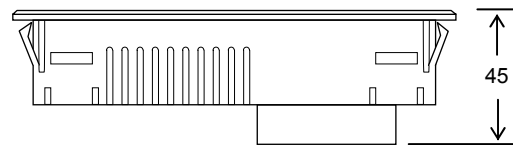
◆ Back view



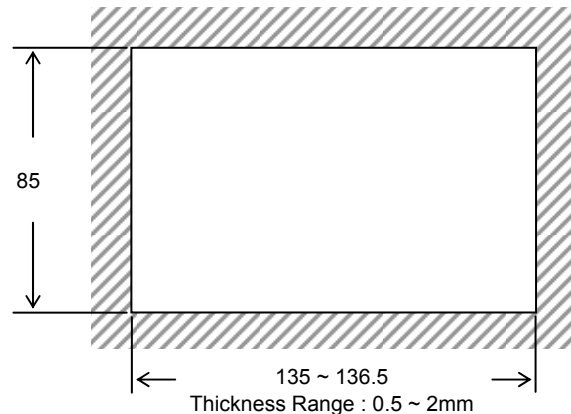
◆ Lateral view



◆ Vertical view, unit: mm



◆ Dimensions of inserting hole, unit: mm



Specifications

1. General specification

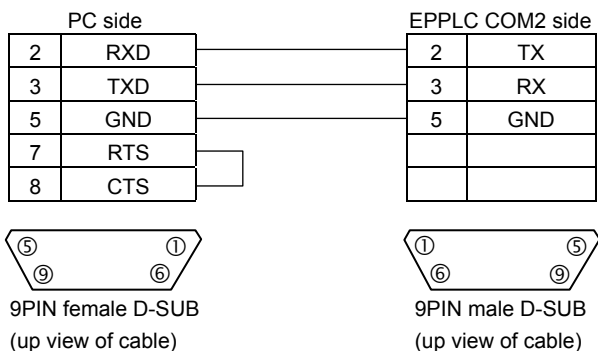
Item	EP300 / EP314	
Display	Screen	STN-LCD
	Color	monochrome
	Backlight	Setting range of backlight auto-closed 1~99 minutes (value=0 is not closed) (Life is about 50,000 hours at 25°C)
	Number of dot	128 X 64 dots
	Range of display	67mm (W) X 32mm (H) ; 3.00" (Diagonal)
	Contrast	10 section contrast
	Language / Font	ASCII: character Taiwan: Traditional Chinese BIG5 code
	Size of word	
LCD contrast adjustment	VR	
LCD backlight	LED backlight	
External interface	COM1 (RS232, RS422/485)	Non-synchronous transmission method Transmission speed: 9600 bps or 19200 bps
	COM2 (RS232)	Non-synchronous transmission method Transmission speed: 9600 bps or 19200 bps

2. Electric specification

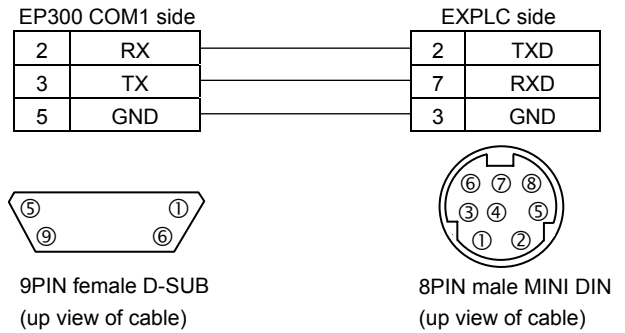
Item	EP300 / EP314
External power	24V (100mA Max.)
Function key / Numeral key	0~9, A~F, F1~F6, ESC, SFT, CLR, ENTER, and Direction keys
Capacity of memory	EP300: 256KB / EP314: 64KB
RAM of system	32KB
Communication interface	COM1: RS232, RS422/485 ; COM2: RS232
Protection of front panel	IP65
Temperature of using hardware	0~50°C; relative humidity 20~90% RH (without condensation)
Temperature of storing hardware	-20~60°C
Shake against	0.5mm displacement, 10-55Hz, X, Y, Z three directions per 2 hours
Strike against	10G, X, Y, Z three directions per 3 times
Cooling method	Air convection to be cool naturally
Weight	EP300:289g / EP314:330g (include steady)

Wiring Diagram

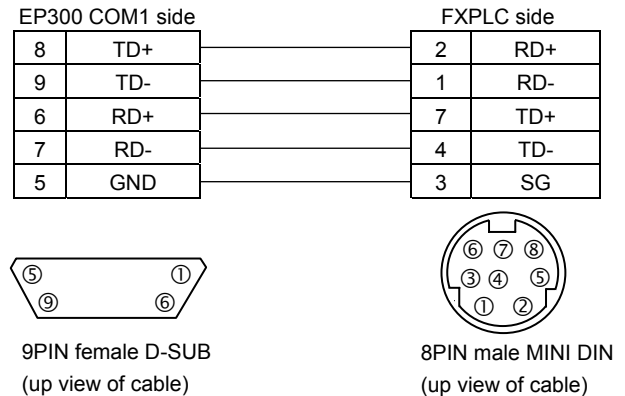
- PC to EPPLC -



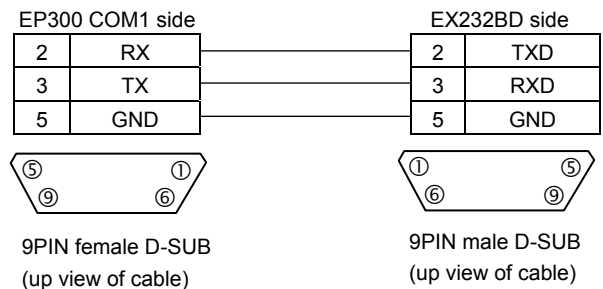
- EP300 to LIYAN PLC EX series -



- EP300 to Mitsubishi PLC FX series -



- EP300 to LIYAN EX232BD -



Pin Arrangement

- COM2 -

RS-232 9PIN D-SUB Female	
2	TX
3	RX
5	GND

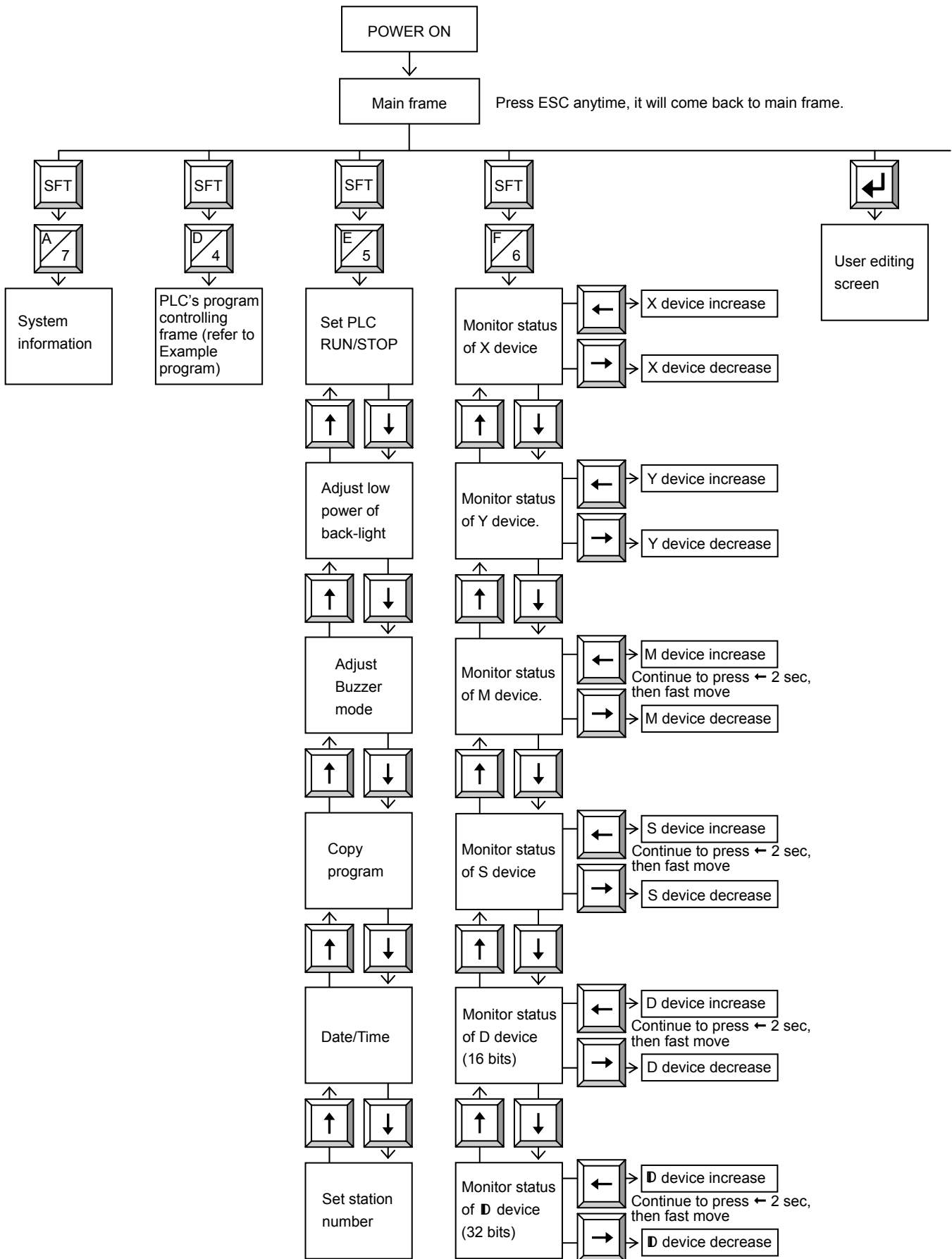
- COM1 -

RS-232, RS422/485 9PIN D-SUB Male	
RS232	RS422/485
2 RX	6 RDA (RD+)
3 TX	7 RDB (RD-)
5 GND	8 TDA (TD+)
	9 TDB (TD-)



- COM1 communication mode (4PIN Dip Switch) -

4PIN Dip Switch	RS232	RS422/485
SW1-SW2	OFF	ON
SW3-SW4	ON	OFF

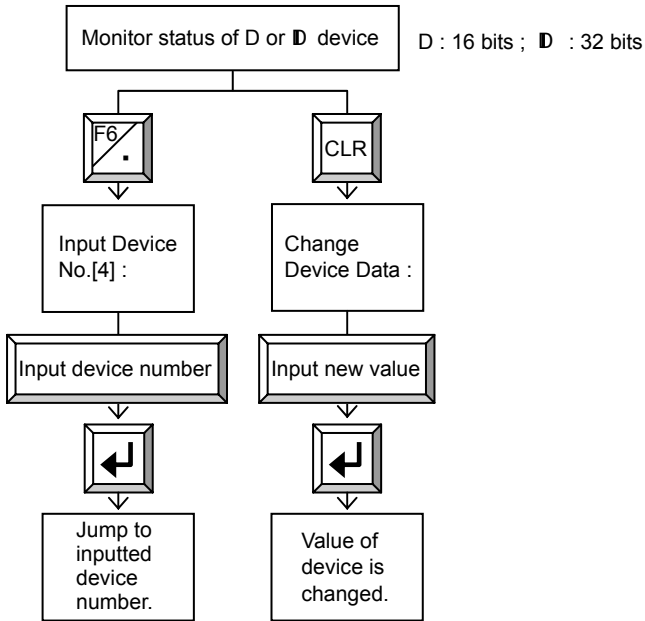
Operating Sequence



◆ Steps of controlling EP314 to STOP mode:

1. Turn power off
2. Press **ESC** button of panel first, and then turn power on
3. Press  and  button of panel, and status of PLC at stop mode is shown.

◆ Search device number and Set new value



Example Program

```

M8013
  ||-----[ Y004 ]
  ||-----[ Y005 ]
  ||-----[ M4 ]

M8013
  ||-----[ INCP D998 ]
  ||-----[ DBCDP D998 D996 D4537 K8 ]
  ||-----[ ASCIP D996 D4537 K8 ]

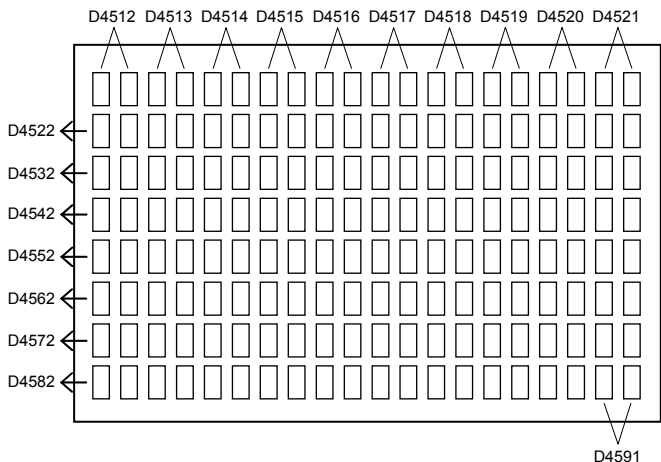
M8013
  ||-----[ ASC abcdefgh D4512 ]
  ||-----[ ASC 87654321 D4518 ]
  ||-----[ ASC Liyan D4522 ]
  ||-----[ ASC Electri D4526 ]
  ||-----[ ASC c D4530 ]

M8013
  ||-----[ ASC 12345678 D4512 ]
  ||-----[ ASC D4518 ]

M8012
  ||-----[ DINCP D0 ]
  ||-----[ DDECP D2 ]
  ||-----[ DADDP K10000 D4 D4 ]
  ||-----[ DADDP K-10000 D6 D6 ]

[ END ]
  
```

- ◆ In this mode, register D4000~D4999 can not be used for other purpose.
- ◆ This mode can display 20X8 letters in English. User just move letter which you want to display to corresponding register by MOV or ASC command, then it will be ok.
- ◆ Corresponding form between Screen and register



EP-edoc0803v142

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