Pro-face
for the best interface

FP-3500T/3600T/3650T シリーズ
取扱説明書

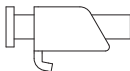FP-3500T/3600T/3650T Series
Installation Guide

Caution
Be sure to read the "Warning/Caution Information" on the attached sheet before using the product.

Package Contents

- FP unit (1)
- Installation Guide (1) (this manual)
- Installation Gasket (1) (attached to the FP unit)
- Installation Fasteners (4/set, 1set)
- Warning/Caution Information (1)
- USB Cable Clamp (2)

- DC Power Connector (1) (attached to the FP unit)
  (Only supplied with FP3500-T41-24V/FP3600-T41-24V)
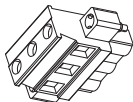
This unit has been carefully packed, with special attention to quality. However, should you find anything damaged or missing, please contact your local FP distributor immediately.

Required software/Reference manual

The FP-3500T/3600T/3650T Series unit needs the following software for operation. As FP user manual, provided by PDF media, describes its details, download the manual below and get the further information. Visit our website below and get both software and reference manual. (URL:http://www.pro-face.com/otasuke/)

- Software : Mouse Emulation Software
- Manual : FP3000 Series User Manual

Installation prerequisites for standards

For the detailed certification's information, refer to the Pro-face Home page.

■ Qualified Product (UL File No.E220851)

The following units are UL/c-UL listed products.

(UL File No.E220851)

Model Type	UL/c-UL Registration Model No.
FP3500-T41-24V	3580403-02
FP3600-T41-24V	3580404-02

■ Qualified Product (UL File No.E171486)

The following unit is UL/c-UL recognized products. (UL File No.E171486)

Model Type	UL/c-UL Registration Model No.
FP3650-T41	3580405-01

■ Cautions

Be aware of the following items when building the FP into an end-use product:
- The FP must be used as a built-in component of an end-use product.
- This unit should be installed in the front face of a metal panel.
- If this unit is installed so as to cool itself naturally, be sure to install it in a vertical panel. Also, be sure that the FP unit is mounted at least 100 mm away from any adjacent structures or equipment. If these requirements are not met, the heat generated by the FP unit's internal components may cause the unit to fail to meet UL/c-UL standard.
- For use in Pollution Degree 2 environment.
- For use on flat surface of a Type1 enclosure (FP3500-T41-24V/FP3600-T41-24V only).

CE Marking Notes

The FP3650-T41 is a CE marked product complying with both the EMC Directive and low voltage directive.
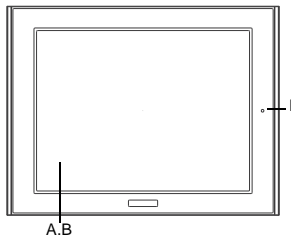
The FP3500-T41-24V and FP3600-T41-24V are CE marked products complying with the EMC Directive.

For the detailed information, be downloaded and refer the Declaration of Conformity from Pro-face Home Page.
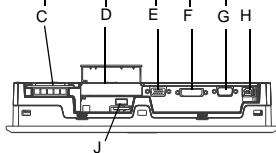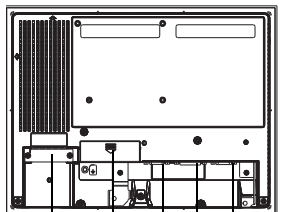
1 Part Names

This model is FP3600-T11.
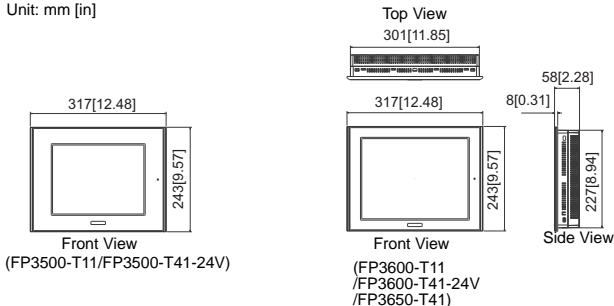
Front View

A,B

Rear View

C D E F G H

Bottom View

J

A: TFT Color LCD
Acts as a display monitor for your host.

B: Touch Panel
Allows you to switch screens or write data to the host.

C: Input Terminal Block (FP3500-T11/ FP3600-T11/FP3650-T41) or Power Connector (Socket) (FP3500-T41-24V/ FP3600-T41-24V)
Provides the input and ground terminals for a power cable.

D: Setting Switch
By opening the cover, the Dip switches and slide switch are seen. Each switch can set a operation mode.

E: Analog RGB Connector
Connector for analog RGB interface

F: DVI-D Interface Connector
Connector for DVI-D interface

G: Serial Connector
Connector for serial (RS-232C) interface. Used for sending touch panel data to the host.

H: USB Connector (Type B)
Connector for USB interface. Used for sending touch panel data to the host or used as an upstream port for USB-HUB.

I: Front LED
Used to indicate the condition of the power supply, a backlight burnout or image signal input. (On FP3650-T41 which is marked on Rev. 5, the Front LED does not indicate the backlight is burned out.)

J: USB Connector (Type A)
A downstream port for embedded USB-HUB in conformity with USB2.0/1.1 standard, which is used for connecting USB devices. Connect the upstream port of the USB-HUB (H:USB connector) to the Host PC for USB connector use.

4

2   Dimensions

Unit: mm [in]

Top View
301[11.85]

317[12.48]

243[9.57]

Front View
(FP3500-T11/FP3500-T41-24V)

317[12.48]

243[9.57]

Front View
(FP3600-T11
/FP3600-T41-24V
/FP3650-T41)

58[2.28]

8[0.31]

227[8.94]

Side View

3   Dip Switches and Slide Switch

The Dip Switches and Slide Switch are located in the bottom of the FP unit. Only the settings when the power supply is turned on is effective to the Dip Switches and the Slide Switch. After changing the settings of the Dip Switches and the Slide Switch, be sure to restart your FP unit

Bottom View

Dip Switches(SW1)
Slide Switch(SW2)

(This model is FP3600-T11.)

■ SW1

Switch	Setting	
1 2 3 4 5 6 7 8 ON	SW1-1 Reserved (Always OFF)	SW1-5 Reserved (Always OFF)
	SW1-2 Display/Hide the OSD	SW1-6 Reserved (Always OFF)
	SW1-3 Reserved (Always OFF)	SW1-7 Reserved (Always OFF)
	SW1-4 Reserved (Always OFF)	SW1-8 Reserved (Always OFF)

• SW1-2   Dip Switch SW1-2 is used to display or hide the OSD.
  To hide the OSD, set the switch to ON. To display the OSD, set the switch to OFF.
  The default setting is OFF. (OSD is displayed.)

■ SW2

Switch	Setting
232 ◄ ⋮ ► USB	Slide Switch is used to switch the data input/output (command control) method on the touch panel between USB and RS-232C (Serial). The default setting is RS-232C.

4 Interfaces

■ Analog RGB Interface

Input signal type	Analog RGB	
Input signal characteristic	Image signal : analog RGB Synchronous signal :TTL level, negative true or positive true Scanning type : non-interlace	
Setting by OSD (On Screen Display)	•CONTRAST •H-POSITION •H-size •DIMMER(BACKLIGHT) •ALL RESET (DEFAULT)	•BRIGHTNESS •V-POSITION •PHASE •SHARPNESS

◆Display Area

(FP3500-T11/FP3500-T41-24V)

Size	H Sync. (kHz)	V Sync. (Hz)	Dot Clock (MHz)	Screen Resolution Expansion (H: Horizontal) (V: Vertical)	Display Resolution
640×350[*1]	31.469	70.000	25.175	×1.0 (H) ×1.2 (V)	640×420
640×400	31.469	70.000	25.175		640×480
640×400	24.827	56.420	21.053		640×480
640×480	31.469	59.992	25.175	×1.0	640×480
720×350[*1*2]	31.469	70.000	28.320	×0.89 (H) ×1.2 (V)	640×420
720×400[*1]	31.469	70.000	28.320		640×480

[*1] When the 350 pixel (vertical) signal setting is selected, 400 pixels, including 50 pixels at the top and at the bottom of the screen will be enlarged and displayed at 480 pixels (1.2times).

[*2] When you use this resolution, set "ON" for "720 × 400 Mode" in the OSD (On Screen Display) "System Settings".

(FP3600-T11/FP3600-T41-24V)

Size	H Sync. (kHz)	V Sync. (Hz)	Dot Clock (MHz)	Screen Resolution Expansion (H: Horizontal) (V: Vertical)	Display Resolution
640×350[*1]	31.469	70.000	25.175	×1.25 (H) ×1.5 (V)	800×525
640×400	31.469	70.000	25.175		800×600
640×400	24.827	56.420	21.053		800×600
640×480	31.469	59.992	25.175	×1.25 (H) ×1.25 (V)	800×600
640×480	35.000	66.670	30.240		
640×480	37.861	72.810	31.500		
720×350[*1*2]	31.469	70.000	28.320	×1.1 (H) ×1.5 (V)	800×525
720×400[*2]	31.469	70.000	28.320		800×600
800×600	35.156	56.250	36.000	×1.0	800×600
800×600	37.879	60.317	40.000		

[*1]. When the 350 pixel (vertical) signal setting is selected, 400 pixels, including 50 pixels at the top and at the bottom of the screen will be enlarged and displayed at 600 pixels (1.5times).

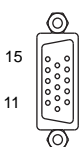[*2]. When you use this resolution, set "ON" for "720 × 400 Mode" in the OSD (On Screen Display) "System Settings".

(FP3650-T41)

Size	H Sync. (kHz)	V Sync. (Hz)	Dot Clock (MHz)	Screen Resolution Expansion (H: Horizontal) (V: Vertical)	Display Resolution
640×400	24.827	56.000	21.053	×1.6 (H) ×1.92 (V)	1024×768
640×400	31.469	70.000	25.175		
640×480	31.469	59.992	25.175	×1.6	
640×480	37.500	75.000	31.500		
640×480	35.000	66.667	30.240		
720×400[*1]	31.469	70.000	28.320	×1.42 (H) ×1.92 (V)	
800×600	37.879	60.317	40.000	×1.28	
800×600	46.875	75.000	49.500		
1024×768	48.363	60.004	65.000	×1.0	
1024×768	56.476	70.069	75.000		
1024×768	60.023	75.029	78.750		

[*1]. When you use this resolution, set "ON" for "720 × 400 Mode" in the OSD (On Screen Display) "System Settings".

◆Pin Assignments and Signal Names for Analog RGB

Pin No.	Signal Name	Pin No.	Signal Name	Pin No.	Signal Name	Pin Location
1	Analog R	6	Return R	11	Reserved	
2	Analog G	7	Return G	12	DDC DATA	
3	Analog B	8	Return B	13	H. SYNC	
4	Reserved	9	Reserved	14	V. SYNC	
5	Digital grounding	10	Digital grounding	15	DDC CLOCK	

Connector .... Mini Dsub 15 pin male
Connector set screw ..... Inch type (#4-40UNC)
Cable............................. RGB cable manufactured by Pro-face.
　　　　　　　　　　　　　FP-CV02-45 <4.5m> (VGA standard)

IMPORTANT
- If a cable other than the specified RGB cable is used, product performance cannot be guaranteed due to the possibility of noise interfering with the FP unit's operation.

■ DVI-D Interface

Input signal type	DVI-D	
Setting by OSD (On Screen Display)	•CONTRAST •DIMMER(BACKLIGHT) •ALL RESET (DEFAULT)	•BRIGHTNESS •SHARPNESS

◆Display Area

(FP3500-T11/FP3500-T41-24)

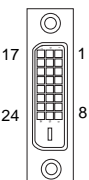| Size	H Sync. (kHz)	V Sync. (Hz)	Dot Clock (MHz)	Screen Resolution Expansion (H: Horizontal) (V: Vertical)	Display Resolution
640×400	31.469	70.000	25.175	×1.0 (H) ×1.2 (V)	
640×400	24.827	56.420	21.053		
640×480	31.469	59.992	25.175	×1.0	640×480
720×400[*1]	31.469	70.000	28.320	×0.89 (H) ×1.2 (V)	

[*1.] When you use this resolution, set "ON" for "720 × 400 Mode" in the OSD (On Screen Display) "System Settings".

(FP3600-T11/FP3600-T41-24):

Size	H Sync. (kHz)	V Sync. (Hz)	Dot Clock (MHz)	Screen Resolution Expansion (H: Horizontal) (V: Vertical)	Display Resolution
640×400	31.469	70.000	25.175	×1.25 (H) ×1.5 (V)	800×600
640×400	24.827	56.420	21.053		
640×480	31.469	59.992	25.175	×1.25 (H) ×1.25 (V)	
640×480	35.000	66.670	30.240		
640×480	37.861	72.810	31.500		
720×400[*1]	31.469	70.000	28.320	×1.1 (H) ×1.5 (V)	
800×600	35.156	56.250	36.000	×1.0	
800×600	37.879	60.317	40.000		

[*1.] When you use this resolution, set "ON" for "720 × 400 Mode" in the OSD (On Screen Display) "System Settings".

(FP3650-T41)

Size	H Sync. (kHz)	V Sync. (Hz)	Dot Clock (MHz)	Screen Resolution Expansion (H: Horizontal) (V: Vertical)	Display Resolution
640×400	24.827	56.000	21.053	×1.6 (H) ×1.92 (V)	1024×768
640×400	31.469	70.000	25.175		
640×480	31.469	59.992	25.175	×1.6	
640×480	37.500	75.000	31.500		
640×480	35.000	66.667	30.240		
720×400[*1]	31.469	70.000	28.320	×1.42 (H) ×1.92 (V)	
800×600	37.879	60.317	40.000	×1.28	
800×600	46.875	75.000	49.500		
1024×768	48.363	60.004	65.000	×1.0	
1024×768	56.476	70.069	75.000		
1024×768	60.023	75.029	78.750		

[*1.] When you use this resolution, set "ON" for "720 × 400 Mode" in the OSD (On Screen Display) "System Settings".

◆Pin Assignments and Signal Names for DVI-D

Pin	Signal Name	Pin	Signal Name	Pin	Signal Name	Pin Location
1	TMDS DATA2-	9	TMDS DATA1-	17	TMDS DATA0-	
2	TMDS DATA2+	10	TMDS DATA1+	18	TMDS DATA0+	
3	TMDS DATA2 SHIELD	11	TMDS DATA1 SHIELD	19	TMDS DATA0 SHIELD	
4	NC	12	NC	20	NC	
5	NC	13	NC	21	NC	
6	DDC Clock	14	NC	22	TMDS CLOCK SHIELD	
7	DDC Data	15	GND	23	TMDS CLOCK+	
8	NC	16	Hot Plug Detect	24	TMDS CLOCK-	

Connector .... DVI-D 24-pin male

Connector set screw ..... Inch type (#4-40UNC)

Cable   DVI-D cable manufactured by Pro-face.

        FP-3500T/3600T Series: FP-DV01-50 <5 m>

        FP3650-T41: FP-DV01-50 <5 m>

                    FP-DV01-100 <10 m>
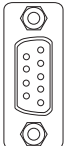
IMPORTANT

- If a cable other than the specified DVI-D cable is used, product performance cannot be guaranteed due to the possibility of noise interfering with the FP unit's operation.
- Only when the FP3650-T41 is connected with PS-2000B or PL-3000B (Revision B or more), FP-DV01-100 can be used.
  - Please turn on PS-2000B's internal dipswitch 4 when use FP-DV01-100 with PS-2000B. (The resolution that can be displayed is 1024 x 768 Become only (XGA).) Please turn off dipswitch 4 when use FP-DV01-50.
  - Please set PL-3000B's internal dipswitch 5 to ● sign side when you use FP-DV01-100 with PL-3000B. We will recommend the resolution of PL-3000B to change to the maximum display resolution of FP additionally. Please set it on the opposite side of ● sign when use FP-DV01-50.

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■ Serial Interface

RS-232C Serial Interface	Baud rate : 9600 bps
	Data length : 8 bits
	Parity : None
	Stop bit : 1
	Flow Control: None

Pin Assignments and Signal Names for Serial Interface

Pin No.	Signal Name	Condition	Pin Location
1	CD	Carrier Detect[*1]	
2	RD	Receive Data (FP->Host)	
3	SD	Send Data (FP<-Host)	
4	DTR	Data Terminal Ready[*1]	
5	GND	Ground	
6	DSR	Data Set Ready[*1]	
7	RS	Request to Send (FP<-Host)	
8	CS	Clear to Send (FP->Host)	
9	NC	(Used internally)	

[*1] The CD, DTR, and DSR are connected together inside of the FP.

Connector .... Dsub 9 pin female
Connector set screw ..... Inch type (#4-40UNC)
Cable............................ SIO cable for FP manufactured by Pro-face.
(FP61V-IS00-O)

Concerning Signal Names

Signal names used for the serial interface on FP units are designed to match the pin order used on most PC serial interfaces, so that a straight cable can be used to connect the two. Therefore, connect each pin's signal to the same signal name on the PC side.

For example, pin #2 'RD' should be connected to the 'RD' input terminal on the PC's connector.

Refer to the FP3000 Series User Manual's section "Cable Diagrams" for each signal's direction.

■ USB Interface (Type-B connector : Up-Stream Port)

Pin Assignments and Signal Names for USB Interface

Pin No.	Signal Name	Condition	Pin Location
1	USB1-5V	+5VIN	
2	USBD1(-)	USB data(-)	
3	USBD1(+)	USB data(+)	
4	GND	Ground	

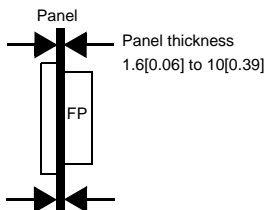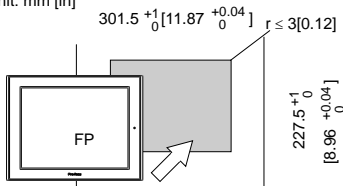Cable............................ USB cable manufactured by Pro-face.
(FP-US00)

IMPORTANT
• If a cable other than the specified USB cable is used, product performance cannot be guaranteed due to the possibility of noise interfering with the FP unit's operation.

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5 Installation

(1) According to the Panel Cut size, make installation holes on the panel. Also, determine the panel thickness according to the panel thickness range with due consideration of panel strength.

Unit: mm [in]

$301.5 \, ^{+1}_{0} [11.87 \, ^{+0.04}_{0}]$ $r \leq 3 [0.12]$

$227.5 \, ^{+1}_{0}$
$[8.96 \, ^{+0.04}_{0}]$

Panel

Panel thickness
1.6[0.06] to 10[0.39]

(2) Check that FP has installation fasteners. Insert the FP from the front.

IMPORTANT
- Installation gasket must be used even though it is not necessary for its environment. For installation, refer to the FP3000 Series User Manual.
- Check that the installation panel or cabinet's surface is flat, in good condition and has no jagged edges. Also, if desired, metal reinforcing strips can be attached to the inside of the panel, near the Panel Cut, to increase the panel's strength.

(3) The following figures show the four(4) fastener insertion slot locations. Insert each fastener's hook into the slot. Tighten the screws in a diagonal pattern, and slowly increase the torque.

Top

Insertion Slots

Bottom

Panel

Installation fastener

Hook

FP
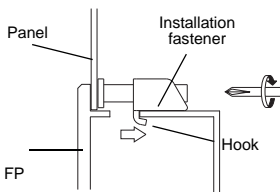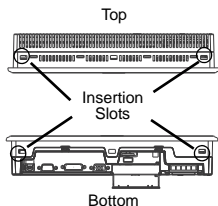
IMPORTANT
- Tightening the screws with too much force can damage the FP unit's case.
- The necessary torque is 0.5 N•m.

⚠ **WARNING**

- To avoid an electric shock, when connecting the FP's power cord terminals to the power terminal block, confirm that the FP's power supply is completely turned OFF, via a breaker, or similar unit.
- To avoid the dangers of fire, electric hazards and equipment damage, be sure to use only the specified voltage when operating the FP.
- Since there is no power switch on the FP unit, be sure to attach a breaker-type switch to its power cord.

■ Electrical Specification

Item			Specification	
			Type DC	Type AC
Power Supply	Rated Voltage		DC24V	AC100 ~ 240V
	Allowable Voltage		DC19.2 ~ 28.8V	AC85 ~ 265V
	Rated Frequency		-	50 / 60HZ
	Allowable Frequency Range		-	40 ~ 72Hz
	Allowable Voltage Drop		10 ms (Max.)	1 cycle or less (Voltage Drop Interval is 1s or more)
	Power Consumption	FP-3500T Series	DC 24V 2.08A (or less) (TYP 1.08A)	AC100V 0.90A or less (TYP 0.55A) AC240V 0.45A or less (TYP 0.30A)
		FP-3600T Series	DC 24V 2.08A (or less) (TYP 1.30A)	
		FP3650-T41	-	
	In-Rush Current		30A (Max.)	60A (Max.)
Voltage Endurance			AC1000V 20mA 1 for minute (between charging and FG terminals)	AC1500V 20mA for 1 minute (between charging and FG terminals)
Insulation Resistance			DC500V 10MΩ (Min.) (between charging and FG terminals)	DC500V 10MΩ (Min.) (between charging and FG terminals)

■ Environmental Specification

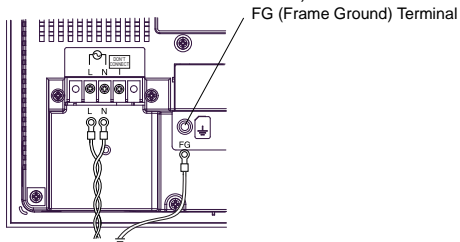| Item	Specification
Surrounding Air Temperature	0 ~ 50ºC (The panel should not incline more than 30º)
Storage Temperature	-20 ~ +60ºC
Ambient Humidity	10 ~ 90%RH
Storage Humidity	(No condensation, Wet bulb temperature: 39ºC max.)
Air Purity (Dust)	0.1mg/m^3 (Max.) (No electrically conductive dust is allowed)
Pollution Degree	For use in Pollution Degree 2 environment

■ FP3500-T11/FP3600-T11/FP3650-T41 (Type AC)

◆Power Cable Connecting

	AC cable	Grounding Wire
Power Cord	Double insulation wire $1.25\sim2.0$ mm^2 (16-14AWG)	$1.25\sim2.0$ mm^2 (16-14AWG)
Recommended Ring terminal[1]	V2-MS3 compatible (J.S.T. Mfg. Co.,Ltd). Over ø3.2 mm[0.13 in.] Under 6.0 mm [0.24 in.]	V2-P4 compatible (J.S.T. Mfg. Co.,Ltd). Over ø4.3 mm[0.17 in.] Under 7.0 mm [0.28 in.]

[1] In order to prevent a short circuit caused by loose screws, make sure to use a crimp-type terminal with insulating sleeve.

◆Connecting the FP Power Cord

(1) Be sure that the FP's power cord is not plugged in to the power supply.
(2) Remove the Terminal Strip's clear plastic cover.
(3) Remove the screws from the two (2) terminals (L,N) and FG (Frame Ground) Terminal, position the Ring Terminals and reattach the screws. (Check each wire to make sure the connections are correct)

FG (Frame Ground) Terminal

NOTE

• The torque required to tighten these screws are as follows:
Terminal Block: 0.5 to 0.6N•m.
FG (Frame Ground) Terminal: 0.6 to 0.7 N•m.

(4) Reattach the Terminal Strip's clear plastic cover.

■ FP3500-T41-24V/FP3600-T41-24V (Type DC)
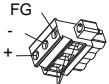
◆Power Cable specification

Use copper conductors only.

Cable thickness	0.75~2.5mm² (18-12 AWG)
Core wire condition	Single or Stranded wire[*1]
Core wire length	7mm[0.28inch]

[*1]. In case of using a strand wire, inappropriate twisting of the core wire may cause short circuit between each wire, or between wire and the abutting electrode contact.

◆Power connector specification

	+	24V
FG - + Power Cable Joint	-	0V
	FG	A frame ground terminal connected with FP unit

NOTE
- Ensure that the power cable is twisted where it is near the connector.
- Kind of power cord is GMVSTBW2,5/3-STF-7,62, which are Phoenix Contact products.

Use the following wiring for FP. Those are Phoenix Contact products.

Recommended Drivers	SZF 1-0.6×3.5(1204517)	
Recommended stick end terminal	AI 0.75-8GY (3200519)	AI 1-8RD (3200030)
	AI 1.5-8BK (3200043)	AI 2.5-8BU (3200522)
Crimp tool for recommended stick end terminal	CRIMPFOX ZA 3 (1201882)	

◆Power cable connecting

(1) Make sure that the power cable has no power distribution.
(2) Remove the power connector from the unit.
(3) There are three screws located in the center of the connecter. Make them loosen.
(4) Peel some of the outside of shield part, twist core wires, and insert the wire into each cable joint.
(5) Fix all of them with screws.
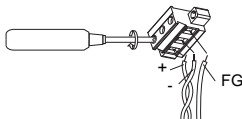
IMPORTANT	• Use a minus driver when fixing terminal screws. The necessary torque is 0.5~0.6N•m [5~7 lb•in].
	• Cable joints are not allowed to solder.

(6) Install the connector in the FP. With both sides of the installation screws of the connector, fix them firmly.

7 Using the USB Cable Clamp

■ USB Cable Clamp Attachment Procedure

◆Installation to USB cable

(1) Insert the USB cable into the USB connector.
(2) Tighten the clamp until the cable is secured in place and insert the convex of cable clamp into the USB fixing hole to fix both as shown in the following figure.
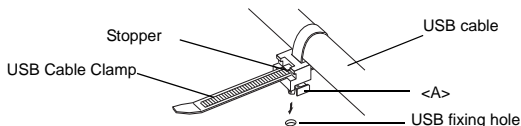
◆USB Cable Clamp Removal Feature

(1) Push up the cable clamp's stopper with a standard flat-blade screwdriver until the cable clamp is unlocked.
(2) Disconnect the USB cable.

NOTE	• If the stopper will not move, press on <A> (shown in the figure) to free the clamp from the clamp holder.

Power Supply Cautions

Please pay special attention to the following instructions when connecting the power cord terminals to the FP unit.

- If the power supply voltage exceeds the FP unit's specified range, connect a voltage transformer.
- Between the line and the ground, be sure to use a low noise power supply. If there is still an excessive amount of noise, connect a noise reducing transformer.
- Input and Output signal lines must be separated from the power control cables for operational circuits.
- The FP unit's power supply cord should not be bundled with or kept close to main circuit lines (high voltage, high current), or input/output signal lines.
- Connect a surge absorber to handle power surges.
- To reduce noise, make the power cord as short as possible.
- The temperature rating of field installed conductors: 75 ºC only (FP3500-T41-24V/FP3600-T41-24V only).

9 Grounding Caution

When attaching a wire to the FP unit's rear face FG terminal, (on the AC Connector), be sure to create an exclusive ground.
(Use a grounding resistance of 100Ω, a wire of 2mm^2 or thicker, or your country's applicable standard.)

10 Input/Output Signal Line Cautions

- All FP Input and Output signal lines must be separated from all operating circuit (power) cables.
- If this is not possible, use a shielded cable and ground the shield.

11 Calibration of OSD Display Position

■ OSD Functions
You can operate the FP screen menus via the touch panel, and even if FP is operating, adjust screen image display to a minute level. The feature is called OSD (On Screen Display). The items that can be set with OSD and the functions are shown.

Example of OSD screen   "Ver.*.**" indicates the version of the OSD.
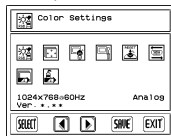
	Item	Function
⚙	Color Settings	Adjusts the contrast and the brightness.
	Screen Settings	Adjusts the display position of the screen.
	Custom Display	Adjusts Sharpness and the backlight brightness.
	System Settings	Changes settings such as activating the click sound.
	All Reset	Resets the current OSD value to the default value.
	Input Source	Switches Analog RGB and DVI-D.
	Auto Adjust	Automatically adjusts the display position of the screen. (Analog RGB only)
	Auto Gain	Automatically adjusts the contrast and the brightness. (Analog RGB only)
ESC	ESC	Cancels the setting and returns to the upper level.
SET	SET	Applies the setting and returns to the upper level.
◀▶	Arrow KEY	Changes the selection.
SELECT	SELECT	Selects icons or items.
SAVE	SAVE	Saves the current value and quits the OSD.
EXIT	EXIT	Quits the OSD.

■ Starting the OSD

To start the OSD and enter OSD mode, press the three corners of the touch panel in turn (upper left, upper right, and lower right) within 5 seconds. In OSD mode, the setting screen is displayed in the center of the screen. In this mode, the touch panel cannot be used to export data to external devices unless the settings for the OSD are completed.

NOTE
• OSD is not displayed when a SW 1-2 is ON.

■ Using the OSD

Icons on the screen are used to operate the OSD. After the OSD start-up, the top menu displays. Touching the icon you want to adjust displays its submenu or setting change screen. In the setting change screen, ◀▶ icons are used to change the setting. To apply the setting, press the SET button. Press the SAVE button to save the defined settings.

■ Quitting the OSD

To quit the OSD, press the SAVE or EXIT button in the top menu or leave the OSD as it is for at least 30 seconds.

IMPORTANT
- In the OSD, pressing the **SET** button applies the set value and enables the setting. The set value won't be canceled unless the power is turned OFF or the value is reset.
  If the power is turned OFF without saving the set value, that data will disappear. The last saved data will be read into the system when the FP starts. To enable the changed value, be sure to press the **SAVE** button.
- All the setting values, even though in process of the OSD settings, will be retained in condition of letting the OSD leave more than 30 seconds or by pressing the **EXIT** button. The OSD will keep those values and make them effective until power-off or a Reset command input.

■ Top Main

Color Settings

- **SELECT** Selection of the change item   **◄ ►** Adjustment button
  - → Contrast
  - → R.Contrast
  - → G.Contrast
  - → B.Contrast
  - → Brightness
- **SET** Applies the setting and then returns to the top menu.
- **ESC** Cancels the setting and then returns to the top menu.

Screen Settings

- **SELECT** Selection of the change item   **◄ ►** Adjustment button
  - → H.Position (Analog RGB only)
  - → V.Position (Analog RGB only)
  - → H.size (Analog RGB only)
  - → Phase (Analog RGB only)
  - → Display Clock Clock for output to TFT-color display can be finely adjusted according to 9 levels. (Default: 50)
    Please use to the default value normaly.
- **SET** Applies the setting and then returns to the top menu.
- **ESC** Cancels the setting and then returns to the top menu.

Custom Display

- **SELECT** Selection of the change item   **◄ ►** Adjustment button
  - → Sharpness
  - → Dimmer
  - → Auto Adjust Enable
  - → OSD Transparent
- **SET** Applies the setting and then returns to the top menu.
- **ESC** Cancels the setting and then returns to the top menu.

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 System Settings

SELECT Selection of the change item ◀ ▶ Adjustment button

- **Click Tone** Enables/disables the click sound. With this parameter, the sound level can also be adjusted. (Default value: OFF <Click sound disabled>)

- **720x400 Mode** When an input data resolution of 720 x 400 is used in the VGA text mode, set this parameter to ON. For other resolutions, set this parameter to OFF. (Default: ON)

- **Auto off Disp** Enables/disables the screen display Auto OFF function and sets the time when the Auto OFF function is enabled. (Default: OFF <Auto OFF function disabled>)

  The Auto OFF function automatically turns off the display to prevent the screen from burning out when the touch panel is not used for some period of time. With this parameter, you can set the time interval to turn off the screen display (how much time passes before the screen display is turned off) when the touch panel is not used. If the touch panel is not touched over the set time, the backlight will automatically turns off. Select the time period from 1 min, 3 min, 5 min, 10 min, and OFF (Auto OFF function disabled).

- **BL Alarm** Enables/disables the Backlight burnout detect function. (Default: ON <Enable>)

  When a burned-out backlight is detected, the status LED flashes alternately green and red, or a steady orange. Touch-operation will be disabled when the backlight burns out, which prevents the FP from sending input signals to the PLC. (On FP3650-T41 which is marked on Rev. 5, as the unit does not support this feature its value is fixed as OFF (Disable).)

  IMPORTANT • Normally, the FP unit detects a backlight burnout by monitoring the backlight's current flow, however, the FP may fail to detect this condition, depending on the type of backlight problem.

- **Detect 2-Point Touch** Enables to halt the data output procedure when two points of the touch panel are pressed. (Default: OFF <Disable>)

  IMPORTANT • When doing the touch operation on a screen like the desktop of Windows®, disable this function.

  • Depending on the conditions, it may not be able to be detected that the two points were pressed.

- **Power on Buzzer** Enables/disables the buzzer sound in turning on the power. (Default: ON <Buzzer sounds enabled>)

- **USB Touch Panel ID** Set the touch panel ID number using the number 0 to 3, when connecting to USB. (Default: 0)

SET Applies the setting and then returns to the top menu.

ESC Cancels the setting and then returns to the top menu.

![RESET] All Reset

> ![SET] Resets all the settings and then returns to the top menu.

> ![SET] Cancels the setting and then returns to the top menu.

![icon] Input Source

> ![SET] Switches Analog RGB and DVI-D, and quits the OSD.

> ![SET] Cancels the setting and then returns to the top menu.

![icon] Auto Adjust (Analog RGB only)

> ![SET] Applies the setting and then returns to the top menu.

> ![SET] Cancels the setting and then returns to the top menu.

> **IMPORTANT** • Be sure to perform the auto adjust while things except that black are shown on sides of the display.

![icon] Auto Gain (Analog RGB only)

> ![SET] Applies the setting and then returns to the top menu.

> ![SET] Cancels the setting and then returns to the top menu.

> **IMPORTANT** • Be sure to perform the auto gain control when the screen has both 100% black and 100% white areas displayed.

![SELECT] Icon decision

![◄►] Icon selection

![SAVE] Saves the setting and quits the OSD. Saves all the adjusted settings in the EEPROM.

![EXIT] End of OSD

Note

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