

# Human Machine Interface PMU Series

PMU 830 / 730 / 530 / 330 Series



## Automation Equipment



# PMU Series

Providing screens with **256 colors** and upgraded functions and performance, we have enhanced competitive strength.



### High-speed communication

- ✔ 32-bit processor adopted for high-speed graphic process
- ✔ Maximum communication speed:115,200bps
- ✔ Screen transfer support

### Easy operation










- ✔ Direct input of controller address and variable libraries support
- ✔ Easy to communicate with LS PLCs via Fnet/Rnet
- ✔ Recipe function for batch processing of parameter data
- ✔ Data logging for running data back-up
- ✔ Basic TENKEY support (no program needed)
- ✔ Image scale up/down

### Various image functions

- ✔ Various products:4 products/9 features
- ✔ Screen configuration with 256 colors
- ✔ Various image functions available (background bitmap, transparent bitmap, etc.)
- ✔ Various network configurations thanks to various communication drivers and communication functions
- ✔ Simultaneous communication with 2 different PLCs via COM1 and COM2
- ✔ Script function support
- ✔ Various language table support

PMU Series	
Property	Product name
	Part number
	Feature
	Display component
	Screen size
	Display color
	Screen resolution
	1 Touch size
	Touch cell
	Displaying language
	Graph type
	Brightness
	Screen save memory
	System buffer memory
Font memory	
Supercapacitor	
SRAM	
Serial	
Fnet	
Rnet	
Printer port	
Dimensions	
Panel cut	
Input power	
Specification	Power consumption
	Internal noise
	Ambient temperature
	Storage temperature
	Ambient humidity
	Insulation resistance
	Internal vibration
	Internal shock
	Full waterproof
	Grounding

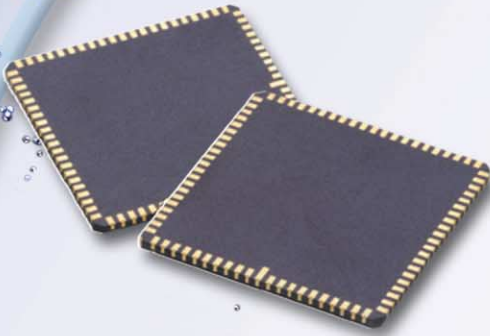


PMU-830	PMU-730		PMU-530		PMU-330			
PMU-830TT(/DC)	PMU-730TTS(/DC)	PMU-730STS(/DC)	PMU-530TTS	PMU-530ST	PMU-330TT	PMU-330ST	PMU-330BT	PMU-330BTE
								
TFT Color	TFT Color	STN Color	TFT Color	STN Color	TFT Color	STN Color	STN Mono	STN Mono
12.1"	10.4"	10"	8"	7.5"	5.5"	5.7"	5.7"	5.7"
256colors							BLUE (MONO)	
1x1 (Dot)			1x1 (Dot)		20x20 (Dot)			1x1 (Dot)
800x600			800x600	640x480	16x12			320x240
Analog			Analog		Matrix			Analog
English, Chinese, Japanese, Korean								
Bar, Trend, Meter, Pie, XY Chart								
135 cd/m <sup>2</sup>	200 cd/m <sup>2</sup>	100 cd/m <sup>2</sup>	150 cd/m <sup>2</sup>	147 cd/m <sup>2</sup>	250 cd/m <sup>2</sup>	75 cd/m <sup>2</sup>	220 cd/m <sup>2</sup>	
4M				2M		1M	1M	512K
3072 Word								
1M (8x8, 8x16, 16x16, 16x32, 32x32 FONT support)								
Built-in				Option				x
Built-in (256 KB)				Option				x
RS232C/2ports (MAX 115200bps)								
RS422 (MAX 115200bps)								
Option							x	
Option							x	
Built-in				Option				x
305(W) x 239(H) x 55(D) mm			240(W) x 170(H) x 62(D) mm		206(W) x 136(H) x 64(D) mm			
294(W) x 228(H) mm			231(W) x 161(H) mm		198(W) x 128(H) mm			
85~265VAC, (/DC):21~28V DC					21~28V DC			
20W				12W				
1200Vp-p				900Vp-p				
0~50°C								
-10~60°C								
Below 85% RH								
10MΩ								
10 ≤ F ≤ 25 Hz								
10G								
IP65F								
Class 3 grounding								





## PMU 30 Series



### 32-bit RISC CPU enables a high-speed processing

- ✓ 256 colors support
- ✓ Equivalent process speed in bitmap and general diagram
- ✓ Improved calculation speed with multi-thread process
- ✓ Max. 115,200bps baud rate support

### Extended memory capacity

- ✓ Batteryless backup : flash memory
- ✓ Screen save memory with 1~4MB
- ✓ Enhanced memory efficiency
- ✓ 3072-word buffering for data process
- ✓ 256K memory for data logging and recipe
- ✓ Screen save and logging memory extension (when required)

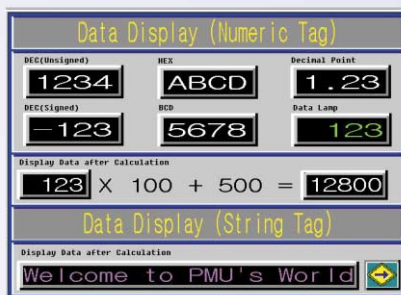
### Various network configurations

- ✓ Built-in RS-232C/422 communication ports
- ✓ Connecting to PLC enables communication diagnosis
- ✓ N:1 communication using RS-485 port
- ✓ 1:N communication using RS-422 port
- ✓ Print : built-in printer port (PMU-730/830), option module (PMU-330/530)
- ✓ N:1 communication using Fnet/Rnet
- ✓ Simultaneous communication with different PLCs via PMU ports (COM1, COM2)



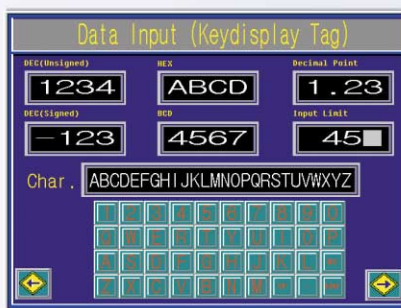
## Numeric display

- ✓ Numeric data display: DEC, HEX and BCD type
- ✓ Data display with 8 different colors depending on the numeric range variance
- ✓ Data from controllers can be displayed after calculation
- ✓ ASCII CODE, read from PLC or controller, can be displayed with characters



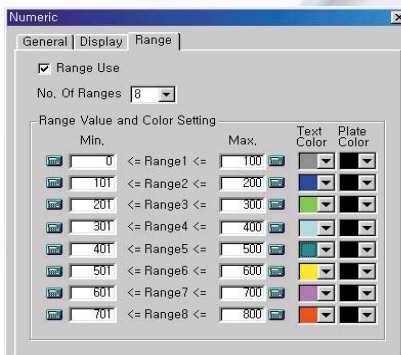
## Data input function

- ✓ Data setting with min./max. value
- ✓ Input range limit
- ✓ Data input using TENKEY
- ✓ Password encrypted
- ✓ Basic TENKEY support (No program needed)

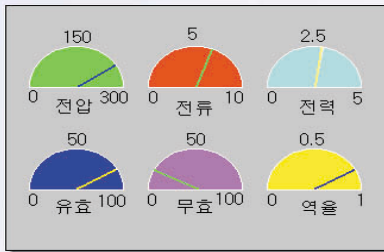
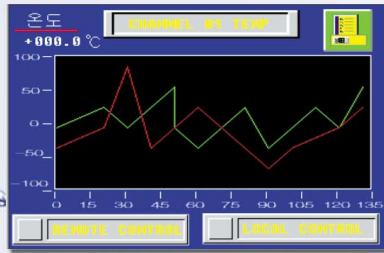


## Touch and lamp function

- ✓ **Caption**  
Displays 2 letters according to the device status (ON/OFF) when using touch/lamp tag  
Various font and language support with image-text
- ✓ **Touch color**  
Displays the device status (ON/OFF) with colors after operation of touch button with lamp function
- ✓ **Data lamp**  
Displays lamp with 8 colors, according to the data range, while monitoring data
- ✓ Maximum 10 functions can be set up with one touch tag



# PMU 30 Series



	W0	W1	W2	W3	W4	W5	W6	W7	W8	W9
Block1	0	0	0	734	225	273	0	10	0	0
Block2	2	1308	1	1	12	1	3	-2	0	1
Block3	49	1	1	1	56	0	306	1	23	22
Block4	0	1	49	1	1	1	55	0	283	1
Block5	23	22	0	1	49	1	1	1	54	0
Block6	0	0	0	0	0	0	0	0	0	0
Block7	0	0	0	0	0	0	0	0	0	0
Block8	0	0	0	0	0	0	0	0	0	0

## Graph function

- ✔ **Trend graph**
  - Input value change is visually shown with the time axis
  - 10 data can be set up with one graph
  - Logging data and recipe data trend available
- ✔ **Meter graph**
  - Sets the lowest/highest value of data and displays current data in rate
  - Preset warning color is shown when data are out of range
  - Analog data (voltage, current) display

## Recipe function

- ✔ Running data of each work are stored in PMU
- ✔ When work changes, running data are batch-transferred to the controller
- ✔ Converts the setup data into MS EXCEL format
- ✔ High-performance under a varied and small volume production environment

## Data logging

- ✔ Data generated during operation are stored in PMU
- ✔ Periodic or conditional data logging
- ✔ Data stored in PMU can be saved in PC using PMU Editor
- ✔ Converts logging data in PC into an MS EXCEL report

## Various bitmap functions

- ✔ **256-color bitmap support**

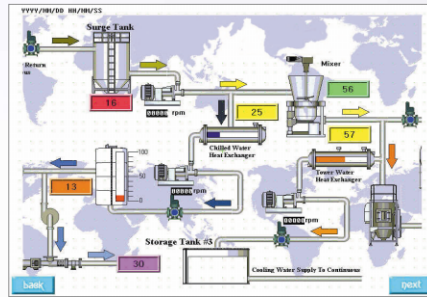
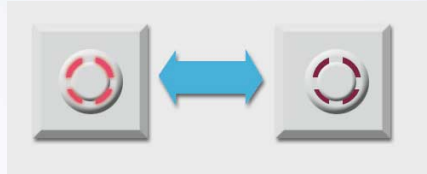
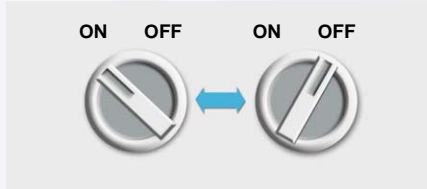
  - A realistic screen with 256 colors
  - A 256-color bitmap file display available
  - Spectacular graphics using various colors
  - Various functions using bitmap
  
- ✔ **Bitmap touch**

Calls other bitmap according to the device status (ON/OFF) after touch operation
  
- ✔ **Bitmap lamp**

Displays other bitmap according to the bit status (ON/OFF) while monitoring
  
- ✔ **Background bitmap**

Draws pictures on screen with a background bitmap of the same screen resolution
  
- ✔ **Transparent bitmap and lettering function**

Does not display the unnecessary part of bitmap and background of letters



PMU 830

## New Standard of Deluxe Type HMI

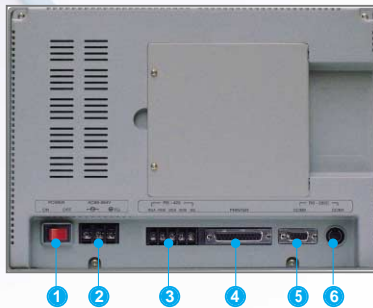


PMU-830TT  
12.1" TFT 256 Colors

### Features

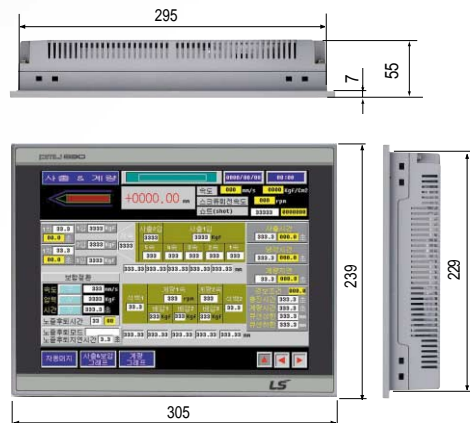
- ✔ 32-bit RISC CPU
- ✔ 800x600 screen resolution
- ✔ 4MB flash memory for saving screen data
- ✔ Built-in RS-232C/422 communication port
- ✔ Built-in printer port
- ✔ Analog touch type
- ✔ Data logging function
- ✔ Recipe function

### Specifications



NO	Name	Specifications
1	Switch	Main power switch
2	Power port	Main power port of PMU (AC85~265V)
3	RS-422 port	5-pin RS-422 serial communication port
4	Printer connector	Printer connection connector
5	RS-232C port	9-pin RS-232C serial communication port
6	PS2 connector	Program downloading port/COM1 comm.

### Size (mm)







PMU 730

## Standard and High Performance HMI



PMU-730TTS  
10.4" TFT 256 Colors

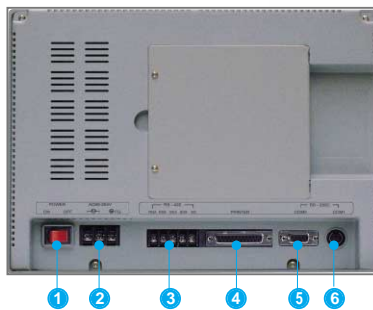


PMU-730STS  
10" STN 256 Colors

### Features

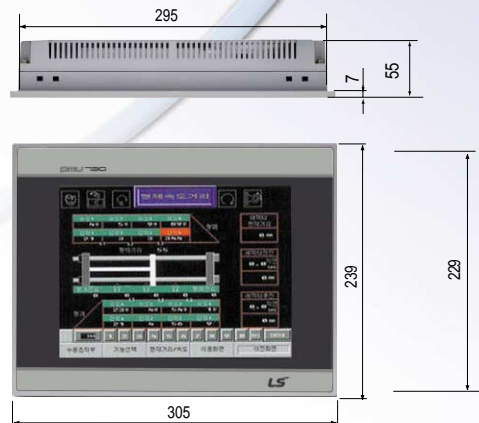
- ✔ 32-bit RISC CPU
- ✔ 800x600 screen resolution
- ✔ 4MB/2MB flash memory for saving screen data
- ✔ Built-in RS-232C/422 communication port
- ✔ Built-in printer port
- ✔ Analog touch type
- ✔ Data logging function
- ✔ Recipe function

### Specifications



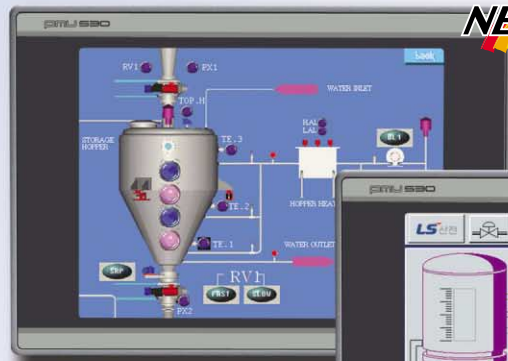
NO	Name	Specifications
1	Switch	Main power switch
2	Power port	Main power port of PMU (AC85~265V)
3	RS-422 port	5-pin RS-422 serial communication port
4	Printer connector	Printer connection connector
5	RS-232C port	9-pin RS-232C serial communication port
6	PS2 connector	Program downloading port/COM1 comm.

### Size (mm)



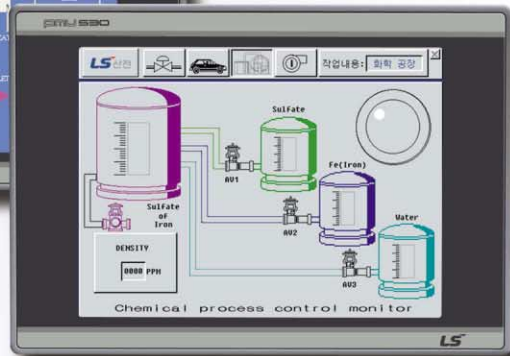
# PMU 530

## Economic and Best Fit



**NEW**

PMU-530TTS  
8" TFT 256 Colors

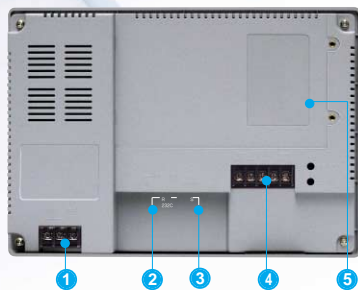


PMU-530ST  
7.5" STN 256 Colors

### Features

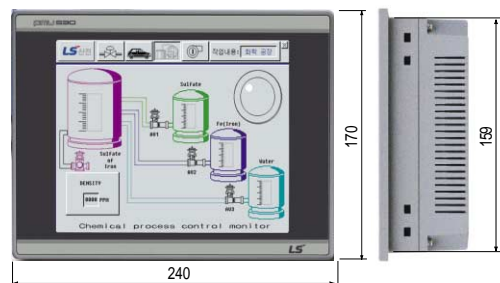
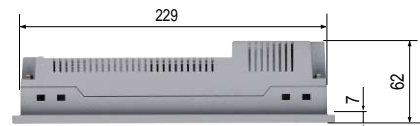
- ✓ 32-bit RISC CPU
- ✓ 800x600, 640x480 screen resolution
- ✓ 4M/2M flash memory for saving screen data
- ✓ Analog touch type
- ✓ Data logging function
- ✓ Recipe function

### Specifications



NO	Name	Specifications
1	Power port	Main power port (AC85~265V)
2	PS2 connector	Program downloading port/COM1 comm.
3	RS-232C port	9-pin RS-232C serial communication port
4	RS-422 port	5-pin RS-422 serial communication port
5	Option card connector	Printer and memory extension connection port

### Size (mm)





# PMU 330

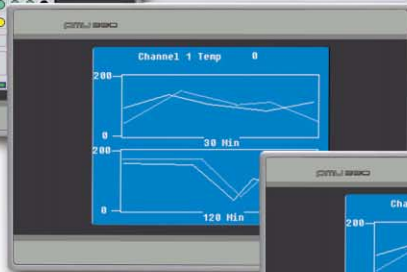
## Economic and Wide Range of HMI



PMU-330TT  
5.5" TFT 256 Colors



PMU-330ST  
5.7" STN 256 Colors



PMU-330BT  
5.7" STN Mono Color

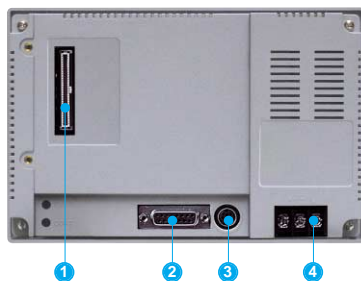


PMU-330BTE  
5.7" STN Mono Color

### Features

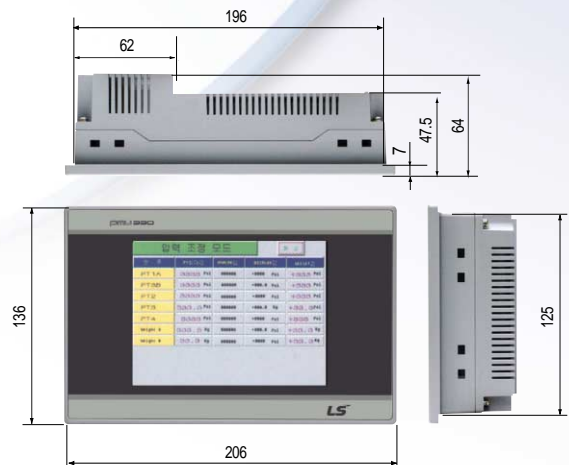
- ✔ 32-bit RISC CPU
- ✔ 320x240 screen resolution
- ✔ 2M/1M/512K flash memory for saving screen data
- ✔ Data logging function
- ✔ Recipe function

### Specifications

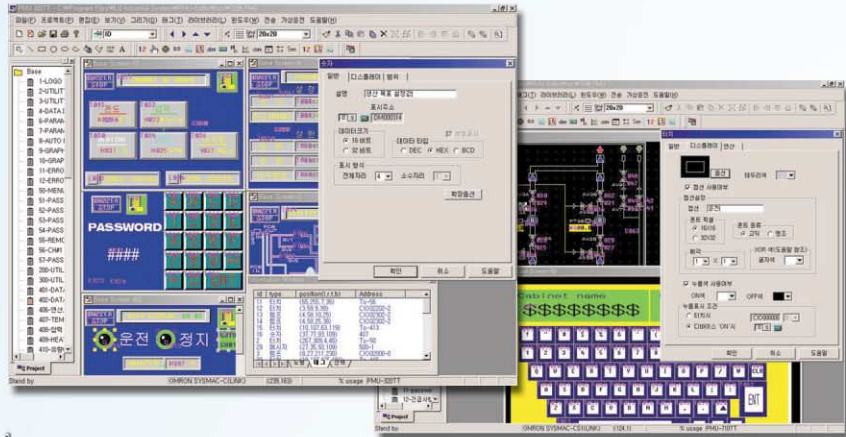


NO	Name	Specifications
1	Option card connector	-
2	Serial communication port	RS-232C: 2 (RX), 3 (TX), 5 (SG) RS-422: 11 (RX+), 12 (RX-), 13 (TX+), 14 (TX-), 15 (SG)
3	PS2 connector	Program downloading port/COM1 comm.
4	Power port	Main power port (AC85 ~ 265V)

### Size (mm)



## Powerful Functions and Convenient Interfaces



### Features

- ✓ Runs on Windows 95/98/NT/2000/XP
- ✓ Project integrating environment for convenient use
- ✓ OS and font downloading for version upgrade
- ✓ Screen magnification support for detailed graphic design (100%, 200%, 300%)
- ✓ Assigns direct/indirect devices
- ✓ Provides various libraries for the elements of system configuration
- ✓ Simulation by connecting to PMU
- ✓ Data can be converted into MS EXCEL format
- ✓ Basic TENKEY support
- ✓ 4 Windows pop up at the same time (8 Windows including sub windows)
- ✓ Script function support

### PMU-Editor functions

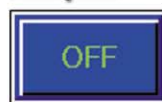
#### Simulation

Tag ON/OFF, data input and monitoring are possible without connecting to PLC



#### Simulation on drawing

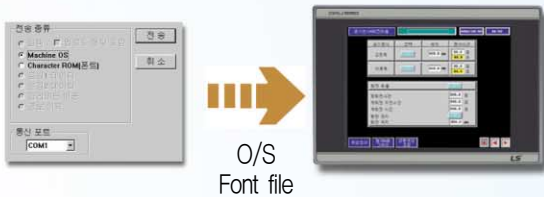
If the status of a bit tag (ON/OFF) changes while drawing the screen, the screen changes can be displayed on PC monitor





## OS and font downloading

When you upgrade the OS of PMU, OS and font file can be downloaded without disassembling the hardware



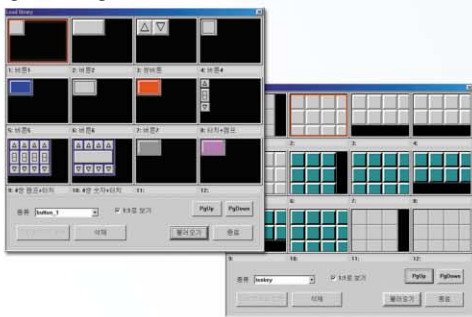
## Cross reference function

Displays a list of the PLC addresses registered in a screen. You can modify and batch change PLC addresses if need be

Base-No	Used Address	Using Tag
300	T7, T8, T9, T10, T11, T12, T13, T14, T15, T16, T17, T18, T19, T20	
300	M1, M2, M3, C0, C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100	
300	Q0, Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q9, Q10, Q11, Q12, Q13, Q14, Q15, Q16, Q17, Q18, Q19, Q20, Q21, Q22, Q23, Q24, Q25, Q26, Q27, Q28, Q29, Q30, Q31, Q32, Q33, Q34, Q35, Q36, Q37, Q38, Q39, Q40, Q41, Q42, Q43, Q44, Q45, Q46, Q47, Q48, Q49, Q50, Q51, Q52, Q53, Q54, Q55, Q56, Q57, Q58, Q59, Q60, Q61, Q62, Q63, Q64, Q65, Q66, Q67, Q68, Q69, Q70, Q71, Q72, Q73, Q74, Q75, Q76, Q77, Q78, Q79, Q80, Q81, Q82, Q83, Q84, Q85, Q86, Q87, Q88, Q89, Q90, Q91, Q92, Q93, Q94, Q95, Q96, Q97, Q98, Q99, Q100	
300	Y0, Y1, Y2, Y3, Y4, Y5, Y6, Y7, Y8, Y9, Y10, Y11, Y12, Y13, Y14, Y15, Y16, Y17, Y18, Y19, Y20, Y21, Y22, Y23, Y24, Y25, Y26, Y27, Y28, Y29, Y30, Y31, Y32, Y33, Y34, Y35, Y36, Y37, Y38, Y39, Y40, Y41, Y42, Y43, Y44, Y45, Y46, Y47, Y48, Y49, Y50, Y51, Y52, Y53, Y54, Y55, Y56, Y57, Y58, Y59, Y60, Y61, Y62, Y63, Y64, Y65, Y66, Y67, Y68, Y69, Y70, Y71, Y72, Y73, Y74, Y75, Y76, Y77, Y78, Y79, Y80, Y81, Y82, Y83, Y84, Y85, Y86, Y87, Y88, Y89, Y90, Y91, Y92, Y93, Y94, Y95, Y96, Y97, Y98, Y99, Y100	
300	X0, X1, X2, X3, X4, X5, X6, X7, X8, X9, X10, X11, X12, X13, X14, X15, X16, X17, X18, X19, X20, X21, X22, X23, X24, X25, X26, X27, X28, X29, X30, X31, X32, X33, X34, X35, X36, X37, X38, X39, X40, X41, X42, X43, X44, X45, X46, X47, X48, X49, X50, X51, X52, X53, X54, X55, X56, X57, X58, X59, X60, X61, X62, X63, X64, X65, X66, X67, X68, X69, X70, X71, X72, X73, X74, X75, X76, X77, X78, X79, X80, X81, X82, X83, X84, X85, X86, X87, X88, X89, X90, X91, X92, X93, X94, X95, X96, X97, X98, X99, X100	
300	L0, L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11, L12, L13, L14, L15, L16, L17, L18, L19, L20, L21, L22, L23, L24, L25, L26, L27, L28, L29, L30, L31, L32, L33, L34, L35, L36, L37, L38, L39, L40, L41, L42, L43, L44, L45, L46, L47, L48, L49, L50, L51, L52, L53, L54, L55, L56, L57, L58, L59, L60, L61, L62, L63, L64, L65, L66, L67, L68, L69, L70, L71, L72, L73, L74, L75, L76, L77, L78, L79, L80, L81, L82, L83, L84, L85, L86, L87, L88, L89, L90, L91, L92, L93, L94, L95, L96, L97, L98, L99, L100	
300	C0, C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100	

## Various built-in libraries

- Various built-in libraries make it easy to configure the screen
- According to the customer's needs, library registering is available



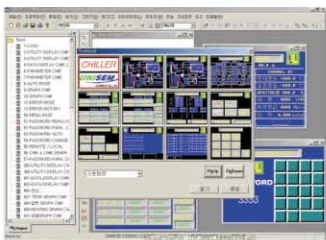
## PLC address display with a tag

Displays PLC addresses of registered tag in the screen



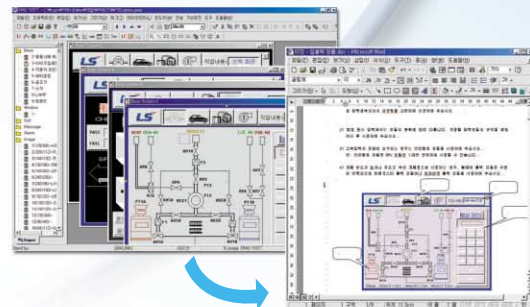
## Thumbnail function

This function makes you see the screen you draw in a lump



## Screen capture

Screen capture available without any other software



## Finding a specific address

Available to find a tag and its position of registered PLC address in the screen

## Automatic saving function

As setting up the automatic saving time, it saves data at every saving period

## Data conversion function (EXCEL)

Data such as tag list, logging data, recipe data and warning can be converted into MS EXCEL file



# Network Configuration

## 1:1 Serial communication

One PLC connection to one PMU: PMU functions as master/slave



## 1: N Serial Communication

Connects more than one PLCs to one PMU

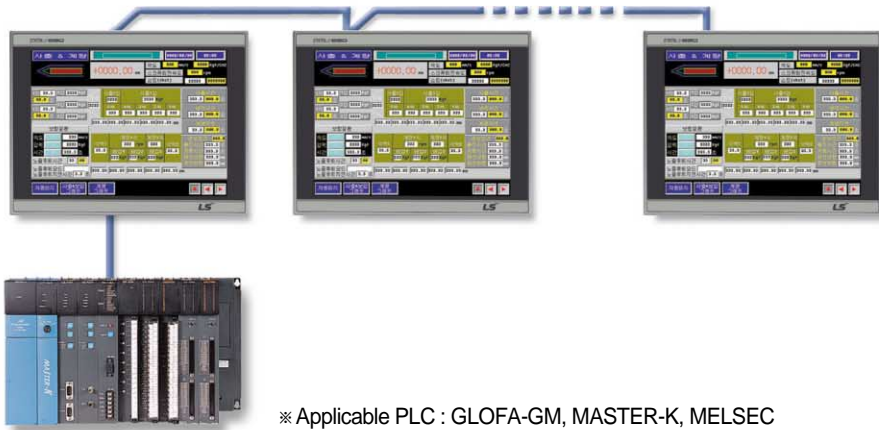


※ In case of 1:N communication via RS-422/485, PLCs should be identical.



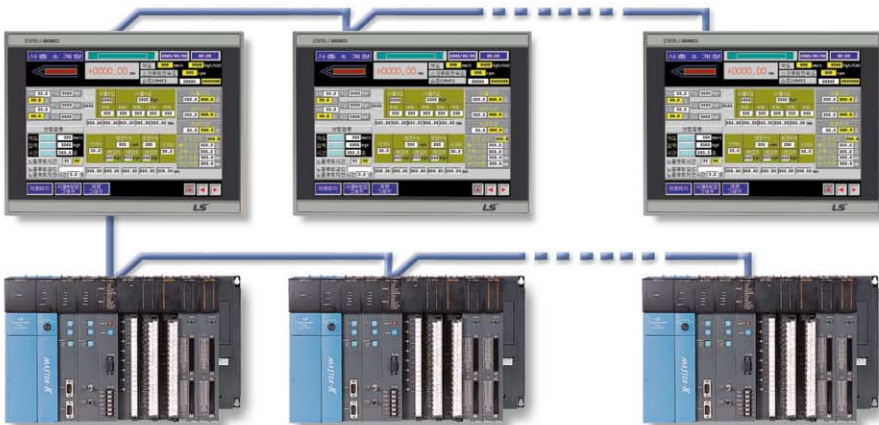
### N:1 (RS-485) Communication

Connects more than one PMUs to one PLC



### N:M (Fnet/Rnet) Communication

Connects more than one PMUs to more than one LS PLCs



### 2-port Communication

Connects one PMU to two different PLCs





# Applicable Equipment

PMU	PMU option	Manufacturer	Type	Model name	Loader	Link	
<b>PMU830</b> <b>PMU730</b> <b>PMU530</b> <b>PMU330</b>	Built-in serial communication	LSIS	PLC	MASTER-K	○	○	
				GLOFA-GM	○	○	
			VFD (Inverter)	iG5	RS-485		
				iS5	RS-485 option board		
				iH	RS-485 option board		
		Samsung	PLC	SPC	○	-	
				FARA-N	○	○	
				FARA-N70/700	○	-	
		Mitsubishi	PLC	MELSEC-A	○	○	
				MELSEC-QnA	○	○	
				MELSEC-Q	○	○	
				MELSEC-A0J2	○	○	
				MELSEC-FX	○	○	
		Fuji	PLC	MICREX-F	-	○	
		Omron	PLC	SYSMAC-C, CS1	-	○	
		Siemens	PLC	3964R	-	○	
				S7-300/400 MPI	○	-	
				S7-200 PPI	○	-	
		AB	PLC	SLC500[5/03,04]	○	-	
				PLC-5	○	-	
		Yaskawa	PLC	Prolog-8	○	-	
				MP-920	○	-	
				CP-9200SH	○	-	
		Modicon	PLC		Modbus		
		KDT	PLC	Cimon	○	○	
		Koyo	PLC	DL-205/305/405	-	○	
		GE Fanuc	PLC	90-30[SBO-X]	-	○	
		POSCON	PLC	POSFA phld-1a/2a	-	○	
		Yokokawa	PLC	FA-M3	-	○	
		Delta	PLC	DVP-ES	-	○	
		PMO-□□□F	LSIS	PLC	MASTER-K	Fnet	
					GLOFA-GM		
PMO-□□□R	LSIS	PLC	MASTER-K	Rnet			
			GLOFA-GM				





## PMU Line-up

### PMU-830

Type	Model	Content
Main board	PMU-830TT	12.1" TFT 256-color display, 800X600 screen resolution

### PMU-730

Type	Model	Content
Main board	PMU-730TTS	10.4" TFT 256-color display, 800X600 screen resolution
	PMU-730STS	10" STN 256-color display, 800X600 screen resolution
Communication card *	PMO-730F	Fnet communication card
	PMO-730R	Rnet communication card

\*Communication cards for PMU-730 are compatible with PMU-830.

### PMU-530

Type	Model	Content
Main board	PMU-530ST	7.5" STN 256-color display, 640X480 screen resolution
	PMU-530TTS	8" TFT 256-color display, 800X600 screen resolution
Communication card	PMO-530F	Fnet communication card
	PMO-530R	Rnet communication card
Printer card	PMO-530PRT	Printer, Backup Battery

### PMU-330

Type	Model	Content
Main board	PMU-330TT	5.5" TFT 256-color display, 320X240 screen resolution
	PMU-330ST	5.7" STN 256-color display, 320X240 screen resolution
	PMU-330BT	5.7" STN Mono display, 320X240 screen resolution
	PMU-330BTE	5.7" STN Mono display, 320X240 screen resolution
Communication card	PMO-330F	Fnet communication card
	PMO-330R	Rnet communication card
Printer card	PMO-330PRT	Printer, Back up Battery

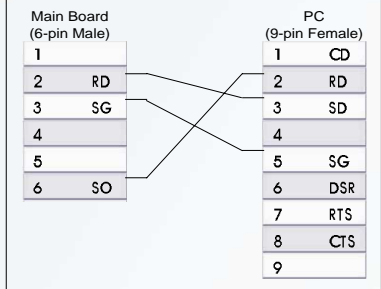
### Common option

Type	Model	Content
Cable	PMC-310S	Program downloading cable
	PMC-422C	MELSEC-M loader communication cable
Software	PMU-Editor	PMU-30 software

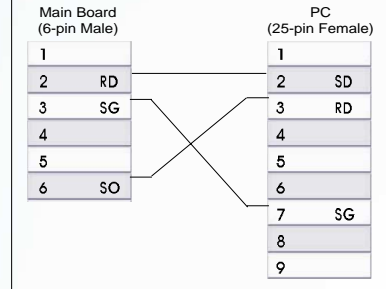
# Cable Connections

## Downloading cable

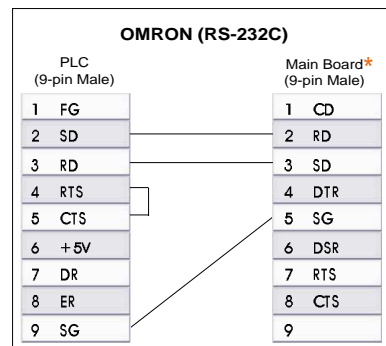
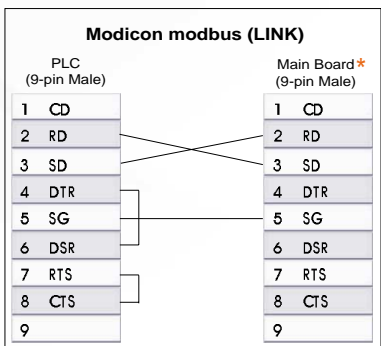
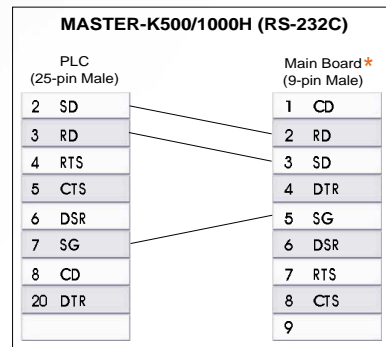
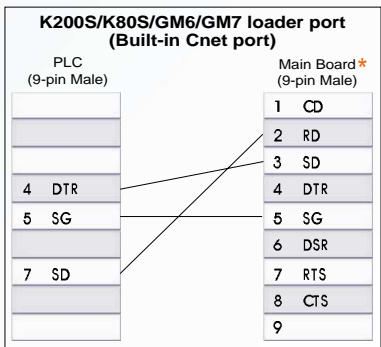
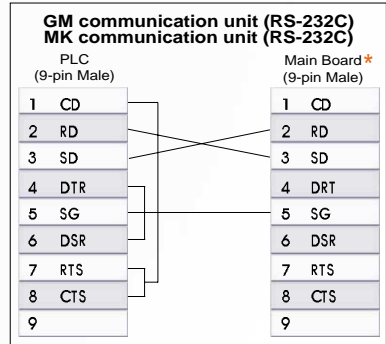
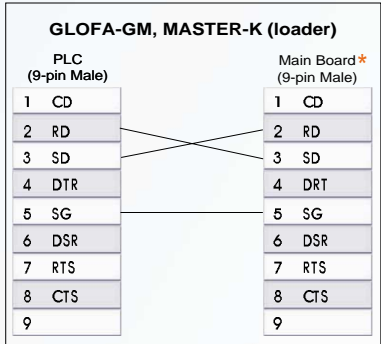
► Connection cable between 6-pin downloading port (PMU main board) and 9-pin port (PC)



► Connection cable between 6-pin downloading port (PMU main board) and 25-pin port (PC)

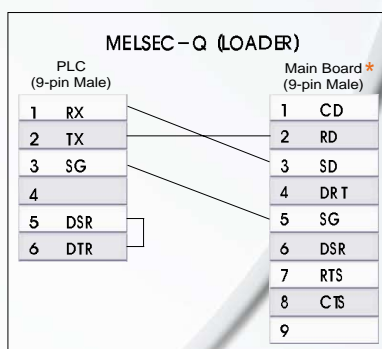
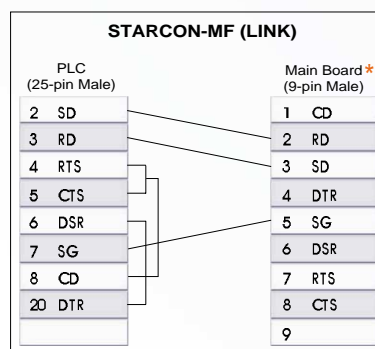
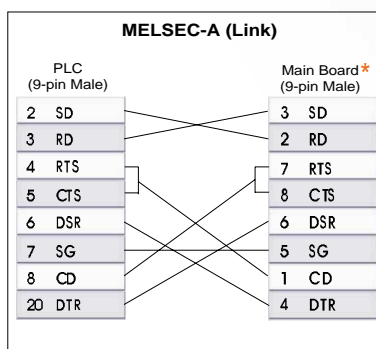
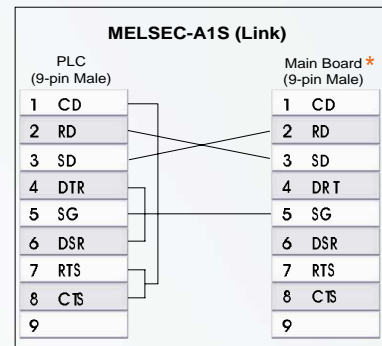
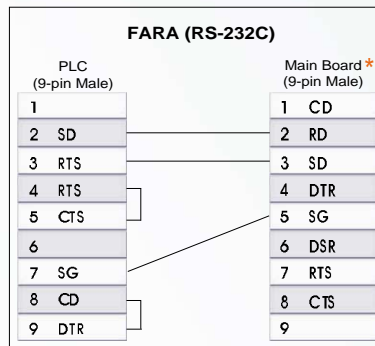
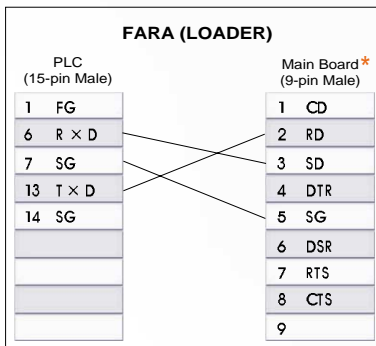
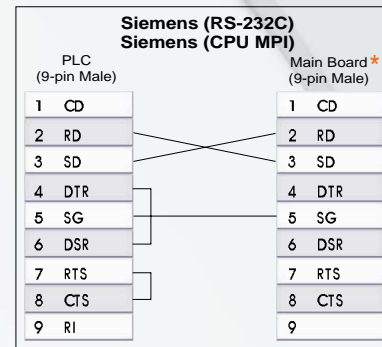
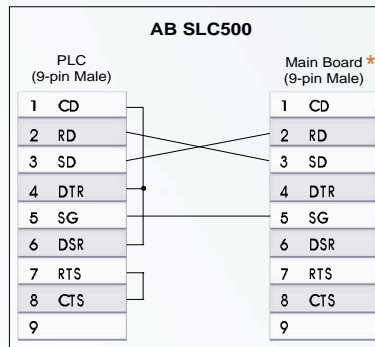
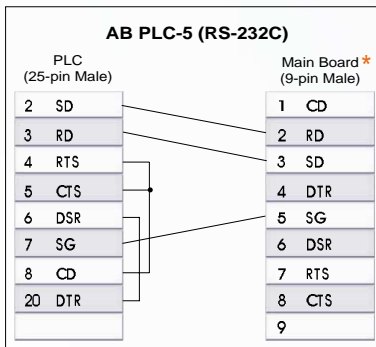


## PLC connection diagram





## PLC connection diagram



\*15-pin for PMU-330

RS-422 of PMU-330 : 11 (RDA), 12 (RDB), 13 (SDA), 14 (SDB), 15 (SG)

## Leader in Electrics & Automation



### Safety Instructions

- For your safety, please read user's manual thoroughly before operating.
- Contact the nearest authorized service facility for examination, repair, or adjustment.
- Please contact qualified service technician when you need maintenance. Do not disassemble or repair by yourself!
- Any maintenance and inspection shall be performed by the personnel having expertise concerned.

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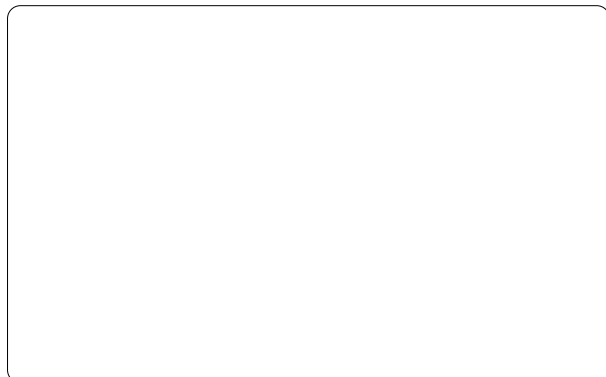
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