



Human Machine Interfaces

Shortform 2005

Operator Terminals for all Applications

Product Overview

Touch Terminals

GT Touch Terminals

- 3, 4 and 5.7 inch screen size
- Ultra-thin body
- Trend diagrams
- Multilanguage function
- Recipe function
- Audible signal / alarm management
- Beautifully formed true type fonts
- Easy maintenance
- Oil and water resistant
- Connectable to PLCs from a variety of manufacturers



GT30
5.7" colour display

GT30
5.7" monochrome display



GT11
4" monochrome display



GT01
3" monochrome display

Message Runner

- Easy to read 8-character display
- Up to 64 messages can be saved and easily displayed
- Messages can be scrolled to 32 characters in length
- Green and orange character display
- Compact DIN 36x72 profile
- Maintenance free
- RS232C or RS485 interface



Message Runner



GT Series Touch Terminals

Most Important Features

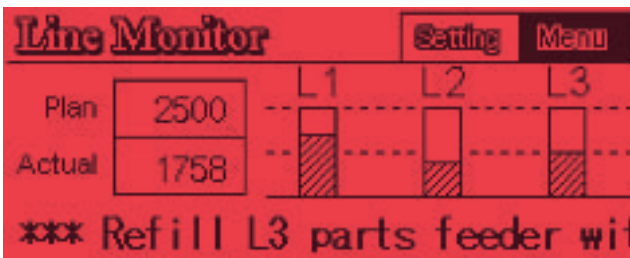
Recipe function

All dynamic data, i.e. the signals and their values, can be saved to a file which the operator can download to the controller system. This will immediately start working with the new values. Up to 100 recipe files can be created.



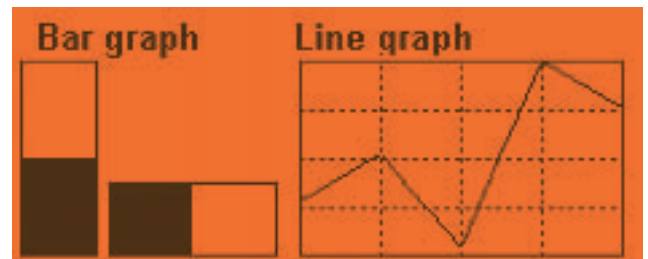
Flow display function

A flowing message of up to 64 characters can be displayed at the bottom of the screen (128 messages).



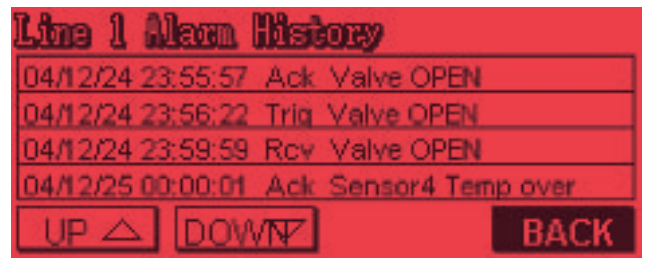
Bar graph function

Analogue values from the controller system can be collected and presented in a trend graph during run time. Up to 8 lines for real time trending are possible.



Alarm list

With the alarm list feature it is possible to choose to display alarms based on frequency, based on time or to show active alarms only. Additional help screens can be linked to the alarm in order to explain the nature of the alarm or how to correct it.



Multi language function

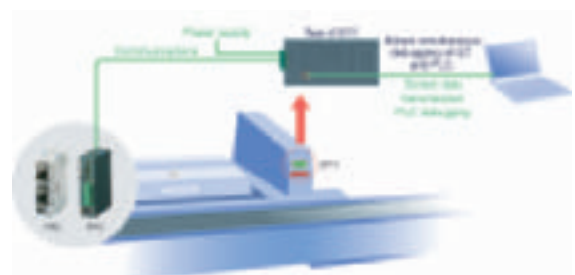
Screen No.	Part.	Language0	Language1	Language2	Language2	Language2
000		English	Deutsch	Francais	Italiano	Espanol
000	SWO	thank you	Danke	merci	grazie	gracias
000	SWO	you are welcome	Bitte	je vous en prie	prego	No hay de qué
000	FSO	off	aus	arrêt	off	desactivado
000	FSO	on	an	marche	on	activado

Using the multi language function, you can easily translate all texts in the application to other languages. Translation can be performed directly in GTWIN. A maximum of 16 languages can be created for an application.

Simple connection and maintenance

Convenient through-function:

GT data can be transmitted and PLC debugging carried out at the same time that communication is taking place between the terminal and PLC.



Touch Terminal GT01

Features

3-colour display screen

Compact size with all the required features for simple control panel.
STN monochrome liquid crystal display (3-colour backlighting).

Order No.: AIGT0030B1 (5 V DC, RS232C type)

AIGT0030B (24 V DC, RS232C type)

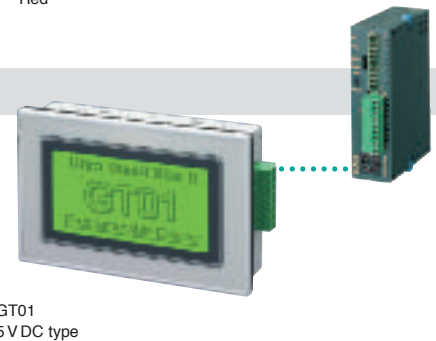
AIGT0032B (24 V DC, RS422 type)



Easy power supply

Using 5VDC, a PLCs tool port can be used as the power supply. Communication with the PLC and power supply are both handled by the same cable. A separately sold PLC direct connection cable is available (part No. AIGT8142).

Note: An additional power supply is needed when more than 2 expansion units are used with the FP0 or more than 6 with the FPΣ (Sigma).



Features of a medium size model

The GT01 contains the features of medium size models (equivalent to GT30), e.g. line graphs, recipe function, etc., flexibly meeting all sorts of user requirements.

Ultra-thin body is only 24mm thick

The body is a mere 24mm thick (including the attachment fittings). With its compact design, the GT01 is an optimum solution wherever space is restricted.



Switch layout free

Employs analogue touch-screen design! There is no limit to how switches can be arranged. Place switches as small as 8 x 8 dots anywhere you want.



True type fonts

The three-inch size can display 72 characters (12 characters across by 6 characters down) making texts possible which will tell you everything about your machine's status.





Touch Terminal GT11

Features

Various display possibilities

Now available with a 3-colour display, this touch terminal provides an ideal operational interface for equipment.

STN monochrome liquid crystal display (3-colour backlighting).

Order No.: AIGT2030B (24VDC, RS232C type)

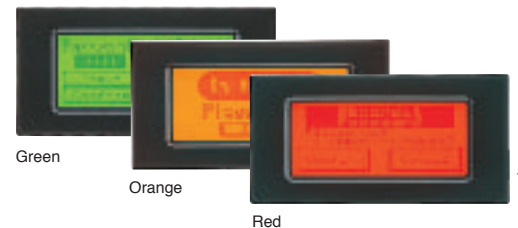
AIGT2032B (24VDC, RS422 type)



Vertical display is also possible!

3-colour display screen is bright and easy to read

This bright, easy-to-read liquid crystal display makes not only messages and graphics, but switches, lamps, internal PLC data, graphs, clocks and other data instantly available. To grasp information at a single glance, green, orange or red backlighting can be used.



Speedy screen displays

The CPU has approximately three times the processing capability of conventional products. Speedy screen displays keep up with even the fastest applications, providing the high-speed response that keeps you one step ahead.

High-resolution touch panel

This high-resolution touch panel is fitted with a 4 inch, 240x96 dots display, so that numerous switches can be used, allowing maximum flexibility in the key tag layout. The analogue resistive touch screen allows objects to go anywhere you want them to onscreen, right down to the pixel.



Great diversity and variety of use

- The trough function improves the convenience in combination with our FP Series PLCs
- Two types of communication interfaces available: RS232C and RS422
- Connection with PLCs of a variety of manufacturers is possible, e.g. Siemens, Mitsubishi, Allen-Bradley, Omron or MODBUS

Ultra-thin body is only 26mm thick

The body is a mere 26mm thick (including the attachment fittings).



Touch Terminal GT30

Features

On-board true type fonts for beautiful text display ...

... with the most compact body available for a 5.7 inch class LCD.

Order No.: AIGT3100B



GT30M
Bright and easy-to-read blue-mode LCD type.

- 5.7 inch
- STN monochrome display
- 320x240 dots
- Through function

Order No.: AIGT3300B



GT30C
Bright 16-colour screen.

- 5.7 inch
- STN colour display
- 16 colours display
- 320x240 dots
- Through function

Display screen is bright and easy to read

Both the 16-colour and blue-mode monochrome displays are at the top of their class in terms of screen brightness.



Compact body just 41mm thick

With a thickness of just 41mm the GT30 boasts the slimmest body in the industry. The LCD screen margin is the narrowest available and the body is very compact for its class.



Narrow screen margin!

Beautifully formed true type fonts

The on-board True Type fonts provide a handsome text display, and a selectable character size (from 10x10 dots to 64x64 dots).

Long-life backlight

The long-life backlight has an operating life of 50,000 hours, so you will almost never have to worry about replacement.





Terminal GTWIN

Screen Creation Software for the GT Touch Terminals

To place parts on the screen, ...

... you can simply drag them from the library or copy screens between files by sharing screen creation operations!



Terminal *GTWIN*

Screen creation tool for the GT terminals



Simply drag'n'drop to place parts!



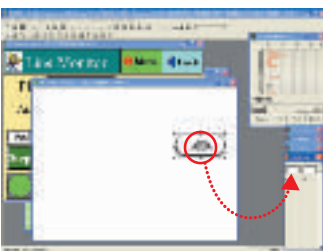
You can design screens any way you want by simply dragging parts from the library and dropping them on the screen.

Screen built status at a glance!

The Screen Manager function tells you which screen you are working on and where available locations are at a glance. You can also display screens by title.



Just drag to create your own parts library!



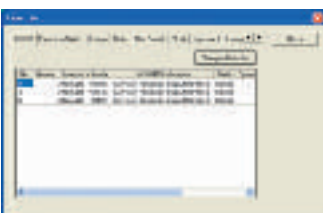
You can register original parts that you have set up with a simple drag operation.

Copying screens between files is a snap!

With the Screen Manager function copying screens between files couldn't be easier. This also makes it easy for you to use data from previous projects and to share screen creation work among a number of operators.



Global parts editing – now that's convenient!



You can display the attributes of all parts placed in screens in a list and directly modify them from there.

Screen bitmap copy!

Screens can be converted into bitmaps and used by other applications. This is convenient when creating instruction manuals for your equipment.



Programmable Display GT Series

Specifications and Product Types

Specifications

Item	GT01 specifications			GT11 specifications		GT30 specifications		
	AIGT0030B1 AIGT0030H1	AIGT0030B AIGT0030H*	AIGT0032B AIGT0032H*	AIGT2030B AIGT2030H*	AIGT2032B AIGT2032H*	AIGT3100B AIGT3100H*	AIGT3300B AIGT3300H*	
Rated voltage	5 V DC		24 V DC	24 V DC		24 V DC		
Operating voltage range	4.5 V DC to 5.5 V DC		21.6 V DC to 26.4 V DC	21.6 V DC to 26.4 V DC		21.6 V DC to 26.4 V DC		
Power consumption	1 W max.		2 W max.	2.4 W max.		10 W max.		
Ambient temperature	0°C to 50°C			0°C to 50°C (25 V DC max. if installed horizontally at 50°C)		0°C to 50°C (25 V DC max. if installed horizontally at 50°C)		
Ambient humidity	20% RH to 85% RH (No dew condensation)							
Storage temperature	-20°C to 60°C							
Storage humidity	10% RH to 85% RH (No dew condensation)							
Vibration resistance	10 Hz to 55 Hz (1-minute cycle): Conforms to JIS C0040 Double amplitude: 0.75 mm, 10 minutes in each of the X, Y, and Z directions							
Shock resistance	98 m/s ² min: Conforms to JIS C0041 4 times in each of the X, Y, and Z directions							
Superposed noise suppression	1,000 V [P-P] min, pulse width of 50 ns, 1 μs between power supply terminals (by a noise simulator) * AIGT0030B1/AIGT0030H1: When the ferrite device supplied with our PLC connection cable (AIGT8142) is mounted							
Environmental resistance	IP65 (in the initial stages) Dust-proof and drip-proof from the front of the panel only (Rubber packing is attached to the panel contact surface.) * When reattaching the panel, replace the waterproof packing.							
Mass	Approx. 160 g			Approx. 230 g		Approx. 440 g		
Display	Display device	STN monochrome LCD		STN monochrome LCD		STN monochrome LCD	STN color LCD	
	Resolution	128 (W) x 64 (H) dots		240 (W) x 96 (H) dots		320 (W) x 240 (H) dots		
	Display color	Two colors (black/white)		Two colors (black/white)		Two colors (blue/white)	16 colors	
	Displayable area	70.38 (W) x 35.18 (H) mm		96.0 (W) x 38.4 (H) mm		117 (W) x 88 (H) mm		
Backlight	3-color LED backlight (green, red, orange) * No need for replacement			3-color LED backlight (green, red, orange) * No need for replacement		CFL * Average life: 50,000 hours (25°C)		
Functions	Font types	Fixed font: 8 x 8, 16 x 8, and 16 x 16 dots Characters can be displayed in the original, doubled, or quadrupled width or height. TrueType fonts, Windows TrueType fonts						
	Languages	Japanese, English, European languages, Simplified Chinese, Traditional Chinese, Korean						
	Graphics	Straight lines, continuous straight lines, squares, circles, ovals, arcs, elliptic arcs, fan shapes, elliptic fan shapes, beveled squares, bitmaps						
	Number of screens	Approx. 160 screens Screen No. that can be set: Base screens No. 00 to FF		Approx. 250 screens Screen No. that can be set: Base screens No. 00 to 3FF		Approx. 220 screens (Monochrome LCD type) Approx. 160 screens (Color LCD type) Screen No. that can be set: Base screens No. 00 to 3FF		
		The number of screens that can be registered varies according to the registered contents.						
	Part functions	Messages, lamps, switches, data, bar graphs, clocks (*), keyboards, and line graphs		Messages, lamps, switches, data, bar graphs, clocks, keyboards, line graphs and alarm list parts				
	Other functions	Recipe, flow display, write device and language switching					Recipe, message scrolling and write device	
	Clock function	Refers to and displays external clock data. (Not provided with a built-in clock function.)			Provided with a built-in clock function. (Can also refer to and display a PLC clock.) * For GT11, buy a commercially available battery			
	Contrast adjustment	Contrast can be adjusted by using the touch panel.						
	Automatic communication settings	The communication conditions of dedicated software and PLC can be automatically set by connecting a cable.						
Debugging function	Through function (PLC can be debugged from a personal computer by connecting the computer to the TOOL port and the PLC to the COM. port.)							
Screen creation	Dedicated software should be used. Applicable OS: Windows 95 (OSR2 or later)/98/Me/2000/NT/XP							
Touch key resolution	Free layout (8 dots min)			Free layout (8 dots min)			16 (W) x 12 (H)	
Touch key operation force	0.5 N max.			0.5 N max.			0.98 N max.	
Touch key life	1 million operations min							
COM. port	Communication standard	Conforms to RS232C	Conforms to RS232C	Conforms to RS422	Conforms to RS232C		Conforms to RS232C	
	External communication conditions	Baud rate: 9,600/19,200/38,400/57,600/115,200 bits/s			Baud rate: 9,600/19,200/38,400/57,600/76,800/115,200 bits/s		Baud rate: 9,600/19,200/38,400/57,600/115,200 bits/s	
		Data bits: 7 or 8 bits Parity: None, Odd, Even Stop bits: 1 bit						
	Protocol	Our FP series supported/General-purpose serial interface supported/Other companies' PLC supported (Refer to the compatible PLC list for manufacturers and models.)			Our FP series supported/General-purpose serial interface supported/Other companies' PLC supported (Refer to the compatible PLC list for manufacturers and models.)			
Connector	Connector terminal base (8 pins)					Connector terminal base (5 pins)		
TOOL port	Communication standard	Conforms to RS232C						
	Communication conditions with personal computers	Baud rate: 9,600/19,200/115,200 bits/s Data bits: 8 bits Parity: None, Odd, Even Stop bits: 1 bit						
	Protocol	Our dedicated protocol						
	Connector	5-pin mini-DIN						

Conformance to the UL/cUL standards

UL/cUL file No.	E96300	UL Standard No.	UL508
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Programmable Display GT Series

Specifications and Product Types

Memory

Screen data and GTWIN configuration setting data

Item	GT01 specifications	GT11 specifications	GT30 specifications	
			Monochrome LCD type	Color LCD type
User's memory	F-ROM	F-ROM	F-ROM	F-ROM
Memory capacity	384 KB	1.375 MB	1.5 MB	3.25 MB

Clock data and PLC device storage data (24 words max.)

Item	GT01 specifications	GT11 specifications	GT30 specifications
Memory	-	SRAM	SRAM
Memory backup	-	Lithium battery (replaceable) CR2032, commercially available * Not included. Buy it separately.	Lithium battery (replaceable) CR2032, commercially available (included)

Models and prices

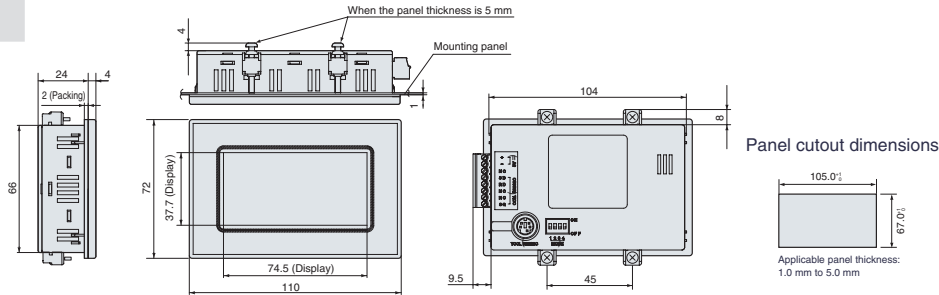
Product name	Description			Order No.
GT01: Main unit	STN monochrome LCD	5 V DC	RS232C type	Black AIGT0030B1
			RS232C type	Ash gray AIGT0030H*
	STN monochrome LCD	24 V DC	RS232C type	Black AIGT0030B
			RS422/RS485 type	Ash gray AIGT0030H*
GT11: Main unit	STN monochrome LCD	24 V DC	RS232C type	Black AIGT2030B
			RS422/RS485 type	Ash gray AIGT2030H*
	STN monochrome LCD	24 V DC	RS232C type	Black AIGT3100B
			RS232C type	Ash gray AIGT3100H*
STN color LCD	24 V DC	RS232C type	Black AIGT3300B	
		RS232C type	Ash gray AIGT3300H*	
Terminal GTWIN Ver. 2 English Version	Composed of: • Screen creation tool "Terminal GTWIN Ver. 2 English Version" (CD-ROM) • GT Series Hardware Manual (English Version)			AIGT8001V2
Terminal GTWIN Upgrade Version	Upgrades the screen creation tool "Terminal GTWIN Ver. 1" to "Ver. 2".			English Version AIGT8001V2R
PLC direct connection cable	Cable (5-pin mini-DIN connectors, 2 m) for direct connection between GT01 (5 V DC/RS232C type) and the TOOL port of our PLC (FP-e/FP2/FPS/FP2/FP2SH/FP-M)			AIGT8142
	Cable (8-pin mini-DIN connectors, 2 m) for direct connection between GT01 (5 V DC/RS422 type) and the Mitsubishi Electric FX Series			AIGT8152
	Cable (8-pin mini-DIN connectors, 5 m) for direct connection between GT11 (RS422 type) and the Mitsubishi Electric FX Series			AIGT8175
PLC direct connection	Cable (One end: 5-pin mini-DIN connector, The other end: Open wire, 2 m) to connect GT01 (24 V DC type)/GT11 to our PLC			AIGT8162
	Cable (One end: 5-pin mini-DIN connector, The other end: Open wire, 5 m) to connect GT01 (24 V DC type)/GT11 to our PLC			AIGT8165
	Cable (One end: 5-pin mini-DIN connector, The other end: Open wire, 10 m) to connect GT01 (24 V DC type)/GT11 to our PLC			AIGT8160
	Cable (One end: 5-pin mini-DIN connector, The other end: Open wire, 2 m) for direct connection between GT30 and the TOOL port of our PLC (FP-e/FP0/FPS/FP2/FP2SH/FP-M)			AIGT8192
Screen transmission cable	Cable (One end: 9-pin D-SUB connector, The other end: Open wire, 2 m) for connection to the COM. port of FP1/FP2/FP2SH/FP-M/FP10SH, TOOL port of FP10SH, and computer communication unit of FP2/FP3			AIP81842
	Screen data transmission cable (5-pin mini-DIN) between GTWIN and GT series displays			AFC8513
Panel face protection sheets	GT01 panel face protection sheets 10 sheets in a set (option)			AIGT080
	GT11 panel face protection sheets (for replacement) 10 sheets in a set			AIGT280
	GT30 panel face protection sheets (for replacement) 10 sheets in a set * One sheet is factory-attached to the GT panel.			AIGT380
Waterproof packing	GT01 waterproof packing (for replacement) 10 pieces in a set * One piece is factory-attached to the GT panel.			AIGT081
	GT11 waterproof packing (for replacement) 10 pieces in a set * One piece is factory-attached to the GT panel.			AIGT181
	GT30 waterproof packing (for replacement) 10 pieces in a set * One piece is factory-attached to the GT panel.			AIGT381
Replacement backlight	Replacement backlight for GT30 color/monochrome LCD			AIGT382
Mounting parts	5 sets of GT01/GT11 mounting parts (4 parts/set)			AIGT083
	5 sets of GT30 mounting parts (2 parts/set)			AIGT383
Connectors	GT01/GT11 COM. port connectors 5 connectors in a set			AIGT084
	GT30 COM. port connectors 5 connectors in a set			AIGT184

*non stock type

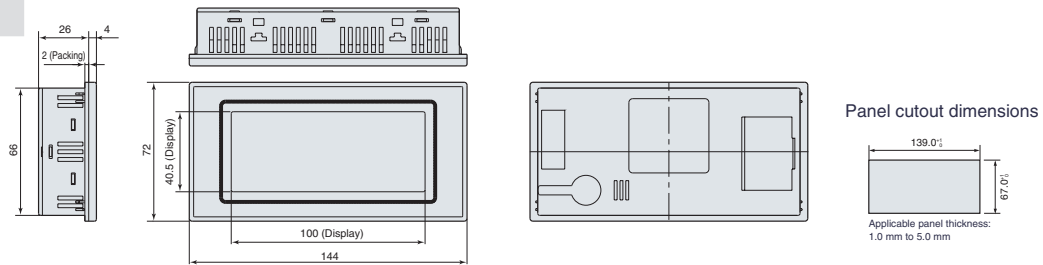
GT Series Touch Terminals

Dimensions

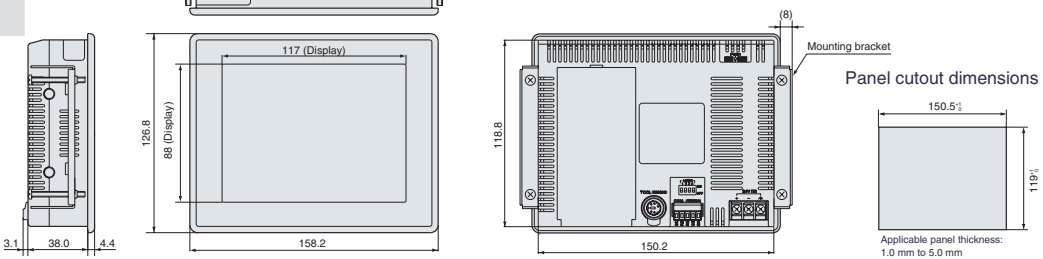
GT01



GT11



GT30



PLC Compatibility

GTWIN Ver. 2.6 (as of October 2004) ●: Compatible -: Not compatible

PLC model	GT model	GT01		GT11		GT30 (Monochrome/Color)
		RS422 type	RS232C type	RS422 type	RS232C type	
Panasonic Electric Works FP Series		●		●		●
Mitsubishi Electric MELSEC-FX0N		●	●*1	●	●*1	●*1
Mitsubishi Electric MELSEC-FX1S		●	●*1	●	●*1	●*1
Mitsubishi Electric MELSEC-FX1N		●	●*1	●	●*1	●*1
Mitsubishi Electric MELSEC-FX1NC		●	●*1	●	●*1	●*1
Mitsubishi Electric MELSEC-FX2N		●	●*1	●	●*1	●*1
Mitsubishi Electric MELSEC-FX2NC		●	●*1	●	●*1	●*1
Mitsubishi Electric MELSEC-FX3UC		●	●*1	●	●*1	●*1
Mitsubishi Electric MELSEC-A (Computer link)		-	●*1	-	●*1	●*1
Omron SYSMAC-C Series		●		●		●
ALLEN-BRADLEY DF1 Protocol		●		●		●
Siemens S7-200 Series		●		●		●
LG MASTER-K (Cnet) Series		●		●		●
MODBUS (RTU Mode)		●		●		●
Toshiba Machine PROVISOIR TCmini Series		●		●		-
Yokogawa Electric FA-M3 Series		●		●		●
General-purpose serial interfaces (Purpose-built boards/Other controllers)		● Command response*2		●		●

*1: An RS422/RS232C conversion adapter or unit is required.

*2: Notes for using the general-purpose serial communication mode of GT01

GT01 control signals (RS, CS) are not available. Note the following points when you use Duplex 1 or Duplex 2.

• Commands transmitted from a microprocessor board during a GT01 data transmission cannot be accepted.

• When there is no response from GT, retry the command transmission.



Message Runner KP3H

Text Display

Small messages on your machine

This small and compact display is extremely well-suited for indicating a variety of short messages.

Compact DIN 36 x 72 profile

The compact DIN 36 x 72 profile allows the unit to be easily installed in control boxes where space did not allow other units to be installed.

Green and orange character display

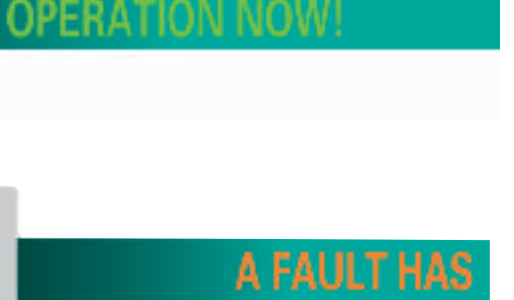
The text can be displayed in either green or orange to reflect equipment status at a glance. A blinking display is also available at the user's discretion for defining messages' appearance!

Maintenance free

- Since LEDs are used for the LCD backlight, troublesome lamp replacement is not necessary.
- A backup battery is not required as the message data is stored in the Message Runner's flash memory.

Easy-to-read message display

The 8-character display allows scrolling of up to 32 characters in length. Up to 64 messages can be saved and easily displayed.



Message Runner KP3C and KP3R

Text Display

In addition to the KP3H's features the KP3C and KP3R Message Runners enable message switching and data rewriting by serial communication (KP3C: RS323C, KP3R: RS485)



When creating messages, the character "*" is defined as data. Example: The message "*****pcs" has a five-column data area. Refer to the figure below: "1 2 3 4 5" is the value in the PLCs data register.



Three data areas can be included in one message. One message may include 32 characters ("*") maximum for lateral display (16 characters vertical).

Message stand-by function

Is selectable for each message, i. e. if a new signal arrives while a message is being displayed, the new message is displayed after the current message finishes.

End message signal can be output

You can select whether or not to output a signal to an external device for each message. An internal relay for the PLC can be specified and a flag turned on. (This is called the scroll finished flag). To reset the flag, use the PLC programming software.

Vertical display

The KP3C and KP3R Series can be mounted in lateral or vertical direction. The length of displayable messages is 32 characters for lateral display and 16 characters for vertical display.





Message Runner KP3C and KP3R

Text Display

Features available for KP3C Message Runners only

Five data formats selectable:

- 16 bits with sign
- 16 bits without sign
- 32 bits with sign
- 32 bits without sign
- ASCII (20h to 7Eh)

Four communication protocols selectable

- Panasonic Electric Works FP Series
- Multi-purpose serial (Message Runner dedicated protocol)
- Computer link for Mitsubishi MELSEC-FX Series
- Host link for Omron SYMAC-C Series (exclusive)



(Without face characters)

Either lit or blinking messages

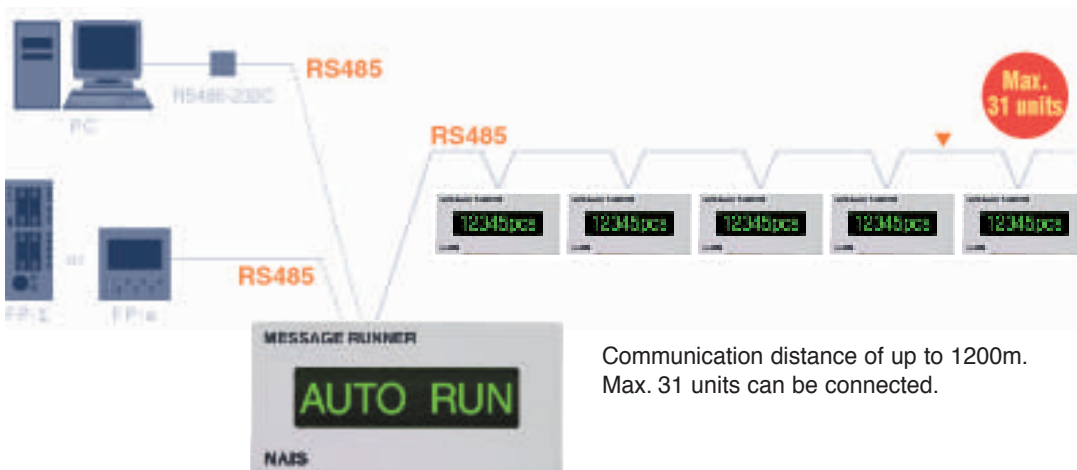
Features available for KP3R Message Runners only

Display data format:

- ASCII 20 (hex) to 7E (hex), except of 3F (hex) on Multi-purpose protocol

Two communication protocols selectable

- Multi-purpose serial (Message Runner dedicated protocol)
- MODBUS (RTU)

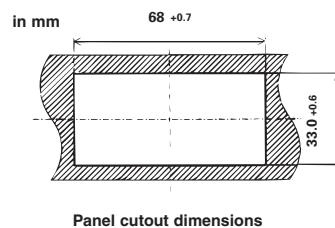
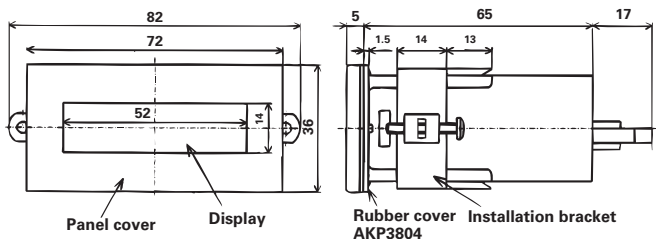


Communication distance of up to 1200m.
Max. 31 units can be connected.

Message Runner

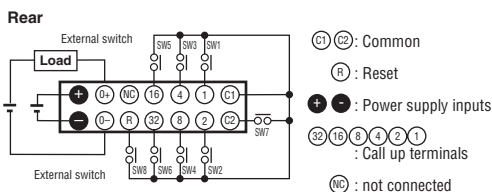
Dimensions and Wiring

Dimensions and part names



Terminal wiring KP3H

*Be sure to turn off the power of the Message Runner unit and computer before connecting or disconnecting the connector and transmission cable.



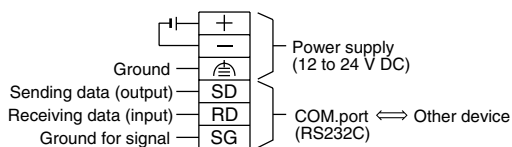
The AKP3835 (1m) and AKP3837 (3m) connector with lead wires is available (optional).

When using a non-contact (transistor) input, connect as follows: → Output, max. 0.1A, 30VDC

As a guideline, the collector voltage of the transistor should be 50V or higher, and the leakage current should be less than 1mA.

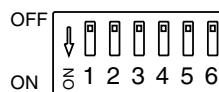
Terminal wiring KP3C

Power supply and COM.port terminal block



Cross cable is used to connect another device to the COM.port.

Functions for dip switch

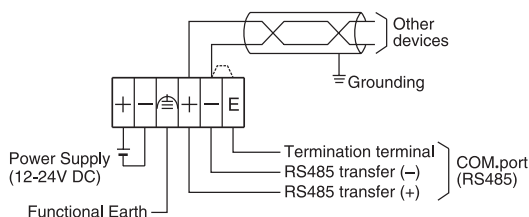


Number	Functions	OFF	ON
1	Baud rate	19,200 bps	9,600 bps
2	Data length	8 bits	7 bits
3	Parity	Yes	No
4	Parity type	Odd	Even
5	Mode selection	Data transmitting	Operation
6	Connector selection	Modular	Terminal block

Data transmission mode: Mode for sending created message and settings from the PC to the Message Runner.
 Operation mode: Mode for transferring data with a PLC, etc., to change messages and data.
 Connector selection: Select the connector for use with the data transmission mode.

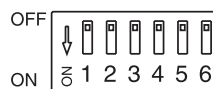
Terminal wiring KP3R

Power supply and COM.port terminal block



In case of terminating station, connect E terminal to - terminal, or irregular operation occurs.

Functions for dip switch



Number	Functions	OFF	ON
1	Baud rate	19200bps	9600bps
2	Data length	8 bits	7 bits
3	Parity	Available	Not Available
4	Parity type	Odd	Even
5	Station No. display	Not displayed	Displayed (Note 1)
6	Connector selection	Modular	Terminal block (Note 2)

Note 1) Station No. display is not concerning connector type.
 Note 2) Select modular concerned with to transfer screens and make settings. Select terminal block for RS485 communication.



Message Runner

Specifications

Product types	Description	Order-No:
Body (with face characters)	Message Runner KP3H (12-24VDC)	AKP31003
Body (without face characters)	Message Runner KP3H (12-24VDC)	AKP31007
Body (with face characters)	Message Runner KP3C (12-24VDC)	AKP32113
Body (without face characters)	Message Runner KP3C (12-24VDC)	AKP32117
Body (with face characters)	Message Runner KP3R (12-24VDC)	AKP33123
Body (without face characters)	Message Runner KP3R (12-24VDC)	AKP33127
Programming unit	1m message transfer cable + message creation software	AKP38203M
Transfer cable	1m message transfer cable	AKP3811
Message creation software	CD available for KP3H, KP3C and KP3R	AKP38163M
Rubber packing	Use when water resistance is required for the panel	AKP3804
Panel cover (black, with face characters)	A panel cover (ash grey) for the body is provided as standard	AKP3801
Panel cover (black, without face characters)		AKP3805
Connector with lead wires for KP3H	Length: 1m (one line)	AKP3835
	Length: 3m (one line)	AKP3837

General	Description
Rated power supply	12-24VDC
Operating voltage range	10.8 to 26.4VDC
Power consumption	Approx. 1.1W (KP3H and KP3C) and 1.5W (KP3R)
Ambient temperature	0°C to 40°C
Ambient humidity	20 to 85% RH (non-condensing)
Storage temperature	-20°C to 60°C
Storage humidity	10 to 85% RH (non-condensing)

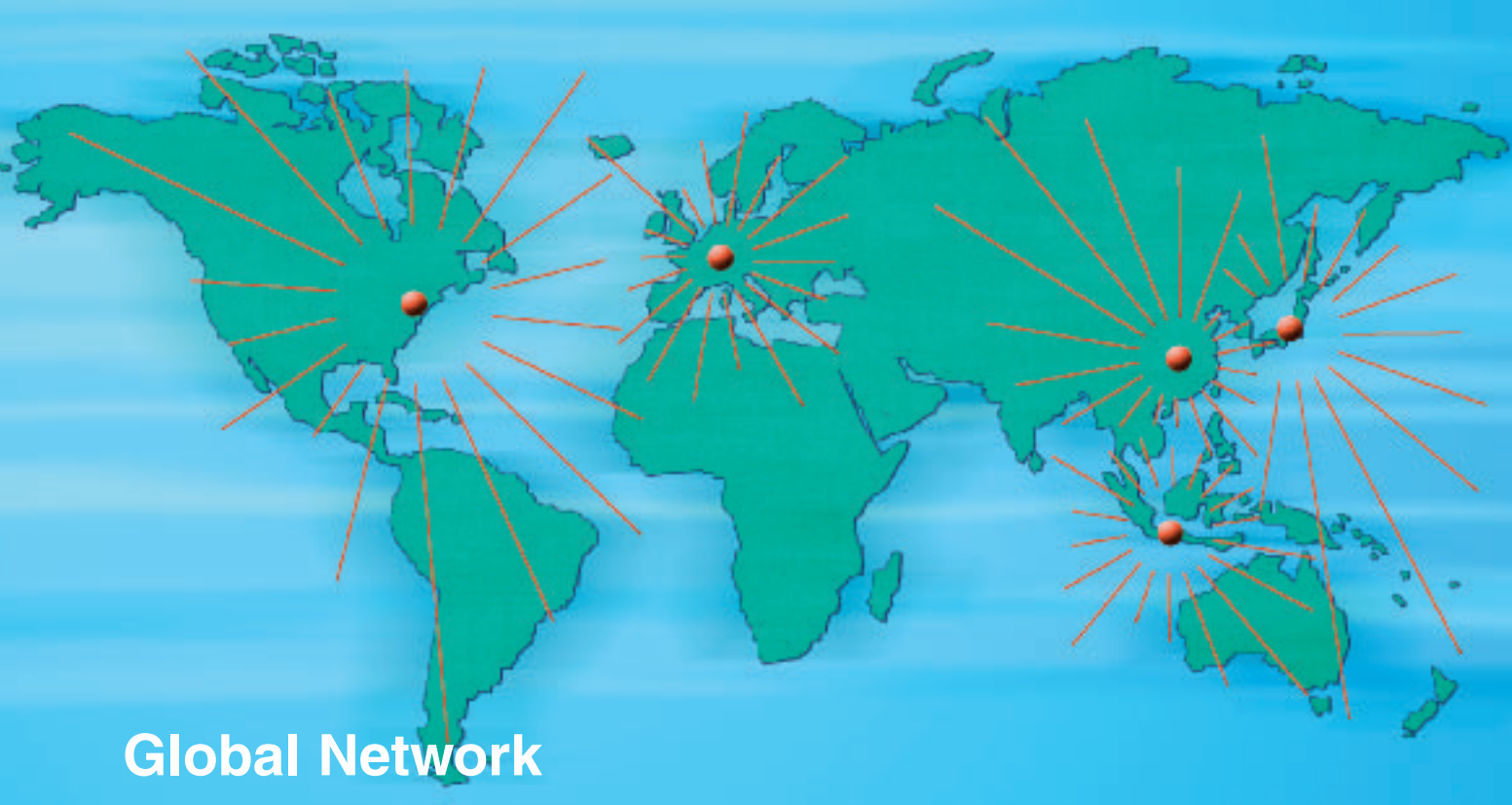
Display	Description
Display	Negative-type dot matrix LCD
Resolution	64 x 16 dots
Backlighting	Green / Orange LED (can be set for each message)
Character display	8 characters x 1 line
Message length	32 characters (max.)
Character types	Internal PC character set depending on the internal character type, some characters cannot be displayed (circled characters, Roman numerals and so on)
Character control	Scrolling display possible (slow, medium or fast), blinking display (0.4s ON / 0.4s OFF)

Memory	Description
Message storage	64 messages
Internal memory	F-ROM (battery backup not required)

Communication specifications (KP3C and KP3H)

Item	KP3C Specification	KP3H Specification
Communication standard	Confirming to RS232C	Confirming to RS485
Communication method	Half duplex transmission	
Transmission distance	Max. 15m	Max. 1200m
Transmission speed	19,200 bps / 9,600 bps (selectable using DIP switch)	
Character bit	8 bits / 7 bits (selectable using DIP switch)	
Stop bit	1 bit fixed	
Parity	Odd/Even/None (selectable using DIP switch)	
Protocol	MEWTOCOL, Multi-purpose protocol (exclusive for Message Runner), Mitsubishi MELSEC-FX Series, Omron SYMAC-C Series	Multi-purpose protocol (exclusive for Message Runner), MODBUS (RTU)

Note: The shielded cables are recommended where electrical noises might occur.



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