

“MONITOUCH TS1000 Smart Series” Programmable Operator Interface, Enhancing Usability and Visibility

MATSUMOTO, Mitsuhiro*

The expansion of globalization through the rapid development of the Chinese and Asian markets has led to increased demand for product supply stability and reduced product prices.

In the industrial sector, the demand for human machine interface (HMI) has been increasing, being used in various types of machinery.

In order to meet the growing demand in the Chinese and Asian markets, Fuji Electric developed the “MONITOUCH TS1000 Smart Series” as a programmable operator interface designed to enhance usability and visibility while consolidating functionality and launched it in August 2018.

1. Overview

Figure 1 shows the external appearance of the “TS1100Si” of the MONITOUCH TS1000 Smart Series and Table 1 shows its main specifications. The MONITOUCH TS1000 Smart Series provides a line-up of 7-inch and 10.2-inch screen sizes, demand for which is at its highest in the Chinese and Asian markets. All models are compliant with major global and regional standards, such as CE, KC, UL and cUL, enabling them to be used throughout the world.

The Series utilizes a TFT color LCD with 65,536 colors through the use of LED backlights, thereby enhancing visibility and expressiveness and guaranteeing reliable status display and usability at production sites. A sleek, simple design is adopted for the external appearance so that it can be mounted to any machine without any sense of incompatibility.



Fig. 1 “TS1100Si”

Table 1 Main specifications of the “MONITOUCH TS1000 Smart Series”

Item		TS1070S	TS1070Si	TS1100Si
Main unit specifications	Screen size	7 inches		10.2 inches
	Display device	TFT color		
	Resolution	800 × 480 dots		
	Display colors	65,536 colors		
	Backlight	LED		
	Touch screen	Analog resistive film system		
	Conformity standards	CE, KC, UL, cUL		
User memory	FROM	26 MB		
	SRAM	128 KB		
External interface	COM1 D-sub9 pin (female)	RS-422/485 Data length: 7, 8 bits Parity: Even, odd, none Stop bit: 1, 2 bits Baud rate: 4,800, 9,600, 19,200, 38,400, 57,600, 76,800, 115,200,187,500*1 bits/s		
	COM2/COM3 D-sub 9 pin (male)	COM2:RS-232C COM3: RS-422/485 (two-wire type) Data length: 7, 8 bits Parity: Even, odd, none Stop bit: 1, 2 bits Baud rate: 4,800, 9,600, 19,200, 38,400, 57,600, 76,800, 115,200 bits/s		
	LAN	N/A	1 ch	
	USB-A	1 ch		
	USB mini-B	1 ch		
	Power supply	Rated voltage	24 V DC ±10%	
Power consumption (max. rating)		11 W or less	12 W or less	
Physical environment	Ambient temperature	0 °C to 50 °C*2		
	Ambient humidity	85% RH or less (without dew condensation)		
	Contamination level (IEC 60664-1)	2		
	Operating altitude	2,000 m or less		
	Operating atmosphere	No corrosive gas and no excessive dust (no conductive dust)		
	Ambient storage temperature	-10 °C to +60 °C		
	Ambient storage humidity	85% RH or less (without dew condensation)		
Installation conditions	Protective structure	Panel front	IP65 equivalent (when using a waterproof gasket*3) IP40 equivalent (when not using a waterproof gasket*3)	
		Rear case	IP20 equivalent	
	Dimensions (mm)	W198.8 × H141.8 × D38.0		W266.8 × H206.8 × D38.0
	Panel cut dimensions (mm)	189.0 × 134.0 (+0.5/-0)		257.0 × 199.0 (+0.5/-0)

*1: 187,500 bits/s only applies to Siemens MPI/PPI communication

*2: To prevent accidents, use at a wet-bulb temperature of 39 °C or less

*3: Optional item

* Power Electronics Systems Group, Fuji Electric Co., Ltd

2. Functions

2.1 Server function

In recent years, the demand for remote monitoring and control of machines has been increasing. The MONITOUCH TS1000 Smart Series comes equipped with VNC server functionality (“i” type only), and it can be remotely monitored and controlled from a PC, tablet and smartphone via a wireless LAN Ethernet*. Furthermore, in situations where a user need to manage data from a higher level system, it also provides FTP server functionality, enabling the user to read and write files located on the USB drive inserted into the MONITOUCH TS1000 Smart Series from your PC connected through Ethernet.

2.2 Remote control

By connecting a PC and the MONITOUCH TS1000 Smart Series via Ethernet, a user can use the remote desktop function to implement the control of the PC screen on the MONITOUCH TS1000 Smart Series. Moreover, it can also be operated by connecting a mouse to the USB port of the MONITOUCH TS1000 Smart Series. Furthermore, by using “TELLUS & V-Server” remote monitoring software, information on the production site can be collected in real time via Ethernet for remote monitoring and management. Please note that the license of remote desktop and TELLUS & V-Server must be purchased separately.

2.3 8-way communications

Eight-way communications combine Ethernet based connections (8 protocols) and serial based connections (3 protocols) to enable a single MONITOUCH TS1000 Smart Series to connect up to 8 different types of devices or programmable logic controllers (PLC) and peripheral devices of other companies. In addition, it also supports simultaneous communication with the 8 types of devices and data transfer between devices.

2.4 Operation log and security functions

In recent years, safety of machinery has become an important issue. The MONITOUCH TS1000 Smart Series contributes to the design of highly safe machines by using operation logs and security functions.

The operation log enables the user to record operations in chronological order, such as switch operations and numerical input on a screen. This makes it possible to refer to history logs and learn who, when, and what operation was executed to analyze factors of abnormalities.

Security functions are managed by user name and password, and security levels can be set from 0 to 15. Security can be set for screens and switches at varying levels, and logged-in users can perform operations at

their authorized level.

3. Features

3.1 Inheritance of screen assets

The MONITOUCH TS1000 Smart Series can use the screen data of the previous model MONITOUCH TS1000 Series as is.

3.2 Reduction in size and weight

The panel cut size and screen size have remained unchanged, while achieving external miniaturization of 10% to 15% over previous models and mounting footprint reduction. Furthermore, it achieves weight savings of 30% to 40% over previous models by replacing the fixations of the housing with a structure that does not require metal plates.

3.3 External interface

(1) USB drive mounting direction

Previously, USB drive was inserted into a port on the back of the case, and that required extra space behind the case in the enclosure. The MONITOUCH TS1000 Smart Series no longer requires this space to be secured because USB drive can now be inserted from underneath the case.

(2) Adoption of NAND flash memory

Previously, a NOR type was utilized as nonvolatile memory (FROM), but the current model has adopted a NAND FROM in order to facilitate increase in screen data capacity and cost savings. As a result, the screen data size capacity has been increased 2.6 times.

(3) NAND flash memory error correction code

An 8-bit BCH error correction code (ECC) scheme has been adopted for the NAND flash memory, and it contributes to enhanced bit error correction.

3.4 Battery voltage detection function

A button cell battery used to back up history logs, etc. was previously prompted replacement every 3 years regardless of whether or not the battery was consumed. Now, the MONITOUCH TS1000 Smart Series is environmentally friendly designed to monitor the battery voltage and prompt the user to replace it by displaying a warning on the screen when the battery is in undervoltage.

3.5 Power consumption

Power consumption is reduced by 25% by adopting a high-efficiency switching power supply IC and achieving circuit power saving.

Launch time

August 2018

*1: Ethernet is a trademark or registered trademark of Fuji Xerox Co., Ltd.

Product inquiries

Factory Automation Systems Division,
Power Electronics Systems Business Group,
Fuji Electric Co., Ltd.
Tel: +81 (3) 5435-7066





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