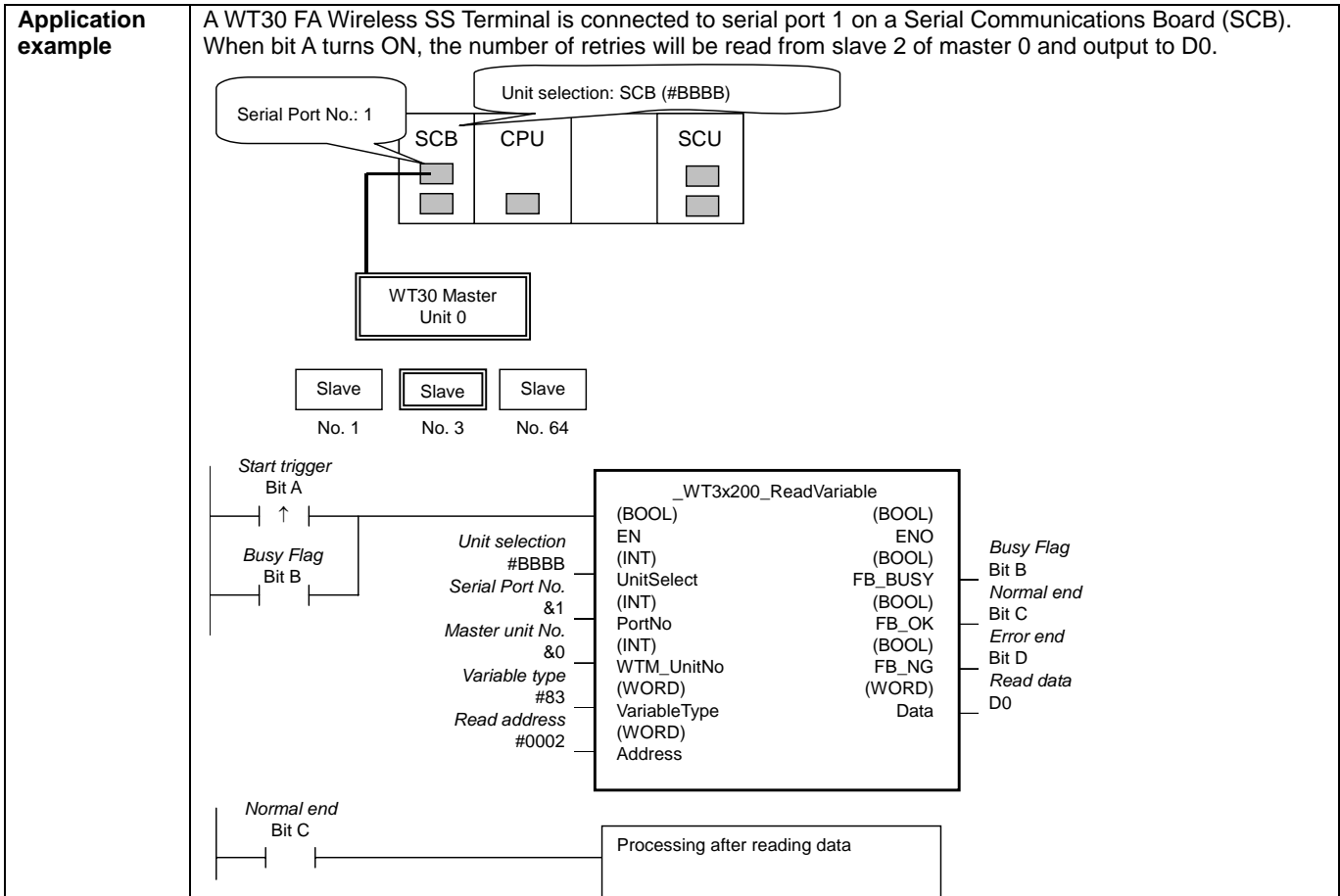| WT3x 200	Read Variable Area: _WT3x200_ReadVariable

Basic function	Reads data from the variable area of the master. This is a general-purpose function block used to specific details component parameters.
Symbol	

File name	Lib\FBL\omronlib\WirelessTerminal\WT30_WT3x200_ReadVariable10.cxf

Applicable models	Master	WT30-M01-FLK
	Slave	WT30-SID16/SMD16/SMD16-1
	CPU Unit	CS1*-CPU**H Unit version 3.0 or higher CJ1*-CPU**H Unit version 3.0 or higher CJ1M-CPU** Unit version 3.0 or higher CP1H CP1L (except 10 points CPU)
	Serial Communications Units/Boards	CS1W-SCU21-V1, CJ1W-SCU21-V1, CJ1W-SCU41-V1 Unit Version 1.2 or higher CS1W-SCB21-V1 and CS1W-SCB41-V1 Unit Version 1.2 or higher
	CX-Programmer	Version 5.0 or higher

Conditions for usage	WT30 FA Wireless SS Terminal
	  • This function block can be used only in RUN mode. This function block cannot be used in TEST or SET mode.
	Communications Settings
	  The communications settings of the serial port must be the same as those of the WT30 FA Wireless SS Terminal.
	  • The communications settings of the specified serial port can be set to the default WT30 settings using the Set Communications Port (_WT3x600_SetComm) function block, and the other WT30 settings using the Set Serial Gateway Mode (_SCx604_SetPortGATEWAY) function block.
	  • Use Serial Communications Unit (SCU) or Serial Communications Board (SCB) unit version 1.2 or later.
	CPU Unit Settings
	  PLC Setup: Shared Settings for Communications Instructions in FBs
	  • Communications Instruction Response Timeout Time (default: 2 s)
	  • Number of Retries (default: 3)
	Shared Resources
	  • Communications ports (internal logical ports)

Function description	When the start trigger turns ON, one element is read from the specified *Variable Type* and *Read Address*. Any data can be read from the memory area by specifying detailed parameters.
FB precautions	• The FB is processed over multiple cycles. The FB_BUSY output variable can be used to check whether the FB is being processed. • *FB_OK* or *FB_NG* will be turned ON for one cycle only after processing is completed. Use these flags to detect the end of FB processing. ■ Timing Chart
EN input condition	Connect EN to an OR between an upwardly differentiated condition for the start trigger and the FB_BUSY output from the FB.
Restrictions **Input variables**	• Always use an upwardly differentiated condition for EN. • If the input variables are out of range, the ENO Flag will turn OFF and the FB will not be processed.
Output variables	• The Readdata is set when the Normal End flag turns ON. • This FB requires multiple cycles to process. Always connect an OR including the FB_BUSY output variable to the EN input variable to ensure that the FB is processed to completion (see *Symbol*). • Do not turn the FB_BUSY output variable ON or OFF outside the FB.

Application example	A WT30 FA Wireless SS Terminal is connected to serial port 1 on a Serial Communications Board (SCB). When bit A turns ON, the number of retries will be read from slave 2 of master 0 and output to D0.

Unit selection: SCB (#BBBB)

Serial Port No.: 1

SCB	CPU		SCU

WT30 Master
Unit 0

Slave	Slave	Slave
No. 1	No. 3	No. 64

Start trigger
Bit A

↑

Busy Flag
Bit B

```
                            _WT3x200_ReadVariable
      Unit selection    (BOOL)                    (BOOL)
          #BBBB         EN                            ENO
      Serial Port No.   (INT)                     (BOOL)
            &1          UnitSelect              FB_BUSY
      Master unit No.   (INT)                     (BOOL)
            &0          PortNo                    FB_OK
      Variable type     (INT)                     (BOOL)
           #83          WTM_UnitNo                FB_NG
      Read address      (WORD)                    (WORD)
          #0002         VariableType               Data
                        (WORD)
                        Address
```

Busy Flag
Bit B

Normal end
Bit C

Error end
Bit D

Read data
D0

Normal end
Bit C

Processing after reading data

Variable Tables
Input Variables

Name	Variable name	Data type	Default	Range	Description
EN	EN	BOOL			ON: FB started OFF: FB not started.
Unit selection	UnitSelect	INT	&0	At right.	Specify the Unit and the serial port.
Serial Port No.	PortNo	INT	&1	&1 to &2	Only serial port 2 of CP1H/CP1L M-type CPU unit is possible to use this FB. ■ Connected to CPU Unit 　Unit selection　　　#FFFF 　Serial port No.　　　Not accessed. 　　　　　　　　　(CP1H/CP1L-M: Serial Port2 　　　　　　　　　CP1L-L14/20: Serial Port1) ■ Connected to Serial Communication Board(SCB) 　Unit selection　　　#BBBB 　Serial port No.　　　&1: Serial Port 1 　　　　　　　　　&2: Serial Port 2 ■ Connected to Serial Communication Unit(SCU) 　Unit selection　　　SCU Unit No. (&0 to &15) 　Serial port No.　　　&1: Serial Port 1 　　　　　　　　　&2: Serial Port 2
Master unit No.	WTM_UnitNo	INT	&0	&0 to &99	Specify the unit number of the master.
Variable type	VariableType	WORD	#0		Specify the variable type. Refer to *Variable Types and Addresses* for details on variable types.
Read address	Address	WORD	#0		Specify the address to write. Refer to *Variable Types and Addresses* for details on addresses.

Output Variables

Name	Variable name	Data type	Range	Description
ENO (May be omitted.)	ENO	BOOL		ON: FB processed normally. OFF: FB not processed or ended in an error.
Busy Flag	FB_BUSY	BOOL		Automatically turns OFF when processing is completed.
Normal end	FB_OK	BOOL		Turns ON for one cycle when processing ends normally.
Error end	FB_NG	BOOL		Turns ON for one cycle when processing ends in an error.
Read data	Data	WORD		Outputs the read data. Refer to *Variable Types and Addresses* for details on read data.

Internal Variables

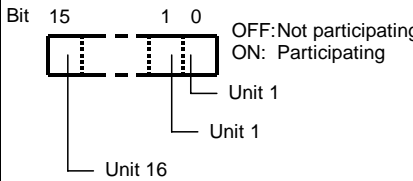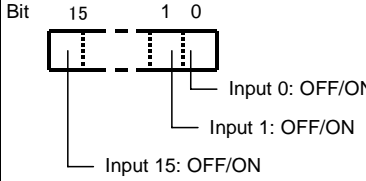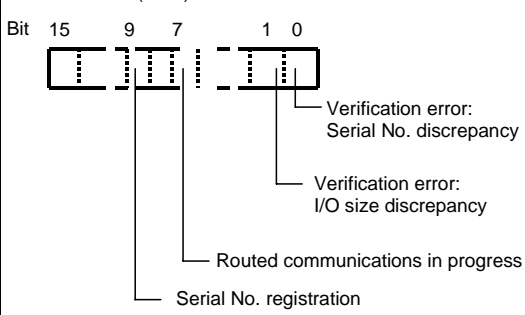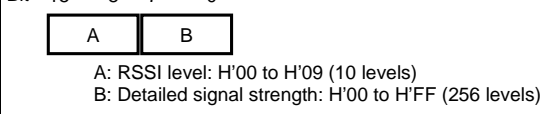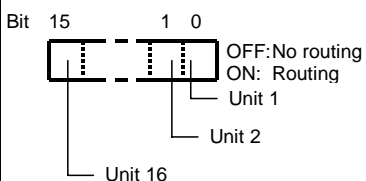Internal variables are not output from the FB.

If the NG Flag from the FB turns ON, the following internal variables can be monitored to obtain information on the error.

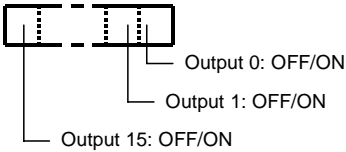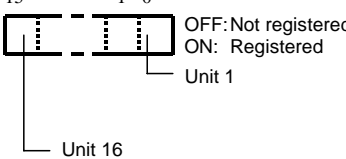| Name	Variable name	Data type	Range	Description
FINS error code	FINS_ErrorCode	WORD		The FINS error code is output. A code of #0000 is output for a normal end. Refer to the *Related Manuals* for details on the error codes.
CompoWay/F error code	CompowayF_Error Code	WORD		Outputs the CompoWay/F error code. A code of #0000 is output for a normal end. See below for details on errors.

CompoWay/F Error Codes

Code	Contents	Meaning
#0000	Normal end	
#1101	Parameter error	• The value of the variable type is illegal.
#1103	Address error	• The read address is illegal.
#2203	Operation error	• The operating mode is incorrect (execution is not possible in the current mode). • An error occurred in EEPROM.

■ **Variable Types and Addresses**

Variable type	Address	Parameter name	Remarks
#80	#0000	Slave participation information, units 1 to 16	Slave participation information can be read using the Check Slave Participation FB.
	#0001	Slave participation information, units 17 to 32	
	#0002	Slave participation information, units 33 to 48	
	#0003	Slave participation information, units 49 to 64	
#80	#0004	Slave input data: Unit 1	The Read Input Data FB can be use to read slave input data.
	Etc.	Etc.	
	#0043	Slave input data: Unit 64	
#80	#0044	Slave status: Unit 1	The Read Slave Status FB can be use to read slave status.
	Etc.	Etc.	
	#0083	Slave status: Unit 64	
#80	#0084	Communications error count: Unit 1	The Read Communications Error Count FB can be use to read the error count.
	Etc.	Etc.	
	#00C3	Communications error count: Unit 64	
#80	#00C4	Receiving signal strength: Unit 1	
	Etc.	Etc.	
	#0103	Receiving signal strength: Unit 64	
#80	#0104	Current frequency	The Read Frequency FB can be use to read the frequency currently being used.
#80	#0105	Communications cycle time	The Read Communications Cycle Time FB can be use to read the cycle time.
#80	#0106	Slave routing information, units 1 to 16	The Read Slave Routing Information FB can be use to read routing information.
	#0107	Slave routing information, units 17 to 32	
	#0108	Slave routing information, units 33 to 48	
	#0109	Slave routing information, units 49 to 64	

Variable type	Address	Parameter name	Remarks
#81	#0000	Slave output data: Unit 1	✍Read Data (Data) Bit 15　　　1　0 Output 0: OFF/ON Output 1: OFF/ON Output 15: OFF/ON
	Etc.	Etc.	
	#003F	Slave output data: Unit 64	
#82	#0000	Slave I/O size: Unit 1	■ Read Data (Data) Bit 15　8　7　　0 OUT | IN Input size: #00: 0 pts / #08: 8 pts / #10: 16 pts Output size: #00: 0 pts / #08: 8 pts / #10: 16 pts
	Etc.	Etc.	
	#003F	Slave I/O size: Unit 64	
#82	#0040	Signal strength monitor: Channel 1	The signal strength monitor parameters contain the signal strengths of the all channels, from which the contents can be read. Values from &0 to &255 (256 levels) are output. ■ Read Data (Data) Bit 15　8　7　　0 A | B A: RSSI level: H'00 to H'09 (10 levels) B: Detailed signal strength: H'00 to H'FF (256 levels)
	Etc.	Etc.	
	#0082	Signal strength monitor: Channel 83	
#82	#0083	Serial No. Registration, units 1 to 16	■ Read Data (Data) Bit 15　　　1　0 OFF: Not registered ON: Registered Unit 1 Unit 16
	#0084	Serial No. Registration, units 17 to 32	
	#0085	Serial No. Registration, units 33 to 48	
	#0086	Serial No. Registration, units 49 to 64	
#83	#0000	Retry count: Unit 1	
	Etc.	Etc.	
	#003F	Retry count: Unit 64	
#83	#0040	IP command count	

Version History

Version	Date	Contents
1.00	2004.12.	Original production

Note

This manual is a reference that explains the function block functions.

It does not explain the operational limitations of Units, components, or combinations of Units and components. Always read and understand the Operation Manuals for the system's Units and other components before using them.