



Multifunction display 570T, 571T, 573T

Modbus RTU Interface of 57xT series

Product features:

- Modbus RTU Slave
- Access to all registers of the TouchScreen series:
570T, 571T, 573T (= 57xT)
- RS232 Modbus interface

Version:	Description:
Index 1 – 571T_01a_Mar_18_01b_June_18	First edition, R60045.0002

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German is the original version.

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1. General

The Modbus interface of the TouchScreen series 57xT is a standard Modbus RTU Slave and provides the following Modbus functions:

- Read Coils
- Write Single Coil
- Read Holding Registers
- Write Multiple Registers
- Diagnosis

For the operation of the interface module and the understanding of this manual basic knowledge in Modbus RTU communication is presupposed.

2. Parameter setting

Required parameter settings in 57xT “Serial menu”:

UNIT NUMBER

Not valid for Modbus communication
(For setting of Modbus address see parameter “MODBUS”)

SERIAL BAUD RATE

This parameter defines the serial baud rate

0	9600	9600 baud
1	19200	19200 baud
2	38400	38400 baud

SERIAL FORMAT

This parameter defines the bit data format.

0	7-EVEN-1	Do not use with Modbus protocol		
1	7-EVEN-2			
2	7-ODD-1			
3	7-ODD-2			
4	7-NONE-1			
5	7-NONE-2			
6	8-EVEN-1	8 data bits	Parity even	1 stop bit
7	8-ODD-1	8 data bits	Parity odd	1 stop bit
8	8-NONE-1	Do not use with Modbus protocol		
9	8-NONE-2	8 data bits	no Parity	2 stop bits

SERIAL INIT

Not valid for Modbus communication

SERIAL PROTOCOL

Not valid for Modbus communication

SERIAL TIMER (S)

Not valid for Modbus communication

SERIAL VALUE

Not valid for Modbus communication

MODBUS

This parameter enables the Modbus protocol and determines the Modbus address.

	0	Do not use for Modbus protocol (Modbus disabled)
	1 ... 247	Modbus enabled: Serial interface is using Modbus RTU protocol The number set here determines the Modbus node address.

3. Modbus Communication

The following Modbus functions are available:

3.1 “Read Holding Registers” and “Write Multiple Registers”

With the functions “Read Holding Registers” and “Write Multiple Registers” it is possible to access all registers of the device.

All variables (actual data) and status registers are mapped to Modbus Holding Registers. However, as all registers of the device are 32 bit registers but Modbus Holding registers are only 16 bit registers, each register of the device requires two Holding registers. (For this reason the use of Modbus function “Write Single Register” is not possible.)

It is only possible to access to one single register of the TouchScreen device by each read or write operation, therefore the “Quantity (or number) of registers” in the Modbus request must always be 2.

3.1.1 Access to parameters

Holding Register 0x0000 / 0x0001 hex and following allow access to the device parameters.

The holding register numbers for a certain parameter can be calculated by the parameter # that can be found in the parameter table in the TouchScreen device manual:

Holding Register low = (parameter #) x 2

Holding Register high = (parameter #) x 2 + 1

Example:

Access to parameter # 51 “PRESELECTION 1” by Holding Register 0x0066 and 0x0067 hex.

3.1.2 Access to actual data

Holding Register 0x1000 / 0x1001 hex and following allow access to variables of the device (actual data registers):

Holding Register 0x1000 / 0x1001 hex → Actual data with serial Code “:0” (Display value)

Holding Register 0x1002 / 0x1003 hex → Actual data with serial Code “:1”

Holding Register 0x1004 / 0x1005 hex → Actual data with serial Code “:2”

Holding Register 0x1006 / 0x1007 hex → Actual data with serial Code “:3”

etc.

3.1.3 Access to status registers

Holding Register 0x2000 / 0x2001 hex and following allow access to status registers of the device:

Holding Register 0x2000 / 0x2001 hex → Output Status (Ctrl. Out status, read only)

Holding Register 0x2002 / 0x2003 hex → Serial Commands

Holding Register 0x2004 / 0x2005 hex → External Command (Ctrl. In status, read only)

Holding Register 0x2006 / 0x2007 hex → All Commands (read only)

3.2 “Read Coils” and “Write Single Coil”

With the functions “Read Coils” and “Write Single Coil” it is possible to read and set/reset single commands:

Coil number	Serial code of command	Command	
0	54	Reset / Set	Reset/Set Value
1	55	Freeze Display	Freeze actual display value
2	56	Touch Disable	Disable touch screen
3	57	Clear Lock	Loosen locking of all outputs / relay
4	58	Clear Min/Max	Reset of the min. / max. values
5	59	Serial Print (do not use with Modbus)	Sending of serial data
6	60	Teach Preset 1	Current display value is stored as PRESELECTION 1
7	61	Teach Preset 2	Current display value is stored as PRESELECTION 2
8	62	Teach Preset 3	Current display value is stored as PRESELECTION 3
9	63	Teach Preset 4	Current display value is stored as PRESELECTION 4
10	64	Scroll Display	Display switching (see display in operation mode)
11	65	Clear Loop Time	Release all latched switching conditions
12	66	Start Preselection	The preselection starts
13	67	Activate Data (not required with Modbus)	The data is activated
14	68	Store to EEPROM	Store to EEPROM
15	69	Testprogram (do not use with Modbus)	Testprogram (do not use with Modbus)

3.3 Diagnostics

The device supports the diagnostics subfunction 00 "Return Query Data".
Other diagnostics functions are not available.

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