Table of Contents

5.31 TesiMod - OMRON Host-Link 5.31-3
5.31.1 General Information 5.31-3
5.31.1.1 Hardware 5.31-3
5.31.1.2 Telegram Mode 5.31-3
5.31.2 Protocol Parameters 5.31-3
5.31.2.1 Communication Interface Parameters 5.31-3
5.31.2.2 Additional Parameters 5.31-4
5.31.2.2.1 Parameter Maximum Waiting Time for Response 5.31-4
5.31.2.2.2 Parameter Delay until Connection Set-up 5.31-4
5.31.2.2.3 Parameter Monitor Mode 5.31-4
5.31.3 Data Types 5.31-5
5.31.3.1 Data Type Orientation 5.31-5
5.31.4 Poll Area 5.31-6
5.31.5 Parallel Message System 5.31-6
5.31.6 Physical Interfacing 5.31-7
5.31.7 Connecting Cable RS232 ..... 5.31-8
5.31.8 Error Messages 5.31-10

/000-8246/ Technical details are subject to change without prior notice
TESI_T_ger_V20.3005310QK0

OMRON Host-Link

OMRON Host-Link

5.31 TesiMod - OMRON Host-Link

5.31.1 General Information

TesiMod operating terminals can be conveniently connected to all controllers that support the OMRON Host-Link protocol. The OMRON Host-Link protocol allows communication between one operating terminal and up to 32 controllers.

5.31.1.1 Hardware

A RS232 or RS422 interface is used to connect TesiMod operating terminals to OMRON controllers. OMRON controllers are equipped with a built-in RS232 interface or can be expanded with a RS232 or RS422 adapter. Communication modules are fitted with both RS232 and RS422/RS485 interfaces.

5.31.1.2 Telegram Mode

RS232 interfaces allow only point-to-point connections; meaning only one controller can communicate with one operating terminal.
In this case, the Host-Link protocol's Single-Mode is used. This is a shortened telegram without a unit number and FCS (frame check sequence).
Use of a RS422 interface allows multipoint connections where simultaneous communication between up to 32 controllers and one operating terminal is possible.
In this case, the Host-Link protocol's Multiple-Mode is used. The telegram contains a unit number (for definition of the addressed controller) and a FCS.
TesiMod operating terminals can be set to the Single-Mode or Multiple-Mode. The operating terminal always has a client functionality which means that data transfers are always initiated by the terminal.

5.31.2 Protocol Parameters

5.31.2.1 Communication Interface Parameters

Parameters that can be defined for the communication interface are as follows:

Baud rate: 300, 600, 1200, 2400, 4800, **9600**, 19200
Data bits: **7**, 8
Parity: **even**, odd
Stop bits: 1, **2**
Handshake: **no handshake**

Default values in the programming software are in **bold** print.

/000-8246/ Technical details are subject to change without prior notice
TESI_T_ger_V20.3005310QK0

5.31.2.2 Additional Parameters

5.31.2.2.1 Parameter Maximum Waiting Time for Response

This parameter specifies the maximum time the operating terminal waits for a response from the PLC.
The valid range of values is 50 ms to 65535 ms.
The value 500 ms is specified by the programming software by default.

5.31.2.2.2 Parameter Delay until Connection Set-up

This parameter specifies the time the operating terminal waits before starting communication.
The valid range of values is 5 s to 255 s.
The value 5 s is specified by the programming software by default.

5.31.2.2.3 Parameter Monitor Mode

The PLC can be used in the RUN or MONITOR mode of operation.
Write access via the protocol is not possible in the RUN mode.
To be able to edit variables from the terminal, the PLC is switched to the Monitor mode whenever the operating terminal is booted.

5.31.3 Data Types

The following data types are available for direct user access.
The address ranges depend on the type of PLC.
The valid address ranges are specified below.

PLC Data Types	Mnemonic Code in Variable List	Address Range	Access
Intern Bit	IR	0.0 to 2555.15	Bit
Intern Word	IR	0 to 2555	Word
Intern Double Word	IRd	30 to 2554	Double Word
Link Bit	LR	0.0 to 63.15	Bit
Link Word	LR	0 to 63	Word
Link Double Word	LRd	0 to 62	Double Word
Holding Bit	HR	0.0 to 99.15	Bit
Holding Word	HR	0 to 99	Word
Holding Double Word	HRd	0 to 98	Double Word
Auxiliary Bit	AR	0.0 to 511.15	Bit
Auxiliary Word	AR	0 to 511	Word
Auxiliary Double Word	ARd	0 to 510	Double Word
Data Memory Word	DM	0 to 9999	Word
Data Memory Double Word	DMd	0 to 9998	Double Word
Timer/Counter	TC	0 to 1023	Read-Only Word

5.31.3.1 Data Type Orientation

a) Alphanumerical Texts
Data are interpreted in the PLC-conformal byte order for words.

b) Floating Point These data are interpreted in IEEE floating point format.

c) Binary Variables
Data with length of 2 bytes are interpreted in the PLC-conformal byte order for words.
Data with length of 4 bytes are interpreted in the PLC-conformal byte order for double words.

/000-8246/ Technical details are subject to change without prior notice
TESI_T_ger_V20.3005310QK0

5.31.4 Poll Area

The poll area must reside in the data memory area and be addressed as a data memory word (DM).

Example:
Word address + 0 DM 100
Word address + 1 DM 101

5.31.5 Parallel Message System

The parallel message system must reside in the data memory area and be addressed as a data memory word (DM).

Example:
Word address + 0 DM 100
Word address + 1 DM 101

5.31.6 Physical Interfacing

Pin assignment of the TesiMod RS232c interface

Pin	Ass.	Designation	Function
1	-	*DCD*	*Data Carrier Detect Signal*
2	x	RD	Receive Data
3	x	TD	Transmit Data
4	x	DTR	Data Terminal Ready
5	x	GND	Signal Ground
6	-	*DSR*	*Data Set Ready*
7	x	RTS	Request to Send
8	x	CTS	Clear to Send
9	-	*RI*	*Ring Indicator*

Pin assignment of the TesiMod RS485 interface

Pin	Ass.	Designation	Function
1	x	Shield	Shielding
2	x	TD(A)	Transmit Data Channel A
3	x	RD(A)	Receive Data Channel A
4	x	RTS(A)	Request to Send Channel A
5	x	CTS(A)	Clear to Send Channel A
6	x	*TXCK(B)*	*Transmitting Clock (in special models only)*
7	x	*RXCK(B)*	*Receiving Clock (in special models only)*
8	x	SG	Signal Ground
9	x	TD(B)	Transmit Data Channel B
10	x	RD(B)	Receive Data Channel B
11	x	RTS(B)	Request to Send Channel B
12	x	CTS(B)	Clear to Send Channel B
13	x	*TXCK(A)*	*Transmitting Clock (in special models only)*
14	x	*RXCK(A)*	*Receiving Clock (in special models only)*
15	-	nc	not assigned
15	-	nc	not assigned

Pins marked - are unassigned
Pins in *italic print* are only assigned in special models

/000-8246/ Technical details are subject to change without prior notice
TESI_T_ger_V20.3005310QK0

5.31.7 Connecting Cable RS232

The following wiring diagram does not apply to the terminals BT5 / BT5VF with combination interfaces and BT2 / BT2VF.

TesiMod
Operating Terminal

OMRON PLC
RS232



D-Subminiature
Male Connector
9-pin

D-Subminiature
Male Connector
9-pin

OMRON Host-Link

The following wiring diagram applies to the operating terminals BT2 / BT2VF only.

TesiMod
Operating Terminal BT2

OMRON PLC
RS232



D-Subminiature
Male Connector
25-pin

D-Subminiature
Male Connector
9-pin

/000-8246/ Technical details are subject to change without prior notice
TESI_T_ger_V20.3005310QK0

5.31.8 Error Messages

Code	50	E_HARDWARE	Communication error on hardware level
Code	60	E_PROTOKOL	Communication error on protocol level
	Subcode		
	10	E_RESPONSE_TIMEOUT	No response from PLC
	20	E_RECEIVE_COUNT	Wrong number of data received
	30	E_FCS	Wrong checksum
Code	70	E_UNDEF_CODE	Undefined command
	80	E_RESPONSE_CODE	Error from PLC
	Subcode		
	01		Can not be executed when PLC is in RUN mode
	02		Can not be executed when PLC is in MONITOR mode
	19		Frame checksum error
	20		Command format error
	21		Wrong read or write areas
	22		Command not available
	24		Frame length error
	35		User memory is write-protected