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24. General introduction to Modbus

When controllers are set up to communicate on a Modbus network using RTU (Remote Terminal Unit) mode, each eight-bit byte in a message contains two four-bit hexadecimal characters. The main advantage of this mode is that its greater character density allows better data throughput than ASCII for the same Baud rate. Each message must be transmitted in a continuous stream.

Only the RTU mode can be used on DELOMATIC Modbus communication.

Function 01 (01hex) Read/Write Multiple Flags

Reads/Write the ON/OFF status of discrete flags in the slave. Broadcast is not supported.

The forced state will remain valid, until the controller's logic next solves each flag. Flags will remain forced, if they are not programmed in the controller's logic.

Address area for reading of status flags

DELOMATIC DATA TO REQUEST	DELOMATIC PRESENT SERIAL COMMUNICATION REFERENCE	ADDRESS AREA
Status	STATUS TABLE	0000 – 999

Function 02 (02hex) Read Multiple Flags

Reads the ON/OFF status of discrete flags in the slave. Broadcast is not supported.

Address area for reading of status flags

DELOMATIC DATA TO REQUEST	DELOMATIC PRESENT SERIAL COMMUNICATION REFERENCE	ADDRESS AREA
Status	STATUS TABLE	0000 – 999
Alarm active	VTA no. Refer to VTA-TABLE	2000 – 2999
Alarm acknowledged	VTA no. Refer to VTA-TABLE	4000 – 4999
Digital Input	IOM Node. 1; 0..15 IOM Node. 2; 16..31 IOM Node. X X…X	6000 – 6999
Digital Output	IOM Node. 1; 0..11 IOM Node. 2; 16..27 IOM Node. X X…X	8000 – 8999
Timer Output	VTA no. Refer to VTA-TABLE	10000 – 10999
Timer Running	VTA no. Refer to VTA-TABLE	12000 – 12999

Function 03 (03hex) Read/Write Multiple Registers

Read/Write the binary value of holding registers in the slave. Broadcast is not supported.

The preset values will remain valid in the registers, until the controller's logic next solves the register contents. The register values will remain, if they are not programmed in the controller's logic.

Address area for reading of holding registers

DELOMATIC DATA TO REQUEST	DELOMATIC PRESENT SERIAL COMMUNICATION REFERENCE	ADDRESS AREA
Value	VTA no. Refer to VTA-TABLE	0000 – 999
Timers	VTA no. Refer to VTA-TABLE	2000 – 2999
Failure Class	VTA no. Refer to VTA-TABLE	4000 – 4999

Function 04 (04hex) Read Multiple Registers

Read the binary value of holding registers in the slave. Broadcast is not supported.

Address area for reading of holding registers

DELOMATIC DATA TO REQUEST	DELOMATIC PRESENT SERIAL COMMUNICATION REFERENCE	ADDRESS AREA
Measuring values	MEASURING VALUES TABLE	0000 – 999
Values minimum	VTA no. Refer to VTA-TABLE	2000 – 2999
Values maximum	VTA no. Refer to VTA-TABLE	4000 – 4999
Timers minimum	VTA no. Refer to VTA-TABLE	6000 – 6999
Timers maximum	VTA no. Refer to VTA-TABLE	8000 – 8999
DGU Used	VTA no. Refer to VTA-TABLE	14000 – 14999
Unit	VTA no. Refer to VTA-TABLE	18000 – 18999
Elapsed Time	VTA no. Refer to VTA-TABLE	20000 – 20999