

Description


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Function Description

The `WRITE_VAR` function is used to write one or more language objects of the same type:

- internal bits
- internal words

Verify that the objects to be written are consecutive. They may be located in a remote CPU or in a device connected to a communication channel.

WARNING

EXCHANGED DATA INCOMPATIBILITY

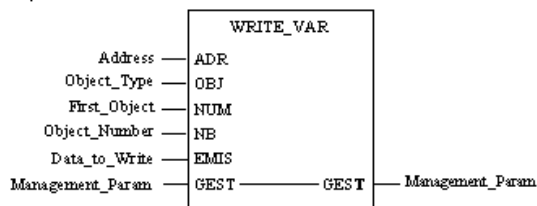
Data structure alignments are not the same for Premium/Quantum and M340/M580 so verify that the data exchanged are compatible. See [DDT: Mapping rules](#) for alignment rules.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

The additional parameters `EN` and `ENO` can be configured.

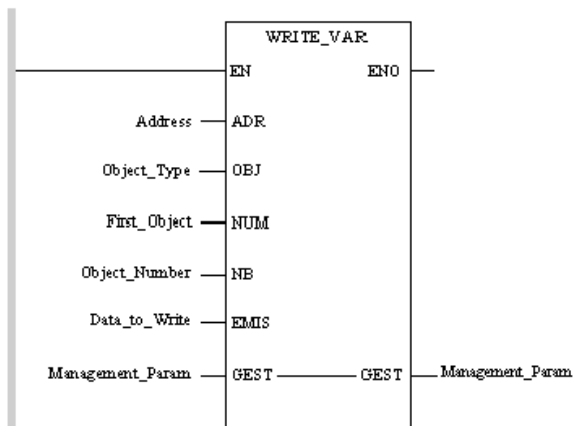
BD Representation

Representation:



.D Representation

Representation:



L Representation

Representation:

LD Address
`WRITE_VAR Object_Type, First_Object, Object_Number, Data_to_Write, Management_Param`

ST Representation

Representation:

`WRITE_VAR(Address, Object_Type, First_Object, Object_Number, Data_to_Write, Management_Param);`

Parameter Description

The following table describes the input parameters:

Parameter	Type	Comment
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Address	<p>ARRAY [0..5] OF INT for Premium</p> <p>ARRAY [0..7] OF INT for Modicon M340 and M580</p>	<p>Specific statements by hardware platforms:</p> <ul style="list-style-type: none"> Premium: <ul style="list-style-type: none"> Address of the message's receiving character mode channel is given by the ADDR function. Address of the destination entity of the exchange. <p>The following addresses are prohibited:</p> <ul style="list-style-type: none"> {Network.Station}APP, {Network.Station}APP.num. broadcast addresses (ALL, 0 for TSX SCY 11601 module). Modicon M340: <ul style="list-style-type: none"> Address of the message's receiving character mode channel is given by the ADDM function. The syntax of the address is of ADDM ('r.m.c.node')-type. Modicon M580: <ul style="list-style-type: none"> Address of the destination entity of the write operation, result of ADDMX function.
Object_Type	STRING	<p>Type of objects to write for Premium PLCs:</p> <ul style="list-style-type: none"> '%M': internal bits, '%MW': internal words, '%S': system bits, '%SW': system words. <p>Type of objects to write for Modicon M340 and M580 PLCs:</p> <ul style="list-style-type: none"> '%M': internal bits, '%MW': internal words.
First_Object	DINT	Index of the first object to be written in the destination device.
Object_Number	INT	Number of objects to write.
Data_to_Write	ARRAY [n..m] OF INT	Word table containing the value of the objects to be written.

The following table describes the input/output parameters:

Parameter	Type	Comment
Management_Param	ARRAY [0...3] OF INT	<p>Exchange management table</p> <p>On Modicon M340 and M580 PLCs, a cancel bit is available in the rank 1 word of the exchange management table.</p> <p>This cancel bit is located at the rank 1 word which consists of 2 bytes:</p> <ul style="list-style-type: none"> Most significant byte: exchange number Least significant byte: activity bit (rank 0) and cancel bit (rank 1). <p>The WRITE_VAR EF can be cancelled by the CANCEL EF or by setting to 1 the cancel bit of the management table.</p>

NOTE: Verify that the length parameter is not initialized before launching the function.

NOTE: Premium CPU embedded Ethernet of TSX P574xxx, TSX P575xxx and TSX P576xxx used as client, can only write 100 words instead of 123 words for other Ethernet modules and Premium CPUs with ETY PORT.

Simultaneous Transactions

The following table gives the capacities of each communication channel to simultaneously process transactions according to various configurations on Micro and Premium PLCs.

Configuration	Micro	TSX 57 10	TSX 57 20	TSX 57 23/30/40/45/55, PCX 57, PMX 57	TSX 57 46/56
Uni-Telway master terminal port	4	4	4	4	8
Uni-Telway master PCMCIA or SCY link	1	8	8	8	8

Uni-Telway client slave terminal port	4	1	1	1	8
Uni-Telway client slave PCMCIA or SCY link	1	1	1	1	1
Uni-Telway server slave terminal port	4	4	4	4	4
Uni-Telway server slave PCMCIA or SCY link	4	6	6	6	6
Modbus terminal port	4	-	-	-	-
Modbus PCMCIA or SCY link	4	8	8	8	8
Character mode terminal block	1	1	1	1	1
Character mode PCMCIA or SCY link	4	8	8	8	8
CANopen PCMCIA	-	10	10	10	10
Fipway PCMCIA or SCY link	4	8	8	8	8
Modbus Plus	4	4	4	4	4
Ethernet	-	16	16	16	16
Embedded Ethernet	-	-	-	-	64

The following table gives the capacities of each communication channel to simultaneously process transactions according to various configurations on Modicon M340 PLCs.

Configuration	BMX P34 1000	BMX P34 2000	BMX P34 2010/ 20102	BMX P34 2020	BMX P34 2030/ 20302
Embedded CANopen	-	-	16	-	16
Embedded Ethernet	-	-	-	16	16
Modbus master serial port	8	16	16	16	-

Maximum number of requests as client per scan on Modicon M580 CPUs:

Configuration	CPU Reference (BME P58 ...)					
	10•0	20•0	30•0	40•0	5040	6040
Ethernet	16	32	48	80	80	96

Maximum number of requests as client per scan on *Hot Standby* Modicon M580 CPUs:

Configuration	CPU Reference (BME H58 ...)		
	2040	4040	6040
Ethernet	32	80	96

Maximum number of requests served per scan on Modicon M580 CPUs:

Configuration	CPU Reference (BME P58 ...)					
	10•0	20•0	30•0	40•0	5040	6040
CPU from all origin ^(1.)	16	24	32	40	48	64
Embedded Ethernet	8	12	16	24 ^(2.)	32	32
USB	4	4	4	4	4	4
<p>1. %SW90 system word allows to adjust the number of requests served per cycle. The minimum number of requests served per cycle is set to 2 in order to reduce the CPU jitter.</p> <p>2. Maximum number of requests is 16 for M580 CPU BME P58 40•0 with firmware version ≤ 1.20.</p>						

Maximum number of requests served per scan on *Hot Standby* Modicon M580 CPUs:

Configuration	CPU Reference (BME H58 ...)

	2040	4040	6040
CPU from all origin ^(1.)	24	40	64
Embedded Ethernet	12	24	32
USB	4	4	4
1. %SW90 system word allows to adjust the number of requests served per cycle. The minimum number of requests served per cycle is set to 2 in order to reduce the CPU jitter.			

NOTE: Verify that the maximum number of simultaneous requests given in all tables takes into account the maximum number of simultaneous requests that each CPU can manage per cycle, *as Client and as Server*.

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