



Device/PLC Connection Manuals



About the Device/PLC Connection Manuals

Prior to reading these manuals and setting up your device, be sure to read the "Important: Prior to reading the Device/PLC Connection manual" information. Also, be sure to download the "Preface for Trademark Rights, List of Units Supported, How to Read Manuals and Documentation Conventions" PDF file. Furthermore, be sure to keep all manual-related data in a safe, easy-to-find location.

A

Siemens

Δ.1

Maximum Number of Consecutive Device Address

The following lists the maximum number of consecutive addresses that can be read by each PLC. Refer to these tables to utilize *Block Transfer*.



When the device is setup using the methods below, the Data Communication Speed declines by the number of times the device is read.

- When consecutive addresses exceed the maximum data number range
- When an address is designated for division
- When device types are different

To speed up data communication, plan the tag layout in screen units, as consecutive devices. (Includes the Alarm and Trend screens.)

■ PLCs

<SIMATIC S5 Series>

Device	Max. No. of Consecutive Address	
Input I		
Output Q		
Internal Relay F		
Timer T	64 Words	
Counter C		
Data Word D		
Ext. Data Word X		

<SIMATIC S7 300/400 (via MPI)>

	· · · · · · · · · · · · · · · · · · ·			
Device	Max. No. of Cosecutive			
Device	Address			
Input				
Output				
Internal	64 Words			
Timer				
C ounter				
Data Block				

<SIMATIC S7 200 (via PPI)>

	` ,
Device	Max. No. of Cosecutive
Device	Address
Input	
Output	
Internal	64 Words
Timer	04 Words
Counter	
Variable Memory	

<SIMATIC S7 300/400 (via 3964/RK512)>

Device	Max. No. of Cosecutive Address		
Data Block	64 Words		

SIMATIC S200 (via MPI)

Device	Max. No. of Cosecutive Address			
Input				
Output	64 Words			
Internal				
Timer	OT WOIGS			
Counter				
Data Block				

<SIMATIC 505 Series>

Device	Max. No. of Consecutive		
	Addresses		
Variable Memory	15 Words *1		
V	15 Words		
Word Input	15 Words		
WX Word Output			
· ·	15 Words		
WY Loop Gain	7.11		
LKC Loop Reset	7 Words		
Loop Reset	7 Words		
LΠ	7 770103		
Loop Rate	7 Words		
LTD Loop Alarm High Limit			
	7 Words		
LHA Loop Low Alarm Limit			
	7 Words		
LLA Loop Process Variable	7 Words		
LPV Loop PV High Limit	/ Words		
_	7 Words		
LPVH Loop PV Low Limit			
•	7 Words		
LPVL Loop Orange Deviation Limit			
LODA	7 Words		
Loop Yellow Deviation Alarm	7 Words		
Limit LYDA Loop Sample Rate	7 Words		
Loop Sample Rate	7 Words		
LTS Loop Setpoint	7 *************************************		
	7 Words		
LSP Loop Output			
1	7 Words		
LMN Loop Error			
	7 Words		
LERR Loop Bias	7 Words		
LMX	/ vvorus		
LMX Loop Alarm High-High Limit	7 Words		
LHHA	7 990103		
Loop Low-Low Alarm Unit LLLA	7 Words		
Loop Rate of Change Alarm Limit	7 Words		
LRCA Loop Setpoint High Point	714		
	7 Words		
LSPH Loop Setpoint Low Limit	7 Words		
LSPL	, ,,,,,,,,		

Loop Alarm Deadband LADB Loop V-flags LVF Most Significant Word of Loop C-flags LCFH Least Significant Word of Loop C-flags LCFL Analog Alarm/Alarm Acknowledge Flags AADB Most Significant Word of Analog Alarm C-flags ACFH Least Significant Word of Analog Alarm C-flags ACFH Least Significant Word of Analog Alarm C-flags ACFL Analog Alarm Error AERR Analog Alarm High Alarm Limit AHA Analog Alarm Low Alarm Limit ALA Analog Alarm Low Alarm Limit ALA Analog Alarm Low Orange Deviation Alarm Limit AODA Analog Alarm Brocess Variable APV Analog Alarm Setpoint ASP Analog Alarm Setpoint ASP Analog Alarm SP High Limit ASPH Analog Alarm Setpoint ASP Analog Alarm Sample Rate ATS Analog Alarm Sample Rate ATS Analog Alarm Sample Rate ATS Analog Alarm Setpoint TCC Drum Counter Preset TCP Timer/Counter Preset TCP Timer/Counter Preset DCP Drum Step Preset DSP Drum Step Preset DSP Drum Step Preset DSC Status Word STW Twords	Device	Max. No. of Consecutive		
Loop V-flags LVF 7 Words Most Significant Word of Loop C-flags LCFH Least Significant Word of Loop C-flags LCFL Analog Alarm/Alarm Acknowledge Flags AADB Most Significant Word of Analog Alarm C-flags ACFH Least Significant Word of Analog Alarm Error AERR 7 Words Analog Alarm High Alarm Limit AHHA 7 Words Analog Alarm Low Alarm Limit ALA Analog Alarm Loop Orange Deviation Alarm Limit APV Analog Alarm Errit APV Analog Alarm Errit APV Analog Alarm Error AERR 7 Words Analog Alarm Loop Orange Deviation Alarm Limit ARC Analog Alarm Set point ASP Analog	Device	Addresses		
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Loop C-flags LCFH Least Significant Word of Loop C-flags LCFL Analog Alarm/Alarm Acknowledge Flags AADB Most Significant Word of Analog Alarm C-flags ACFH Least Significant Word of Analog Alarm C-flags ACFH Least Significant Word of Analog Alarm Error AERR Analog Alarm High Alarm Limit AHA Analog Alarm High-High Alarm Limit AHHA Analog Alarm Low Alarm Limit ALA Analog Alarm Low-Low Alarm Limit ALLA Analog Alarm Loop Orange Deviation Alarm Limit AODA Analog Alarm Rate of Change Alarm SP High Limit ASPH Analog Alarm SP Low Limit ASPL Analog Alarm Sample Rate ATS Analog Alarm Yellow Deviation Alarm Limit AYDA Timer/Counter Preset TCP Twords Timer/Counter Preset TCP Twords Timer/Counter Preset TCP Twords Timer/Counter Preset DCP Twords Timer/Counter Preset DCP Twords Timer Status Word STW Twords	Loop V-flags LVF	7 Words		
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Variable APV Analog Alarm Rate of Change Alarm Limit ARCA Analog Alarm Setpoint ASP Analog Alarm SP High Limit ASPH Analog Alarm SP Low Limit ASPL Analog Alarm Sample Rate ATS Analog Alarm Yellow Deviation Alarm Limit AYDA Timer/Counter Preset TCP Drum Counter Preset DSP Drum Step Preset DSP Drum Step Current DSC Status Words 7 Words 7 Words 7 Words 7 Words 10 Words 10 Words 7 Words 10 Words 10 Words 10 Words 10 Words 7 Words	Deviation Alarm Limit AODA	/ vvords		
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Analog Alarm SP High Limit ASPH Analog Alarm SP Low Limit ASPL Analog Alarm Sample Rate ATS Analog Alarm Yellow Deviation Alarm Limit AYDA Timer/Counter Preset TCP Timer/Counter Current TCC Drum Counter Preset DSP Drum Step Preset DSP Drum Step Current DSC Status Words 7 Words 7 Words 10 Words 10 Words 10 Words 10 Words 10 Words	Change Alarm Limit ARCA	/ Words		
ASPH Analog Alarm SP Low Limit ASPL Analog Alarm Sample Rate ATS Analog Alarm Yellow Deviation Alarm Limit AYDA Timer/Counter Preset TCP Timer/Counter Current TCC Trum Counter Preset DCP Trum Step Preset DSP Trum Step Current DSC Status Words T Words Town Step Current DSC Town Step Current DSC Town Step Current DSC Town Status Words Town Step Status Words	Analog Alarm Setpoint ASP	7 Words		
ASPH Analog Alarm SP Low Limit ASPL Analog Alarm Sample Rate ATS Analog Alarm Yellow Deviation Alarm Limit AYDA Timer/Counter Preset TCP Timer/Counter Current TCC Trum Counter Preset DCP Trum Step Preset DSP Drum Step Current DSC Status Words Towords	Analog Alarm SP High Limit	7 Words		
ASPL Analog Alarm Sample Rate ATS Analog Alarm Yellow Deviation Alarm Limit AYDA Timer/Counter Preset TCP Timer/Counter Current TCC Trum Counter Preset DCP Trum Step Preset DSP Torum Step Current DSC Status Word STW Towords	ASPH	/ Words		
ASPL Analog Alarm Sample Rate ATS Analog Alarm Yellow Deviation Alarm Limit AYDA Timer/Counter Preset TCP Timer/Counter Current TCC Trum Counter Preset DCP Trum Step Preset DSP Trum Step Current DSC Status Word STW T Words 7 Words Town Step Current DSC	Analog Alarm SP Low Limit	7 Words		
ATS Analog Alarm Yellow Deviation Alarm Limit AYDA Timer/C ounter Preset TCP Timer/C ounter Current TCC Trum Counter Preset DCP Trum Step Preset DSP Trum Step Current DSC Status Word STW T Words	The state of the s	/ Words		
ATS Analog Alarm Yellow Deviation Alarm Limit AYDA Timer/Counter Preset TCP Timer/Counter Current TCC Tounter Counter Preset DCP Toun Counter Preset DCP Toun Step Preset DSP Toun Step Current DSC Status Word STW Towords	Analog Alarm Sample Rate	7 Words		
Deviation Alarm Limit AYDA Timer/Counter Preset TCP Timer/Counter Current TCC Town Counter Preset DCP Trum Step Preset DSP Town Step Current DSC Status Word STW Twords	ATS	/ Words		
Deviation Alarm Limit AYDA	Analog Alarm Yellow	7 Words		
Timer/C ounter C urrent TCC 7 Words Drum C ounter Preset DCP 7 Words Drum Step Preset DSP 10 Words Drum Step Current DSC 10 Words Status Word STW 7 Words	Deviation Alarm Limit AYDA	/ WUIUS		
Drum Counter Preset DCP 7 Words Drum Step Preset DSP 10 Words Drum Step Current DSC 10 Words Status Word STW 7 Words	i i	7 Words		
Drum Step Preset DSP 10 Words Drum Step Current DSC 10 Words Status Word STW 7 Words	Timer/Counter Current TCC	7 Words		
Drum Step Current DSC 10 Words Status Word STW 7 Words	Drum Counter Preset DCP	7 Words		
Status Word STW 7 Words		10 Words		
		10 Words		
Drum Count Current DCC 10 Words	Status Word STW	7 Words		
1	Drum Count Current DCC	10 Words		

◆Interbus-S Communication

Packet Transfer Mode

Device	Max. No. of Consecutive Address		
Data Block DBxW			
Input IW	6 Words		
Output OW	o words		
Internal Memory MW			

Ethernet Communication

Device	Max. No. of Consecutive Addresses			
Input E	64 Words			
Output A	04 Words			
Marker M	128 Words			
Data Block DB	256 Words			
Timer T	1 Word			
Counter Z	i vvoid			

A.2 Device Codes and Address Codes

Device codes and address codes are used to specify indirect addresses for the E-tags or K-tags.

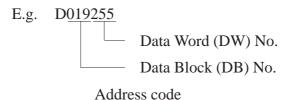
The word addresses of data to be displayed are coded and stored in the word address specified by the E-tags and K-tags. (Code storage is done either by the PLC, or with T-tag and K-tags)

■ PLCs

<SIMATIC S5 Series (using Link I/F)*>

	Device	Word Address	Device code (HEX)	Address code
Word	Data Register	D003000~	0040	Upper two digits: Value of "DB number minus 3" is indicated in HEX. Lower two digits: Value that DB number is indicated in HEX.
Word Device	Extended Data Register	X0030000~	5840	Upper two digits: Value of "DB number minus 3" is indicated in HEX. Lower two digits: Value that DB number is indicated in HEX.
	LS area	LS0000~	4040	Word Address

^{*} The address codes for Data Register and Extended Data Register are as follows:



Upper two digits: 019-3=16 (DEC) ->10 (HEX)

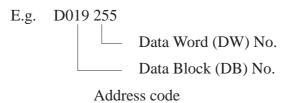
Lower two digits: 255 (DEC) -> FF (HEX)

Address code is 10FF.

<SIMATIC S5 Series (CPU Direct Connection)*>

	Device	Word Address	Device code (HEX)	Address code		
	Input Relay	IW000~	8140	Save as address value divided by 2.		
Bit Device	Output Relay	QW000~	8940	Save as address value divided by 2.		
	Internal Relay	FW000~	9140	Save as address value divided by 2.		
	Timer T000~ 6000		Word Address			
	Counter	C 000~	7000	Word Address		
Word Device	Data Register	D002000~	0040	Upper two digits: Value of "DB number minus 2" is indicated in HEX. Lower two digits: Value that DB number is indicated in HEX.		
Device	Extended Data Register	X002000~	5840	Upper two digits: Value of "DB number minus 2" is indicated in HEX. Lower two digits: Value that DB number is indicated in HEX.		
	LS area	LS0000~	4040	Word Address		

^{*} The address codes for Data Register and Extended Data Register are as follows:



Upper two digits: 019-2=17 (DEC) ->11 (HEX)

Lower two digits: 255 (DEC) ->FF (HEX)

Address code is 11FF.

<SIMATIC S7 300/400 (via MPI)>

	Device		Device Word Address		Address Code
	Input	Node 1	EW000 ~	8000	Word Address devided by 2
		Node 2	EW000 ~	8200	Word Address devided by 2
		Node 3	EW000 ~	8400	Word Address devided by 2
		Node 4	EW000 ~	8600	Word Address devided by 2
	Output	Node 1	AW000 ~	8800	Word Address devided by 2
Bit Device		Node 2	AW000 ~	8A00	Word Address devided by 2
Dit Device		Node 3	AW000 ~	8C 00	Word Address devided by 2
		Node 4	AW000 ~	8E00	Word Address devided by 2
	Internal	Node 1	MW000 ~	9000	Word Address devided by 2
		Node 2	MW000 ~	9200	Word Address devided by 2
		Node 3	MW000 ~	9400	Word Address devided by 2
		Node 4	MW000 ~	9600	Word Address devided by 2
	Timer		T000 ~	6000	Word Address
	Counter		Z00 ~	7000	Word Address
	Data Block		DB1W00000 ~ DB1W65534	0000	Word Address devided by 2
	Data Block		DB2W00000 ~ DB2W65534	0200	Word Address devided by 2
	Data Blo	ck	DB3W00000 ~ DB3W65534	0400	Word Address devided by 2
		:	:	:	:
	Data Blo		DB32W00000 ~ DB32W65534	3E00	Word Address devided by 2
	Data Block		DB33W00000 ~ DB33W65534	4200	Word Address devided by 2
	:		:	:	:
	Data Blo		DB47W00000 ~ DB47W65534	5E00	Word Address devided by 2
Word Device	Data Block		DB48W00000 ~ DB48W65534	6200	Word Address devided by 2
	:		:	:	:
	Data Block		DB54W00000 ~ DB54W65534	6E00	Word Address devided by 2
	Data Block		DB55W00000 ~ DB55W65534	7200	Word Address devided by 2
	:		:	:	:
	Data Block		DB60W00000 ~ DB60W65534	7C 00	Word Address devided by 2
	Data Block		DB1.DBW0 ~ DB1.DBW65534	A000	Word Address devided by 2
		:	÷	:	:
	Data Blo	ck	DB65535.DBW0 ~ DB65535.DBW65534	EE00	Word Address devided by 2
	LS area		LS0000 ~	4000	Word Address

<SIMATIC S7 300/400 (via 3964/RK512)>

	Device	Word Address	Device code (HEX)	Address Code
Word Device	Data Block	DB00W00000 ~	7C 00	Save as word address value divided by 2.

<SIMATIC S7 200 (via PPI)>

	Device	Word Address	Device code (HEX)	Address Code
	Input Bit	IWO ~	9000	Save as word address value divided by 2.
	Output Bit	QW0 ~	8800	Save as word address value divided by 2.
Bit Device	Internal Bit	MW00 ~	C 800	Save as word address value divided by 2.
	Specioal Memory	SMW00 ~	B800	Save as word address value divided by 2.
	Variable Memory	VW0000 ~	D000	Save as word address value divided by 2.
Word Device	Timer Word	T000 ~	0400	Save as word address value divided by 2.
VVOIG DEVICE	Counter Word	C000 ~	0800	Save as word address value divided by 2.

<SIMATIC S7 200 (via MPI)>

	Devic	е	Word Address	Device Address	Address Code
	Input	Node 1	IW0 ~	9000	Word Address devided by 2
	<u>'</u>	Node 2	IW0 ~	9200	Word Address devided by 2
		Node 3	IW0 ~	9400	Word Address devided by 2
		Node 4	IW0 ~	9600	Word Address devided by 2
	Output	Node 1	QW0 ~	8800	Word Address devided by 2
Bit Device		Node 2	QW0 ~	8A00	Word Address devided by 2
Bit Device		Node 3	QW0 ~	8C 00	Word Address devided by 2
		Node 4	QW0 ~	8E00	Word Address devided by 2
	Internal	Node 1	MW00 ~	C 800	Word Address devided by 2
		Node 2	MW00 ~	CA00	Word Address devided by 2
		Node 3	MW00 ~	CC00	Word Address devided by 2
		Node 4	MW00 ~	CE00	Word Address devided by 2
	Timer	Node 1	T000 ~	0400	Word Address
		Node 2	T000 ~	0600	Word Address
		Node 3	T000 ~	1000	Word Address
		Node 4	T000 ~	1200	Word Address
	Counter	Node 1	C00 ~	0800	Word Address
		Node 2	C00 ~	0A00	Word Address
Word Device		Node 3	C00 ~	0C 00	Word Address
		Node 4	C00 ~	0E00	Word Address
	Var. Memory	Node 1	VW0000 ~	D000	Word Address devided by 2
		Node 2	VW0000 ~	D200	Word Address devided by 2
		Node 3	VW0000 ~	D400	Word Address devided by 2
		Node 4	VW0000 ~	D600	Word Address devided by 2
	LS area		LS0000 ~	4000	Word Address

<SIMATIC 505>

	Device	Word Address	Device Code (HEX)	Address Code
	Variable Memory	V00001 ~	0000	Word Address minus 1
	Word Input	WX00001 ~	0C 00	Word Address minus 1
	Word Output	WY00001 ~	0E00	Word Address minus 1
	Loop Gain	LKC0001 ~	1C00	Word Address minus 1
	Loop Reset	LTI0001 ~	1E00	Word Address minus 1
	Loop Rate	LTD0001 ~	2000	Word Address minus 1
	Loop Alarm High Limit	LHA0001 ~	2400	Word Address minus 1
	Loop Low Alarm Limit	LLA0001 ~	2800	Word Address minus 1
	Loop Process Variable	LPV0001 ~	2C 00	Word Address minus 1
	Loop PV High Limit	LPVH0001 ~	2E00	Word Address minus 1
	Loop PV Low Limit	LPVL0001 ~	3000	Word Address minus 1
	Loop Orange Deviation Limit	LODA0001 ~	3400	Word Address minus 1
	Loop Yellow Deviation Alarm Limit	LYDA0001 ~	3800	Word Address minus 1
	Loop Sample Rate	LTS0001 ~	3A00	Word Address minus 1
	Loop Setpoint	LSP0001 ~	3E00	Word Address minus 1
	Loop Output	LM N 0001 ~	4400	Word Address minus 1
	Loop Error	LERR0001 ~	4800	Word Address minus 1
	Loop Bias	LM X0001 ~	4E00	Word Address minus 1
	Loop Alarm High-High Limit	LHHA0001 ~	5000	Word Address minus 1
Word Daviso	Loop Low-Low Alarm Unit	LLLA0001 ~	5400	Word Address minus 1
Word Device	Loop Rate of Change Alarm Limit	LRC A 0001 ~	5600	Word Address minus 1
	Loop Setpoint High Limit	LSPH0001 ~	5A00	Word Address minus 1
	Loop Setpoint Low Limit	LSPL0001 ~	6000	Word Address minus 1
	Loop Alarm Deadband	LADB0001 ~	6200	Word Address minus 1
	LS Area	LS0000 ~	4000	Word Address
	Loop V-flags	LVF0001 ~	6400	Word Address
	Most Significant Word of Loop C-flags	LCFH0001 ~	6600	Word Address
	Least Significant Word of Loop C-flags	LCFL0001 ~	6800	Word Address
	Analog Alarm/Alarm Acknowledge Flags	AADB0001 ~	6C 00	Word Address
	Most Significant Word of Analog Alarm C-flags	ACFH0001 ~	6E00	Word Address
	Least Significant Word of Analog Alarm C-flags	ACFL0001 ~	7000	Word Address
	Analog Alarm Error	AERR0001 ~	7400	Word Address
	Analog Alarm High Alarm Limit	AHA0001 ~	7800	Word Address
	Analog Alarm High-High Alarm Limit	AHHA0001 ~	7C 00	Word Address
	Analog Alarm Low Alarm Limit	ALA0001 ~	7E00	Word Address

(Continue to the next page.)

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	Device	Word Address	Device Code (HEX)	Address Code
	Analog Alarm Low-Low Alarm Limit	ALLA0001 ~	7A00	Word Address
	Analog Alarm Loop Orange Deviation Alarm Limit	AODA0001 ~	7600	Word Address
	Analog Alarm Process Variable	APV0001 ~	7200	Word Address
	Analog Alarm Rate of Change Alarm Limit	ARC A0001 ~	6A00	Word Address
	Analog Alarm Setpoint	ASP0001 ~	5E00	Word Address
	Analog Alarm SP High Limit	ASPH0001 ~	5800	Word Address
Device	Analog Alarm SP Low Limit	ASPL0001 ~	5200	Word Address
	Analog Alarm Sample Rate	ATS0001 ~	4C 00	Word Address
	Analog Alarm Yellow Deviation Alarm Limit	AYDA0001 ~	4A00	Word Address
	Timer/Counter Preset	TCP0001 ~	2600	Word Address
	Timer/Counter Current	TC C 0001 ~	2A00	Word Address
	Drum Counter Preset	DCP0101 ~	3200	Word Address
	Drum Step Preset	DSP0001 ~	3600	Word Address
	Drum Step Current	DSC 0001 ~	3C 00	Word Address
	Status Word	STW0001 ~	4600	Word Address
	Drum Count Current	DCC0001 ~	4200	Word Address
	LS Area	LS0000 ~	4000	Word Address

♦ Interbus Communication

<Direct I/O Mode>

	Device	Word Address	Device code (HEX)	Address code
Word Device	LS area	LS0000 ~	4000	Word Address

<Packet Transfer Mode>

	Device	Word Address	Device code (HEX)	Address code
Word Device	Data Block	DB02W00000~	7C 00	Same as word address value divided by 2
Word Device	Input Relay	IW00000~	8000	Same as word address value divided by 2
Bit Device	Output Relay	OW0000~	8800	Same as word address value divided by 2
Dit Device	Internal Memory	Mw00000~	9000	Same as word address value divided by 2

Ethernet Communication

Device	Word Address	Device Code	
Input	EW00000~	8000	(Word address) / 2
Output	AW00000~	8800	(Word address) / 2
Marker	MW00000~	9000	(Word address) / 2
Timer	T00000~	6000	Word address
Counter	Z00000~	7000	Word address
Data Block Index 1	DBx.DBW00000 ~	A000	(Word address) / 2
Data Block Index 2	DBx.DBW00000 ~	A200	(Word address) / 2
:	:	:	:
Data Block Index 40	DBx.DBW00000 ~	EE00	(Word address) / 2
LS area	LS0000 ~	4000	Word address