Glossary

Address	$\rightarrow$ Station address
ANZW	16 bit in-out variable for sending commands to an FB and receiving return values.
Bit	Abbreviation for **bi**nary dig**it**, the smallest unit in the binary system; it can have the value 0 or 1.
Bus	Cable with two defined ends which is used for exchanging data between the connected bus stations.
Bus connector	Plug used to connect the bus stations to the bus cable.
Bus segment	$\rightarrow$ Segment
Bus station	Device attached to the bus which can send data over the bus (e.g. DP master), receive data over the bus (e.g. DP slave), or amplify signals (e.g. repeater).
Byte	A byte consists of eight bits and is the smallest addressable amount of memory.
Character timeout	Used to detect the end of a telegram in the case of an unstructured flow of ASCII data. The telegram currently being received is considered to be completed when the time between two received characters is larger than the specified character timeout.
Command byte	$\rightarrow$ Stamp
Configuration	During configuration, the modules and the addresses of the DP slave are assigned. The actual configuration describes the modules which are actually present in the slave. the required configuration describes the modules which should be present in the slave. This approach allows an incorrect configuration to be detected when the system is booted.
Configurator	Software for configuring PROFIBUS devices and for setting parameters.
Control information	Used to synchronize and fragment the exchange of telegrams via PROFIBUS DP. Control information is always contained in the first byte (byte 0) of the DP data channel.

CPU	**C**entral **P**rocessing **U**nit
Data block	Special memory area in a PLC which is optimized for storing data; it consists of a specified number of words (or bytes) of memory.
Data channel	A logical channel for exchanging data with the SPI 3. The size of the data channel (i.e. I/O area) is dependent on the SPI 3 configuration. If a telegram is larger than the data channel, it needs to be fragmented.
Data transfer rate	Measurement for the speed of data transfer, specified in bits per second.
Data word	16 bit area of memory in a data block.
Diagnostics	Detection, localization, classification and display of errors, faults and messages.
DP	$\rightarrow$ PROFIBUS
DP address	ID number used to uniquely identify each bus device (station) in PROFIBUS DP.
DP standard	Bus protocol for PROFIBUS DB which is standardized in EN 50 170.
Floating	Indicates that a component or circuit is not electrically connected to ground
Fragment	Part of a telegram which is transferred through a data channel.
FREEZE	Control command that a DP slave receives from the DP master. It causes the slave to store (freeze) the current states of its inputs and to transfer the frozen values cyclically to the master. The slave only starts to transfer the cyclically updated values to the master again after it receives the UNFREEZE command.
Function block	Used to control the asynchronous exchange of data between PROFIBUS and a Fieldbus device with serial interface via the SPI 3.

Function code	Used to uniquely specify a function that can be executed in the controller.
Galvanically isolated	With galvanically isolated I/O devices, the reference potentials of control circuits and power circuits are not electrically interconnected.
Ground	Conductive material (e.g. ground wire) whose electrical potential is considered to be zero; all interconnected inactive components of a device which cannot assume dangerous voltages even in case of faults.
GSD	Device Data Base file (DDB), i.e. electronic device data sheet which describes the features of the PROFIBUS device uniquely and completely in a clearly specified syntax. A GSD file for the SPI 3 is provided on the supplied diskette and is required to set up the device.
Handshake	Method used to synchronize data exchange. For example, data can only be exchanged between a master and slave after the master and the slave have "agreed" that the exchange should take place.
ID byte	Configures the number and size of the bytes to be transferred in a module.
Input byte	PLC address area which contains the data that the DP slave sends to the DP master.
IP 20	Protection class specification to DIN 40 050. Components of the device which carry voltages are protected against touching with the fingers and against the penetration of solid objects with a diameter of more than 12 mm.
Master	Active bus station that can send data to other bus stations and request data from other bus stations.
Mirror	The input byte 0 of a data channel is called the mirror. The SPI 3 mirrors (returns a copy of) the stamp (q.v.) to confirm the operation or when user data is being processed. Mirror = 0 indicates that the DP slave is ready for data exchange. If mirror = 0, input byte 2 contains information on the length of the following user data. Mirror $\neq$ 0 indicates that user data will now follow or that the operation is completed.

MODBUS	MODBUS RTU is implemented according to the Reference Guide "Modicon PI-MBUS-300, Rev. D".
Module	Selecting a module during device configuration determines the configuration telegram and thus the size of the PLC I/O area.
MSB	**M**ost **S**ignificant **B**it
Non-floating	With non-floating I/O devices, the reference potentials of control circuits and power circuits are electrically interconnected and are not galvanically isolated.
Non-isolated	With non-isolated I/O devices, the reference potentials of control circuits and power circuits are electrically interconnected.
Output byte	PLC address area which contains data which the DP master sends to the DP slave.
Parameter	Variable used to specify the behavior of a device
Parameter master	When the system is booted, the parameter master passes parameter information to the DP slave. The parameter master can write to and read from the slave and change the configuration of the slave.
Parameter setting	To set the behavior of a DP slave and its modules.
Parameter telegram	Contains all parameters which can be set for a DP slave
Parity	Even parity: The sum of all 1's in a byte must be an even number. Odd parity: the sum of all 1's in a byte must be an odd number. The parity bit which can be 1 or 0 is used to create an even or odd parity to allow detection of errors due to lost bits.
PII (Ger: PAE)	Process input image (PII)
PLC	Programmable logic controller, electronic controller whose control function is controlled by the program in its memory.
POI (Ger: PAA)	Process output image (POI)
Potential equalization	Electrical connection between conducting bodies to bring them to an identical or practically identical potential and thus prevent interfering or dangerous voltages between the bodies.

PROFIBUS	**Pro**cess **Fi**eld **Bus** is an open Fieldbus system used to network PROFIBUS compatible devices. PROFIBUS works with three different protocols: PROFIBUS-DP (Decentral Peripheral), PROFIBUS-FMS (Fieldbus Message Specification), and PROFIBUS-PA (Process Automation). PROFIBUS is standardized in EN 50 170.
Protocol	A set of rules and regulations which control the flow of information in a communication system. The term protocol can refer to either hardware or software.
Receive	The Fieldbus device receives a telegram from the DP master through the SPI 3.
Receive channel	Data channel for data which the SPI 3 receives.
Remote peripheral	I/O device which is not directly integrated in the PLC CPU, but is accessed remotely via the bus.
Response monitoring	If a slave is not accessed within the response monitoring timeout, it switches automatically to a safe status by setting all outputs to 0. The response monitoring timeout is specified during parameter setting.
Response timeout	The duration of time within which the partner device must respond. The response timeout must be configured the same for both partner devices.
Segment	Section of the bus cable between two terminating resistors. A bus segment can support up to 32 bus stations, and several bus segments can be connected together with RS 485 repeaters.
Send	The DP master sends a telegram to a Fieldbus device through the SPI 3.
Send channel	Data channel for data which is sent to the SPI 3.
Slave	Bus station which is only allowed to exchange data with a master, and only on request of the master.

Stamp	The output byte 0 of a data channel is called the stamp. Stamp = 0 indicates that the master is ready for data exchange. If stamp = 0, output byte 2 contains information on the length of the following user data. Stamp $\neq$ 0 indicates that user data now follows or that the operation is completed.
Station address	Address with which the DP master accesses the PROFIBUS DP slave.
Status byte	$\rightarrow$ Mirror
Step 5	Programming language used for user programs for SIMATIC S5 controllers.
Step 7	Programming language used for user programs for SIMATIC S7 controllers.
Step 7 tool	Tool for Step 7 which automates particular programming tasks.
SYNC	Control command that a DP slave receives from the DP master. It causes the slave to store (freeze) the current states of its outputs. When following telegrams are received, it stores the output data, but the states of the outputs remain unchanged. The outputs are only cyclically updated again after the slave receives the UNSYNC command.
Telegram	A data flow which is sent or received through the serial interface (SIO), e.g. when you send a text to a text display or receive a bar code from a bar code scanner.
Telegram fragment	Part of a send or receive telegram. A telegram must be fragmented when it is so large that it cannot be transferred within a single PLC cycle
Terminating resistor	Used to stop electrical reflections and thus signal distortion at the end of the bus cable. Terminating resistors are required at each end of the bus cable.
Tool	Software tool used to specify and change the parameters of a parameter block.

Version code	Indicates the version of a product and is always incremented when the hardware or software in the product is updated or modified. The version code can be seen on the first and second page of this manual at the bottom left.
Word	$\rightarrow$ Data word
Xon	With software flow control, the Xon control character indicates readiness to receive; complement of Xoff.
Xoff	With software flow control, the Xoff control character indicates unreadiness to receive; complement of Xon.