SIPROTEC

Power Supply Transfer Device

7VU68

Communication module

PROFIBUS-DP
Bus mapping

Edition: April. 2014

C53000-L2140-C557-1

Siemens Aktiengesellschaft
C53000-L2140-C557-1

Preface

Purpose of this manual

This manual describes the data in the PROFIBUS-DP messages of the SIPROTEC device 7VU68x and is devided into the following topics:

- Data of the PROFIBUS-DP messages --> Chapter 1,
- Standard mappings 3-1 --> Chapter 2,

General details about the function, operation, assembly and commissioning of the SIPROTEC devices you find in the

- SIPROTEC4 System Manual, order no. E50417–H1176–C151.

PROFIBUS-DP communication profile documentation

The following additional manual informs you about the data types, bus specific parameters and hardware inteface of the PROFIBUS-DP slave modul of the SIPROTEC devices:

Manual	Order number
SIPROTEC Communication module, PROFIBUS-DP - Communication profile	C53000-L1840-B001-03

PROFIBUS-DP specification

The PROFIBUS-DP specification and the structure of the PROFIBUS-DP messages are defined in the International Standards:

- IEC 61158
  “Digital data communications for measurement and control - Fieldbus for use in industrial control systems”
  Communication profile type 3
- IEC 61784
  “Digital data communications for measurement and control”
  Communication profile family CPF3/1

Validity

This manual is valid for the SIPROTEC device:

- 7VU68x (firmware version 4.60 or higher),
- 7VU683 (firmware version 4.70 or higher),

with

- PROFIBUS-DP communication module version 04.03.01 or higher,

For device parameterization have to be used:

- DIGSI 4.8 or higher,
- DIGSI 4.21 considering the preconditions explained in the manual "SIPROTEC Communication module, PROFIBUS-DP - Communication profile" (ref. to page 3)
- PROFIBUS-DP standard mappings 3-1 to 3-n
  (n = device type dependent -number of standard mappings).

Additional Support

For questions regarding SIPROTEC4 devices, please contact your Siemens representative.

Training courses

Individual course offerings may be found in our Training Catalog and questions can be directed to our Training Centre. Please contact your Siemens representative.

Target audience

Protection engineers, commissioning engineers, personnel concerned with adjustment, checking and service of selective protective equipment, automatic and control facilities and personnel of electrical facilities and power plants.

Warning!

Hazardous voltages are present in this electrical equipment during operation. Non-observance of the safety rules can result in severe personal injury or property damage.

Only qualified personnel shall work on and around this equipment after becoming thoroughly familiar with all warnings and safety notices of this and the associated manuals as well as with the applicable safety regulations.

The successful and safe operation of this device is dependent on proper transport and storage, proper handling, installation, operation, and maintenance by qualified personnel under observance of all warnings and hints contained in this and the associated manuals.

In particular the general erection and safety regulations (e.g. IEC, EN, DIN, VDE, or other national and international standards) regarding the correct use of high-voltage installations must observed. Non-observance can result in death, personal injury or substantial property damage.

QUALIFIED PERSONNEL

For the purpose of this manual and product labels, a qualified person is one who is familiar with the installation, construction and operation of the equipment and the hazards involved. In addition, he has the following qualifications:

- Is trained and authorized to energize, de-energize, clear, ground and tag circuits and equipment in accordance with established safety practices.
- Is trained in the proper care and use of protective equipment in accordance with established safety practices.
- Is trained in rendering first aid.

Typographic and graphical conventions

The following text formats are used to identify concepts giving device information described by the text flow:

`Parameter names`, or identifiers for configuration or function parameters that appear in the device display or on the screen of a PC (with DIGSI) are shown in mono-script (same point size) bold text. This also applies to header bars for selection menus.

`Parameter conditions`, or possible settings of parameters that appear in the device display or on the screen of a PC (with DIGSI), are additionally shown in italic style. This also applies to selection items for selection menus.

„`Annunciations`“, or identifiers for information produced by the device or required by other devices or from the switchgear is shown in mono-script (same point size) and placed into quotation marks.

For diagrams in which the identifier type results from the representation itself, text conventions may differ from the above-mentioned.

■

Revision index

Listing of the changes between the editions of this manual:

Modified chapters / pages	Edition	Reasons of modification
ALL	1.00	First edition, Doc.-No.: C53000-L2140-C557-1 April. 11th, 2011
Chapter 2	2.00	Modified the chapter2.2 May 17th,2011
ALL	2.10	Add all information increased in 7VU683 V4.70. March 24th, 2014

■

Table of contents

Data of the PROFIBUS-DP messages

1

This chapter delivers explanations to the data descriptions of the standard mappings as well as notes for evaluation of selected SIPROTEC objects and for the configuration of the standard mapping in the PROFIBUS-DP master.

1.1 Explanations

Note:

The examples shown in this chapter do not necessarily correspond to the real allocation of the objects in the bus mapping.

Chapters 2 defines the data area of the PROFIBUS-DP messages for data transfer between the PROFIBUS-DP slave of the SIPROTEC device 7VU68x1,7VU683 and the PROFIBUS-DP master.

The columns "Designation of the SIPROTEC objects" contain the names of the SIPROTEC objects for `"US English"` device language.

The listed SIPROTEC objects in the PROFIBUS-DP messages' data area are sorted after byte offset, beginning with 0.

Variables with data type greater than or equal to 1 byte

The offset defines the start of the most significant byte in the message, e.g.:

Offset	Designation of the SIPROTEC objects	Comments	Scaling (32767 corresponds to...)	Internal object no.
20	Ia_B =	Operat. meas. current A on bus	32767	17601

The measured value "`IA S2`" is assigned to data byte 20 (most significant byte of the measured value) and data byte 21 (least significant byte of the measured value) in the PROFIBUS-DP message

Bit variables (SP/SC, DP/DC)

The offset indicates the byte which contains the bit value and the position of bit 0 of the bit variable, e.g. (input message):

Offset	Designation of the SIPROTEC objects	Comments	Internal object no.
9/5	PhaseO/C-1 Trip	1 = Phase Overcurrent-1 Trip	17830

Offset	Designation of the SIPROTEC objects	Comments	Internal object no.
0/0	Breaker ON/OFF OFF	Circuit Breaker	
0/1	Breaker ON/FF ON		

The single-point indication "`PhaseO/C-1 Trip`" is located in byte 9, bit position 2^5.

The checkback signal from the circuit breaker(as double-point indication) is located in data byte 0, bit position 2^0(bit 0) and 2^1(bit 1).

Note:

The definition of the data types (single-point indication, measured value etc.) are contained in the manual "SIPROTEC Communication module, PROFIBUS-DP - Communication profile" (ref. to page 3).

1.2 Messages in output direction: PROFIBUS-DP master to the SIPROTEC device

The messages in PROFIBUS-DP output direction (ref to chap. 2.1) allow:

- command outputs through the output relays of the SIPROTEC devices (external commands),
- manipulation of taggings (internal commands),
- transmission of measured values to the SIPROTEC device.

1.2.1 Commands

Note:

- The allocation of the output relays to the switching devices and to the output channels is defined during parameterization of the SIPROTEC devices.
- Depending on the device composition there may be less than indicated output relays (and corresponding PROFIBUS-DP message positions) available in the SIPROTEC device.

1.2.2 References

Standard mappings 3-1: ref. to chap. 2.1.

1.3 Messages in input direction: SIPROTEC device to the PROFIBUS-DP master

The messages in PROFIBUS-DP input direction (ref. to chap. 2.2) allow:

- polling of switching devices' status and binary inputs,
- transmission of indications, measurands and meter values to the PROFIBUS-DP master.

1.3.1 Indications

Note:

- The allocation of the input channels to the binary inputs is defined during parameterization of the devices.
- Depending on the device composition and the existing protection packages not all of the indicated binary inputs or protection indications (and corresponding PROFIBUS-DP message positions) may be available in the SIPROTEC device.

1.3.2 Measured values

Note:

- Depending on the device composition not all of the indicated analog inputs (and corresponding PROFIBUS-DP message positions) may be available in the SIPROTEC device.
- The transferred percentage values are with reference to the nominal values of the primary equipment.
- Changes of the scaling of the measured values and the type (percentage value or primary value) are possible in adaptation to the concrete installation environment. You find information about this in the manual "SIPROTEC Communication module, PROFIBUS-DP - Communication profile" (ref. to page 3).

1.4 Configuration data of the standard mappings

There are five standard mappings (standard mapping 3-1) available for the SIPROTEC device 7VU68x .

Standard mapping 3-1

The standard mapping 3-1 contains:

Output direction:

- 2 Double commands
- 14Single commands

Input direction:

- 2 Double-point indications
- 152 Single-point indications
- 18 Measured values (integer)

Configuration data

Standard mapping 3-1: **1FH 1FH 1FH 1FH 1FH 13H 28H**

(100 bytes input-, 9 bytes output direction)

PROFIBUS-DP master

At the configuration of a PROFIBUS-DP slave of the SIPROTEC devices in the parameterization system of the PROFIBUS-DP masters are to select the following modules for the 7VU68x standard mappings and to allocate associated addresses in the I/O addressing range of the PROFIBUS-DP master:

Standard mapping 3-1:

Module	Order number	Input address	Output address
0	Input - 16 Bytes	Adr_Ix	
1	Input - 16 Bytes	Adr_Ix + 16	
2	Input - 16 Bytes	Adr_Ix + 32	
3	Input - 16 Bytes	Adr_Ix + 48	
4	Input - 16 Bytes	Adr_Ix + 64	
5	Input - 16 Bytes	Adr_Ix + 80	
6	Input - 4 Bytes	Adr_Ix + 96	
7	Output - 9 Bytes		Adr_Ox

Addr_Ix and Addr_Ox indicates arbitrary (as a rule even) addresses in the I/O addressing range of the PROFIBUS-DP master.

Addr_Ix (base address of the inputs) is identical with offset 0 of the PROFIBUS-DP message data of the SIPROTEC device in input direction (ref. to chap. 2.2).

Addr_Ox (base address of the outputs) is identical with offset 0 of the PROFIBUS-DP message data of the SIPROTEC device in output direction (ref. to chap. 2.1).

Note:

There is dependently on the PROFIBUS-DP master in addition possibly the demand to put the base address of the inputs on a value divisible by four so that accesses on the metered measurands can be correctly carried out in the PROFIBUS-DP master.

1.5 Notes to SIPROTEC objects

This chapter contains notes for the use and evaluation of certain SIPROTEC objects.

Note:

- The descriptions of the standard mappings (ref. to chap. 2) contain the pre-allocation of the mapping files at delivery or at first assignment of a mapping in DIGSI to the SIPROTEC device.
- Changes of the allocation and the scaling of the measured values are possible in adaptation to the concrete installation environment.
  You find information about this in the manual "SIPROTEC Communication module, PROFIBUS-DP - Communication profile" (ref. to page 3).
- If a mapping file is assigned to a SIPROTEC device and if the data size of the PROFIBUS-DP message of this SIPROTEC device is changed by choice of a new mapping file then assignments which are not available in the existing mapping file remain unassigned furthermore.

1.5.1 Changing the setting group

In order to change the setting group, the value "10" = ON must be transmitted to the corresponding pair of bits and afterwards be reset to "00" = "Quiescent status" (controlled by an impulse from the PROFIBUS-DP master).

- Switching ON one setting group automatically switches OFF the current active setting group.
- Transmission of the value "01" = OFF is insignificant for the change of the setting group and is refused by the device.
- A change of the setting group is only possible via PROFIBUS-DP if the parameter **`Change to Another Setting Group`** (parameter address = 302) has the value ***`Protocol`***.

References *Standard mappings 3-1:* ref. to chap. 2.1.2

■

Standard mappings 3-1

2

This chapter describes the data in the PROFIBUS-DP messages between the PROFIBUS-DP master and the SIPROTEC device 7VU68x if one of the standard mappings 3-1 is selected.

2.1 Message in output direction

2.1.1 User-defined commands and taggings

- User-defined commands and taggings can be routed on these positions as “Source system interface” using the **`DIGSI Configuration matrix`**.

Offset	Designation of the SIPROTEC objects	Comments	Internal object no.
0 / 0	<user-defined> OFF	not pre-allocated	-
0 / 1	<user-defined> ON		
3 / 2	<user-defined> OFF	not pre-allocated	-
3 / 3	<user-defined> ON		
3 / 4	<user-defined> OFF	not pre-allocated	-
3 / 5	<user-defined> ON		
3 / 6	<user-defined> OFF	not pre-allocated	-
3 / 7	<user-defined> ON		

2.1.2 Internal Commands

- Ref. to chap. 1.5.1 for additional notes regarding “Changing the setting group”.

Offset	Designation of the SIPROTEC objects	Comments	Internal object no.
1 / 4	Setting Group A	Activation of setting group A	-
1 / 5	Setting Group A		
1 / 6	Setting Group B	Activation of setting group B	-
1 / 7	Setting Group B		
2 / 0	Setting Group C	Activation of setting group C	-
2 / 1	Setting Group C		
2 / 2	Setting Group D	Activation of setting group D	-
2 / 3	Setting Group D		
1 / 2	ModeRemote Locked	Control Mode Remote = Locked	-
1 / 3	ModeRemote Unlocked	Control Mode Remote = Unlocked	

2.1.3 Double commands

- With 7VU68x V4.60 or higher, double commands with double-point indications as checkback indication can be routed on these positions as “Source system interface” using the **DIGSI Configuration matrix**.

4 / 6

Offset	Designation of the SIPROTEC objects	Comments	Internal object no.
0 / 0	<user-defined> OFF	not pre-allocated	-
0 / 1	<user-defined> ON		
0 / 2	Remote Op. CB3 OFF (Only for 7VU683)	Remote Op. CB3	-
0 / 3	Remote Op. CB3 ON (Only for 7VU683)		
2 / 4	HSBT ON/OFF OFF(Only for 7VU683)	HSBT OFF is active	17960
2 / 5	HSBT ON/OFF ON(Only for 7VU683)	HSBT ON is active	
2 / 6	ATS ON/OFF OFF(Only for 7VU681)	ATS OFF is active	17961
2 / 7	ATS ON/OFF ON(Only for 7VU681)	ATS ON is active	
3 / 0	Prot. ON/OFF OFF	Protection OFF is active	17962
3 / 1	Prot. ON/OFF ON	Protection ON is active	
3 / 2	Remote Op. CB1 OFF (Only for 7VU683)	Remote Op. CB1	-
3 / 3	Remote Op. CB1 ON (Only for 7VU683)		
3 / 4	Remote Op. CB2 OFF (Only for 7VU683)	Remote Op. CB2	-
3 / 5	Remote Op. CB2 ON (Only for 7VU683)		
3 / 6	<user-defined> OFF	not pre-allocated	-
3 / 7	<user-defined> ON		
4 / 0	<user-defined> OFF	not pre-allocated	-
4 / 1	<user-defined> ON		
4 / 2	<user-defined> OFF	not pre-allocated	-
4 / 3	<user-defined> ON		
4 / 4	<user-defined> OFF	not pre-allocated	-
4 / 5	<user-defined> ON		
4 / 6	<user-defined> OFF	not pre-allocated	-
4 / 7	<user-defined> ON		

2.2 Message in input direction

2.2.1 Indications

2.2.1.1 User-defined indications

- User-defined protection indications, single-point indications and taggings can be routed on these positions as “Destination system interface” using the **DIGSI Configuration matrix**.

is chapter describes the data in the PROFIBUS-DP messages between the PROFIBUS-DP master and the SIPROTEC device 7VU68x if one of the standard mappings 3-1 is selected.

Offset	Designation of the SIPROTEC objects	Comments	Internal object no.
1 / 0	<user-defined>	not pre-allocated	-
1 / 1	<user-defined>	not pre-allocated	-
1 / 2	<user-defined>	not pre-allocated	-
1 / 3	<user-defined>	not pre-allocated	-
1 / 4	<user-defined>	not pre-allocated	-
1 / 5	<user-defined>	not pre-allocated	-
1 / 6	<user-defined>	not pre-allocated	-
1 / 7	<user-defined>	not pre-allocated	-
2 / 0	<user-defined>	not pre-allocated	
2 / 1	<user-defined>	not pre-allocated	
2 / 6	<user-defined>	not pre-allocated	
2 / 7	<user-defined>	not pre-allocated	
3 / 0	<user-defined>	not pre-allocated	
3 / 1	<user-defined>	not pre-allocated	
3 / 2	<user-defined>	not pre-allocated	
3 / 6	<user-defined>	not pre-allocated	
3 / 7	<user-defined>	not pre-allocated	
9 / 2	<user-defined>	not pre-allocated	
9 / 4	<user-defined>	not pre-allocated	
9 / 6	<user-defined>	not pre-allocated	
9 / 7	<user-defined>	not pre-allocated	
10 / 0	<user-defined>	not pre-allocated	
10 / 2	<user-defined>	not pre-allocated	
10 / 5	<user-defined>	not pre-allocated	
10 / 7	<user-defined>	not pre-allocated	
11 / 0	<user-defined>	not pre-allocated	

Offset	Designation of the SIPROTEC objects	Comments	Internal object no.
11 / 2	<user-defined>	not pre-allocated	
11 / 4	<user-defined>	not pre-allocated	
12 / 7	<user-defined>	not pre-allocated	
13 / 0	<user-defined>	not pre-allocated	
13 / 1	<user-defined>	not pre-allocated	
13 / 2	<user-defined>	not pre-allocated	
13 / 3	<user-defined>	not pre-allocated	
15 / 6	<user-defined>	not pre-allocated	
15 / 7	<user-defined>	not pre-allocated	
16 / 0	<user-defined>	not pre-allocated	
16 / 1	<user-defined>	not pre-allocated	
16 / 2	<user-defined>	not pre-allocated	
16 / 3	<user-defined>	not pre-allocated	
16 / 4	<user-defined>	not pre-allocated	
16 / 5	<user-defined>	not pre-allocated	
16 / 6	<user-defined>	not pre-allocated	
16 / 7	<user-defined>	not pre-allocated	
17 / 0	<user-defined>	not pre-allocated	
17 / 1	<user-defined>	not pre-allocated	
17 / 2	<user-defined>	not pre-allocated	
17 / 3	<user-defined>	not pre-allocated	
17 / 4	<user-defined>	not pre-allocated	
17 / 5	<user-defined>	not pre-allocated	
17 / 6	<user-defined>	not pre-allocated	
17 / 7	<user-defined>	not pre-allocated	
18 / 0	<user-defined>	not pre-allocated	
18 / 1	<user-defined>	not pre-allocated	
18 / 2	<user-defined>	not pre-allocated	
18 / 3	<user-defined>	not pre-allocated	
18 / 4	<user-defined>	not pre-allocated	
18 / 5	<user-defined>	not pre-allocated	
18 / 6	<user-defined>	not pre-allocated	
18 / 7	<user-defined>	not pre-allocated	
19 / 0	<user-defined>	not pre-allocated	
19 / 1	<user-defined>	not pre-allocated	
19 / 2	<user-defined>	not pre-allocated	
19 / 3	<user-defined>	not pre-allocated	
19 / 4	<user-defined>	not pre-allocated	

Offset	Designation of the SIPROTEC objects	Comments	Internal object no.
19 / 5	<user-defined>	not pre-allocated	
19 / 6	<user-defined>	not pre-allocated	
19 / 7	<user-defined>	not pre-allocated	

2.2.1.2 Diagnosis

Offset	Designation of the SIPROTEC objects	Comments	Internal object no.
3 / 3	Relay PICKUP	1 = Relay PICKUP (group signal)	501
3 / 4	Relay TRIP	1 = Relay GENERAL TRIP command	511

2.2.1.3 Protections

Offset	Designation of the SIPROTEC objects	Comments	Internal object no.
9 / 3	Phase Over-current I> Trip	1 = Phase Over-current I> Trip	17828
9 / 5	Phase Over-current I>> Trip	1 = Phase Over-current I>> Trip	17830
9 / 7	Earth Over-current I> Trip	1 = Earth Over-current I> Trip	17837
10 / 1	Earth Over-current I>> Trip	1 = Earth Over-current I>> Trip	17839
10 / 5	Phase O/C I> Switch-Onto-Fault Trip	1 = Phase O/C I> Switch-Onto-Fault Trip	17929
10 / 7	Phase O/C I>> Switch-Onto-Fault Trip	1 = Phase O/C I>> Switch-Onto-Fault Trip	17931
11 / 1	Earth O/C I> Switch-Onto-Fault Trip	1 = Earth O/C I> Switch-Onto-Fault Trip	17933
11 / 3	Earth O/C I>> Switch-Onto-Fault Trip	1 = Earth O/C I>> Switch-Onto-Fault Trip	17935
14 / 4	Phase Over-current Protection ON/OFF	1 = Phase Over-current Protection ON	17981
14 / 5	Earth Over-current Protection ON/OFF	1 = Earth Over-current Protection ON	17892
14 / 6	Phase O/C Switch-Onto-Fault ON/OFF	1 = Phase O/C Switch-Onto-Fault ON	17893
14 / 7	Earth O/C Switch-Onto-Fault ON/OFF	1 = Earth O/C Switch-Onto-Fault ON	17894

2.2.1.4 ATS(Only for 7VU681)

Offset	Designation of the SIPROTEC objects	Comments	Internal object no.
4 / 0	CommandOpenCB1	1 = Command: Open CB1	17760
4 / 1	CommandOpenCB2	1 = Command: Open CB2	17761
4 / 2	CommandOpenCB3	1 = Command: Open CB3	17762
4 / 3	CommandOpenCB4	1 = Command: Open CB4	17763
4 / 7	CommandCloseCB1	1 = Command: Close CB1	17767
5 / 0	CommandCloseCB2	1 = Command: Close CB2	17768
5 / 1	CommandCloseCB3	1 = Command: Close CB3	17769
5 / 2	CommandCloseCB4	1 = Command: Close CB4	17770
5 / 3	CommandCloseCB5	1 = Command: Close CB5	17771
5 / 5	CommandCloseCB7	1 = Command: Close CB7	17773
7 / 4	L1->L2 Succ.	1 = Line1->Line2 Succeeded	17798
7 / 5	L2->L1 Succ.	1 = Line2->Line1 Succeeded	17799
7 / 6	B1->B2 Succ.	1 = Bus1->Bus2 Succeeded	17800
7 / 7	B2->B1 Succ.	1 = Bus2->Bus1 Succeeded	17801
8 / 0	T1->T2 Succ.	1 = Transformer1->Transformaer2 Succeeded	17802
8 / 1	T2->T1 Succ..	1 = Transformer2->Transformaer1 Succeeded	17803
8 / 2	L1->L2 Failed	1 = Line1->Line2 Failed	17910
8 / 3	L2->L1 Failed	1 = Line2->Line1 Failed	17911
8 / 4	B1->B2 Failed	1 = Busbar1->Busbar2 Failed	17912
8 / 5	B2->B1 Failed	1 = Busbar2->Busbar1 Failed	17913
8 / 6	T1->T2 Failed	1 = Transformer1->Transformaer2 Failed	17914
8 / 7	T2->T1 Failed	1 = Transformer2->Transformaer1 Failed	17915
9 / 0	LSH Trip(T1)	1 = Load Shedding Trip(TimeDelay1)	17734
9 / 1	LSH Trip(T2)	1 = Load Shedding Trip(TimeDelay2)	17735
11 / 7	ATS ON/OFF	1 = ATS ON/OFF ON	17961
12 / 0	Prot. ON/OFF	1 = Prot. ON/OFF ON	17962
13 / 4	L1->L2 ON/OFF	1 = Line1->Line2 ON/OFF	17974
13 / 5	L2->L1 ON/OFF	1 = Line2->Line1 ON/OFF	17975
13 / 6	B1->B2 ON/OFF	1 = Busbar1->Busbar2 ON/OFF	17976
13 / 7	B2->B1 ON/OFF	1 = Busbar2->Busbar1 ON/OFF	17977
14 / 0	T1->T2 ON/OFF	1 = Transformer1->Transformaer2 ON/OFF	17978
14 / 1	T2->T1 ON/OFF	1 = Transformer2->Transformaer1 ON/OFF	17979
14 / 2	B1->B2 LS ON/OFF	1 = Busbar1->Busbar2 Load-shifting ON/OFF	17980
14 / 3	B2->B1 LS ON/OFF	1 = Busbar2->Busbar1 Load-shifting ON/OFF	18000
15 / 5	ATS is Ready	1 = ATS is Ready	18013

2.2.1.5 HSBT(Only for 7VU683)

Offset	Designation of the SIPROTEC objects	Comments	Internal object no.
4 / 0	CommandOpenCB1	1 = Command: Open CB1	17760
4 / 1	CommandOpenCB2	1 = Command: Open CB2	17761
4 / 2	CommandOpenCB3	1 = Command: Open CB3	17762
4 / 7	CommandCloseCB1	1 = Command: Close CB1	17767

Offset	Designation of the SIPROTEC objects	Comments	Internal object no.
5 / 0	CommandCloseCB2	1 = Command: Close CB2	17768
5 / 1	CommandCloseCB3	1 = Command: Close CB3	17769
5 / 6	L1->L2 Succ.	1 = Line1->Line2 Succeeded	17871
5 / 7	L2->L1 Succ.	1 = Line2->Line1 Succeeded	17872
6 / 0	B1->B2 Succ.	1 = Bus1->Bus2 Succeeded	17873
6 / 1	B2->B1 Succ.	1 = Bus2->Bus1 Succeeded	17874
6 / 2	B1->L1 Succ.	1 = Bus1->Line1 Succeeded	17875
6 / 3	B2->L2 Succ.	1 = Bus2->Line2 Succeeded	17876
6 / 4	L1->L2 Failed	1 = Line1->Line2 Failed	17916
6 / 5	L2->L1 Failed	1 = Line2->Line1 Failed	17917
6 / 6	B1->B2 Failed	1 = Busbar1->Busbar2 Failed	17918
6 / 7	B2->B1 Failed	1 = Busbar2->Busbar1 Failed	17919
7 / 0	B1->L1 Failed	1 = Busbar1->Line1 Failed	17920
7 / 1	B2->L2 Failed	1 = Busbar2->Line2 Failed	17921
11 / 1	Earth Overcurrent-1 Energization Trip	1 = Earth Overcurrent-1 Energization Trip	17933
11 / 3	Earth Overcurrent-2 Energization Trip	1 = Earth Overcurrent-2 Energization Trip	17935
11 / 6	HSBT ON/OFF	1 = HSBT ON/OFF ON	17960
12 / 0	Prot. ON/OFF	1 = Prot. ON/OFF ON	17962
12 / 1	L1->L2 ON/OFF	1 = Line1->Line2 ON/OFF	17963
12 / 2	L2->L1 ON/OFF	1 = Line2->Line1 ON/OFF	17964
12 / 3	B1->B2 ON/OFF	1 = Busbar1->Busbar2 ON/OFF	17965
12 / 4	B1->L1 ON/OFF	1 = Busbar1->Line1 ON/OFF	17966
12 / 5	B2->B1 ON/OFF	1 = Busbar2->Busbar1 ON/OFF	17967
12 / 6	B2->L2 ON/OFF	1 = Busbar2->Line2 ON/OFF	17968
15 / 2	HSBT Succeed	1 = HSBT Succeed	17948
15 / 3	HSBT Failed	1 = HSBT Failed	17949
15 / 4	HSBT is Ready	1 = HSBT is Ready	18012
16 / 0	LVLSH Trip	1 = LVLSH Trip	30410
16 / 1	B1 LVLSH TRIP	1 = B1 LVLSH TRIP	30412
16 / 2	B2 LVLSH TRIP	1 = B2 LVLSH TRIP	30414
16 / 3	L1->L3 Succeed	1 = Line1->Line3 Succeeded	30419
16 / 4	L1->L3 Failed	1 = Line1->Line3 Failed	30421
16 / 5	L2->L3 Succeed	1 = Line2->Line3 Succeeded	30425
16 / 6	L2->L3 Failed	1 = Line2->Line3 Failed	30427
16 / 7	L3->L1 Succeed	1 = Line3->Line1 Succeeded	30431
17 / 0	L3->L1 Failed	1 = Line3->Line1 Failed	30433
17 / 1	L3->L2 Succeed	1 = Line3->Line2 Succeeded	30437
17 / 2	L3->L2 Failed	1 = Line3->Line2 Failed	30439

Offset	Designation of the SIPROTEC objects	Comments	Internal object no.
17 / 3	L1->L3 ON/OFF	1 = Line1->Line3 ON/OFF	30440
17 / 4	L2->L3 ON/OFF	1 = Line2->Line3 ON/OFF	30441
17 / 5	L3->L1 ON/OFF	1 = Line3->Line1 ON/OFF	30442
17 / 6	L3->L2 ON/OFF	1 = Line3->Line2 ON/OFF	30443

2.2.1.6 Internal Commands-status

Offset	Designation of the SIPROTEC objects	Comments	Internal object no.
2 / 2	Group A	1 = SettingGroupA is active	-
2 / 3	Group B	1 = SettingGroupB is active	-
2 / 4	Group C	1 = SettingGroupC is active	-
2 / 5	Group D	1 = SettingGroupD is active	-

2.2.1.7 Double-point indications

- Message positions 0 / 4 to 0 / 7 are available with 7VU681 V4.60,7VU683 V4.70 or higher.User-defined double-point indications (e.g. checkback indications of double commands) can be routed on these positions as "Destination system interface" using the **`DIGSI Configuration matrix`**.
- 7VU681 V4.60,7VU683 V4.70: the value 0 is transmitted at these positions

s

Offset	Designation of the SIPROTEC objects	Comments	Internal object no.
0 / 4	<user-defined> OFF	not pre-allocated	-
0 / 5	<user-defined> ON		
0 / 6	<user-defined> OFF	not pre-allocated	-
0 / 7	<user-defined> ON		

2.2.2 Measured values

- Measured values in input direction are only available at use of standard mapping 3-1(ref. to chap. 1.4).
- Ref. to chap. 1.3.2 for notes regarding scaling of measured values.

2.2.2.1 For 7VU681/683 (Segmented single bus)

s

Offset	Designation of the SIPROTEC objects	Comments	Internal object no.
36	Uab_B1 =	Uab_Bus1 =	32767 kV

Offset	Designation of the SIPROTEC objects	Comments	Internal object no.
38	Ubc_B1 =	Ubc_Bus1 =	32767 kV
40	Uca_B1 =	Uca_Bus1 =	32767 kV
42	Uab_B2 =	Uab_Bus2 =	32767 kV
44	Ubc_B2 =	Ubc_Bus2 =	32767 kV
46	Uca_B2 =	Uca_Bus2 =	32767 kV
48	Ux_L1 =	Ux_L1 =	32767 kV
50	Ux_L2 =	Ux_L2 =	32767 kV
52	Ia_B =	Ia_bus =	32767 kA
54	Ib_B =	Ib_bus =	32767 kA
56	Ic_B =	Ic_bus =	32767 kA
58	Ie_B =	Ie_bus =	32767 kA
60	Ix_L1 =	Ix_Line1 =	32767 kA
62	Ix_L2 =	Ix_Line2 =	32767 kA

2.2.2.2 For 7VU683 with the primary diagram as Single Bus

Offset	Designation of the SIPROTEC objects	Comments	Internal object no.
30	Uab_B =	Uab_Bus =	32767 kV
32	Ubc_B =	Ubc_Bus =	32767 kV
34	Uca_B =	Uca_Bus =	32767 kV
48	Ux_L1 =	Ux_L1 =	32767 kV
50	Ux_L2 =	Ux_L2 =	32767 kV
60	Ix_L1 =	Ix_Line1 =	32767 kA
62	Ix_L2 =	Ix_Line2 =	32767 kA
64	Ux_L3 =	Ux_Line3 =	32767 kA
66	Ix_L3 =	Ix_Line3 =	32767 kA

Glossary

CFC	Continuous Function Chart
DC	Double command
GSD file	The GSD file contains the General Station Description (technical characteristics) of the PROFIBUS-DP communication module (PROFIBUS-DP slave). This file is required for configuration of the PROFIBUS-DP master and is supplied together with DIGSI.
DIGSI	Parameterization system / parameterization software for SIPROTEC devices
DP	Double-point indication
Input data / Input direction	Data from the PROFIBUS-DP slave to the PROFIBUS-DP master.
Octet	Term from EN 50170, one octet corresponds to 8 bits.
OLM	Optical Link Module
Output data / Output direction	Data from the PROFIBUS-DP master to the PROFIBUS-DP slave.
PNO	PROFIBUS Nutzerorganisation (PROFIBUS International Organization)
PROFIBUS-DP	PROFIBUS - Decentralized Peripherals
PSE	PROFIBUS interface module with (electrical) isolated RS485 interface for the SIPROTEC devices from Siemens.
PSO	PROFIBUS interface module with fibre-optical interface for the SIPROTEC devices from Siemens.
SC	Single command
SP	Single-point indication

■

Index