

















Appendix of the operating manual

Memo-Graph

DP-Slave-Module _is Pro Gate[®] ("profibuscoupler") V1.51 upwards

Connection of Memo-Graph to PROFIBUS DP via serial interface with _is Pro Gate[®] of ifak system GmbH



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1 General

1.1 Trans portation damage ?

Attention: Please inform both your supplier and shipping agent!

1.2 Complete delivery ?

- these operating instructions
- the DP-Slave-Module _is Pro Gate with user manual



- serial interface connecting cable for Memo-Graph
- disk with GSD-file and bitmaps

Please inform your supplier immediately if anything is missing!

Please take note of the following characters:

Hint:

Hints for better installation/operation.

Attention:

Ignoring this note can lead to damage of the device or faulty operation.

1.3 Used terms

Profibuscoupler: Even from now the term for _is Pro Gate is profibuscoupler.

PROFIBUS-master: All facilities like PLC, PC plug in cards, etc. which fulfil a PROFIBUS-master function are called **PROFIBUS-master** from now on.

2 Installation

2.1 Requirement

The option is only available:

- with a new CPU-board up the unit number xx 542041 (CW12/2000)
- without the "old" PROFIBUS DP option (PROFIBUS Listener) RSG10-E(F,G,H)xxx
- Memo-Graph firmware V2.50 upwards



The profibuscoupler has to be connected to the serial RS232-interface at the backside of Memo-Graph.

Attention: If the profibuscoupler is cable-connected, the serial interface at the front is not useable!

2.2 Connections/terminal layout

Interface RS232 (backside of Memo-Graph):

Sub-D-connector DIN 41652, jack, 9-pins

Hint: Leave open unused ports

Pin Memo- Graph	profibuscoupler
5	GND
2	RxD
3	TxD

RS485

profibuscoupler
3
8
5

C	Colour	
9	green	
	white	
ł	orown	

Data B
Data A
GND

Power supply: 24 V DC / 100 mA

2.3 Functionality

The profibuscoupler is the connection of Memo-Graph to PROFIBUS DP, with the functionality of a DP-slave with cyclic services.

Supported baud rates 45,45k, 93,75k, 187,5k, 500k, 1,5M, 3M, 6M und 12MBaud.

2.4 Termination impedance

The profibuscoupler comes with integrated termination impedances, reside behind the front panel. Place e.g. a screw-driver in the slit between front panel and clamps and cancel the front panel carefully. Bridgeover the three opened wrap connexions with the existing plug-in jumpers. Reinstall the front panel by pressing powerfully. Please take account of the hole for the LED.

2.5 Block diagram



3 Setting up

3.1 General

If the function **data interface** is not available in set up, you have to make a **once-only** initialisation.

- 1. Turn off Memo-Graph
- 2. Connect the profibuscoupler at the serial RS232 interface at the rear side of Memo-Graph
- 3. Turn on the profibuscoupler
- 4. Turn on Memo-Graph

From now on, the function *data interface* is available, independent of the existence of the profibuscoupler. And now the functionality appears in the PC-software-package ReadWin[®].

The existence of the profibuscoupler will only be detected while initialisation of Memo-Graph. If no profibuscoupler is detected, you can use the serial interface as usual for setting up or read out. If there is a RS485-interface available in Memo-Graph, you can use it for data exchange to PC-software.

3.2 Check existence of the profibuscoupler

After selection of "ext. DP-Slave-Module " on Memo-Graph under *data interface* (see next chapter) the hint "DP" in the headline appears.

The background colour gives information about the state of the data interface.

Read background: Problem at connection establishment. You can see detailed info under softkey "Info" (see chapter 3.9).

12.10.00	17:14	Analogue	1-8	DB	ATA:	
				_		

Green background: Connection established successfully, communication in progress.

12.10.00 17:15	Analogue	1-8	💵 ATA:
	35		and states.
			2 C

3.3 Settings in set up

After power up of Memo-Graph the profibuscoupler will be initialised via RS232 (Slave-address, etc.).

If there is a change in set up which affects e.g. the ring-memory of the measured values, a reinitialisation of Memo-Graph will be carried out, i.e. a reinitialisation of the profibuscoupler.

Consequence: The profibuscoupler retires from DP-side, in order to come back a few seconds later. This produces a "Component part carrier failure" at the PLC. E.g. the Simatic S7 goes in STOP-mode and has to restarted hand controlled to RUN-mode. There is the possibility to intercept the interruption by transferring OB86 to PLC. The PLC then doesn't go in STOP-mode, only the red LED flashes for a short time and the PLC continues in RUN-mode.

These settings are only possible if the once-only initialisation is performed. And are possible also without cable-connected profibuscoupler.

Under /Miscellaneous/Extras /Data interface/Communicate with select ext. DP-Slave-Module.

Data interface *	Data interface *
Communicate wi ext. DF-Slave-Module	Communicate with :ext. DP-Slave-Module Slave address :006 Baudrate :automatic Timeout :03 s Input/output(PJC):100/60 Syte
	Reference data: "100/60" 100 bytes transfered to PLC and 60 bytes from the PLC. On set up change, the profibuscoupler has to be turned off/on.
ESC=Return +t=Select +=Accept	ESC-Return +t=Select +=Change

Then select slave-address, baud rate, timeout and reference data structure (see also chapter 4.2). Please select a slave-address less than 126.

Now all inputs and outputs are available, even if they don't really exist.

3.4 Analogue inputs

If the analogue inputs don't really exist, only one selection is possible.

Anal	logue input 1	*	Analogue i	nput 1∕Int	egration *
Sigmal Channel ident. Engineering uni Decimal point Meas. range sta Zoom start Zoom start Zoom end Offset Damping/filter Copy settings Integration ► Limit values 1 Limit values 4 Limit values 4	Input not used From data into :none (XXXX nt:-9999 :-9999 :+9999 :4000 :000.0 s No)	Integration ba Integr. units Scrolled displ Data interface	se :Seconds (pu :No Onlu s Not used Send total/v	s) e polucic rear count.
ESC=Return	↓ †=Select	#=Accept	ESC=Return	↓ †=Select	∉ =Accept
ESC	+ +	له	ESC	+ +	له

I.e. "Analogue inputs" only come from PROFIBUS-master. But it's possible to send the integrated value via data interface.

If the analogue inputs are substantial, you can choose the analogue input from the analogue board, of course.

Analogue input 1	Analogue input 1 *
Signal 0-1 U squared Channel ident 0-10 U squared Engineering un Typ B (Ft30Rh-Pt6Rh) Decimal point Typ J (Fe-CuNi) Meas. range s Typ K (NiCr-Ni) Meas. range t Typ L (Fe-CuNi) Zoom start Typ K (NiCrSi-NiSi) Zoom start Typ K (Ft13Rh-Pt) Damping/filtet Typ K (Cu-CuNi) Data interfact Typ U (Cu-CuNi) Corp settings Typ H5 (H3Re-M25Re) Integration ► Typ H5000 Limit values Pt5000 Limit values Pt1000 Ki1000 Ft5000 Limit values Pt1000 Ki1000 Ft1000	Signal :4-20 MA Channel ident. :Channel 1 Engineering units:X Decimal point :one (XXX,X) Meas. range start:+000.0 % Meas. range end :+100.0 % Zoom start :+000.0 % Zoom start :+000.0 % Copy start :+000.0 % Damping/filter :000.0 % Damping/filter :000.0 % Damping/filter :000.0 % Damping/filter :000.0 % Damping/filter :000.0 % End: instant. value Limit values 2 > Limit values 3 > Limit values 4 >
ESC=Return +t=Select +=Accept	ESC=Return 4t=Select 4=Accept

After selection of an substantial analogue input (here "4-20 mA"), you can send this value via data interface to PROFIBUS-master.

3.5 Mathe matics channels

Mathematics channels may send via data interface to PROFIBUS-master.

Ma	th channel 1 *	Math channel 1 / Integration *
Formula Channel ident. Function 'g' Signal 'y1' Factor 'a' Math operator '' Signal 'y2' Factor 'b' Constant 'c' Engineering uni Decimal points Zoom start Zoom start Zoom start Zoom start Zoom settings Integration ► Limit values 1 Limit values 2	:f=(g(y1)*a)?(y2*b)+c :Maths 1 :not used :Analogue input 1 :+001.000000 :-(Subtraction) :Analogue input 9 :+000.00000 :+000.00000 ts: :None (XXXX) :-9999 :0000 Not used Sent result	Integrations base:Seconds (s) Integr. eng. unit: Scrolled displa <u>u ibs Calu is scalueis</u> Data interface Not used <u>Send total/year count</u> .
ESC=Return	↓†=Select ↓=Acce⊮t ↓ ↑ ↓	ESC=Return +t=Select +=Accept ESC + t

The integrated result may send via data interface to PROFIBUS-master.

3.6 Digita l inputs / digital boards

3.6.1 Control input resp. on/off events

The status can be sent to PROFIBUS-master or the digital status may be received from PROFIBUS-master.

Di	gital input 1	*	Dig	ital input 1	*
Function Identifier Action Data interface Copy settings	: Control in Digital 1 Not used Keceive act. Send act. sta	status	Function Identifier Description `H` Description 'L` Event text L->H Event text H->L Message window Data interrace Copy settings	On/off ev Digital 1 ion off <u>Do not li</u> Not used Receive act. Send act. St	ents status atus
ESC=Return ESC	↓t=Select	Accept	ESC=Return ESC	↓f=Select ↓ f	4=Accept

3.6.2 Impulse counter resp. op. time counter

The impulses can be received from PROFIBUS-master, or the impulse counter of a substantial digital input can be sent to PROFIBUS-master.

Digital input 1 *	Digital input 1 *
Function : Impulse counter Identifier : Digital 1 Engineering units: Decimal points : One (XXX,X) 1 Impulse = :+001.0 Total/year count :+0000000000.0 Display : Tata Interview actual Copy settings Limit values 1 Limit values 3 Limit values 3 Limit values 4	Function :Op. time counter Identifier :Digital 1 Total/year count :+00000000000 s :Total/unaw count Data interface Copy settings Limit values 1 Limit values 2 Limit values 4
ESC=Return ↓†=Select ↓=Accept	ESC=Return ↓†=Select ↓=Accept
ESC 4	ESC I I I

3.6.3 Event + op. time counter

The total counter and the digital status can be sent to the PROFIBUS-master, or the digital status can be received from PROFIBUS-master.

Dig	rital	input 1		*
Function Identifier Description 'H' Description 'L' Event text L->H Message window Total/year coun Display <u>Date interface</u> Copy settings Limit values 1 Limit values 2 Limit values 3 Limit values 4	E D O O D O C O C O C O C O C O C O C O C	vent+op. igital 1 n ff 0 not di 00000000 150 1/005 00000000 00000000000	time splay 000 s stat stat	count
ESC=Return	¥ †=	Select	A=l+	ccept
ESC	+	T T		le le

3.7 Combining digital channels

If the combination relates to op. time and impulse counter, the result can be sent as a total counter, with logical combination the status.

C	alculation 1 *	Calculation 1				
Function Formula Sum of Channel ident. Function 'g' Input 'g1' Factor 'b' Constant 'c' Engineering un Decimal points Display Vata interviace Copy settings Limit values 1 Limit values 4	Sum/average :f=g(y1:y2)*b+c :Impulse counter :Sum 1 :Digital input 1 :Digital input 1 :+001.00000 :+004.00000 :ts: :One (XXX,X) Not used Send vesult	Function Formula Channel ident. Input 'y1' Logic cond. y1 Calculation '?' Input 'y2' Logic cond. y2 External switch Description 'H' Description 'L' Event text L->H Event text H->L Message window Vata Interface A Copy settings	:Logical comb :f=op1(g1)?op :Sum 1 :Digital inpu High (+12 :OR :Digital inpu :High (+12 :No :on :on :of : : : : : : : : : : : : : : : : : :	<pre>sination 2(92) (t 1 +320) (t 1 +320) (t 1 +320) </pre>		
ESC=Return ESC	↓†=Select ↓=Accept ↓ ↑ ↓	ESC=Return ESC	↓t=Select ↓	l=Accept		

3.8 Relays/OC

Under /Service/Relay operation mode you can select the output of all relays conditions via data interface.

	Relay	operation mode/OC	*
Relay 3	in LV	:Closing	2
Relay 4	in LV	:Closing	222
Relay 5	in LV	:Closing	
Open Co	llector	LV:Switched	
Relay 6	in LU	:Closing	
Relay 7	in LV	:Closing	
Relay 8	in LV	:Closing	
Relay 9	in LV	:Closing	
Relay 1	0 in LU	Closing	
Relay 1	1 in LV	Closing	
Relay 1	2 in LU	Closing	
Relay 1	3 in LU	Closing	
Relay 1	4 in LU	Closing	
Relay 1	5 in LU	Closing	
Relay 1	6 in LU	Closing	
Relay 1	7 in LU	Clocing	
Data in	terface	Not used	
EPLD fr	equency	Send rel./OC condit	tion P
TO 0-	D	14-0-1	1000
ESC=	Return	+T=Select #=Acc	ept
ESC		+ +	4

3.9 Control of data transferred

With softkey "Info" and then "DP-Slave" the data structure of the data interface is shown.

.10.00 11 28	Analogue	1-8	🗐 ATA :	
Data interfa	ie in the second se			
Baudrate : a Communication Cyclic data	utomatic , Slav n with profibus transfer on DP-	e address coupler in side activ	: 126 n progres ve.	s.
MASTER-IN: A DT1:25, VI3: :42, ++ MASTER-OUT:	1:0, AI2:5, M1: 30, VT2:35, DS1 A2:0, DS2:5.7	10, MI1:1 :40.7, VS	5, DI1:20 1:40.6, F), :L

e.g. VS1:40.6 : Digital status of combination 1, offset 40 bytes, bit 6 Al2:5 : Analogue input 2 integrated, offset 5 bytes

Communication with profibuscoupler in progress	Memo-Graph is transmitting data to the profibuscoupler.				
Communication problems with profibuscoupler	It's not possible to make a link to profibuscoupler.				
Profibuscoupler connected	The profibuscoupler is substantial.				
Profibuscoupler not connected	The profibuscoupler is not substantial.				
Cyclic data transfer on DP-side active	Cyclic data exchange takes place between profibuscoupler and PROFIBUS-master.				
No cyclic data transfer active on DP-side	No cyclic data exchange takes place between profibuscoupler and PROFIBUS-master.				
Memo-Graph -> PROFIBUS-master MASTER-IN :	Structure of data, Memo-Graph sends to PROFIBUS-master: The byte offset is shown after the colon. The bit position of an digital status is shown after the point. A x: Analogue input x A Ix: Analogue input x integrated M x: Maths channel x M Ix: Maths channel integrated x D Ix: Impulse counter x D Tx: Time counter x V Ix: Combination x impulse counter V Tx: Combination x time counter D Sx: Digital status of digital input x V Sx: Digital status of combination x R L: Relays conditions ++: Not all value can be transferred (see next chapter)				
PROFIBUS-master -> Memo-Graph MASTER-OUT :	 Structure of data, PROFIBUS-master sends to Memo-Graph: The byte offset is shown after the colon. The bit position of an digital status is shown after the point. Ax: Analogue input x DSx: Digital status of digital input x ++: Not all value can be transferred (see next chapter) 				

4 Data exchange

4.1 General

From PROFIBUS-master to Memo-Graph you can send only

- Analogue values
- Digital states

From Memo-Graph to PROFIBUS-master you can send

- Analogue values
- Integrated analogue values
- Maths channels
- Integrated maths channels
- Digital states
- Impulse counters
- Op. time counters
- Op. time counters with digital status
- Combinations impulse counter
- Combinations op. time counters
- Combinations logical operations
- Relays conditions

4.2 Reference data

It's possible to choose between two combinations of reference data, corresponding on the affords of the process.



Input/output(SPS)	Memo-Graph -> PROFIBUS- master <i>Input</i>	PROFIBUS-master -> Memo-Graph <i>Output</i>
100/60 byte	100 byte e.g. 8 analogue inputs plus integration and 4 math. functions	60 byte e.g. 8 analogue inputs and 37 digital states
70/90 byte	70 byte e.g. 8 integrated analogue inputs, 4 math. functions, 16 digital states and all relays conditions	90 byte e.g. 16 analogue inputs and 21 digital states

The content of the reference data has the following order:

From Memo-Graph to PROFIBUS-master:

Data	Interpretation	bytes
analogue input 1-16	32-bit floating point (IEEE-754) ^{*1} + status *4	5
analogue input 1-16 integrated	32-bit floating point (IEEE-754) ^{*1} + status *4	5
math. function 1-4	32-bit floating point (IEEE-754) ^{*1} + status *4	5
math. function 1-4 integrated	32-bit floating point (IEEE-754) ^{*1} + status *4	5
digital counter	32-bit floating point (IEEE-754) ^{*1} + status *4	5
digital operating time	32-bit floating point (IEEE-754) ^{*1} + status *4	5
combination counter	32-bit floating point (IEEE-754) ^{*1} + status *4	5
combination op. time	32-bit floating point (IEEE-754) ^{*1} + status *4	5
digital states	8 bit + status *2	2
combination states	8 bit + status ^{*2}	2
relays conditions	3 byte (18 bit used) *3	3

i.e. if 16 analogue values and 4 maths channels are sent, all "positions" are occupied, if the reference data structure 100/60 is selected (see chapter 4.2). No other value can be send. Identifiable at "++" under softkey Info/DP-Slave (see chapter 3.9).

From PROFIBUS-master to Memo-Graph:

Data	Interpretation	
analogue value 1-16	32-bit floating point (IEEE-754) *1 + status *4	5
digital states	8 bit + status $*^2$	2

^{*1} see chapter 4.2.1 ^{*2} see chapter 4.2.2 ^{*3} see chapter 4.2.4

^{*4} see chapter 4.2.3

4.2.1 32-bit floating point (IEEE-754)

Octet	8	7	6	5	4	3	2	1
1	SN	(E) 2 ⁷	(E) 2 ⁶					(E) 2 ¹
2	(E) 2 ⁰	(M) 2 ⁻¹	(M) 2 ⁻²					(M) 2 ⁻⁷
3	(M) 2 ⁻⁸							(M) 2 ⁻¹⁵
4	(M) 2 ⁻¹⁶							(M) 2 ⁻²³

SN = 0: positive value

SN = 1: negative value

 $Zahl = -1^{SN} \cdot (1+M) \cdot 2^{E-127}$

E = exponent, M = mantissa

Example:

 $10 \quad 2^{129-127} \quad (1 \quad 2^{-1} \quad 2^{-2} \quad 2^{-3})$

Value =
$$-1^{0} \cdot 2^{129-127} \cdot (1 + 2^{-1} + 2^{-2} + 2^{-3})$$

= $1 \cdot 2^{2} \cdot (1 + 0.5 + 0.25 + 0.125)$
= $1 \cdot 4 \cdot 1.875 = 7.5$

4.2.2 Digital states

A digital status is described with two bits in two bytes.

Byte 1 bit x = 0: status "Low" = 1: status "High" Byte 2 bit x = 0: inactive = 1: active

4.2.3 Status

- for floating point:

8xH = x = 0: value O.K., no limits exceeded x = 1: limit value 1 exceeded x = 2: limit value 2 exceeded x = 4: limit value 3 exceeded x = 8: limit value 4 exceeded

x=1,2,4,8 only in direction Memo-Graph -> PROFIBUS-master.

10H = e.g. open circuit, waste value

otherwise = waste value

from PROFIBUS-master to Memo-Graph

80H:	value O.K.
not 80H:	value not O.K.

4.2.4 Relays

The relay conditions are described in 3 bytes:

Byte offset	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	Relay 1	Relay 2	Relay 3	Relay 4	Relay 5	OC	Relay 6	Relay 7
1	Relay 8	Relay 9	Relay 10	Relay 11	Relay 12	Relay 13	Relay 14	Relay 15
2	Relay 16	Relay 17	0	0	0	0	0	0

4.2.5 Example

From Memo-Graph to PROFIBUS-master:

channel	value	info	address	data
Analogue 1	4.1	A1:0	0, 1, 2, 3, 4	40 83 33 33 80
Digital impulse 2	12345,6	DI2:5	5, 6, 7, 8, 9	46 40 E6 66 80
Digital 1 status	High, active	DS1:10.7	10, 11	A0 E0
Digital 4 status	Low, active	DS4:10.6		
Combination 1 logic	High, active	VS1:10.5		

5 Implementation in Simatic S7

5.1 Network topology



5.2 Hardware configuration

5.2.1 Install ation and preparation

5.2.1.1 GSD file

In HW config:

- Copy the GSD and BMP files into the right directory of the configuration software STEP 7. e.g.: c:\...\Siemens\Step7\S7data\GSD
 - c:\...\Siemens\Step7\S7data\NSBMP



5.2.2 Slave configuration for Memo-Graph

In the HW config.:

- Drag the unit Memo-Graph V2.50 from the hardware catalogue
- Insert the slave device out of the hardware catalogue -> PROFIBUS DP -> Additional field devices -> General
 - in the PROFIBUS-DP network, set the node address.

Please differentiate between Memo-Graph (profibuscoupler < V1.51) and Memo-Graph V2.50 (profibuscoupler V1.51 upwards).
 There is a label at the profibuscoupler with the version info (only when V1.51 upwards).

Result:

SZ UFAVASRA	State 7
Al8x12Bit	Unit 1

Note: The assigned device address has to agree with the current (hardware) device address.

 Select the right module for the data structure selected in Memo-Graph (100/60 or 70/90) and drag it to slot 0.

😑 (0) UR	PROFIBUS(1): DP-Mastersystem (1)
1 PS 307 2A 2 CPU 315-2 DP	(6) Memo-G
3	
4 Al8x12Bit	
6	
7	

-	6) Memo-Graph V2	2.50			
lot	Module /	Order number	I Address	Q Address	Comment
0	31	Byte: 701 / 90 0	015		22
1	31	-> Byte: 701/900	1631	- 20 -	
2	31	> Byte: 701 / 90 0	3247	- C	2
3	31	-> Byte: 701 / 90 0	4863	- e	3
4	21	-> Byte: 701 / 90 0	6469		5
5	47	-> Byte: 701 / 90 0		a 15	3
6	47	-> Byte: 701 / 90 0	0	1631	3
7	47	-> Byte: 701 / 90 0	8	3247	3
8	47	-> Byte: 701/900	0	4863	3
9	47	-> Byte: 701 / 90 0	8	6479	2
10	41	-> Byte: 701/900	0	8089	2

- The addresses for inputs resp. outputs of the reference data are shown as I Address and Q Address, here with hardware address 6 the I addresses 0...69 and Q addresses 0...89.

5.2.3 Configuration download

- Save and compile the configuration.
- Download configuration into the CPU with menu PLC -> Download to Module.

If the LED "BUSF" still lights after configuration download, the projected network may not fit the physically existing network or the slave module configuration has been done wrongly. Check your network and configuration to discover the fault.

5.3 Specimen program

5.3.1 Address list

Input/Output data address space:

I-address: 0 Q-address: 0

Settings Memo-Graph: (see chapter 3.9)

MASTER-IN:	A1:0, A2:5, A3:10
MASTER-OUT:	A4:0, A5:5

5.3.2 Program in function block

The following program parts show, how to read and write inconsistent data. The special functions SFC14 and SFC15 don't function because the data is not consistent.

F	C	1	:
_			

L	ED	0	<pre>// Get 4 byte // Transfer to marker 0 // Get 1 byte status // Status to marker 4</pre>
T	MD	0	
L	EB	4	
T	MB	4	
L T L T	ED MD EB MB	5 5 9	<pre>// Get 4 byte // Transfer to marker 5 // Get 1 byte status // Status to marker 9</pre>
L	ED	10	<pre>// Get 4 byte // Transfer to marker 10 // Get 1 byte status // Status to marker 14</pre>
T	MD	10	
L	EB	14	
T	MB	14	
FC2:			
L	MD	15	<pre>// Get FLOATING POINT out of marker // and send // Status out of marker // and send</pre>
T	AD	0	
L	MB	19	
T	AB	4	
L	MD	20	<pre>// Get FLOATING POINT out of marker // and send // Status out of marker // and send</pre>
T	AD	5	
L	MB	24	
T	AB	9	

Function calls in OB1:

CALL FC1 CALL FC2

5.4 Monitoring

5.4.1 Variable table

In the variable editor marker addresses can be addressed and values accessed. Define the permitted addresses in a new variable table.

Example:

影	VA	T_1 M	emo-Grap	h\SIMATIC 300-	Station\CPU 3	315 _ 🗆 X
	-	Address	Symbol	Display format	Status value	Modify value
1	-214773	// Value a	analogue ir	nput 1		
2		MD 0		FLOATING_POINT		
3		MB 4	0	HEX		
4		// Value a	analogue ir	nput 2		
5		MD 5		FLOATING_POINT		
6		MB 9		HEX		
7		// Value	analogue	input 3		
8		MD 10		FLOATING_POINT		
9		MB 14	0	HEX		
10		// Value	analogue i	input 4 output		
11		MD 15		FLOATING_POINT		
12		MB 19		HEX		
13		77 Value	analogue i	input 5 output		
14		MD 20		FLOATING_POINT		
15		MB 24	0	HEX		
16						

5.4.2 Monitoring the slave data

Establish the communication between CPU and PG/PC. Enable the monitor function.

588	100	MI_1	memo-ui	aphilanmAllic 30	o-station ter t	
	-	Address	Symbol	Display format	Status value	Modify value
1		// Value a	analogue in	nput 1		
2		MD 0		FLOATING_POINT	61.7	
3		MB 4		HEX	B#16#80	
4		// Value a	inalogue ii	nput 2		
5	363365	MD 5		FLOATING_POINT	78.3	
6		MB 9		HEX	B#16#80	
7		// Value	analogue	nput 3		
8		MD 10		FLOATING_POINT	98.3	
9		MB 14		HEX	B#16#80	
10		// Value	analogue i	nput 4 output		
11		MD 15		FLOATING_POINT	0.0	
12		MB 19		HEX	B#16#00	
13	603603	77 Value	analogue i	nput 5 output		
14		MD 20		FLOATING_POINT	0.0	
15		MB 24		HEX	B#16#00	P
16						

5.4.3 Modify values

For a write job in the data sink of Memo-Graph, the status good (80h) has first to be transferred into the device. Then, the value can be transferred into the data sink as a 4 byte floating point.

- Set the status byte to 80 (hex).

影	@\	/AT_1	-	Memo-Gi	aph\SIMATIC 30	0-Station\CPl	J 3 💶 🗡
	-	Addr	ess	Symbol	Display format	Status value	Modify value
1		// Va	lue a	inalogue ir	nput 1		
2		MD	0		FLOATING_POINT	79.2	
3		MB	4		HEX	B#16#80	
4		// Va	lue a	inalogue ir	nput 2		
5		MD	5		FLOATING_POINT	84.0	
6		MB	9		HEX	B#16#80	
7		// Va	alue	analogue i	nput 3		
8		MD	10		FLOATING_POINT	47.7	
9		MB	14		HEX	B#16#80	
10		// Va	alue	analogue i	nput 4 output		
11		MD	15		FLOATING_POINT	0.0	
12		MB	19		HEX	B#16#00	B#16#80
13		77 Va	alue	analogue i	nput 5 output		
14		MD	20		FLOATING_POINT	0.0	
15		MB	24		HEX	B#16#00	
16							

- Menu Variable -> Activate Modify Values

Result:

The status value has been transferred into the device.

1	🚰 @VAT_1 Memo-Graph\SIMATIC 300-Station\CPU 3 🔳 🗖 🗙						
	-	Addres	Symbol	Display format	Status value	Modify valu	
1		// Value	analogue i	nput 1		te Antonio de concención de concención	
2		MD 0		FLOATING_POINT	44.2		
3		MB 4		HEX	B#16#80		
4		// Value	analogue i	nput 2			
5		MD 5		FLOATING_POINT	19.8		
6		MB 9		HEX	B#16#80		
7		// Value	analogue	input 3			
8		MD 10		FLOATING_POINT	33.8		
9		MB 14		HEX	B#16#80		
10		// Value	analogue	input 4 output			
11		MD 15		FLOATING_POINT	0.0		
12		MB 19		HEX	B#16#80	B#16#80	
13	603603	77 Value	analogue	input 5 output	•		
14		MD 20		FLOATING_POINT	0.0		
15		MB 24		HEX	B#16#00		
16			Ì				

- Set the desired value for transmitting into the device data sink.

@\	/AT_1	Memo-Gi	aph\SIMATIC 30	0-Station\CPL	J 3 💶 🗆 🗙		
-	Address	Symbol	Display format	Status value	Modify value		
	// Value a	analogue ir	nput 1				
	MD 0		FLOATING_POINT	61.7			
	MB 4	0	HEX	B#16#80			
	// Value analogue input 2						
	MD 5		FLOATING_POINT	30.9			
	MB 9		HEX	B#16#80			
	// Value	analogue i	nput 3				
	MD 10		FLOATING_POINT	9.4			
	MB 14	0	HEX	B#16#80			
	// Value	analogue i	nput 4 output				
	MD 15		FLOATING_POINT	0.0	22.25		
	MB 19		HEX	B#16#80	B#16#80		
643663	// Value analogue input 5 output						
	MD 20		FLOATING_POINT	0.0			
	MB 24	0	HEX	B#16#00			
		Address Address MD 0 MB 4 // Value 0 MB 9 // Value 0 MD 10 MB 14 // Value 0 MD 15 MB 19 // Value 0 MD 20 MB 24	@VAT_1 Memo-Gr Address Symbol // Value analogue ir MD<0	Address Symbol Display format // Value analogue input 1 MD 0 FLOATING_POINT MB 4 HEX // Value analogue input 2 MD 5 MD 5 FLOATING_POINT MB 9 HEX // Value analogue input 2 MD 5 MD 10 FLOATING_POINT MB 14 HEX // Value analogue input 3 MD 10 MD 10 FLOATING_POINT MB 14 HEX // Value analogue input 4 output MD MD 15 FLOATING_POINT MB 19 HEX // Value analogue input 5 output MD MD 20 FLOATING_POINT MB 24 HEX	@VAT_1 - Memo-Graph\SIMATIC 300-Station\CPU Address Symbol Display format Status value // Value analogue input 1 MD 0 FLOATING_POINT 61.7 MB 4 HEX B#16#80 // Value analogue input 2 MD 5 FLOATING_POINT 30.9 MB 9 HEX B#16#80 // Value analogue input 2 MD 5 FLOATING_POINT 30.9 MB 9 HEX B#16#80 // Value analogue input 3 B#16#80 7/ Value analogue input 4 MD 10 FLOATING_POINT 9.4 MB 14 HEX B#16#80 // Value analogue input 4 output 0.0 8#16#80 // Value analogue input 5 output 0.0 MB 19 HEX B#16#80 // Value analogue input 5 output MD 20 FLOATING_POINT 0.0 MB 24 HEX B#16#00 B#16#00		

- Menu Variable -> Activate Modify Values

Result:

-	Ada	lress	Symbol	Display format	Status value	Modify valu
1	// V	alue a	nalogue i	nput 1		
2	MD	0		FLOATING_POINT	61.7	
3	MB	4		HEX	B#16#80	
4	- 77 V	alue a	inalogue ii	nput 2		
5	MD	5		FLOATING_POINT	78.0	
6	MB	9		HEX	B#16#80	
7	11 \	/alue	analogue	nput 3	*****	
8	MD	10		FLOATING_POINT	111.4	
9	MB	14		HEX	B#16#80	
10	11.1	/alue -	analogue i	nput 4 output		_
11	MD	15		FLOATING_POINT	22.25	22.25
12	MB	19		HEX	B#16#80	B#16#80
13	- 77 \	/alue	analogue i	nput 5 output	n der der der der der der der der	
14	MD	20		FLOATING_POINT	0.0	
15	MB	24		HEX	B#16#00	
16						

The desired value has been transmitted into the Memo-Graph data sink and is shown on the device display.

5.5 Status codes

5.5.1 Table

Status	Code	Description
Bad, Sensor failure	10H	Sensor failure, Bad value
Good, ok	80H	No sensor failure
Good, ok, limit 1	81H	Out value exceeds the limit 1
Good, ok, limit 2	82H	Out value exceeds the limit 2
Good, ok, limit 3	84H	Out value exceeds the limit 3
Good, ok, limit 4	88H	Out value exceeds the limit 4

81H, 82H, 84H and 88H only transmitted from Memo-Graph to PROFIBUS-master.

5.5.2 Example of status codes

Measured value and status are good in the defined range:

	-	Address	Symbol	Display format	Status value	Modify value
1		//Value a	inalogue i	nput 1		-
2		MD 0		FLOATING_POINT	79.2	
3		MB 4		HEX	B#16#80	
4		// Value a	inalogue ii	nput 2		
5		MD 5		FLOATING_POINT	19.8	
6		MB 9		HEX	B#16#80	
7		// Value	analogue	input 3		
8		MD 10		FLOATING_POINT	15.8	
9		MB 14		HEX	B#16#80	
10		// Value	analogue i	input 4 output		
11		MD 15		FLOATING_POINT	22.25	22.25
12		MB 19		HEX	B#16#80	B#16#80
13		// Value	analogue i	input 5 output		
14		MD 20		FLOATING_POINT	0.0	
15		MB 24		HEX	B#16#00	
16						

The measured value has exceeded the limit 2:

8	@\	/AT_1	Memo-G	raph\SIMATIC 30	0-Station\CPL	J 3 💶 🗙
	~	Address	Symbol	Display format	Status value	Modify value
1		// Value	analogue i	nput 1		
2		MD 0	1	FLOATING_POINT	61.7	
3		MB 4		HEX	B#16#82	
4		// Value	analogue i	nput 2		-
5		MD 5	1	FLOATING_POINT	34.1	
6		MB 9	-	HEX	B#16#80	
7		// Value	analogue	input 3		
8		MD 10		FLOATING_POINT	91.3	
9		MB 14	1	HEX	B#16#80	
10		// Value	analogue	input 4 output		
11		MD 15	1	FLOATING_POINT	22.25	22.25
12		MB 19		HEX	B#16#80	B#16#80
13		77 Value	analogue	input 5 output		
14		MD 20		FLOATING_POINT	0.0	
15		MB 24		HEX	B#16#00	P
16						

Sensor failure, the value is not useable.

sia)	@/	/AI_1	Memo-Gi	aph\SIMATIC 30	U-Station/CPt	J 3 🔳 🔲 🖻
	-	Address	Symbol	Display format	Status value	Modify value
1		//Value a	analogue ir	nput 1		
2		MD 0		FLOATING_POINT	0.0	
3		MB 4		HEX	B#16#10	
4		// Value a	inalogue ir	nput 2		
5		MD 5		FLOATING_POINT	0.0	
6		MB 9		HEX	B#16#10	
7		// Value	analogue i	nput 3		
8		MD 10		FLOATING_POINT	0.0	
9		MB 14		HEX	B#16#10	
10		// Value	analogue i	nput 4 output		
11		MD 15		FLOATING_POINT	8.0	22.25
12		MB 19		HEX	B#16#00	B#16#80
13		// Value	analogue i	nput 5 output		
14		MD 20		FLOATING_POINT	0.0	
15		MB 24		HEX	B#16#00	D
16						

6 Troub leshooting

Problem	Cause	Adjustment
Profibuscoupler not detected after turn on	Memo-Graph is not able to contact the profibuscoupler.	Profibuscoupler turn off/on. Then turn off/on Memo-Graph
Memo-Graph. Message at screen "Profibuscoupler not connected"	The serial connection between Memo- Graph and profibuscoupler is wrong.	Please check connection. Have a look at the assignment of the colours (Chapter 2.2).
Hist "DD" decen't appear in the headline	Once-only initialisation hasn't been carried out.	Carry out once-only initialisation. (Chapter 3.1).
nint DP doesn't appear in the headline.	Data interface in set up is not activated.	Please activate data interface in set up (Chapter 3.3).
	The detection of the baud rate at DP-side	- Activate PROFIBUS-master
failed. Please activate DP-master!"	has failed, because of absent activity of master.	- Select the correct baud rate in set up (Chapter 3.3).
	Reference data (70/90 or 100/60) is different to the configuration in PROFIBUS- master.	Compare with reference data (Chapter 4.2) of PROFIBUS-master. Additional information about the configuration string you can get on the enclosed disk in file readme.pdf.
Info/DP-Slave: "No cyclic data transfer active on DP-side"	PROFIBUS-master.	Please activate PROFIBUS-master
	Baud rate is different.	Compare baud rate.
	Slave-address wrong	The slave-address of Memo-Graph has to match with the projected DP-slave-address (< 126).
Memo-Graph displays only dashes () , even though the PROFIBUS-master	The transmitted value consists of 5 bytes (4 bytes value and 1 byte status). The status has to be 80H , so that Memo-Graph accepts this value. If the status is not 80H the Memo-Graph detects.	Set status (5. byte) to 80H in PROFIBUS- master.
sends values.	The status is 80H, bat the value is not a valid IEEE-754-floatingpoint.	Make arrangements that a valid IEEE-754- floatingpoint will be sent.
	The output address range of the PROFIBUS-master has gaps.	Trim the output address range, so that there is no.

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