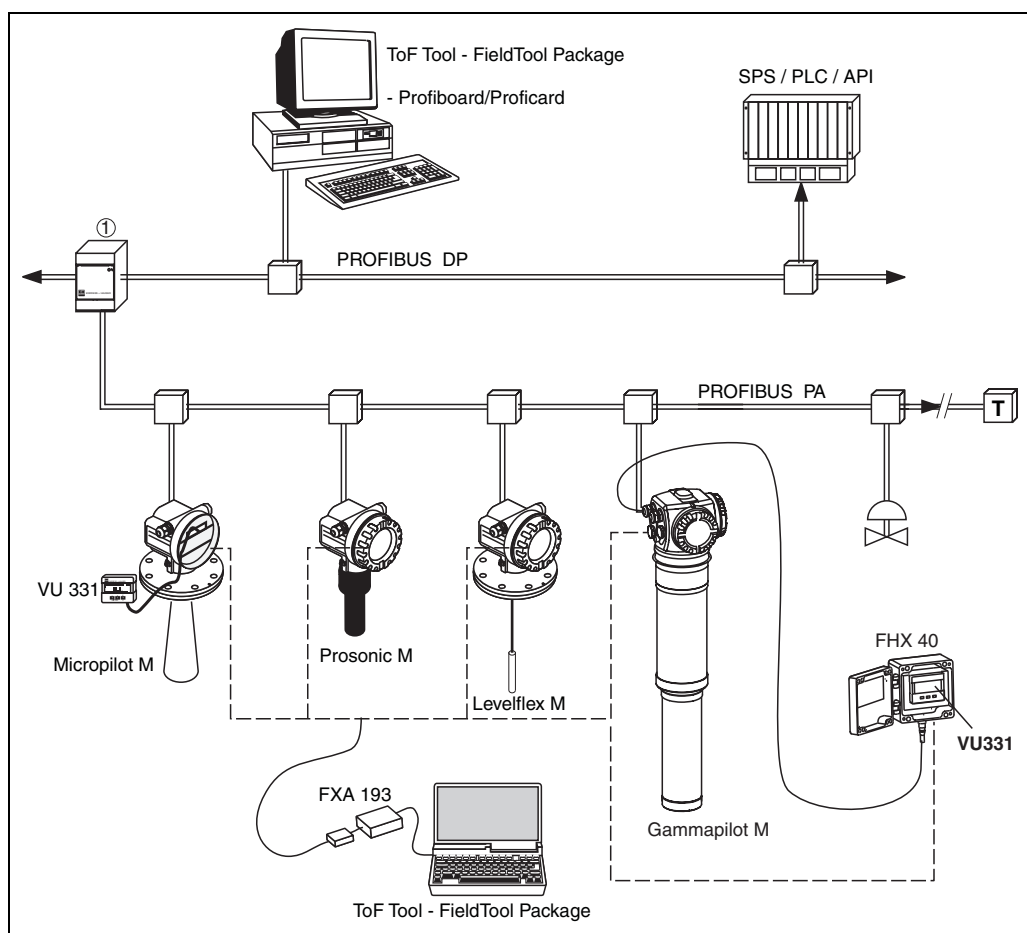


Gammapilot M FMG60 - Profibus PA interface

1 Synopsis

A maximum of 32 transmitters (8 if mounted in an explosion hazardous location EEx ia IIC according to the FISCO model) can be connected to the bus. The segment coupler (1) provides the operating voltage to the bus. For further information on the PROFIBUS-PA standard refer to the Operating Manual BA 198F "PROFIBUS-DP/PA: Guidelines for planning and commissioning" or to the PROFIBUS-PA specification EN 50170 (DIN 19245).



L00-FMxxxxxx-14-00-06-xx-001

1.1 Operation via the service interface:

- with the display and operating unit FHX40
- with the Service Interface FXA193 and the operating program "ToF Tool - FieldTool Package"; The FXA193 can be connected to the display plug of the Gammapilot M or of the FHX40.

1.2 Operation via PROFIBUS:

- with Profiboard or Proficard and the operating program "ToF Tool - FieldTool Package"

2 Instrument address

2.1 Selecting the device address

- Every PROFIBUS-PA device must be given an address. If the address is not set correctly, the device will not be recognised by the process control system.
- A device address may appear only once within a particular PROFIBUS-PA network.
- Valid device addresses are in the range 1 and 126. All devices are delivered from the factory with the software address 126.

2.2 Setting the device address

The default address can be used to check the function of the device and connect it to an operating PROFIBUS-PA system. Afterwards the address must be changed to allow other devices to be connected to the network.

The address can be set by the following methods:

1. The address can be set by the **display and operating module VU331 (in the FHX40)**. To do so, go to the "profibus params" function group and enter the desired address into the **"instrument address" (*60)** function.
2. The address can be set by the **ToF Tool - Fieldtool Package**. To do so, go to the "profibus params" function group and enter the desired address into the **"instrument address"** function

3 Device database and type files

A device database file (GSD) contains a description of the properties of the PROFIBUS-PA device, e.g. the supported transmission rates and the type and format of the digital information output to the PLC.

Additional bitmap files are required in order to represent the device by an icon in the network design software.

Every device is allocated an identity code by the PROFIBUS User Organisation (PNO). This appears in the device data base file name (.gsd).

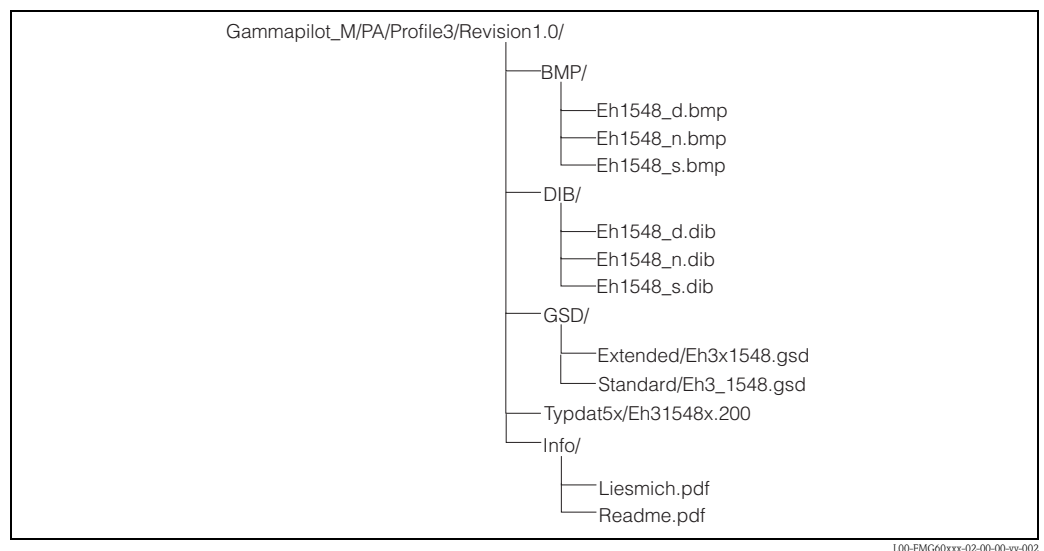
The Gammapiot M has the ID number 1548(hex) = 5448 (dec).

3.1 Sources of supply

- www.endress.de
click on "Download" and enter "GSD" into the "Text search" field. The "Software" link opens a list containing the links to all available GSD files.
- CD-ROM with GSD files for all E+H devices. Order-Code: 50097200
- GSD library of the PROFIBUS User Organisation (PNO): <http://www.PROFIBUS.com>

3.2 Directory structure

The files are organized in the following structure:



- The GSD files in the directory "Extended" are needed for the network design software STEP 7 of the S7-300/400 PLC family.
- The GSD files in the directory "Standard" are used for PLCs, which do not support an identifier format but only an identifier byte (e.g. PLC5 of Allen-Bradley)
- For the network design tool COM ET200 with Siemens S5 instead of an GSD file the Type file "EH_152Cx.200" and instead of the BMP files the DIB files have to be used.

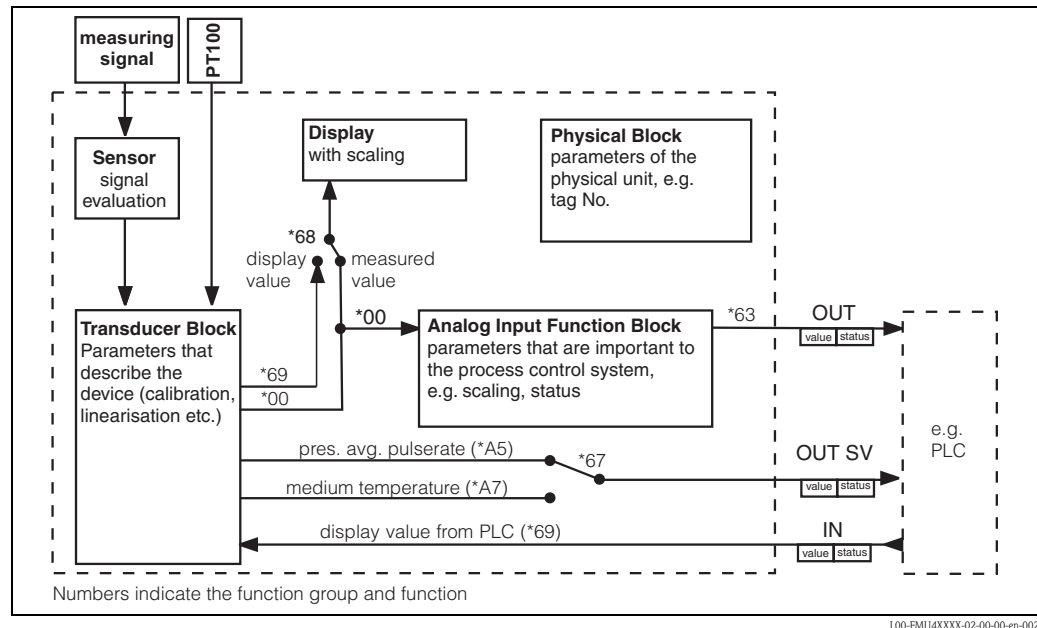
3.3 Universal Database File

As an alternative to the device specific GSD file, the PNO provides an universal database file with the designation PA139700.gsd for devices with one analogue input block. This file supports the transmission of the main value. Transmission of a second cyclic value or a display value is not supported.

When the universal database is used, the option "**profile**" must be selected in the "**Ident number**" (*61) function.

4 Cyclic data exchange

4.1 Block model of the Gammapilot M



The block model shows, which data are exchanged continuously (i.e. by cyclic data transfer) between the Prosonic M and the PLC. The numbers refer to the function groups and functions.

- After linearization and integration in the transducer block the **"measured value" (*00)** is transmitted to the Analog-Input Block. There, it may be scaled and checked for limit transgression, and is written to the PLC via the **"out value" (*63)** function.
- The function **"select V0H0" (*68)** determines, if the main value, or a read in value from the PLC (**"display value" (*69)**) is shown on the display.
- The function **"second cyclic value" (*67)** determines, if the **"present average pulse rate" (*A5)** or the **"medium temperature" (*A7)** is transmitted as the second cyclic value.

4.2 Modules for the cyclic data telegram

For the cyclic data telegram the Prosonic provides the following modules:

1. **Main Process Value**
This is the main measured value scaled by the Analog Input Block (*63).
2. **2nd Cyclic Value**
This is either the present average pulse rate (*A5) or the medium temperature measured by an externe PT-100 temperature probe (*A7).
3. **Display Value**
This is a value which can be transferred from the PLC to the Gammapilot M in order to be shown on the display (*69).
4. **FREE PLACE**
This module must be applied during configuration (see below), if the 2nd cyclic value or the display value are not to appear in the data telegram.

4.3 Configuration of the cyclic data telegram

Use the configuration software of your PLC in order to compose the data telegram from these modules in one of the following ways:

1. **Main value**
In order to transmit the main measured value, select the module **Main Process Value**.
2. **Main value and second cyclic value**
In order to transmit the main value and the second cyclic value (temperature or measured distance), select the modules in the following order: **"Main Process Value"**, **"2nd Cyclic Value"**, **"FREE PLACE"**.
3. **Main value and display value**
In order to transmit the main value and to receive a display value select the modules in the following order: **"Main Process Value"**, **"FREE PLACE"**, **"Display Value"**.
4. **Main value, second cyclic value and display value**
In order to transmit the main value and the second cyclic value and to receive a display value, select the modules in the following order: **"Main Process Value"**, **"2nd Cyclic Value"**, **"Display Value"**.

The exact way of performing the configuration depends on the configuration software of the PLC.

4.4 Structure of the input data (instrument -> SPS)

The input data are transmitted according to the following structure:

Index Input data	Data	Access	Format/Remarks
0, 1, 2, 3	Main value (level, density)	read	32 bit floating point number (IEEE-754)
4	Status code for main value	read	see. "Status codes"
5, 6, 7, 8 (optional)	Secondary value (average pulse rate, temperature)	read	32 bit floating point number (IEEE-754)
9 (optional)	Status code for secondary value	read	s. "Status codes"

4.5 Structure of the output data (SPS -> instrument)

The output data are transmitted according to the following structure:

Index Output data	Data	Access	Format/Remarks
0, 1, 2, 3	Display value	write	32 bit floating point number (IEEE-754)
4	Status code for Display value	write	s. "Status codes"

4.6 IEEE-754 Floating Point Number

The measured value is transmitted as a IEEE 754 floating point number, whereby:

$$\text{Measured value} = (-1)^{VZ} \times 2^{(E-127)} \times (1+F)$$

Byte 1								Byte 2							
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Sign	2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0	2^{-1}	2^{-2}	2^{-3}	2^{-4}	2^{-5}	2^{-6}	2^{-7}
Exponent (E)								Mantissa (F)							

Byte 3								Byte 4							
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
2^{-8}	2^{-9}	2^{-10}	2^{-11}	2^{-12}	2^{-13}	2^{-14}	2^{-15}	2^{-16}	2^{-17}	2^{-18}	2^{-19}	2^{-20}	2^{-21}	2^{-22}	2^{-23}
Mantissa (F)															

Example:

$$\begin{aligned}
 40 \text{ F0 } 00 \text{ } 00 \text{ (hex)} &= 0100 \text{ } 0000 \text{ } 1111 \text{ } 0000 \text{ } 0000 \text{ } 0000 \text{ } 0000 \text{ } 0000 \text{ (bin)} \\
 &= (-1)^0 \times 2^{(129-127)} \times (1 + 2^{-1} + 2^{-2} + 2^{-3}) \\
 &= 1 \times 2^2 \times (1 + 0.5 + 0.25 + 0.125) \\
 &= 1 \times 4 \times 1.875 \\
 &= 7.5
 \end{aligned}$$

4.7 Stauts codes

The status codes comprise one byte and have got the following meaning:

Status-Code	Device status	Significance	Primary value	Secondary value
0C Hex	BAD	device error		X
0F Hex	BAD	device error	X	
1F Hex	BAD	out-of-service (target mode)	X	
40 Hex	UNCERTAIN	non-specific		X
47 Hex	UNCERTAIN	last usable value (Fail-safe-Mode aktiv)	X	
4B Hex	UNCERTAIN	Substitute set (fail-Safe mode active)	X	
4F Hex	UNCERTAIN	initial value (fail-Safe mode active)	X	
5C Hex	UNCERTAIN	Configuration error (limits not set correctly)	X	
80 Hex	GOOD	OK	X	X
84 Hex	GOOD	Active block alarm (static revision counter incremented)	X	
89 Hex	GOOD	LOW_LIM (alarm active)	X	
8A Hex	GOOD	HI_LIM (alarm active)	X	
8D Hex	GOOD	LOW_LOW_LIM (alarm active)	X	
8E Hex	GOOD	HI_HI_LIM (alarm active)	X	

If a stauts other than "GOOD" is sent to the device, the display indicates an error.

5 Acyclic data exchange

Acyclic data exchange allows device parameters to be changed independently of the communication between the device and a PLC.

Acyclic data exchange is used

- to transmit device parameters during commissioning and maintenance;
- to display measured values that are not acquired in cyclic traffic.

There are two types of acyclic data exchange:

5.1 Acyclic communication with a Class 2 master (MS2AC)

In the case of MS2AC, a Class 2 master opens a communication channel via a so-called service access point (SAP) in order to access the device. Class 2 masters are for example:

- ToF Tool
- FieldCare
- PDM

Before data can be exchanged via PROFIBUS, however, the Class 2 master must be made aware of the parameters contained within the field device. This can be done by:

- a device description (DD)
- a device type manager (DTM)
- a software component within the master, which accesses the parameters via slot and index addresses.



Note!

- The DD or DTM is supplied by the device manufacturer.
- The number of Class 2 masters that can simultaneously access a device, is determined by the number of SAPs that the device can provide.
- The use of a Class 2 master increases the cycle time of the bus system. This must be taken into consideration when the control system or PLC is programmed.

5.2 Acyclic communication with a Class 1 master (MS1AC)

In the case of MS1AC, a Class 1 master that is already communicating cyclically with a device opens a communication channel via SAP 0x33, a special access point for MS1AC. As is the case for a Class 2 master, the parameter is read or written via the slot and index.



Note!

- At the time of writing, there are only a few PROFIBUS masters that support this type of communication.
- Not all PROFIBUS field devices support MS1AC.



Caution!

Permanent writing of parameters, e.g. with every cycle of the application program, must be avoided, since this can drastically reduce the life of the device.

Acyclic write parameters are stored electrically in the RAM (EEPROM, Flash...). The RAM modules are design for a limited number of write operations only. In standard operation without MS1AC, i.e. during parametrisation of the device, the number of write operations is negligible when compared to the limit. If the application program is badly designed, however, this limit can be reached quickly, and the RAM will fail

5.3 Slot/index tables

5.3.1 Device management

Parameter	Menu position	Slot	Index	Size [bytes]	Type	Read	Write	Storage Class
Dir. Object Header		1	0	12	STRING	X		constant
Comp. List Dir. Entry		1	1	24	STRING	X		constant

5.3.2 Analog Input Block

Parameter	Menu position	Slot	Index	Size [bytes]	Type	Read	Write	Storage Class
Standard parameters								
Block Object		1	16	20	STRING	X		constant
Static revision		1	17	2	UINT16	X		static
Tag Description		1	18	32	STRING	X	X	static
Strategy		1	19	2	UINT16	X	X	static
Alert key		1	20	1	UINT8	X	X	static
Target Mode		1	21	1	ENUM8	X	X	static
Mode of Block		1	22	3	UINT8+ UINT8+ UINT8	X		dynamic
Alarm summary		1	23	8	UINT16+ UINT16+ UINT16+ UINT16	X		dynamic
Batch		1	24	10	UINT32+ UINT16+ UINT16+ UINT16	X		dynamic
Block parameters								
Out		1	26	5	FLOAT+ UINT8	X	X	static
PV Scale		1	27	8	FLOAT+ FLOAT	X	X	static
Out Scale		1	28	11	FLOAT+ FLOAT+ UINT16+ UINT8	X	X	static
Linearisation type		1	29	1	UINT8	X	X	static
Channel		1	30	2	UINT16	X	X	static
PV filter time		1	32	4	FLOAT	X	X	static
Fail safe type		1	33	1	UINT8	X	X	static
Fail safe value		1	34	4	FLOAT	X	X	static
Alarm Hysteresis		1	35	4	FLOAT	X	X	static
HI HI Limit		1	37	4	FLOAT	X	X	static
HI Limit		1	39	4	FLOAT	X	X	static
LO Limit		1	41	4	FLOAT	X	X	static
LO LO Limit		1	43	4	FLOAT	X	X	static

Parameter	Menu position	Slot	Index	Size [bytes]	Type	Read	Write	Storage Class
HI HI Alarm		1	46		UINT8+ UINT8+ STRING+ UINT16+ FLOAT	X		dynamic
HI Alarm		1	47		UINT8+ UINT8+ STRING+ UINT16+ FLOAT	X		dynamic
LO Alarm		1	48		UINT8+ UINT8+ STRING+ UINT16+ FLOAT	X		dynamic
LO LO Alarm		1	49		UINT8+ UINT8+ STRING+ UINT16+ FLOAT	X		dynamic
Simulate		1	50	6	UINT8+ FLOAT+ UINT8	X	X	dynamic
Out unit text		1	51		STRING	X	X	static

5.3.3 Physical Block

Parameter	Menu position	Slot	Index	Size [bytes]	Type	Read	Write	Storage Class
Standard parameters								
Block Object		0	16		STRING	X		constant
Static revision		0	17	2	UINT16	X		static
Tag description		0	18		STRING	X	X	static
Strategy		0	19	2	UINT16	X	X	static
Alert key		0	20	1	UINT8	X	X	static
Target mode		0	21	1	ENUM8	X	X	static
Mode		0	22	3	UINT8+UINT8+ +UINT8	X		dynamic
Alarm summary		0	23	2	STRING	X		dynamic
Block parameters								
Software revision		0	24		STRING	X		constant
Hardware revision		0	25		STRING	X		constant
Device manufacturer ID		0	26	2	UINT16	X		constant
Device ID		0	27		STRING	X		constant
Device serial number		0	28		STRING	X		constant
Diagnosis		0	29		STRING	X		dynamic
Diagnosis extension		0	30		STRING	X		dynamic
Diagnosis mask		0	31		STRING	X		constant
Diagnosis mask ext.		0	32		STRING	X		constant
Device certification		0	33		STRING	X		constant

Parameter	Menu position	Slot	Index	Size [bytes]	Type	Read	Write	Storage Class
Write locking		0	34	2	UINT16	X	X	static
Factory reset		0	35	2	UINT16	X	X	static
Descriptor		0	36	32	STRING	X	X	static
Device message		0	37	32	STRING	X	X	static
Device instal. date		0	38	16	STRING	X	X	static
Ident number select		0	40	1	UINT8	X	X	static
HW write protection		0	41	1	UINT8	X		dynamic
Endress+Hauser parameters								
error code		0	54	2	UINT16	X		dynamic
last error code		0	55	2	UINT16	X		static
Up Down features		0	56	1	STRING	X		constant
Up Down control		0	57	1	UINT8	X	X	dynamic
Up Down param		0	58	20	STRING	X	X	dynamic
Bus address		0	59	1	UINT8	X		dynamic
Device SW No.		0	60	2	UINT16	X		constant
set unit to bus		0	61	1	UINT8	X	X	dynamic
display value		0	62	6	FLOAT+UINT8 +UINT8 +STRING	X	X	
Select Main value		0	63	1	UINT8	X	X	static
PA profile revision		0	64	32	STRING	X		constant
Status		0	65	1	UINT8	X		static
Identification String		0	66	32	STRING	X		static
Identification Number		0	67	1	UINT8	X		dynamic
Dir. Object Header		1	0	12	STRING	X		constant
Comp. List Dir. Entry		1	1	24	STRING	X		constant

5.3.4 Endress+Hauser specific level Transducer Block

Parameter	Menü-Position	Slot	Index	Size [bytes]	Type	Read	Write	Storage Class
Standard parameters								
Block data		1	114	20	STRING	X	X	static
Static revision		1	115	2	UINT16	X		static
Tag description		1	116	32	STRING	X	X	static
Strategy		1	117	2	UINT16	X	X	static
Alert key		1	118	1	UINT8	X	X	static
Target mode		1	119	1	UINT8	X	X	static
Mode		1	120	3	UINT8+ UINT8 UINT8	X		dynamic
Alarm summary		1	121	8	STRING	X		dynamic
Status		1	122	1	UINT8	X	X	dynamic
Endress+Hhauser parameters								
Measured value	(*00)	1	138	4	FLOAT	X		dynamic

Parameter	Menü-Position	Slot	Index	Size [bytes]	Type	Read	Write	Storage Class
Present Date	(*01)	1	139	16	STRING	X		static
Present Date Day	(*01)	1	140	1	UINT8	X	X	dynamic
Present Date Month	(*01)	1	141	1	UINT8	X	X	dynamic
Present Date Year	(*01)	1	142	1	UINT8	X	X	dynamic
Present Date Hour	(*01)	1	143	1	UINT8	X	X	dynamic
Present Date Minute	(*01)	1	144	1	UINT8	X	X	dynamic
Ray type	(*02)	1	145	2	ENUM	X	X	static
Radiation Source	(*03)	1	146	2	ENUM	X	X	static
Master Slave Mode	(*04)	1	147	2	ENUM	X	X	static
Measurement Mode	(*05)	1	148	2	ENUM	X	X	static
Density Unit	(*06)	1	149	2	ENUM	X	X	static
Min. Density	(*07)	1	150	4	FLOAT	X	X	static
Max. Density	(*08)	1	151	4	FLOAT	X	X	static
Pipe Diam. Unit	(*09)	1	152	2	ENUM	X	X	static
Pipe Diameter	(*0A)	1	153	4	FLOAT	X	X	static
Output Damping	(*0B)	1	154	2	UINT16	X	X	static
Backgr. Calibr.	(*10)	1	160	2	ENUM	X	X	static
Average Pulse Rate	(*11)	1	161	4	INT32	X		dynamic
Backgr. Pulse Rate	(*12)	1	162	4	INT32	X	X	static
Calibr. Point Level	(*13)	1	163	2	ENUM	X	X	static
Value Full	(*14)	1	164	4	FLOAT	X	X	static
Calibration Start Stop	(*15)	1	165	2	ENUM	X	X	static
Full Calibr. Pulse Rate	(*16)	1	166	4	INT32	X	X	static
Value Empty	(*17)	1	167	4	FLOAT	X	X	static
Empty Calibr. Pulse Rate	(*18)	1	168	4	INT32	X	X	static
Calibration Next Point	(*19)	1	169	2	ENUM	X	X	static
Calibr. Point Density	(*1A)	1	170	1	UINT8	X	X	static
Density Calibr.	(*1B)	1	172	4	INT32	X	X	static
Density Value	(*1C)	1	173	4	FLOAT	X	X	static
Use of Cal. Point	(*1D)	1	174	2	ENUM	X	X	static
Absorp. Coeff.	(*1E)	1	175	4	FLOAT	X	X	static
Ref. Pulse Rate	(*1F)	1	176	4	UINT32	X		dynamic
Output On Alarm	(*20)	1	180	2	ENUM	X	X	static
Temp. Compens.	(*30)	1	190	2	ENUM	X	X	static
Select Temperature	(*31)	1	191	2	ENUM	X	X	static
Temp. Value	(*32)	1	192	4	FLOAT	X	X	static
Density Value	(*33)	1	193	4	FLOAT	X	X	static
Lin. Coeff.	(*34)	1	194	4	FLOAT	X		static
Square Coeff.	(*35)	1	195	4	FLOAT	X		static
Temp. Coeff. Next Point	(*36)	1	196	2	ENUM	X	X	static
Linearisation Level	(*40)	1	200	2	ENUM	X	X	static
Lin. Table Number	(*41)	1	201	1	UINT8	X	X	static
Input Level	(*42)	1	202	4	FLOAT	X	X	static

Parameter	Menü-Position	Slot	Index	Size [bytes]	Type	Read	Write	Storage Class
Linearisation Start Stop	(*43)	1	203	2	ENUM	X	X	static
Normal. Pulse Rate	(*44)	1	204	4	INT32	X	X	static
Unit Selection	(*45)	1	205	2	ENUM	X	X	static
Customer Unit	(*46)	1	206	2	ENUM16	X	X	static
Linearisation Concentr.	(*47)	1	207	2	ENUM	X	X	static
Table Number Concentr.	(*48)	1	208	1	UINT8	X	X	static
Input Density	(*49)	1	209	4	FLOAT	X	X	static
Input Concentr.	(*4A)	1	210	4	FLOAT	X	X	static
Lin. Next Point	(*4B)	2	233	2	ENUM	X	X	static
Gammagr. Detect.	(*50)	1	220	2	ENUM	X	X	static
Span Time	(*51)	1	221	2	UINT16	X	X	static
Gammagr. Sensitivity	(*52)	1	222	1	UINT8	X	X	static
Gammagr. Output	(*53)	1	223	2	ENUM	X	X	static
Gammagr. Hold Time	(*54)	1	224	2	UINT16	X	X	static
Gammagr. Counter	(*55)	1	225	2	UINT16	X		dynamic
Gammagr. Counter Reset	(*56)	1	226	2	ENUM	X	X	static
PA Slave Address	(*60)	1	230	1	UINT8	X	X	static
PA Ident Number Sel.	(*61)	1	231	2	ENUM	X	X	static
Set Unit To Bus	(*62)	1	232	2	ENUM	X	X	static
AI Out Value	(*63)	1	233	4	FLOAT	X		dynamic
AI Out Status	(*64)	1	234	1	UINT8	X		dynamic
Sim. Level Mode	(*65)	1	235	2	ENUM	X	X	static
Sim. Density Mode	(*65)	1	236	2	ENUM	X	X	static
Sim. Concentr. Mode	(*65)	1	237	2	ENUM	X	X	static
Sim. Value Level	(*66)	1	238	4	FLOAT	X	X	static
Sim. Value Pulse Rate	(*66)	1	239	4	INT32	X	X	static
Sim. Value Density	(*66)	1	240	4	FLOAT	X	X	static
Sim. Value Concentr.	(*66)	1	241	4	FLOAT	X	X	static
2nd Cyclic Value	(*67)	1	242	2	ENUM	X	X	static
Select Main Value	(*68)	1	243	2	ENUM	X	X	static
Language	(*92)	1	245	2	ENUM	X	X	static
Back To Home	(*93)	1	246	2	INT16	X	X	static
No. of Decimals	(*95)	1	247	2	ENUM	X	X	static
Sep. Character	(*96)	1	248	2	ENUM	X	X	static
Display Test	(*97)	1	249	2	ENUM	X	X	static
Present Error	(*A0)	2	0	2	UINT16	X		dynamic
Last Error	(*A1)	2	1	2	UINT16	X		dynamic
Clear Last Error	(*A2)	2	2	2	ENUM	X	X	static
Reset	(*A3)	2	3	2	UINT16	X	X	static
Unlock Parameter	(*A4)	2	4	2	UINT16	X	X	static
Pres. Avg. Pulse Rate	(*A5)	2	5	4	INT32	X		dynamic
Avg. Raw Pulse Rate	(*A6)	2	6	4	INT32	X		dynamic
Medium Temp.	(*A7)	2	7	4	FLOAT	X		dynamic

Parameter	Menü-Position	Slot	Index	Size [bytes]	Type	Read	Write	Storage Class
Density Value	(*A8)	2	8	4	FLOAT	X		dynamic
Tag Number	(*C0)	2	9	4	STRING	X	x	STATIC
Profile Version	(*C1)	2	10	16	STRING	X		static
Prot. Softw. Version	(*C2)	2	11	16	STRING	X		const.
Serial Number	(*C4)	2	12	16	STRING	X		static.
Temp. Unit	(*C6)	2	13	2	ENUM	X	X	static
Calibr. Date	(*C7)	2	14	16	STRING	X		static
Calibr. Date Day	(*C7)	2	15	1	UINT8	X	X	static
Calibr. Date Month	(*C7)	2	16	1	UINT8	X	X	static
Calibr. Date Year	(*C7)	2	17	1	UINT8	X	X	static
Calibr. Date Hour	(*C7)	2	18	1	UINT8	X	X	static
Calibr. Date Minute	(*C7)	2	19	1	UINT8	X	X	static
Recalibr. Date	(*C8)	2	20	16	STRING	X		static
Recalibr. Date Day	(*C8)	2	21	1	UINT8	X		static
Recalibr. Date Month	(*C8)	2	22	1	UINT8	X		static
Recalibr. Date Year	(*C8)	2	23	1	UINT8	X		static
Recalibr. Date Hour	(*C8)	2	24	1	UINT8	X		static
Recalibr. Date Minute	(*C8)	2	25	1	UINT8	X		static