

AWT210

PROFIBUS PA 2-wire transmitter



Measurement made easy

—
AWT210
2-Wire transmitter

Introduction

This Communications Supplement provides procedures specifically related to the AWT210 PROFIBUS PA® 2-wire transmitter. Refer to the AWT210 Operating Instruction ([OI/AWT210-EN](#)) for general information on installation, operation and maintenance.

For more information

Further publications for the AWT210 transmitter are available for free download from:
www.abb.com/measurement

or by scanning this code:



Search for or click on:

AWT210 transmitter – Data Sheet	DS/AWT210-EN
AWT210 transmitter – Commissioning Instruction	CI/AWT210-EN
AWT210 transmitter – Operating Instruction	OI/AWT210-EN

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Sales



Service



Software



1 Health & Safety

Document symbols

Symbols that appear in this document are explained below:



DANGER – SERIOUS DAMAGE TO HEALTH

This symbol in conjunction with the signal word 'DANGER' indicates an imminent electrical hazard. Failure to observe this safety information will result in death or severe injury.



WARNING – BODILY INJURY

This symbol in conjunction with the signal word 'WARNING' indicates a potential electrical hazard. Failure to observe this safety information will result in death or severe injury.



CAUTION – MINOR INJURIES

This symbol in conjunction with the signal word 'CAUTION' indicates a potentially dangerous situation. Failure to observe this safety information may result in minor or moderate injury. The symbol may also be used for property damage warnings.



IMPORTANT (NOTE)

This symbol indicates operator tips, particularly useful information or important information about the product or its further uses. The signal word 'IMPORTANT (NOTE)' does not indicate a dangerous or harmful situation.

Safety precautions

Be sure to read, understand and follow the instructions contained within this manual before and during use of the equipment. Failure to do so could result in bodily harm or damage to the equipment.



WARNING – BODILY INJURY

Installation, operation, maintenance and servicing must be performed:

- by suitably trained personnel only
- in accordance with the information provided in this manual
- in accordance with relevant national and local regulations

Potential safety hazards

AWT210 transmitter – electrical



WARNING – BODILY INJURY

To ensure safe use when operating this equipment, the following points must be observed:

- Up to 240 V AC may be present. Be sure to isolate the supply before removing the terminal cover.
- Normal safety precautions must be taken to avoid the possibility of an accident occurring when operating in conditions of high pressure and/or temperature.

Safety advice concerning the use of the equipment described in this manual or any relevant Material Safety Data Sheets (where applicable) can be obtained from the Company, together with servicing and spares information.

Safety standards

This product has been designed to satisfy the requirements of IEC61010-1:2010 3rd edition 'Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use' and complies with US NEC 500, NIST and OSHA.

This equipment complies with the requirements of CEI/IEC 61010-1:2010 'Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use' and complies with US NEC 500 and Occupational Safety & Health Administration. If the equipment is used in a manner NOT specified by the Company, the protection provided by the equipment may be impaired.

...1 Health & Safety

Waste Electrical and Electronic Equipment (WEEE)

WEEE EU Directive 2012/19/EU covers disposal and recycling of electronic equipment at the end of life for reasons of environmental protection.



For industrial installations, portable equipment is included. This means that when the transmitter is used with a portable sensor, it is included in directive's scope and has the WEEE symbol (left) on its data label. Therefore, at the end of life, contact the supplier for specialist waste recycling. It must not be disposed of as municipal waste.

Permanent Industrial installations are not designated within this directive for recycling. At the point of supply the intended use is not always known, so the WEEE symbol is included on all remote forms of the transmitter.

Product recycling and disposal (Europe only)



Electrical equipment marked with this symbol may not be disposed of in European public disposal systems after 12 August 2005. To conform to European local and national regulations (EU Directive 2012/19/EU), European electrical equipment users can now return old or end-of-life equipment to the manufacturer for disposal at no charge to the user. ABB is committed to ensuring that the risk of any environmental damage or pollution caused by any of its products is minimized as far as possible.



IMPORTANT (NOTE)

For return for recycling, please contact the equipment manufacturer or supplier for instructions on how to return end-of-life equipment for proper disposal.

Information on ROHS Directive 2011/65/EU (RoHS II)

ABB, Industrial Automation, Measurement & Analytics, UK, fully supports the objectives of the ROHS II directive. All in-scope products placed on the market by IAMA UK on and following the 22nd of July 2017 and without any specific exemption, will be compliant to the ROHS II directive, 2011/65/EU.

Product symbols

Symbols that may appear on this product are shown below:



Risk of electric shock.



This symbol, when noted on a product, indicates a potential hazard which could cause serious personal injury and/or death. The user should reference this instruction manual for operation and/or safety information.



Protective earth (ground) terminal.



Functional earth (ground) terminal.



Direct current supply only.



This symbol, when noted on a product enclosure or barrier, indicates that a risk of electrical shock and/or electrocution exists and indicates that only individuals qualified to work with hazardous voltages should open the enclosure or remove the barrier.



Recycle separately from general waste under the WEEE directive.

2 Cyber security

The AWT210 PROFIBUS PA® transmitter is designed to be connected to and to communicate information and data via a digital communication interface. It is your sole responsibility to provide and continuously ensure a secure connection between the product and your network or any other network (as the case may be). You shall establish and maintain any appropriate measures (such as but not limited to the application of authentication measures etc.) to protect the product, the network, its system and the interface against any kind of security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information.

ABB Ltd and its affiliates are not liable for damages and/or losses related to such security breaches, any unauthorized access, interference, intrusion, leakage and/or theft of data or information.

3 Profibus PA

PROFIBUS is an all-digital, serial, two-way communication system that serves as a Local Area Network (LAN) for factory/plant instrumentation and control devices.

PROFIBUS is a manufacturer-independent, open Fieldbus standard for a wide range of applications in manufacturing, process and building automation. Manufacturer independence and openness are ensured by the international standard EN 50170.

The AWT210 transmitter meets the requirements of PROFIBUS PA Application profile 3.02.

Using the PROFIBUS protocol, devices from different manufacturers exchange information on the same communications bus without the need for special interface equipment.

Information on PROFIBUS PA can be found in the PNO Guideline and standards IEC 61158, IEC 61784, EN 50170/DIN 19245 and EN 50020 (FISCO model).

For further information on Profibus, refer to:
the PI organization website:

www.profibus.com

or the ABB website:

www.abb.com/fieldbus

4 Device overview

Four variants of AWT210 are available for use with pH, ORP, pION, and conductivity sensors.

Supported sensors:

- pH
- 2-electrode conductivity
- 4-electrode conductivity
- toroidal conductivity

The AWT210 PROFIBUS PA is compliant with the PNO Profile for Process Control Devices version 3.02 – Class B [Ref. 2].

The AWT210 PROFIBUS PA is a compact slave device implementing:

- one Physical Block (PB)
 - the PBs describes the necessary parameters and functions of the device or the operation of the device hardware itself.
- four Transducer Blocks (TB)
 - the TBs contain the parameters of a device representing the necessary parameters and functions of the connection to the process.
 - Examples are measured process values, the type of sensor and the calibration data.
 - There is one transducer block for each sensor type.
- two Function Blocks (FB)
 - both function blocks are AI blocks.
 - each FB can be connected to one TB at one time.

Reference documents

Document ID	Title
DS/AWT210-EN	AWT210 transmitter Data Sheet
OI/AWT210-EN	AWT210 transmitter Operating Instruction
CI/AWT210-EN	AWT210 transmitter Commissioning Instruction

5 Transmitter functionality and operator interface controls

Process interface

Sensor Input Channels

The sensor module provides 8 terminals marked 1 to 8, 1 to 4 for Process Variable (detailed in commissioning instructions) and 5 to 8 for temperature sensor (up to 3 wire RTD + shield).

Operating ranges correspond to the capabilities of each sensor type.

Host interface

The AWT210 PA is a Bus Powered device with Profibus PA communication. The communication module provides 5 terminals for bus power & functional earth connection.

- Terminals 1(A) & 2(B) are for polarity independent bus lines.
- Terminal 3 (\perp) provides a functional earth connection.
- Terminals 4(A) & 5(B) are a repeat of Terminals 1(A) & 2(B).

Local interfaces, jumpers and switches

Local controls and displays

- The Device has a 75 x 65 mm (3.00 x 2.55 in.) monochromatic dot matrix LCD display and 4 push buttons

Internal jumpers and switches

The device has 2 internal switches, situated on the top righthand side of the communication module – see Figure 2, page 8:

- SW1: Reset to Defaults
 - if the device is powered up with SW1 in the **ON** position it returns device setup to default factory settings.
 - if powered up with SW1 in the **OFF** position the device retains previously saved user settings*.
- SW2: Write Protection
 - If SW2 is in the **ON** position HW write protect shows as enabled and the user is unable to make changes to setup or send Write commands via PROFIBUS®.

With SW2 in OFF position the user is able to make changes/send commands providing they are in a sufficient access level and Software Write Protect has not been enabled.

*Note: Reset to defaults is not performed if SW2 Write Protection is ON.

6 Installation

All devices are connected in a bus structure ('line') as shown in Figure 1.

The number of transmitters or devices that can be connected to a bus is primarily dependent on the power consumption of the transmitters or devices, the type of cable, the number of spurs, the total cable length of the bus and intrinsic safety requirements.

Each end of a segment must be terminated by an active bus terminating resistor. Both bus terminators must always be powered to ensure fault-free operation, therefore it is strongly recommended that they are connected to a back-up power supply.

The PROFIBUS PA furnishes transmitter power and can be configured as a point-to-point, tree, Daisy Chain, or Trunk/Spurs network. Modulating the base quiescent current generates the communication signals. The quiescent current value is used as a reference to establish the number of devices that can be installed on a single bus line.

Data is transmitted over the bus using digital, bit synchronous Manchester II coding at a baud rate of 31.25 kbit/sec.

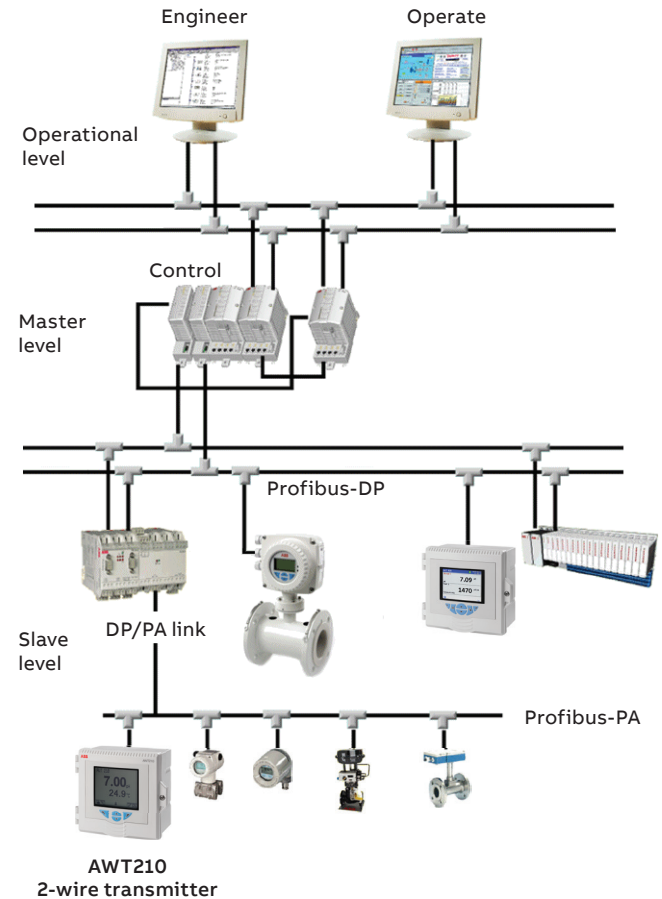


Figure 1 Typical PROFIBUS network

...6 Installation

Cable length

Maximum cable length	1900 m (6233 ft)
Maximum spur length (1 device)	120 m (394 ft)
Maximum spur length (2 devices)	90 m (295 ft)
Maximum spur length (3 devices)	60 m (197 ft)
Maximum spur length (4 devices)	30 m (98 ft)

Cable specification

The cable lengths in Table 1 apply to cable to the following specification:

Impedance	135 to 165 Ω
Capacitance per unit length	<30 pf/m
Loop resistance	110 Ω/km
Core diameter	0.64 mm
Core cross section	>0.34 mm ²

Network connection

PROFIBUS network connections are made to the terminal block on the AWT210 Communication module.



WARNING – BODILY INJURY

- Refer to the AWT210 Operating Instruction ([OI/AWT210-EN](#)) before making electrical connections.

NOTICE

Property damage

When connecting an AWT210 to a PROFIBUS-PA network:

- Use cable that meets PROFIBUS specifications for reliable communications
- Ensure a PROFIBUS active terminator is fitted to each end of each bus segment.
- Route data lines clear of the source of any strong electrical and magnetic fields.

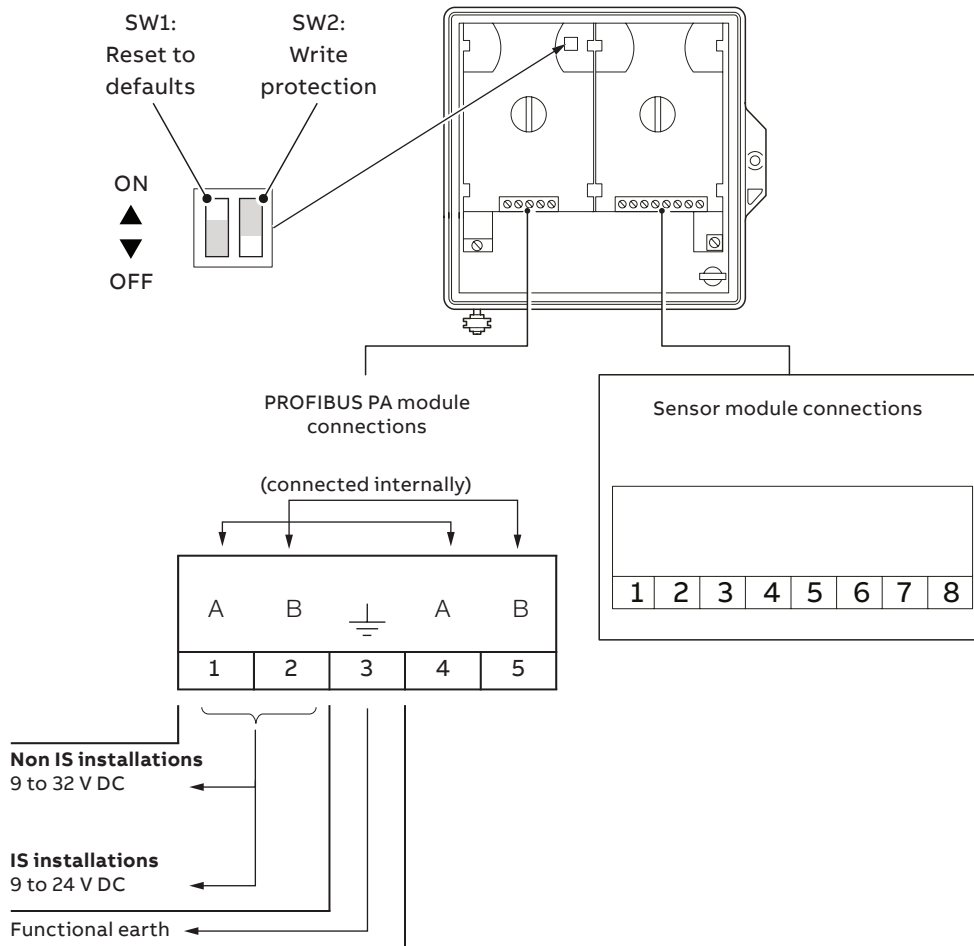
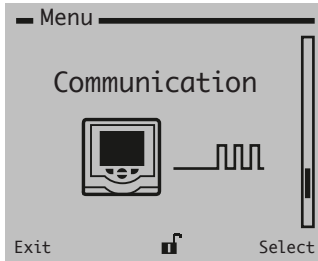


Figure 2 PROFIBUS PA communication module connection overview

7 Configuration

Local configuration

The configuration of PROFIBUS communications for an AWT210 transmitter can be set locally using the keypad and menus however it is recommended that the configuration is set remotely by a Profibus master.



Used to configure the communications.

Menu	Comment	Default
Slave address	Device-specific slave address to identify the transmitter on the network.	126
Tag Descriptor	String to identify the device (displayed at the top of the operator page)	"AWT210"
Ident No. Selector	Selects the ident number: 9750 – Analyzer/3404 - Dev Specific/Adaptation Mode	9750 = Analyzer
Manuf ID	Read Only Manufacturer Identification number	1Ah (26) = ABB
Device Type	Read Only Indicates the Profibus PA Device Type	Analyzer
PA Profile	Read Only Indicates the Profibus PA profile version	3.02

Integration using GSD

PROFIBUS devices differ with respect to available functionality and parameters for each device type and manufacturer. In order to obtain 'Plug-and-Play' configuration for PROFIBUS, characteristic device communication features such as manufacturer name, device name, hardware/software versions, baud rate and the number and nature of inputs/outputs are defined in an electronic device data sheet known as a GSD (Generic Station Description) file.

A GSD file is readable ASCII text file that contains both general and device-specific specifications for communication. Each of the entries describes a feature supported by a device. By using keywords, a configuration tool reads the device identification, the adjustable parameters, the corresponding data type and the permitted limit values for the configuration of the device from the GSD. Some keywords are mandatory (for example, **Vendor_Name**), others are optional (for example, **Sync_Mode_supported**).

The GSD file for AWT210 transmitters specifies the device specific Ident No. 3404 and conforms to the PROFIBUS standard, providing a clear and comprehensive description of each instrument in a precisely defined format. The description enables the system configuration tool to use the information automatically when configuring a PROFIBUS bus system.

The AWT210 GSD file (ABB_3404.gsd) is available for download from the ABB website at:

www.abb.com/fieldbus (follow the link for PROFIBUS DP field devices).

AWT210 Profibus data sheet

Item	Detail
Device name	AWT210
Profile ident support	9750 – Analyzer, 3404 – Device Specific, Adaptation Mode,
PNO ID no.	0D4Ch (3404)
Bus Address	0 to 126 (default = 126)
Block types	one Physical Block four Transducer Blocks, two AI Function Blocks
Physical Layer	In compliance with IEC 61158-2
Transmission rate	31.25 kbps

8 PROFIBUS slots

Physical block – slot 0

The PB mapping is located on slot 0.

The initial index is 16 and this number must be added to the relative Index in column index to get the absolute index.

First index (n) = 16

Index (n) = 16	Parameter	Access	Data	Type	Size (bytes)	Range
STANDARD PARAMETERS						
n+0	BLOCK_OBJECT	R	Record	DS-32	20	
n+1	ST_REV	R	Simple	Unsigned16	1	
n+2	TAG_DESC	RW	Simple	OctetString	32	Device TAG
n+3	STRATEGY	RW	Simple	Unsigned16	2	
n+4	ALERT_KEY	RW	Simple	Unsigned8	1	
n+5	TARGET_MODE	RW	Simple	Unsigned8	1	AUTO
n+6	MODE_BLK	R	Record	DS-37	3	
n+7	ALARM_SUM	R	Record	DS-42	8	
STANDARD PHYSICAL BLOCK PARAMETERS						
n+8	SOFTWARE_REVISION	R	Simple	VisibleString	16	
n+9	HARDWARE_REVISION	R	Simple	VisibleString	16	
n+10	DEVICE_MAN_ID	R	Simple	Unsigned16	2	
n+11	DEVICE_ID	R	Simple	VisibleString	16	
n+12	DEVICE_SER_NUM	R	Simple	VisibleString	16	
n+13	DIAGNOSIS	R	Simple	OctetString	4	
n+14	DIAGNOSIS_EXT	R	Simple	OctetString	6	
n+15	DIAGNOSIS_MASK	R	Simple	OctetString	4	
n+16	DIAGNOSIS_MASK_EXT	R	Simple	OctetString	6	
n+17	DEVICE_CERTIFICATION	R	Simple	VisibleString	32	
n+18	WRITE_LOCKING	RW	Simple	Unsigned16	2	Table 1 (page 21)
n+19	FACTORY_RESET	RW	Simple	Unsigned16	2	Table 2 (page 21)
n+20	DESCRIPTOR	RW	Simple	OctetString	32	
n+21	DEVICE_MESSAGE	RW	Simple	OctetString	32	
n+22	DEVICE_INSTAL_DATE	RW	Simple	OctetString	16	
n+23	LOCAL_OP_ENA	RW	Simple	Unsigned8	1	Table 3 (page 21)
n+24	IDENT_NUMBER_SELECTOR	RW	Simple	Unsigned8	1	Table 4 (page 21)
n+25	HW_WRITE_PROTECTION	R	Simple	Unsigned8	1	Table 5 (page 21)
n+26	FEATURE	R	Record	DS-68	8	
n+27	COND_STATUS_DIAG	RW	Simple	Unsigned8	1	
n+28	DIAG_EVENT_SWITCH	RW	Record	Diag-switch	50	
n+29 to n+35	NULL_// reserved by PI					
ANALYZER FIELD DEVICE SPECIFIC PHYSICAL BLOCK PARAMETERS						
n+36	DEVICE_CONFIGURATION	R	Simple	VisibleString	32	
n+37	INIT_STATE	RW	Simple	Unsigned8	1	
n+38	DEVICE_STATE	RW	Simple	Unsigned8	1	
n+39	GLOBAL_STATUS	R	Simple	Unsigned16	2	
n+40 to n+47	NULL_// reserved by PI					

Index (n) = 16	Parameter	Access	Data	Type	Size (bytes)	Range
AWT 210 SPECIFIC PHYSICAL BLOCK PARAMETERS						
n+48	CB_FW_REVISION	R	Simple	VisibleString	8	
n+49	CB_HW_REVISION	R	Simple	VisibleString	8	
n+50	FE_FW_REVISION	R	Simple	VisibleString	8	
n+51	FE_HW_REVISION	R	Simple	VisibleString	8	
n+52	DIAGNOSIS_WORST_COND	R	Simple	Unsigned16	2	
n+54	DIAGNOSIS_EXT_HISTORY	R	Simple	OctetString	6	
n+55	DIAGNOSIS_DETAILS	R	Record	DIAGNOSIS_DETAILED	22	
n+56	DIAGNOSIS_SIMULATION_STATUS	RW	Simple	Unsigned8	1	
n+57	DIAGNOSIS_EXT_SIMULATION	RW	Simple	OctetString	16	
n+58	DIAGNOSIS_EXT_MASK	RW	Simple	OctetString	6	
n+59	ASSEMBLY_DATE	R	Simple	OctetString	16	
n+60	SAVINGS	RW	Simple	Unsigned8	1	
n+61	SERVICES	RW	Simple	Unsigned8	1	
n+62 to n+64	NULL// ABB Reserved					
n+65	PASSWORD	RW	Simple	VisibleString	20	
n+66	ADDRESS	RW	Record	PRIVATE_ADDRESS	8	
n+67	DATA	RW	Record	PRIVATE_DATA	33	
n+68	MEMORY_ADDRESS	RW	Record	PRIVATE_MEMORY_ADDRESS	7	
n+69	MEMORY_DATA	RW	Record	PRIVATE_DATA	33	
n+70	TEST_RESULT	RW	Simple	Unsigned8	1	
n+71	DEVICE_SERIAL_NUMBER	R	Simple	VisibleString	14	
n+72	DISP_CONTRAST	RW	Simple	Unsigned8	1	0 to 100 %
n+73	LANGUAGE	RW	Simple	Unsigned8	1	Table 16 (page 21)
n+74	FE_BOARD_TYPE	R	Simple	Integer8	1	Table 24 (page 22)
n+75	SENSOR_DIAG	RW	Simple	Unsigned8	1	Table 9 (page 21)

...8 PROFIBUS slots

pH Transducer block – slot 1

Index	Parameter	Access	Data	Type	Size (bytes)	Range
STANDARD PARAMETERS						
0	BLOCK_OBJECT	R	Record	DS-32	20	
1	ST_REV	R	Simple	Unsigned16	1	
2	TAG_DESC	RW	Simple	OctetString	32	
3	STRATEGY	RW	Simple	Unsigned16	2	
4	ALERT_KEY	RW	Simple	Unsigned8	1	
5	TARGET_MODE	RW	Simple	Unsigned8	1	AUTO
6	MODE_BLK	R	Record	DS-37	3	
7	ALARM_SUM	R	Record	DS-42	8	
ANALYZER FIELD DEVICE SPECIFIC TRANSDUCER BLOCK PARAMETERS						
8	COMPONENT_NAME	RW	Simple	OctetString	32	
9	PV	R	Record	DS-60	12	
10	PV_UNIT	RW	Simple	Unsigned16	2	Table 21 (page 22)
11	PV_UNIT_TEXT	RW	Simple	OctetString	8	
12	ACTIVE_RANGE	RW	Simple	Unsigned8	1	
13	AUTORANGE_ON	RW	Simple	Bool	1	
14	SAMPLING_RATE	RW	Simple	Time_Diff	4	
15 to 24	NULL_// reserved by PI					
25	NUMBER_OF_RANGES	R	Simple	Unsigned8	1	
26	RANGE_1	RW	Record	DS-61	8	
AWT 210 pH SPECIFIC TRANSDUCER BLOCK PARAMETERS						
27	PV_MIN_SPAN	R	Simple	Float	4	
28	SENSOR_RANGE	R	Record	DS-61	8	
29	MEASUREMENT_TYPE	RW	Simple	Unsigned8	1	Table 7 (page 21)
30	SECONDARY_VALUE_1	R	Record	DS-101	5	
31	SECONDARY_VALUE_UNIT_1	RW	Simple	Unsigned16	2	Table 19 to 21 (page 22)
32	SECONDARY_VALUE_2	R	Record	DS-101	5	
33	SECONDARY_VALUE_UNIT_2	RW	Simple	Unsigned16	2	Table 19 to 21 (page 22)
34	SECONDARY_VALUE_3	R	Record	DS-101	5	
35	SECONDARY_VALUE_UNIT_3	RW	Simple	Unsigned16	2	Table 19 to 21 (page 22)
36	SENSOR_TYPE	RW	Simple	Unsigned8	1	Table 10 (page 21)
37	ISO_POTENTIAL	RW	Simple	Float	4	-20 to 20 pH
38	ASY_POTENTIAL	RW	Simple	Float	4	-2000 to 2000 mV
39	VALENCE	RW	Simple	Unsigned8	1	Table 11 (page 21)
40	MAGNITUDE	RW	Simple	Unsigned8	1	Table 12 (page 21)
41	END_MAGNITUDE	RW	Simple	Unsigned8	1	Table 13 (page 21)
42	END_MV	RW	Simple	Integer16	2	-1500 to 1500 mV
43	TEMP_UNIT	RW	Simple	Unsigned16	2	Table 18 (page 21)
44	TEMP_COMP_TYPE	RW	Simple	Unsigned8	1	Table 15 (page 21)
45	MANUAL_TEMP	RW	Simple	Float	4	20 to 150 °C/-4 to 302 °F
46	PH_SOLN_COEFF	RW	Simple	Float	4	-10 to 10ph/10 °C
47	MV_SOLN_COEFF	RW	Simple	Float	4	-20 to 20 mV/10 °C
48	TEMP_SENSOR_TYPE	R	Simple	Unsigned8	1	Table 14 (page 21)
49-58	NULL_// reserved by PI					
59	TEMP_SENSOR_AR_TRIGGER	W	Simple	Unsigned8	1	Write 1 to trigger
60	TEMP_SENSOR_AR_STATUS	R	Simple	Unsigned8	1	Table 23 (page 22)
61	REF_IMP_LIMIT	RW	Simple	Float	4	1 to 1000 kΩ
62	SENSOR_DIAG	RW	Simple	Unsigned8	1	Table 9 (page 21)
63	DAMPING_TIME	RW	Simple	Float	4	0 to 99.9 s

Index	Parameter	Access	Data	Type	Size (bytes)	Range
...AWT 210 pH SPECIFIC TRANSDUCER BLOCK PARAMETERS						
64	AUTO_CAL_BUFF_TYPE	RW	Simple	Unsigned8	1	Table 25 (page 22)
65	AUTO_CAL_BUFF1_VAL	RW	Simple	Unsigned8	1	Table 26 (page 22)
66	AUTO_CAL_BUFF2_VAL	RW	Simple	Unsigned8	1	Table 26 (page 22)
67	USER_DEF_BUFF1_VAL	RW	Array	Float	20	-2 to 16
68	USER_DEF_BUFF1_TEMP_VAL	RW	Array	Float	20	20 to 150 °C/-4 to 302 °F
69	USER_DEF_BUFF2_VAL	RW	Array	Float	20	-2 to 16 pH
70	USER_DEF_BUFF2_TEMP_VAL	RW	Array	Float	20	20 to 150 °C/-4 to 302 °F
71	CAL_MODE	RW	Simple	Unsigned8	1	
72	CAL_STATUS	RW	Simple	Unsigned8	1	
73	CAL_PROGRESS_TIMER	R	Simple	Float	4	
74	CAL_ERROR_VAL	R	Simple	Unsigned8	1	
75	PV_CAL_SLOPE	RW	Simple	Float	4	40 to 150 %
76	PV_CAL_OFFSET	RW	Simple	Float	4	-1000 to 1000 mV
77	TEMP_CAL_SLOPE	RW	Simple	Float	4	20 to 150 %
78	TEMP_CAL_OFFSET	RW	Simple	Float	4	-40 to 40 °C/-72 to 72 °F
79	CAL_RESET	RW	Simple	Unsigned8	1	Write 1 to reset
80						
81	CAL_POINT	RW	Simple	Float	4	
82	PV_SLOPE_ALARM_LIMIT_HI	RW	Simple	Float	4	100 to 150 %
83	PV_SLOPE_ALARM_LIMIT_LO	RW	Simple	Float	4	40 to 100 %
84	PV_OFFSET_ALARM_LIMIT	RW	Simple	Float	4	0 to 1000 mV
85	BUFFER_TEMP_CAL_2PT	RW	Simple	Float	4	-20 to 150 °C/-4 to 302 °F
86	BUFFER_VALUE1_CAL_2PT	RW	Simple	Float	4	-2 to 16 pH
87	BUFFER_VALUE2_CAL_2PT	RW	Simple	Float	4	-2 to 16 pH
88	PV_FAC_CAL_LOW	RW	Simple	Unsigned8	1	
89	PV_FAC_CAL_HIGH	RW	Simple	Unsigned8	1	
90	REFZ_FAC_CAL_1K	RW	Simple	Unsigned8	1	
91	REFZ_FAC_CAL_100K	RW	Simple	Unsigned8	1	
92	PV_FAC_CAL_COEFFS	R	Array	Float	8	
93	REFZ_FAC_CAL_COEFFS	R	Array	Float	8	

...8 PROFIBUS slots

2-electrode conductivity transducer block – slot 2

Index	Parameter	Access	Data	Type	Size (bytes)	Range
STANDARD PARAMETERS						
0	BLOCK_OBJECT	R	Record	DS-32	20	
1	ST_REV	R	Simple	Unsigned16	1	
2	TAG_DESC	RW	Simple	OctetString	32	
3	STRATEGY	RW	Simple	Unsigned16	2	
4	ALERT_KEY	RW	Simple	Unsigned8	1	
5	TARGET_MODE	RW	Simple	Unsigned8	1	AUTO
6	MODE_BLK	R	Record	DS-37	3	
7	ALARM_SUM	R	Record	DS-42	8	
ANALYZER FIELD DEVICE SPECIFIC TRANSDUCER BLOCK PARAMETERS						
8	COMPONENT_NAME	RW	Simple	OctetString	32	
9	PV	R	Record	DS-60	12	
10	PV_UNIT	RW	Simple	Unsigned16	2	Table 21 and 22 (page 22)
11	PV_UNIT_TEXT	RW	Simple	OctetString	8	
12	ACTIVE_RANGE	RW	Simple	Unsigned8	1	
13	AUTORANGE_ON	RW	Simple	Bool	1	
14	SAMPLING_RATE	RW	Simple	Time_Diff	4	
15 to 24	NULL_// reserved by PI					
25	NUMBER_OF_RANGES	R	Simple	Unsigned8	1	
26	RANGE_1	RW	Record	DS-61	8	
AWT 210 2-ELECTRODE CONDUCTIVITY SPECIFIC TRANSDUCER BLOCK PARAMETERS						
27	PV_MIN_SPAN	R	Simple	Float	4	
28	SENSOR_RANGE	R	Record	DS-61	8	
29	MEASUREMENT_TYPE	RW	Simple	Unsigned8	1	Table 17 (page 21)
30	SECONDARY_VALUE_1	R	Record	DS-101	5	
31	SECONDARY_VALUE_UNIT_1	RW	Simple	Unsigned16	2	Table 21 and 22 (page 22)
32	SECONDARY_VALUE_2	R	Record	DS-101	5	
33	SECONDARY_VALUE_UNIT_2	RW	Simple	Unsigned16	2	Table 19 to 21 (page 22)
34	SECONDARY_VALUE_3	R	Record	DS-101	5	
35	SECONDARY_VALUE_UNIT_3	RW	Simple	Unsigned16	2	Table 19 to 21 (page 22)
36	COND_UNITS_MODE	RW	Simple	Unsigned8	1	Table 27 (page 22)
37	CELL_CONSTANT	RW	Simple	Float	4	0.003 to 1.999
38	CONC_CURVE_NAME	RW	Simple	OctetString	6	
39	CONC_CURVE_TABLE_X_CONC	RW	Array	Float	24	0 to 20000 µS/cm
40	CONC_CURVE_TABLE_Y_CONC	RW	Array	Float	24	0 to 2000
41	TEMP_UNIT	RW	Simple	Unsigned16	2	Table 18 (page 21)
42	TEMP_COMP_TYPE	RW	Simple	Unsigned8	1	Table 15 (page 21)
43	MANUAL_TEMP	RW	Simple	Float	4	-20 to 300 °C/-4 to 572 °F
44	AUTO_TC_OPTION	RW	Simple	Unsigned8	1	Table 28 (page 22)
45	TC_COEFFICIENT	RW	Simple	Float	4	0 to 9.99 %/°C
46	PURE_H2O_TYPE	RW	Simple	Unsigned8	1	Table 29 (page 22)
47	USER_DEF_TC_CURVE_X_TEMP	RW	Array	Float	24	-20 to 300 °C/-4 to 572 °F
48	USER_DEF_TC_CURVE_Y_TEMP	RW	Array	Float	24	0 to 19.99
49	REFERENCE_TEMP	RW	Simple	Float	4	-20 to 200 °C/-4 to 392 °F
50 to 59	Reserved by PI					
60	TEMP_SENSOR_TYPE	R	Simple	Unsigned8	1	Table 14 (page 21)
61	TEMP_SENSOR_AR_TRIGGER	W	Simple	Unsigned8	1	Write 1 to trigger
62	TEMP_SENSOR_AR_STATUS	R	Simple	Unsigned8	1	Table 23 (page 22)
63	SENSOR_DIAG	RW	Simple	Unsigned8	1	Table 9 (page 21)

Index	Parameter	Access	Data	Type	Size (bytes)	Range
...AWT 210 2-ELECTRODE CONDUCTIVITY SPECIFIC TRANSDUCER BLOCK PARAMETERS						
64	DAMPING_TIME	RW	Simple	Float	4	0 to 99.9
65	CAL_MODE	RW	Simple	Unsigned8	1	
66	CAL_STATUS	R	Simple	Unsigned8	1	
67	CAL_PROGR_TIMER	R	Simple	Float	4	
68	CAL_ERROR_VAL	R	Simple	Unsigned8	1	
69	PV_CAL_SLOPE	RW	Simple	Float	4	20 to 500 %
70	PV_CAL_OFFSET	RW	Simple	Float	4	-20 to 20 μ S/cm
71	TEMP_CAL_SLOPE	RW	Simple	Float	4	-20 to 150 %
72	TEMP_CAL_OFFSET	RW	Simple	Float	4	-40 to 40 °C/-72 to 72 °F
73	CAL_RESET	W	Simple	Unsigned8	1	Write 1 to reset
74	CAL_POINT	RW	Simple	Float	4	
75	FAC_CAL_ACTION	W	Simple	Unsigned8	1	
76	FAC_CAL_STATUS	RW	Simple	Unsigned8	1	
77	PV_FAC_CAL_SLOPE	R	Array	Float	20	
78	PV_FAC_CAL_OFFSET	R	Array	Float	20	
79	SPV_FAC_CAL_SLOPE	R	Array	Float	20	
80	SPV_FAC_CAL_OFFSET	R	Array	Float	20	

...8 PROFIBUS slots

Toroidal conductivity transducer block – slot 3

Index	Parameter	Access	Data	Type	Size (bytes)	Range
STANDARD PARAMETERS						
0	BLOCK_OBJECT	R	Record	DS-32	20	
1	ST_REV	R	Simple	Unsigned16	1	
2	TAG_DESC	RW	Simple	OctetString	32	
3	STRATEGY	RW	Simple	Unsigned16	2	
4	ALERT_KEY	RW	Simple	Unsigned8	1	
5	TARGET_MODE	RW	Simple	Unsigned8	1	AUTO
6	MODE_BLK	R	Record	DS-37	3	
7	ALARM_SUM	R	Record	DS-42	8	
ANALYZER FIELD DEVICE SPECIFIC TRANSDUCER BLOCK PARAMETERS						
8	COMPONENT_NAME	RW	Simple	OctetString	32	
9	PV	R	Record	DS-60	12	
10	PV_UNIT	RW	Simple	Unsigned16	2	Table 21 and 22 (page 22)
11	PV_UNIT_TEXT	RW	Simple	OctetString	8	
12	ACTIVE_RANGE	RW	Simple	Unsigned8	1	
13	AUTORANGE_ON	RW	Simple	Bool	1	
14	SAMPLING_RATE	RW	Simple	Time_Diff	4	
15 to 24	NULL_// reserved by PI					
25	NUMBER_OF_RANGES	R	Simple	Unsigned8	1	
26	RANGE_1	RW	Record	DS-61	8	
AWT 210 TOROIDAL CONDUCTIVITY SPECIFIC TRANSDUCER BLOCK PARAMETERS						
27	PV_MIN_SPAN	R	Simple	Float	4	
28	SENSOR_RANGE	R	Record	DS-61	8	
29	MEASUREMENT_TYPE	RW	Simple	Unsigned8	1	Table 17 (page 21)
30	SECONDARY_VALUE_1	R	Record	DS-101	5	
31	SECONDARY_VALUE_UNIT_1	RW	Simple	Unsigned16	2	Table 21 and 22 (page 22)
32	SECONDARY_VALUE_2	R	Record	DS-101	5	
33	SECONDARY_VALUE_UNIT_2	RW	Simple	Unsigned16	2	Table 19 to 21 (page 22)
34	SECONDARY_VALUE_3	R	Record	DS-101	5	
35	SECONDARY_VALUE_UNIT_3	RW	Simple	Unsigned16	2	Table 19 to 21 (page 22)
36	COND_UNITS_MODE	RW	Simple	Unsigned8	1	Table 27 (page 22)
37	CONCENTRATION_SOLUTION	RW	Simple	Unsigned8	1	Table 30 (page 22)
38	CONC_CURVE_NAME	RW	Simple	OctetString	6	
39	CONC_CURVE_TABLE_X_COND	RW	Array	Float	24	0 to 2000000 $\mu\text{S}/\text{cm}$
40	CONC_CURVE_TABLE_Y_CONC	RW	Array	Float	24	0 to 2000
41	TEMP_UNIT	RW	Simple	Unsigned16	2	Table 18 (page 21)
42	TEMP_COMP_TYPE	R	Simple	Unsigned8	1	Table 15 (page 21)
43	MANUAL_TEMP	RW	Simple	Float	4	-20 to 300 °C/-4 to 572 °F
44	AUTO_TC_OPTION	RW	Simple	Unsigned8	1	Table 31 (page 22)
45	TC_COEFFICIENT	RW	Simple	Float	4	0 to 9.99 %/°C
46	USER_DEF_TC_CURVE_X_TEMP	RW	Array	Float	24	-20 to 300 °C/-4 to 572 °F
47	USER_DEF_TC_CURVE_Y_KREF	RW	Array	Float	24	0 to 19.99
48	REFERENCE_TEMP	RW	Simple	Float	4	-20 to 200 °C/-4 to 392 °F
49	TEMP_SENSOR_TYPE	R	Simple	Unsigned8	1	Table 14 (page 21)
50 to 59	Reserved by PI					
60	TEMP_SENSOR_TYPE	R	Simple	Unsigned8	1	Table 14 (page 21)
61	TEMP_SENSOR_AR_TRIGGER	W	Simple	Unsigned8	1	Write 1 to trigger
62	TEMP_SENSOR_AR_STATUS	R	Simple	Unsigned8	1	Table 23 (page 22)
63	SENSOR_DIAG	RW	Simple	Unsigned8	1	Table 9 (page 21)

Index	Parameter	Access	Data	Type	Size (bytes)	Range
...AWT 210 TOROIDAL CONDUCTIVITY SPECIFIC TRANSDUCER BLOCK PARAMETERS						
64	DAMPING_TIME	RW	Simple	Float	4	0 to 99.9s
65	CAL_MODE	RW	Simple	Unsigned8	1	
66	CAL_STATUS	R	Simple	Unsigned8	1	
67	CAL_PROGR_TIMER	R	Simple	Float	4	
68	CAL_ERROR_VAL	R	Simple	Unsigned8	1	
69	PV_CAL_SLOPE	RW	Simple	Float	4	20 to 500 %
70	PV_CAL_OFFSET	RW	Simple	Float	4	-20 to 20 μ S/cm
71	TEMP_CAL_SLOPE	RW	Simple	Float	4	-20 to 150 %
72	TEMP_CAL_OFFSET	RW	Simple	Float	4	-40 to 40 °C/-72 to 72 °F
73	CAL_RESET	W	Simple	Unsigned8	1	Write 1 to reset
74	CAL_POINT	RW	Simple	Float	4	
75	FAC_CAL_ACTION	W	Simple	Unsigned8	1	
76	FAC_CAL_STATUS	RW	Simple	Unsigned8	1	
77	PV_FAC_CAL_SLOPE	R	Array	Float	20	
78	PV_FAC_CAL_OFFSET	R	Array	Float	20	
79	SPV_FAC_CAL_SLOPE	R	Array	Float	20	
80	SPV_FAC_CAL_OFFSET	R	Array	Float	20	

...8 PROFIBUS slots

4-electrode conductivity transducer block – slot 4

Index	Parameter	Access	Data	Type	Size (bytes)	Range
STANDARD PARAMETERS						
0	BLOCK_OBJECT	R	Record	DS-32	20	
1	ST_REV	R	Simple	Unsigned16	1	
2	TAG_DESC	RW	Simple	OctetString	32	
3	STRATEGY	RW	Simple	Unsigned16	2	
4	ALERT_KEY	RW	Simple	Unsigned8	1	
5	TARGET_MODE	RW	Simple	Unsigned8	1	AUTO
6	MODE_BLK	R	Record	DS-37	3	
7	ALARM_SUM	R	Record	DS-42	8	
ANALYZER FIELD DEVICE SPECIFIC TRANSDUCER BLOCK PARAMETERS						
8	COMPONENT_NAME	RW	Simple	OctetString	32	
9	PV	R	Record	DS-60	12	
10	PV_UNIT	RW	Simple	Unsigned16	2	Table 21 and 22 (page 22)
11	PV_UNIT_TEXT	RW	Simple	OctetString	8	
12	ACTIVE_RANGE	RW	Simple	Unsigned8	1	
13	AUTORANGE_ON	RW	Simple	Bool	1	
14	SAMPLING_RATE	RW	Simple	Time_Diff	4	
15 to 24	NULL_// reserved by PI					
25	NUMBER_OF_RANGES	R	Simple	Unsigned8	1	
26	RANGE_1	RW	Record	DS-61	8	
AWT 210 4-ELECTRODE CONDUCTIVITY SPECIFIC TRANSDUCER BLOCK PARAMETERS						
27	PV_MIN_SPAN	R	Simple	Float	4	
28	SENSOR_RANGE	R	Record	DS-61	8	
29	MEASUREMENT_TYPE	RW	Simple	Unsigned8	1	Table 17 (page 21)
30	SECONDARY_VALUE_1	R	Record	DS-101	5	
31	SECONDARY_VALUE_UNIT_1	RW	Simple	Unsigned16	2	Table 21 and 22 (page 22)
32	SECONDARY_VALUE_2	R	Record	DS-101	5	
33	SECONDARY_VALUE_UNIT_2	RW	Simple	Unsigned16	2	Table 19 to 21 (page 22)
34	SECONDARY_VALUE_3	R	Record	DS-101	5	
35	SECONDARY_VALUE_UNIT_3	RW	Simple	Unsigned16	2	Table 19 to 21 (page 22)
36	COND_UNITS_MODE	RW	Simple	Unsigned8	1	Table 27 (page 22)
37	SENSOR_GROUP	RW	Simple	Unsigned8	1	Table 32 (page 22)
38	CONCENTRATION_SOLUTION	RW	Simple	Unsigned8	1	Table 30 (page 22)
39	CONC_CURVE_NAME	RW	Simple	OctetString	6	
40	CONC_CURVE_TABLE_X_COND	RW	Array	Float	24	0 to 2000000 µS/cm
41	CONC_CURVE_TABLE_Y_CONC	RW	Array	Float	24	0 to 2000
42	TEMP_UNIT	RW	Simple	Unsigned16	2	Table 18 (page 21)
43	TEMP_COMP_TYPE	R	Simple	Unsigned8	1	Table 15 (page 21)
44	MANUAL_TEMP	RW	Simple	Float	4	-20 to 300 °C/-4 to 572 °F
45	AUTO_TC_OPTION	RW	Simple	Unsigned8	1	Table 31 (page 22)
46	TC_COEFFICIENT	RW	Simple	Float	4	0 to 9.99 %/°C
47	USER_DEF_TC_CURVE_X_TEMP	RW	Array	Float	24	-20 to 300 °C/-4 to 572 °F
48	USER_DEF_TC_CURVE_Y_KREF	RW	Array	Float	24	0 to 19.99
49-58	Reserved by PI					
59	REFERENCE_TEMP	RW	Simple	Float	4	-20 to 200 °C/-4 to 392 °F
60	TEMP_SENSOR_TYPE	R	Simple	Unsigned8	1	Table 14 (page 21)
61	TEMP_SENSOR_AR_TRIGGER	W	Simple	Unsigned8	1	Write 1 to trigger
62	TEMP_SENSOR_AR_STATUS	R	Simple	Unsigned8	1	Table 23 (page 22)
63	SENSOR_DIAG	RW	Simple	Unsigned8	1	Table 9 (page 21)

Index	Parameter	Access	Data	Type	Size (bytes)	Range
...AWT 210 4-ELECTRODE CONDUCTIVITY SPECIFIC TRANSDUCER BLOCK PARAMETERS						
64	DAMPING_TIME	RW	Simple	Float	4	0 to 99.9 s
65	CAL_MODE	RW	Simple	Unsigned8	1	
66	CAL_STATUS	R	Simple	Unsigned8	1	
67	CAL_PROGR_TIMER	R	Simple	Float	4	
68	CAL_ERROR_VAL	R	Simple	Unsigned8	1	
69	PV_CAL_SLOPE	RW	Simple	Float	4	20 to 500 %
70	PV_CAL_OFFSET	RW	Simple	Float	4	-20 to 20 μ S/cm
71	TEMP_CAL_SLOPE	RW	Simple	Float	4	-20 to 150 %
72	TEMP_CAL_OFFSET	RW	Simple	Float	4	-40 to 40 °C/-72 to 72 °F
73	CAL_RESET	W	Simple	Unsigned8	1	Write 1 to reset
74	CAL_POINT	RW	Simple	Float	4	
75	FAC_CAL_ACTION	W	Simple	Unsigned8	1	
76	FAC_CAL_STATUS	RW	Simple	Unsigned8	1	
77	PV_FAC_CAL_SLOPE	R	Array	Float	20	
78	PV_FAC_CAL_OFFSET	R	Array	Float	20	
79	GNDLP_FAC_CAL_SLOPE	R	Array	Float	20	
80	GNDLP_FAC_CAL_OFFSET	R	Array	Float	20	

...8 PROFIBUS slots

Analog input blocks – slots 5 and 6

AI_1 mapping is located on slot 5. AI_2 mapping is located on slot 6.
The initial index is 16 and this number must be added to the relative Index in column index to get the absolute index.

First index (n) = 16

Index (n) = 16	Parameter	Access	Data	Type	Size (bytes)	Range
STANDARD PARAMETERS						
n+0	BLOCK_OBJECT	R	Record	DS-32	20	
n+1	ST_REV	R	Simple	Unsigned16	1	
n+2	TAG_DESC	RW	Simple	OctetString	32	
n+3	STRATEGY	RW	Simple	Unsigned16	2	
n+4	ALERT_KEY	RW	Simple	Unsigned8	1	
n+5	TARGET_MODE	RW	Simple	Unsigned8	1	Table 6 (page 21)
n+6	MODE_BLK	R	Record	DS-37	3	
n+7	ALARM_SUM	R	Record	DS-42	8	
n+8	BATCH	R/W	Record	DS-67	10	
STANDARD AI BLOCK PARAMETERS						
n+9	NULL_// reserved by PI					
n+10	OUT	RW	Record	DS-101	5	
n+11	PV_SCALE	RW	Array	Float	8	0.0 to 100.0 %
n+12	OUT_SCALE	RW	Record	DS-36	11	
n+13	LIN_TYPE	RW	Simple	Unsigned8	1	0-Linear
n+14	CHANNEL	RW	Simple	Unsigned16	2	1-2
n+15	NULL_// reserved by PI					
n+16	PV_FTIME	RW	Simple	Float	4	0 to 60 s
n+17	FSAFE_TYPE	RW	Simple	Unsigned8	1	Table 8 (page 21)
n+18	FSAFE_VALUE	RW	Simple	Float	4	
n+19	ALARM_HYS	RW	Simple	Float	4	
n+20	NULL_// reserved by PI					
n+21	HI_HI_LIM	RW	Simple	Float	4	
n+22	NULL_// reserved by PI					
n+23	HI_LIM	RW	Simple	Float	4	
n+24	NULL_// reserved by PI					
n+25	LO_LIM	RW	Simple	Float	4	
n+26	NULL_// reserved by PI					
n+27	LO_LO_LIM	RW	Simple	Float	4	
n+28 to n+29	NULL_// reserved by PI					
n+30	HI_HI_ALM	R	Record	DS-39	16	
n+31	HI_ALM	R	Record	DS-39	16	
n+32	LO_ALM	R	Record	DS-39	16	
n+33	LO_LO_ALM	R	Record	DS-39	16	
n+34	SIMULATE	RW	Record	DS-50	6	Table 9 (page 21)
n+35	OUT_UNIT_TEXT	RW	Simple	OctetString	16	

9 Device tables

Table 1	Software write locking table
0	Write Locked
2457	Write unlocked

Table 2	Reset table
1	Reset to default values
2506	Warm Start-up
2712	Reset Bus address to default (126)

Table 3	Software write locking table
0	Disabled (local operation not allowed)
1	Enabled (local operation is allowed)

Table 4	Ident number table
0	Profile specific Id_Num one AI = 0x09700
1	Device specific Id_Num = 266 id = 0x3450

Table 5	Hardware write protection table
0	Unprotected
1	Protected

Table 6	Target mode table
128	OOS
16	Man
8	Auto

Table 7	pH Sensor measurement type table
111	pH
114	ORP
118	PION

Table 8	Failsafe type table
0	Fsave Value as OUT
1	OUT = Last usable OUT value
2	OUT as calculated

Table 9	Enable/Disable table
0	Disabled/OFF
1	Enabled/ON

Table 10	pH Sensor type table
0	Glass Sensor
1	Antimony Sensor
2	Custom Sensor

Table 11	Valence table
0	-3
1	-2
2	-1
3	1
4	2
5	3

Table 12	Magnitude table
1	1
2	2
3	3

Table 13	End magnitude table
1	10
2	100
3	1000

Table 14	Temperature sensor type table
0	Balco 3K 2wire
1	Balco 3K 3wire
2	PT100 2wire
3	PT100 3Wire
4	PT1000 2Wire
5	PT1000 3Wire
6	Temp Sensor Not Connected

Table 15	Temperature compensation type table
0	Auto
1	Manual
2	Auto Solution

Table 16	Language table
0	English
1	German
2	French
3	Spanish
4	Italian
14	Portuguese

Table 17	Conductivity measurement type table
117	Conductivity
118	Concentration

Table 18	Temperature units table
1001	Degree Celsius
1002	Degree Fahrenheit

...9 Device tables

Table 19	pH Units table
1422	pH

Table 20	ORP/pION units table
1243	mV

Table 21	Concentration units table
1342	%
1423	ppm
1424	ppb
1558	mg/L
1559	µg/L

Table 22	Conductivity units table
1552	µS/cm
1553	mS/cm

Table 23	Temp sensor detection status table
0	Not Recognized
1	Recognized

Table 24	Front end board type
0	Unknown
1	pH
2	4-Wire Conductivity
4	2-Wire Conductivity
8	Toroidal Conductivity

Table 25	AutoCal buffer type
0	User-defined
1	ABB
2	NIST
3	DIN19266
4	MERCK
5	US Tech

Table 26	Auto Cal Buffer Values
0	ABB 4.01 pH
1	ABB 7.00 pH
2	ABB 9.18 pH
3	MERCK 4.00 pH
4	MERCK 7.00 pH
5	MERCK 9.00 pH
6	MERCK 10.00 pH
7	DIN 1.68 pH
8	DIN 4.01 pH
9	DIN 6.86 pH
10	DIN 9.18 pH
11	US Tech 4.01 pH
12	US Tech 7.00 pH
13	US Tech 10.01 pH
14	NIST 4.01 pH
15	NIST 6.86 pH
16	NIST 9.18 pH

Table 27	Conductivity units mode
0	Auto
1	µS/cm
2	mS/cm

Table 28	2-electrode conductivity auto temperature compensation option
0	Standard KCl
1	TC Coefficient
2	Pure H2O
3	User-dDefined Temperature Compensation

Table 29	Pure H ₂ O type
0	Neutral
1	Acid
2	Base

Table 30	Concentration solution
0	NaOH 0 to 15 %
1	NaCl 0 to 20 %
2	HCl 0 to 18 %
3	H2SO4 0 to 20 %
4	User Defined

Table 31	Toroidal/4-electrode conductivity auto temperature compensation option
0	Standard KCl
1	Temperature Compensation Coefficient
2	NaOH
3	NaCl
4	HCl
5	H2SO4
6	User-dDefined Temperature Compensation

Table 32	4-electrode conductivity sensor group
0	Sensor Group A
1	Sensor Group B

Acknowledgements

- PROFIBUS is a registered trademark of PROFIBUS organization.



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