

DM 811

S-DIAS Absolute Pressure Input Module

Instruction Manual

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Translation of the Original Instructions

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S-DIAS Absolute Pressure Input Module

DM 811

with 1 absolute pressure input

1 PT100 temperature input and

8 digital inputs

The S-DIAS DM 811 absolute pressure input module has one absolute pressure input with a measurement range of 0-1600 mbar, one PT100 temperature input 0-300 °C and eight digital inputs (+24 V/3.7 mA/0.5 ms).



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1 Introduction

1.1 Target Group/Purpose of this Operating Manual

This operating manual contains all information required for the operation of the product.

This operating manual is intended for:

- Project planners
- Technicians
- Commissioning engineers
- Machine operators
- Maintenance/test technicians

General knowledge of automation technology is required.

Further help and training information, as well as the appropriate accessories can be found on our website www.sigmathek-automation.com.

Our support team is happily available to answer your questions.
Please see our website for our hotline number and business hours.

1.2 Important Reference Documentation

This and additional documents can be downloaded from our website or obtained through support.

1.3 Contents of Delivery

1x DM 811

2 Basic Safety Directives

2.1 Symbols Used

The following symbols are used in the operator documentation for warning and danger messages, as well as informational notes:

DANGER



Danger indicates that death or serious injury **will occur**, if the specified measures are not taken.

⇒ To avoid death or serious injuries, observe all guidelines.

Danger indique une situation dangereuse qui, faute de prendre les mesures adéquates, **entraînera** des blessures graves, voire mortelles.

⇒ Respectez toutes les consignes pour éviter des blessures graves, voire mortelles.

WARNING



Warning indicates that death or serious injury **can** occur, if the specified measures are not taken.

⇒ To avoid death or serious injuries, observe all guidelines.

Avertissement d'une situation dangereuse qui, faute de prendre les mesures adéquates, **entraînera** des blessures graves, voire mortelles.

⇒ Respectez toutes les consignes pour éviter des blessures graves, voire mortelles.

CAUTION



Caution indicates that moderate to slight injury **can** occur, if the specified measures are not taken.

⇒ To avoid moderate to slight injuries, observe all guidelines.

Attention indique une situation dangereuse qui, faute de prendre les mesures adéquates, **peut** entraîner des blessures assez graves ou légères.

⇒ Respectez toutes les consignes pour éviter des blessures graves, voire mortelles.

INFORMATION**Information**

- ⇒ Provides important information on the product, handling or relevant sections of the documentation, which require attention.

2.2 Disclaimer

INFORMATION



The contents of this operating manual were prepared with the greatest care. However, deviations cannot be ruled out. This operating manual is regularly checked and required corrections are included in the subsequent versions. The machine manufacturer is responsible for the proper assembly, as well as device configuration. The machine operator is responsible for safe handling, as well as proper operation.

The current operating manual can be found on our website. If necessary, contact our support.

Subject to technical changes, which improve the performance of the devices. The following operating manual is purely a product description. It does not guarantee properties under the warranty.

Please thoroughly read the corresponding documents and this operating manual before handling a product.

SIGMATEK GmbH & Co KG is not liable for damages caused through, non-compliance with these instructions or applicable regulations.

2.3 General Safety Directives

The Safety Directives in the other sections of this operating manual must be observed. These instructions are visually emphasized by symbols.



INFORMATION

According to EU Directives, the operating manual is a component of a product.

This operating manual must therefore be accessible in the vicinity of the machine since it contains important instructions.

This operating manual should be included in the sale, rental or transfer of the product, or its online availability indicated.

Regarding the requirements for Safety and health connected to the use of machines, the manufacturer must perform a risk assessment in accordance with machine directives 2006/42/EG before introducing a machine to the market.

Operate the unit with devices and accessories approved by SIGMATEK only.

CAUTION

Handle the device with care and do not drop or let fall.

Prevent foreign bodies and fluids from entering the device.

The device must not be opened!

Manipulez l'appareil avec précaution et ne le laissez pas tomber.

Empêchez les corps étrangers et les liquides de pénétrer dans l'appareil.

L'appareil ne doit pas être ouvert!

If the device does not function as intended or has damage that could pose a danger, it must be replaced!

En cas de fonctionnement non conforme ou de dommages pouvant entraîner des risques, l'appareil doit être remplacé!

The module complies with EN 61131-2.

In combination with a facility, the system integrator must comply with EN 60204-1 standards.

For your own safety and that of others, compliance with the environmental conditions is essential.

Le module est conforme à la norme EN 61131-2.

En combinaison avec une équipement, l'intégrateur de système doit respecter la norme EN 60204-1.

Pour votre propre sécurité et celle des autres, le respect des conditions environnementales est essentiel.

2.4 Software/Training

The application is created with the software LASAL CLASS 2 and LASAL SCREEN Editor.

Training for the LASAL development environment, with which the product can be configured, is provided. Information on our training schedule can be found on our website.

3 Standards and Directives

3.1 Directives

The product was constructed in compliance with the following European Union directives and tested for conformity.

3.1.1 EU Conformity Declaration



EU Declaration of Conformity

The product DM 811 conforms to the following European directives:

- **2014/35/EU** Low-voltage Directive
- **2014/30/EU** Electromagnetic Compatibility (EMC Directive)
- **2011/65/EU** “Restricted use of certain hazardous substances in electrical and electronic equipment” (RoHS Directive)

The EU Conformity Declarations are provided on the SIGMATEK website. See Products/Downloads or use the search function and the keyword “EU Declaration of Conformity”.

4 Type Plate



HW: X.XX
SW: XX.XX.XXX
Safety Version: SXX.XX.XX

SIGMATEK GMBH & CO KG
Sigmatekstrasse 1 A-5112 LAMPRECHTSHAUSEN

Serial No.

Article Number

Product Name

Short Name

Exemplary nameplate (symbol image)



HW: 1.00
SW: 01.00.000
Safety Version: S01.00.00

SIGMATEK GMBH & CO KG
Sigmatekstrasse 1 A-5112 LAMPRECHTSHAUSEN

12345678

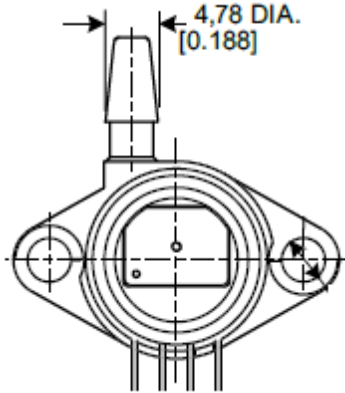
12-246-133-3

Handbediengerät Wireless HGW 1033-3

HW: Hardware version
SW: Software version

5 Technical Data

5.1 Absolute Pressure Input Specifications

Number	1
Pressure sensor type	absolute pressure sensor
Measurement range	0-1600 mbar
Measurement value	0-16000 ⁽¹⁾
Resolution	12-bit (ca. 0.4 mbar/LSB)
Conversion time for all channels	1 ms
Input filter hardware	typically 1 kHz, low pass 3 rd order
Input filter	configurable
Measurement precision	±0.25 % of scale end value, i.e. ±4.0 mbar for 25 °C ambient temperature with offset and gain comparison ±1.00 % of scale end value, i.e. ±16.0 mbar for 0-50 °C ambient temperature without offset and gain comparison
Calibratable	yes (2-point comparison)
Maximum overpressure	4 bar
Connection	 Ø: typically 4.78 mm

⁽¹⁾ 4 measuring values are returned:

- 1.) Raw value (PressureRawValue) 1638-14745 corresponds to 0-1600 mbar
- 2.) Standardized analog value (PressureNotLinear) of 0-1600 mbar
- 3.) Standardized and linearized analog value (PressureLinear) in 0.1 mbar of 0-1600 mbar. The linearization table used is based on the measurement of several pressure sensors with the reference vacuumeter Thyracont VD85.
- 4.) Internal pressure sensor temperature in 0.1 °C from -50 ... +150 °C.

5.2 Temperature Input Specifications (PT100)

Number	1	
Measurement range	100.0-212.1 Ω	
	PT100	
	0-300 °C	
Resolution	0.1 °C	
Conversion time per channel	1 ms	
Cable break monitor	yes	
Input filter hardware	typically 1 kHz	low pass 3 rd order system
Input filter software	configurable	
Precision of analog channel measurement	±0.5 % of maximum measurement value	

5.3 Digital Input Specifications

Number	8	
Input voltage	typically +24 V	maximum +30 V
Signal level (up to HW version 1.10)	low: < +8 V	high: > +14 V
Signal level (starting with HW version 1.20)	low: < +5 V	high: > +15 V
Input current	3.7 mA at +24 V	
Input delay	typically 0.5 ms	

5.4 Electrical Requirements

Voltage supply from the S-DIAS bus	+5 V	
Current consumption on the S-DIAS bus (+5 V power supply)	typically 60 mA	maximum 65 mA
Voltage supply from the S-DIAS bus	+24 V	
Current consumption on the S-DIAS bus (+24 V power supply)	typically 20 mA	maximum 25 mA

INFORMATION

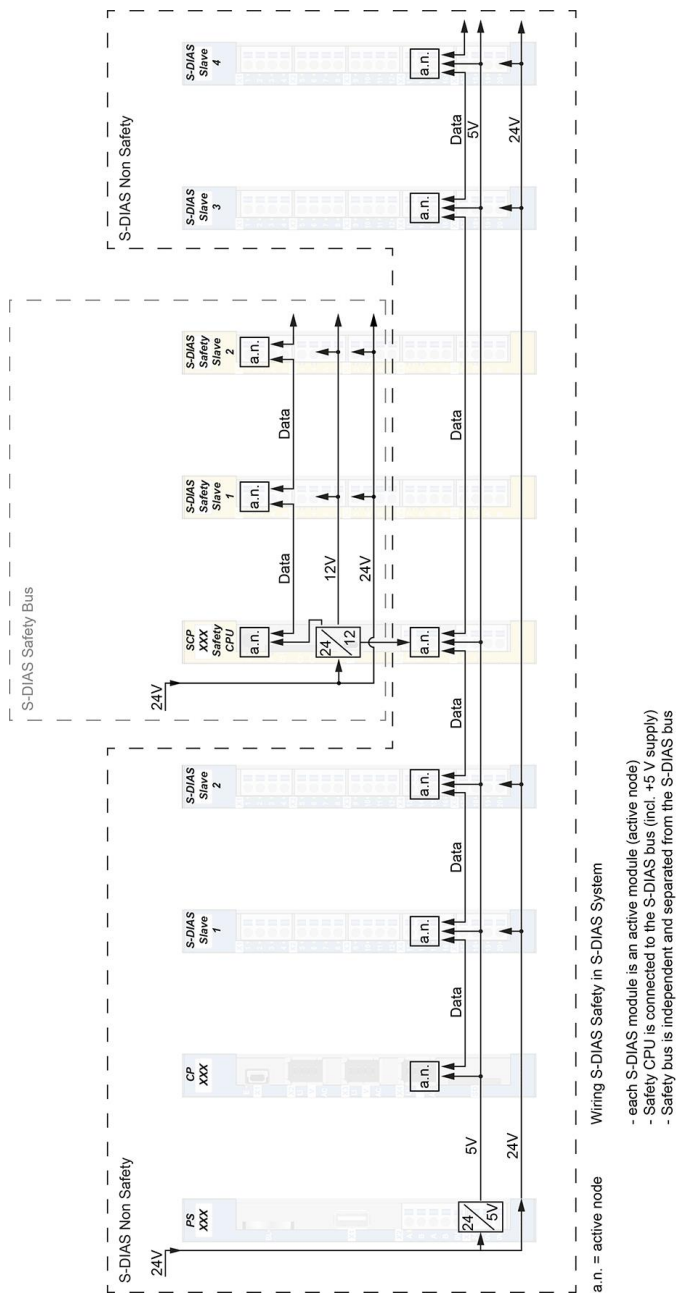


If this S-DIAS module is connected to an S-DIAS supply module with several S-DIAS modules, the total current of the modules used must be determined and checked.

The total current of the +24 V supply cannot exceed 1.6 A!

The total current of the +5 V supply cannot exceed 1.6 A!

The specification for the current can be found in the module-specific documentation under "Electrical Requirements".



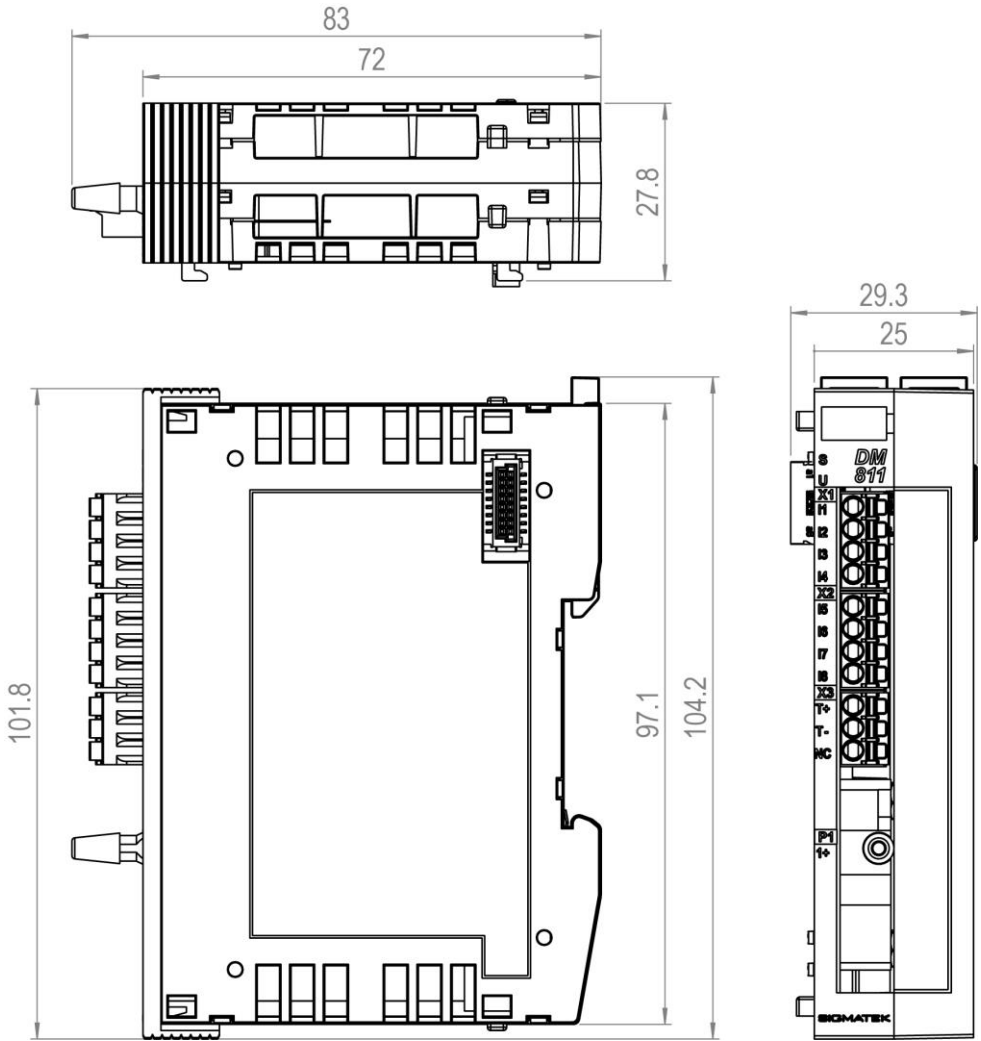
5.5 Miscellaneous

Article number	20-008-811
Standard	UL 508 (E247993)
Approbations	UL, cUL, CE

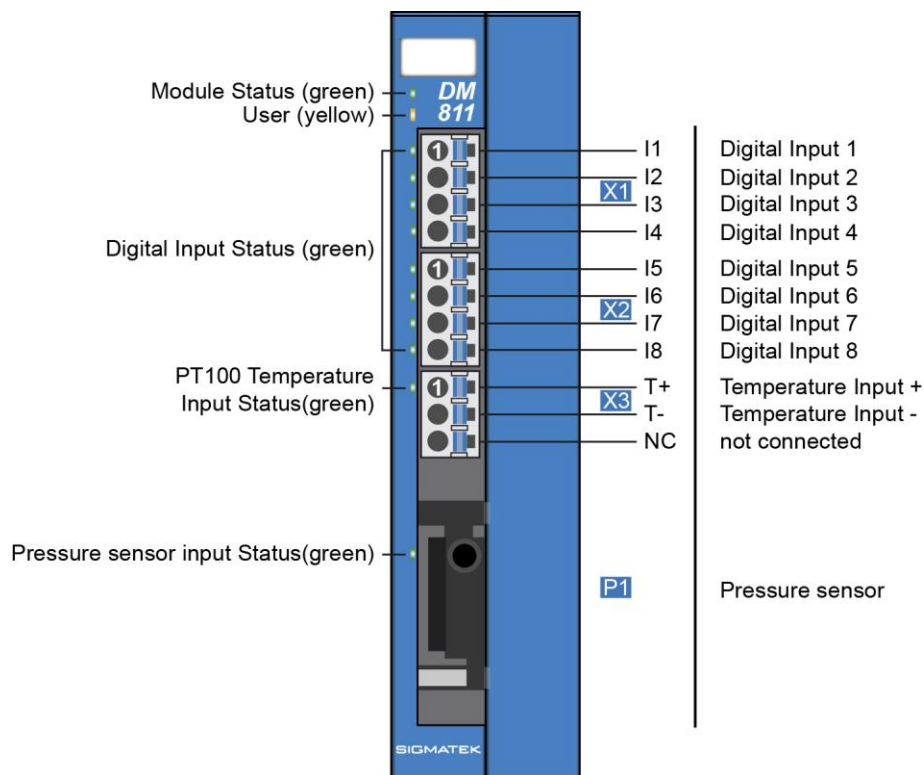
5.6 Environmental Conditions

Storage temperature	-20 ... +85 °C	
Environmental temperature	0 ... +60 °C	
Humidity	0-95 %, non-condensing	
Installation altitude above sea level	0-2000 m without derating > 2000 m with derating of the maximum environmental temperature by 0.5 °C per 100 m	
Operating conditions	pollution degree 2	
EMC resistance	in accordance with EN 61000-6-2:2007 (industrial area)	
EMC noise generation	in accordance with EN 61000-6-4 (industrial area)	
Vibration resistance	EN 60068-2-6	3.5 mm from 5-8.4 Hz 1 g from 8.4-150 Hz
Shock resistance	EN 60068-2-27	15 g
Protection type	EN 60529	IP20

6 Mechanical Dimensions



7 Connector Layout



7.1 Status LEDs

Module Status	green	ON	module active
		OFF	no supply available
		BLINKING (5 Hz)	no communication
User	yellow	ON	can be set from the application
		OFF	(e.g. the module LED can be set to blinking through the visualization so that the module is easily found in the control cabinet)
		BLINKING (2 Hz)	
		BLINKING (4 Hz)	
Digital input status	green	ON	input ON
		OFF	input OFF
PT100 temperature input status	green	ON	input activated
		OFF	input deactivated
		BLINKING (0.5 Hz)	input below measurement range
		BLINKING (4 Hz)	measuring range/sensor break input
Pressure sensor status	green	ON	input activated
		OFF	input deactivated
		BLINKING (0.5 Hz)	input below measurement range
		BLINKING (4 Hz)	measuring range/sensor break input

7.2 Applicable Connectors

Connectors:

X1-X3: Connectors with spring terminals (included in delivery)
The spring terminals are suitable connecting ultrasonically compacted (ultrasonically welded) strands.

Connections:

Ferrule without/with plastic sleeve:	0.2-1.5/0.2-0.75 mm ²
Stripping length/Sleeve length:	10 mm
Conductor cross section rigid:	0.2-1.5 mm ²
Conductor cross section flexible:	0.2-1.5 mm ²
Conductor cross section ultrasonically compacted:	0.2-1.5 mm ²
Conductor cross section AWG/kcmil:	24-16
Conductor cross section flexible with ferrule without plastic sleeve:	0.25-1.5 mm ²
Conductor cross section flexible with ferrule with plastic sleeve:	0.25-0.75 mm ² (reason for reduction d2 of the ferrule)

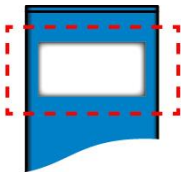


INFORMATION



The S-DIAS module CANNOT be connected or disconnected while voltage is applied!

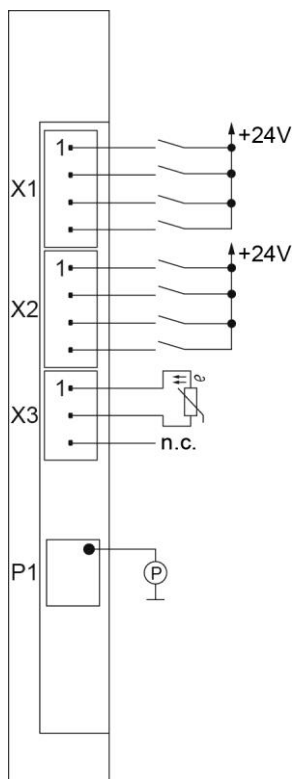
7.3 Label Field



Manufacturer	Weidmüller
Type	MF 10/5 CABUR MC NE WS
Weidmüller article number	1854510000
Compatible printer	Weidmüller
Type	Printjet Advanced 230V
Weidmüller article number	1324380000

8 Wiring

8.1 Wiring Example



9 Assembly/Installation

9.1 Check Contents of Delivery

Ensure that the contents of the delivery are complete and intact. See chapter 1.3 Contents of Delivery.

INFORMATION

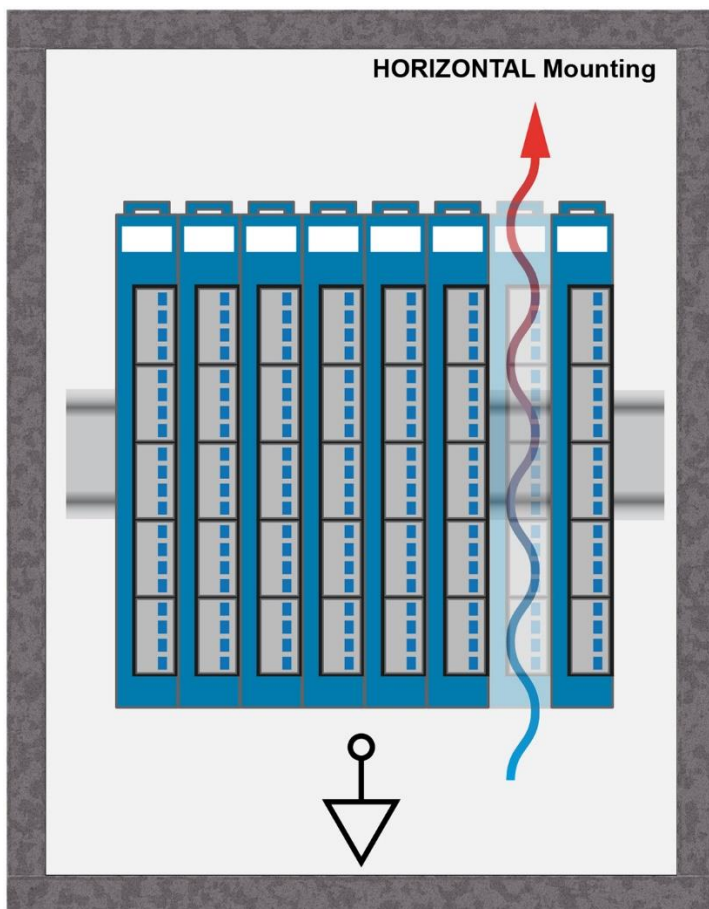


On receipt and before initial use, check the device for damage. If the device is damaged, contact our customer service and do not install the device in your system.

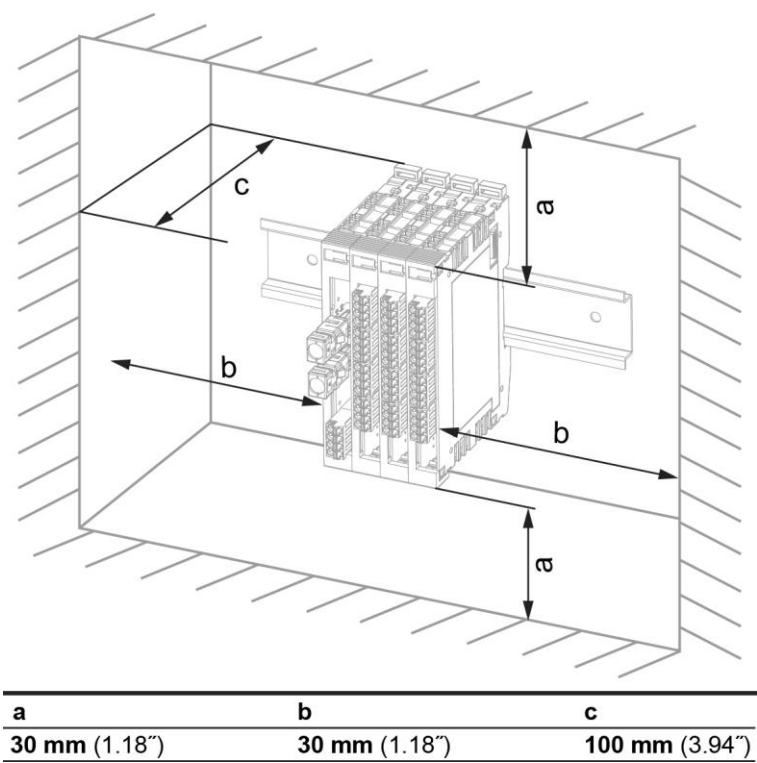
Damaged components can disrupt or damage the system.

9.2 Mounting

The S-DIAS modules are designed for installation into the control cabinet. To mount the modules a DIN-rail is required. The DIN rail must establish a conductive connection with the back wall of the control cabinet. The individual S-DIAS modules are mounted on the DIN rail as a block and secured with latches. The functional ground connection from the module to the DIN rail is made via the grounding clamp on the back of the S-DIAS modules. The modules must be mounted horizontally (module label up) with sufficient clearance between the ventilation slots of the S-DIAS module blocks and nearby components and/or the control cabinet wall. This is necessary for optimal cooling and air circulation, so that proper function up to the maximum operating temperature is ensured.



Recommended minimum distances of the S-DIAS modules to the surrounding components or control cabinet wall:



a, b, c ... distances in mm (inches)

10 Addressing

10.1 Address Mapping Overview

Address (hex)	Size (bytes)	Description
0000	128	Cyclic Data for Firmware
0080	128	Cyclic Data for the HW Class
0100	128	CFG for the Firmware
0180	128	CFG/version for the HW class
0300	128	SDO Request
0380	128	SDO Response

10.2 Detailed Address Mapping

Cyclic Data for the HW Class (memory address range)		
0004	2	Status Bit 0 tbd
0006	2	Analog input 1
0008	2	Analog input 2
000A	1	Over range Bit 0 input AI1 Bit 1 input AI2 Under range Bit 2 input AI1 Bit 3 input AI2
000B	2	Raw value analog input 1
000D	2	Raw value analog input 2
Cyclic Data for Firmware (memory address range)		
0080	0	-
CFG for the Firmware (memory address range)		
0100	2	CRC16
0102	2	Data length

0104	1	Info (special-purpose or status bits) Bit 0 free Bit 1 boot loader/update request
0105	2	reserved
Standard mode (info register bit 0 = 0)		
0106	2	Cutoff frequency low pass filter input 1
0108	2	Cutoff frequency low pass filter input 1
010A	1	Bit 0 = 0 AI1 → inactive Bit 0 = 1 AI1 → active Bit 1 = 0 AI2 → inactive Bit 1 = 1 AI2 → active
010B	1	Message Counter
CFG/version for the HW class (memory address range)		
0180	2	CRC16
0182	2	Data length
0184	2	Firmware version
SDO access (memory address range)		
0300	128	SDO Request
0380	128	SDO Response

11 Supported Cycle Times

11.1 Cycle Times below 1 ms (in μ s)

FW	50	100	125	200	250	500
V1.00			x	x	x	x

11.2 Cycle Times equal to or above 1 ms (in ms)

FW	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
V1.00	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

FW	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
V1.00	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

12 Hardware Class DM811

Hardware Class DM811 for the S-DIAS DM0811 analog module

This hardware class is used to control the DM 811 hardware module. The module has a pressure input with a measuring range from 0-1600 mBar, a temperature sensor (PT100) and eight digital inputs (+24 V/3.7 mA/0.5 ms). More information on the hardware can be found in the module documentation.

```

SDIAS:47, DM811 (DM811)
S Class State (ClassState) <-[]->
S Device ID (DeviceID) <-[]->
S FPGA Version (FPGAVersion) <-[]->
S Hardware Version (HwVersion) <-[]->
S Serial Number (SerialNo) <-[]->
S Retry Counter (RetryCounter) <-[]->
O LED Control (LEDControl) <-[]->
S Firmware Version (FirmwareVersion) <-[]->
+ S Firmware Errors (FWErrorBits) <-[]->
+ S Firmware Status (FWStatusBits) <-[]->
----- Digital Inputs -----
I Digital Input 1 (Input1) <-[]->
I Digital Input 2 (Input2) <-[]->
I Digital Input 3 (Input3) <-[]->
I Digital Input 4 (Input4) <-[]->
I Digital Input 5 (Input5) <-[]->
I Digital Input 6 (Input6) <-[]->
I Digital Input 7 (Input7) <-[]->
I Digital Input 8 (Input8) <-[]->
I Input Byte (InputByte) <-[]->
----- Analog Inputs -----
I Pressure Raw Value (PressureRawValue) <-[]->
I Pressure Not Linearized (PressureNotLinear) <-[]->
I Pressure Linearized (PressureLinear) <-[]->
I Pressure Linearized Temperature Compensated (PressureLinearTComp) <-[]->
I Temperature internal (TempIntern) <-[]->
I Temperature external (TempExtern) <-[]->
S Range Detection (Range) <-[]->
ALARM:00, Empty

```

12.1 Interfaces

12.1.1 General

Class State	State	Shows the actual status of the hardware class.																	
Device ID	State	Shows the Device ID of the hardware module.																	
FPGA Version	State	FPGA version of the module in 16#XY (e.g. 16#10 = version 1.0).																	
Hardware Version	State	Hardware version of the module in format 16#XXYY (e.g. 16#0120 = Version 1.20)																	
Serial Number	State	Shows the serial number of the hardware module.																	
Retry Counter	State	Increments, when a transfer fails.																	
LED Control	Output	With this output, the application LED of the S-DIAS module can be activated to find the module in the network more quickly. The following statuses are possible: <table><tr><td>0</td><td>LED off</td></tr><tr><td>1</td><td>LED on</td></tr><tr><td>2</td><td>blinks slowly</td></tr><tr><td>3</td><td>blinks rapidly</td></tr></table>		0	LED off	1	LED on	2	blinks slowly	3	blinks rapidly								
0	LED off																		
1	LED on																		
2	blinks slowly																		
3	blinks rapidly																		
Required	Property	This property is active by default, which means that the S-DIAS hardware module at this position is mandatory for the system and can under no circumstances be disconnected or return an error. Otherwise, the entire hardware deactivated. If the hardware module is missing or removed, an S-DIAS error is triggered. If his client is initialized with 0, the hardware module located in this position is not mandatory. This means that it can be inserted or removed at any time. However, which components identified as "not required" should be selected with regard to the safety of the system.																	
Firmware Version	State	Shows the used firmware version of the hardware module.																	
Firmware Errors	State	Shows the status bits of the FW. The respective bits mean the following: <table><tr><td>Bit 0</td><td>DC not OK</td></tr><tr><td>Bit 1</td><td>no Sync available</td></tr><tr><td>Bit 2</td><td>Flash Data CRC Error</td></tr><tr><td>Bit 3</td><td>RAM Data CRC Error</td></tr><tr><td>Bit 4</td><td>invalid EEPROM version</td></tr><tr><td>Bit 5</td><td>Bus time not supported</td></tr><tr><td>Bit 6</td><td>Invalid configuration</td></tr><tr><td>Bit 7</td><td>Sensor error</td></tr></table>		Bit 0	DC not OK	Bit 1	no Sync available	Bit 2	Flash Data CRC Error	Bit 3	RAM Data CRC Error	Bit 4	invalid EEPROM version	Bit 5	Bus time not supported	Bit 6	Invalid configuration	Bit 7	Sensor error
Bit 0	DC not OK																		
Bit 1	no Sync available																		
Bit 2	Flash Data CRC Error																		
Bit 3	RAM Data CRC Error																		
Bit 4	invalid EEPROM version																		
Bit 5	Bus time not supported																		
Bit 6	Invalid configuration																		
Bit 7	Sensor error																		
Firmware Status	State	<table><tr><td>Bit 0</td><td>No valid user alignment data available</td></tr><tr><td>Bit 1</td><td>No valid user linearization available</td></tr></table>		Bit 0	No valid user alignment data available	Bit 1	No valid user linearization available												
Bit 0	No valid user alignment data available																		
Bit 1	No valid user linearization available																		

Range Detection	State	This server shows, whether a limit violation is active on one of the inputs.	
		Bit 0	maximum value of pressure input exceeded
		Bit 1	maximum value of external temperature sensor exceeded
		Bit 2	minimum value of pressure input underrun
		Bit 3	minimum value of external temperature sensor underrun
		Bit 4	maximum value of internal temperature sensor exceeded
		Bit 5	minimum value of internal temperature sensor underrun

12.1.2 Digital Inputs 1-8

Digital Input [1-8]	Input	Input 1-8, status queried over read().
Input Byte	State	Shows the digital inputs in a 16 bit field. Within this bit field, 0 to 7 are allocated to inputs input1 to input8

12.1.3 Pressure Input

Pressure Raw Value	Input	Value of the pressure sensor as raw value in 1/10 mBar, status queried over read().														
Pressure Not Linearized	Input	Value of the pressure sensor not linearized in 1/10 mBar, status queried over read().														
Pressure Linearized	Input	Value of the pressure sensor linearized in 1/10 mBar, status queried over read().														
Pressure Linearized Temperature Compensated	Input	Linearized value of the pressure sensor and compensated by the internal temperature sensor, in 1/10 mbar, status inquiry via read ().														
Pressure Input cut off frequency	Property	Here the limit frequency for the software low pass filter is set. Value setting options are: <table><tr><td>0</td><td>1000 Hz</td></tr><tr><td>1</td><td>500 Hz</td></tr><tr><td>2</td><td>250 Hz</td></tr><tr><td>3</td><td>100 Hz</td></tr><tr><td>4</td><td>50 Hz</td></tr><tr><td>5</td><td>25 Hz</td></tr><tr><td>6</td><td>10 Hz</td></tr></table>	0	1000 Hz	1	500 Hz	2	250 Hz	3	100 Hz	4	50 Hz	5	25 Hz	6	10 Hz
0	1000 Hz															
1	500 Hz															
2	250 Hz															
3	100 Hz															
4	50 Hz															
5	25 Hz															
6	10 Hz															
Pressure Input Active	Property	Here you set, whether the according channel is active. Possible values: <table><tr><td>0</td><td>Channel is not active. LED is off.</td></tr><tr><td>1</td><td>Channel is active. LED is on. LED blinks with 4 Hz, if the input value is above the measuring range, and with 0.5 Hz, if it is below the measuring range.</td></tr></table>	0	Channel is not active. LED is off.	1	Channel is active. LED is on. LED blinks with 4 Hz, if the input value is above the measuring range, and with 0.5 Hz, if it is below the measuring range.										
0	Channel is not active. LED is off.															
1	Channel is active. LED is on. LED blinks with 4 Hz, if the input value is above the measuring range, and with 0.5 Hz, if it is below the measuring range.															

12.1.4 Temperature Input External and Internal

Temperature internal	Input	Value of the temperature sensor in 1/10 degrees, status queried over read().														
Temp Intern Input cut off frequency	Property	In this client, the cutoff frequency for the software low pass filter is set. Value setting options are: <table><tr><td>0</td><td>1000 Hz</td></tr><tr><td>1</td><td>500 Hz</td></tr><tr><td>2</td><td>250 Hz</td></tr><tr><td>3</td><td>100 Hz</td></tr><tr><td>4</td><td>50 Hz</td></tr><tr><td>5</td><td>25 Hz</td></tr><tr><td>6</td><td>10 Hz</td></tr></table>	0	1000 Hz	1	500 Hz	2	250 Hz	3	100 Hz	4	50 Hz	5	25 Hz	6	10 Hz
0	1000 Hz															
1	500 Hz															
2	250 Hz															
3	100 Hz															
4	50 Hz															
5	25 Hz															
6	10 Hz															
Temp Intern Input Channel Active	Property	This client is used to set whether the respective channel is active. Possible values: <table><tr><td>0</td><td>Channel is not active. LED is off.</td></tr><tr><td>1</td><td>Channel is active. LED is on. LED blinks with 4 Hz, if the input value is above the measuring range, and with 0.5 Hz, if it is below the measuring range.</td></tr></table>	0	Channel is not active. LED is off.	1	Channel is active. LED is on. LED blinks with 4 Hz, if the input value is above the measuring range, and with 0.5 Hz, if it is below the measuring range.										
0	Channel is not active. LED is off.															
1	Channel is active. LED is on. LED blinks with 4 Hz, if the input value is above the measuring range, and with 0.5 Hz, if it is below the measuring range.															
Temperature external	Input	Value of the temperature sensor in 1/10 degrees, status queried over read().														
Temp Extern Input cut off frequency	Property	In this client, the cutoff frequency for the software low pass filter is set. Value setting options are: <table><tr><td>0</td><td>1000 Hz</td></tr><tr><td>1</td><td>500 Hz</td></tr><tr><td>2</td><td>250 Hz</td></tr><tr><td>3</td><td>100 Hz</td></tr><tr><td>4</td><td>50 Hz</td></tr><tr><td>5</td><td>25 Hz</td></tr><tr><td>6</td><td>10 Hz</td></tr></table>	0	1000 Hz	1	500 Hz	2	250 Hz	3	100 Hz	4	50 Hz	5	25 Hz	6	10 Hz
0	1000 Hz															
1	500 Hz															
2	250 Hz															
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Temp Extern Input Channel Active	Property	This client is used to set whether the respective channel is active. Possible values: <table><tr><td>0</td><td>Channel is not active. LED is off.</td></tr><tr><td>1</td><td>Channel is active. LED is on. LED blinks with 4 Hz, if the input value is above the measuring range, and with 0.5 Hz, if it is below the measuring range.</td></tr></table>	0	Channel is not active. LED is off.	1	Channel is active. LED is on. LED blinks with 4 Hz, if the input value is above the measuring range, and with 0.5 Hz, if it is below the measuring range.										
0	Channel is not active. LED is off.															
1	Channel is active. LED is on. LED blinks with 4 Hz, if the input value is above the measuring range, and with 0.5 Hz, if it is below the measuring range.															

12.1.5 Communication Interfaces

ALARM	Downlink	With this downlink the corresponding alarm class can be placed via the hardware editor.
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12.2 Global Methods

12.2.1 WriteUserCalib

Method for writing of user specific calibration or linearization data to the flash memory of the module.

Transfer parameters	Type	Description										
RawValue1	INT	Raw value from the pressure sensor for reference pressure 1 (e.g. 2 bar) which is shown on the server PressureRawValue of the class										
PressureValue1	INT	Pressure according to pressure measuring device for reference pressure 1 (e.g. 2 mBar) in 1/10 mBar										
RawValue2	INT	Raw value from the pressure sensor for reference pressure 2 (e.g. 1 mBar) which is shown on the server PressureRawValue of the class										
PressureValue2	INT	Pressure according to pressure measuring device for reference pressure 2 (e.g. 1 mBar) in 1/10 mBar										
FlashVersion	HINT	Optional parameter for setting the version in the flash (default: 1)										
bUserCalibData	BOOL	Optional parameter, whether the transferred calibration data should be used (default: TRUE)										
Return parameters	Type	Description										
dRetCode	DINT	Return value of the method <table><tr><td>0</td><td>Function successfully executed</td></tr><tr><td>-2</td><td>The configuration is currently being written</td></tr><tr><td>-3</td><td>The used hardware does not support this function</td></tr><tr><td>-6</td><td>Internal linearization table is invalid</td></tr><tr><td>-7</td><td>At least one transferred pressure value is outside the linearization table</td></tr></table>	0	Function successfully executed	-2	The configuration is currently being written	-3	The used hardware does not support this function	-6	Internal linearization table is invalid	-7	At least one transferred pressure value is outside the linearization table
0	Function successfully executed											
-2	The configuration is currently being written											
-3	The used hardware does not support this function											
-6	Internal linearization table is invalid											
-7	At least one transferred pressure value is outside the linearization table											

With the optional parameters the following short notation for the calibration is possible:

```
Retcode := toDM811.WriteUserCalib(RawValue1,
                                   PressureValue1,
                                   RawValue2,
                                   PressureValue2);
```

For deleting the user calibration data simply call the method and set bUserCalibData and bUserLinTable both to FALSE. Hereby the values of the other parameters are ignored.

12.2.2 ReadUserCalib

Method for reading user specific calibration data from the flash memory of the module.

Transfer parameters		Type	Description
pUserCalibData		^ t_UserCalibReadData	Pointer to the calibration data read by the module
Return parameters		Type	Description
dRetCode		DINT	Return value of the method
		0	Function successfully executed
		-1	Pointer to the calibration data invalid
		-2	No valid user specific calibration data available
		-3	The configuration is currently being written

13 Transport/Storage

INFORMATION



This device contains sensitive electronics. During transport and storage, high mechanical stress must therefore be avoided.

For storage and transport, the same values for humidity and vibration as for operation must be maintained!

Temperature and humidity fluctuations may occur during transport. Ensure that no moisture condenses in or on the device, by allowing the device to acclimate to the room temperature while turned off.

When sent, the device should be transported in the original packaging if possible. Otherwise, packaging should be selected that sufficiently protects the product from external mechanical influences. Such as cardboard filled with air cushioning.

14 Storage

INFORMATION



When not in use, store the operating panel according to the storage conditions. See chapter 13.

During storage, ensure that all protective covers (if available) are placed correctly, so that no contamination, foreign bodies or fluids enter the device.

15 Maintenance

INFORMATION



During maintenance as well as servicing, observe the safety instructions from chapter 2 Basic Safety Directives.

15.1 Service

This product was constructed for low-maintenance operation.

15.2 Repair

INFORMATION



In the event of a defect/repair, send the device with a detailed error description to the address listed at the beginning of this document.

For transport conditions, see chapter 13 Transport/Storage.

16 Disposal

INFORMATION



Should you need to dispose of the device, the national regulations for disposal must be followed.

The device appliance must not be disposed of as household waste.



Documentation Changes

Change date	Affected page(s)	Chapter	Note
18.02.2016	5	1.4 Electrical Requirements	Graphics added
28.04.2016	14	5 Mounting	Graphics distances
09.12.2016	7	1.5 Miscellaneous	UL added
17.08.2017	7	1.6 Environmental Conditions	Pollution Degree
	11	3.2 Applicable Connectors	Sleeve length added Added info regarding ultrasonically welded strands
18.10.2017	12	3.3 Label Field	Added chapter
	15	5 Mounting	Graphic replaced
18.07.2019	18	7 Supported Cycle Times	Chapter added
08.09.2020	20	8 Hardware Class DM811	Chapter added
04.11.2020	15	5 Mounting	Expansion functional ground connection
03.09.2021	5	1.3 Digital Input Specifications	Signal level and Switching threshold
26.07.2023		Document	General chapters added, design