

# DM 811

## S-DIAS Absolute Pressure Input Module

### Operating Manual

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### **Translation from German**

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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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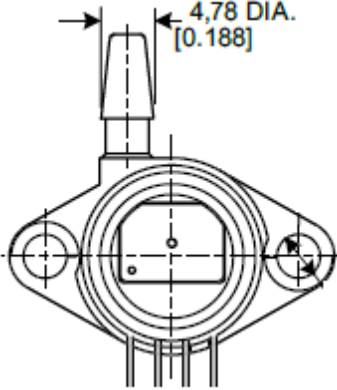
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# 1 Technical Data

## 1.1 Absolute Pressure Input Specifications

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

<sup>(1)</sup> 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.

## 1.2 Temperature Input Specifications (PT100)

Number	1	
Measurement range	100.0-212.1 $\Omega$	
	PT100	
	0-300 $^{\circ}\text{C}$	
Resolution	0.1 $^{\circ}\text{C}$	
Conversion time per channel	1 ms	
Cable break monitor	yes	
Input filter hardware	typically 1 kHz	low pass 3 <sup>rd</sup> order system
Input filter software	configurable	
Precision of analog channel measurement	$\pm 0.5\%$ of maximum measurement value	

## 1.3 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	

## 1.4 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

**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!**

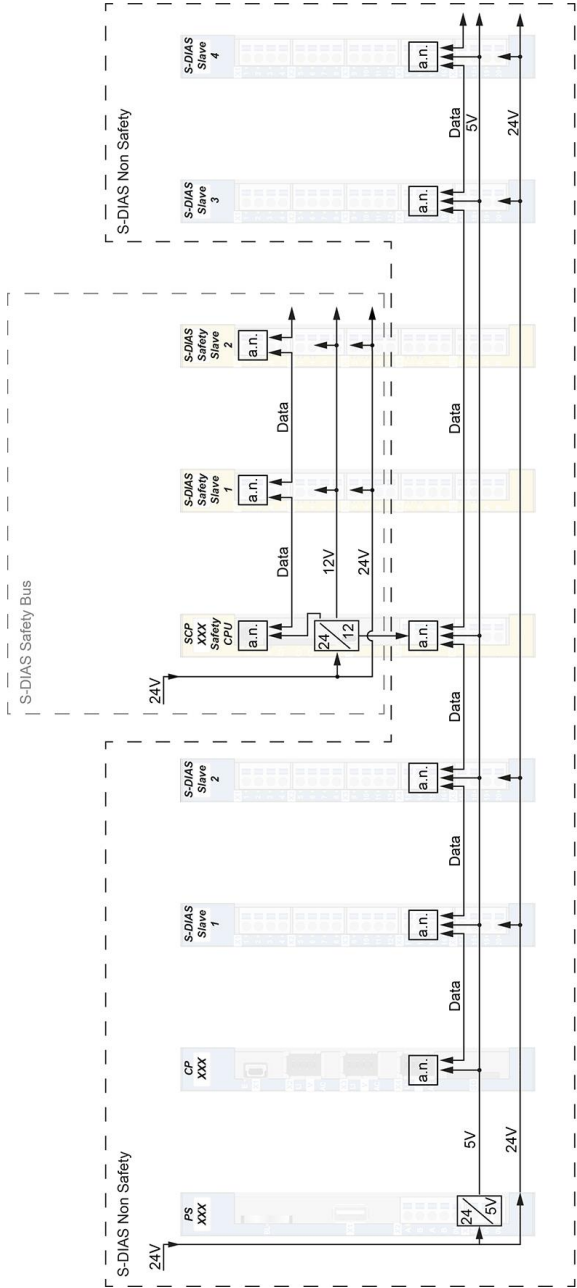
**The specification for the current can be found in the module-specific documentation under "Electrical Requirements".**

**Si ce module S-DIAS est connecté à un module d'alimentation S-DIAS suivi de plusieurs modules S-DIAS, le courant total des modules utilisés doit être déterminé et vérifié.**

**Le courant total de l'alimentation +24 V ne peut pas dépasser 1,6 A!  
Le courant total de l'alimentation +5 V ne peut pas dépasser 1,6 A!**

**Le cahier des charges pour le courant peut être trouvé dans la documentation spécifique au module sous "Spécifications électriques".**





Wiring S-DIAS Safety in S-DIAS System

a.n. = active node

- each S-DIAS module is an active module (active node)
- Safety CPU is connected to the S-DIAS bus (incl. +5 V supply)
- Safety bus is independent and separated from the S-DIAS bus

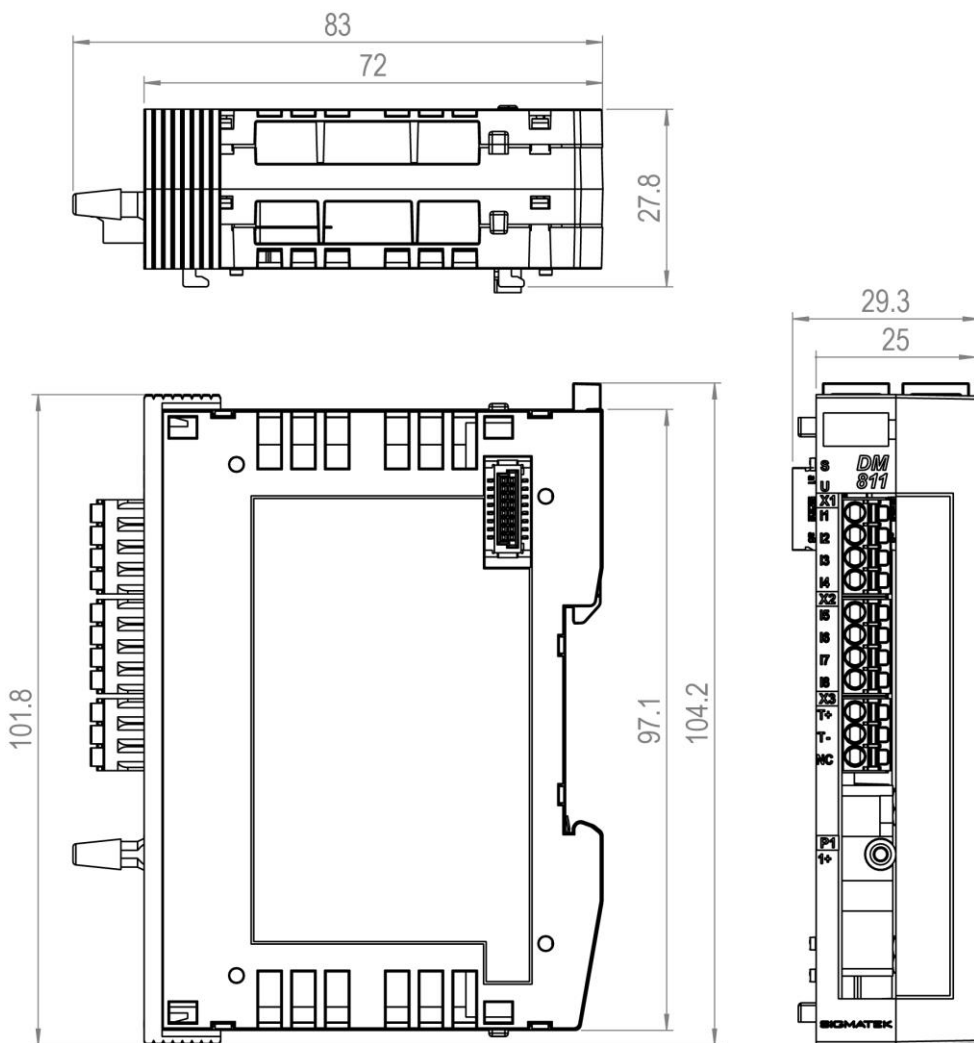
## 1.5 Miscellaneous

Article number	20-008-811
Hardware version	1.x
Standard	UL 508 (E247993)
Approbations	UL, cUL, CE

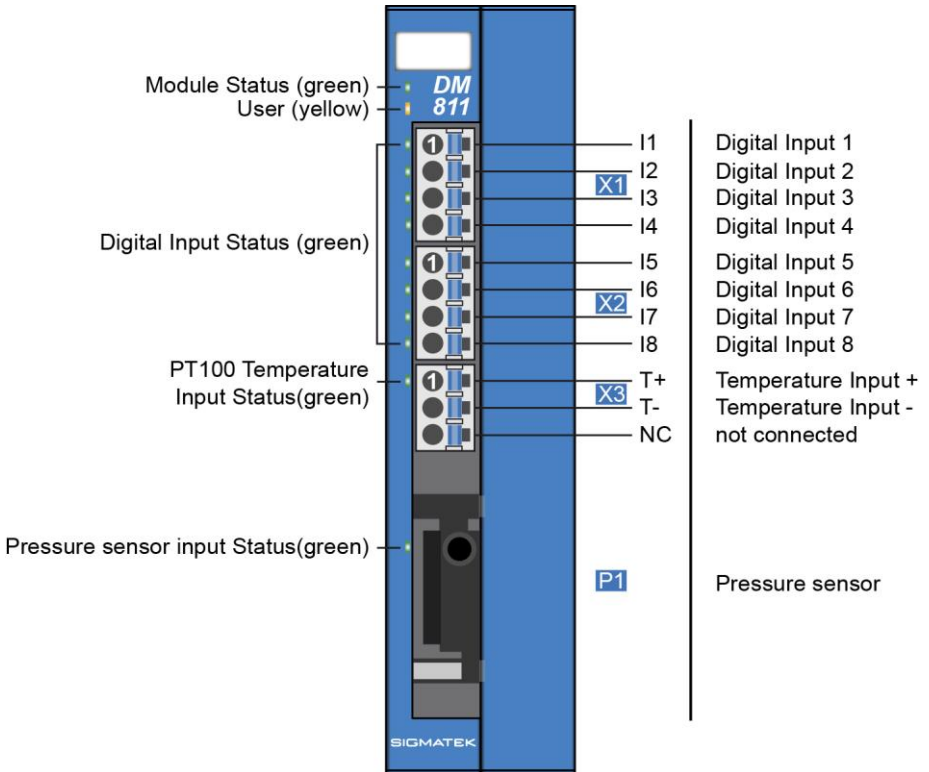
## 1.6 Environmental Conditions

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 altitude up to 2000 m	
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

## 2 Mechanical Dimensions



### 3 Connector Layout



### 3.1 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

### 3.2 Applicable Connectors

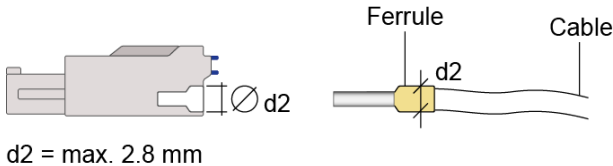
#### Connectors:

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



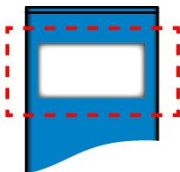
#### IMPORTANT:

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

#### IMPORTANT:

Le module S-Dias **NE PEUT PAS** être inséré ou retiré sous tension.

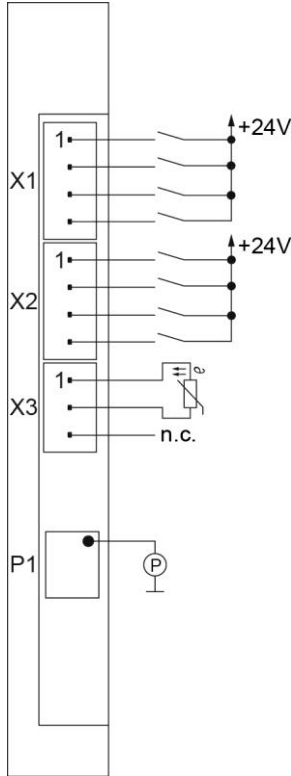
### 3.3 Label Field



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

## 4 Wiring

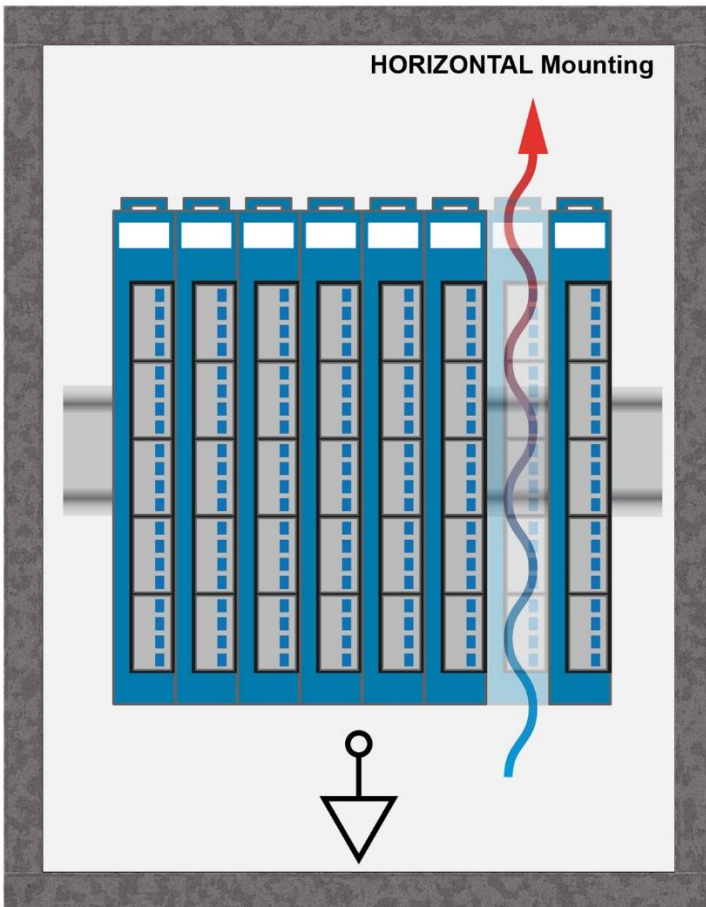
### 4.1 Wiring Example



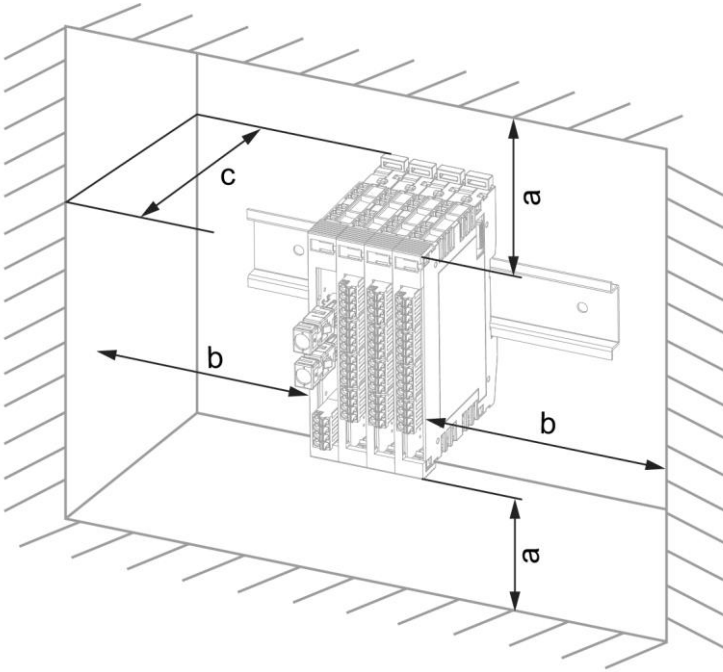


## 5 Mounting

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:



<b>a</b>	<b>b</b>	<b>c</b>
<b>30 mm (1.18")</b>	<b>30 mm (1.18")</b>	<b>100 mm (3.94")</b>

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

## 6 Addressing

### 6.1 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

### 6.2 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

## 7 Supported Cycle Times

### 7.1 Cycle Times below 1 ms (in $\mu\text{s}$ )

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

### 7.2 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

## 8 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 (DM8111)
[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]

```

## 8.1 Interfaces

### 8.1.1 General

<b>Class State</b>	State	Shows the actual status of the hardware class.																
<b>Device ID</b>	State	Shows the Device ID of the hardware module.																
<b>FPGA Version</b>	State	FPGA version of the module in 16#XY (e.g. 16#10 = version 1.0).																
<b>Hardware Version</b>	State	Hardware version of the module in format 16#XXYY (e.g. 16#0120 = Version 1.20)																
<b>Serial Number</b>	State	Shows the serial number of the hardware module.																
<b>Retry Counter</b>	State	Increments, when a transfer fails.																
<b>LED Control</b>	Output	<p>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:</p> <table border="1"> <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																	
<b>Required</b>	Property	<p>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.</p>																
<b>Firmware Version</b>	State	Shows the used firmware version of the hardware module.																
<b>Firmware Errors</b>	State	<p>Shows the status bits of the FW. The respective bits mean the following:</p> <table border="1"> <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																	
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Bit 7	Sensor error																	
<b>Firmware Status</b>	State	<table border="1"> <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																	

<b>Range Detection</b>	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

### 8.1.2 Digital Inputs 1-8

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

### 8.1.3 Pressure Input

<b>Pressure Raw Value</b>	Input	Value of the pressure sensor as raw value in 1/10 mBar, status queried over read().														
<b>Pressure Not Linearized</b>	Input	Value of the pressure sensor not linearized in 1/10 mBar, status queried over read().														
<b>Pressure Linearized</b>	Input	Value of the pressure sensor linearized in 1/10 mBar, status queried over read().														
<b>Pressure Linearized Temperature Compensated</b>	Input	Linearized value of the pressure sensor and compensated by the internal temperature sensor, in 1/10 mbar, status inquiry via read ().														
<b>Pressure Input cut off frequency</b>	Property	Here the limit frequency for the software low pass filter is set. Value setting options are: <table border="1" data-bbox="403 1005 1013 1228"> <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
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1	500 Hz															
2	250 Hz															
3	100 Hz															
4	50 Hz															
5	25 Hz															
6	10 Hz															
<b>Pressure Input Active</b>	Property	Here you set, whether the according channel is active. Possible values: <table border="1" data-bbox="403 1244 1013 1364"> <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.										
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### 8.1.4 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	<p>In this client, the cutoff frequency for the software low pass filter is set. Value setting options are:</p> <table border="1"> <tbody> <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> </tbody> </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	<p>This client is used to set whether the respective channel is active. Possible values:</p> <table border="1"> <tbody> <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> </tbody> </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.															
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Temperature external	Input	Value of the temperature sensor in 1/10 degrees, status queried over read().														
Temp Extern Input cut off frequency	Property	<p>In this client, the cutoff frequency for the software low pass filter is set. Value setting options are:</p> <table border="1"> <tbody> <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> </tbody> </table>	0	1000 Hz	1	500 Hz	2	250 Hz	3	100 Hz	4	50 Hz	5	25 Hz	6	10 Hz
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5	25 Hz															
6	10 Hz															
Temp Extern Input Channel Active	Property	<p>This client is used to set whether the respective channel is active. Possible values:</p> <table border="1"> <tbody> <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> </tbody> </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.															

### 8.1.5 Communication Interfaces

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

### 8.2.1 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 border="1" data-bbox="554 805 1016 1005"> <tbody> <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> </tbody> </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.

## 8.2.2 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 <table border="1" data-bbox="532 391 991 534"> <tbody> <tr> <td>0</td> <td>Function successfully executed</td> </tr> <tr> <td>-1</td> <td>Pointer to the calibration data invalid</td> </tr> <tr> <td>-2</td> <td>No valid user specific calibration data available</td> </tr> <tr> <td>-3</td> <td>The configuration is currently being written</td> </tr> </tbody> </table>	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
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									

## 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 11	1.6 Environmental Conditions 3.2 Applicable Connectors	Pollution Degree Sleeve length added Added info regarding ultrasonically welded strands
18.10.2017	12 15	3.3 Label Field 5 Mounting	Added chapter 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