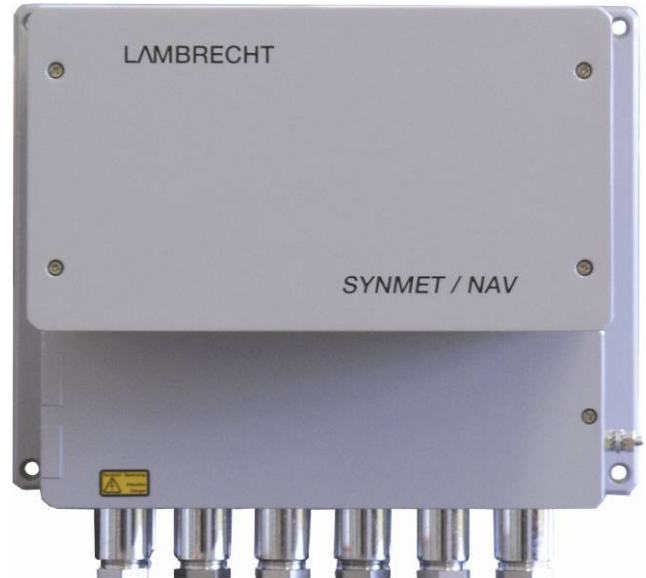




SYNMET IND

Id-No. 00.95661.610000

(Picture without cover)



SYNMET NAV

Id-No. 00.95664.610000

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1 Introduction

The following operating instructions shall provide a description of the main steps required to successfully set into operation a SYNMET weather station.

In the manufacturer's plant all parameters for operation are configured according to the customer's requirements and stored in a non-volatile memory so that after completing the mechanical and electrical installation and switching on the power supply voltage the system will be started automatically.

In addition to this guide a mandatory wiring diagram is required that is created specifically for each delivered system and is included in with the operating instructions for the other components (e.g. sensors, software etc.).

The configuration can be changed using the configuration and test software "SYNMET-Commander". However, an experienced user should only do this because incorrect settings may lead to serious system errors.

Before beginning to assemble and install the station make sure that all present material is complete.

Especially for application on ships the intelligent data acquisition and interface systems SYNMET / NAV converts the analogue and digital signals of the connected sensors and transmits the instantaneous values in a standardised data format acc. to NMEA 0183 standard to peripheral instruments, e.g. a board computer.

Details of the message format are described in the NMEA 0183 standard whereas all project relevant requirements are mentioned in a specific Interface Design Specification (IDS).

2 Short Instruction “step-by-step”

All working steps required for a safe setting to work procedure are mentioned here in a short-form:

- (a) check of completeness of the system
- (b) preparations of the installation sites (mast foundations, cable installation etc.)
- (c) erection of the masts and mounting of the sensors
- (d) mounting of the data logger at its desired place
- (e) mounting and installation of accessories (power supply units, junction boxes etc.)
- (f) termination of signal cables according to the wiring diagram
- (g) termination of telemetry cables according to the wiring diagram (online systems only)
- (h) termination of power supply cables according to the wiring diagram
- (i) final check of the electrical installation
- (j) starting the computer and installing the evaluation software (e.g. MeteoWare – Pro)
- (k) power-on by means of the two switches on the front panel of the power supply board of the SYNMET
- (l) automatic configuration and further required settings in the software according to a separate manual

3 Assembling of the device housing

The SYNMET data acquisition device is mounted preferably on a mounting plate located on the mast or on a building wall. The mounting place should be easily accessible to facilitate servicing and maintenance.

If the appropriate accessories were not included in the factory delivery you must bore four mounting holes in the mounting plate according to the boring plan illustrated below. We recommend using rustproof fixing material made of stainless steel to prevent the corrosion of the material.

Since this device develops a relatively small amount of heat (maximum power consumption of 75 watts) there are no particular precautions to be taken when the device is mounted in an exterior housing.

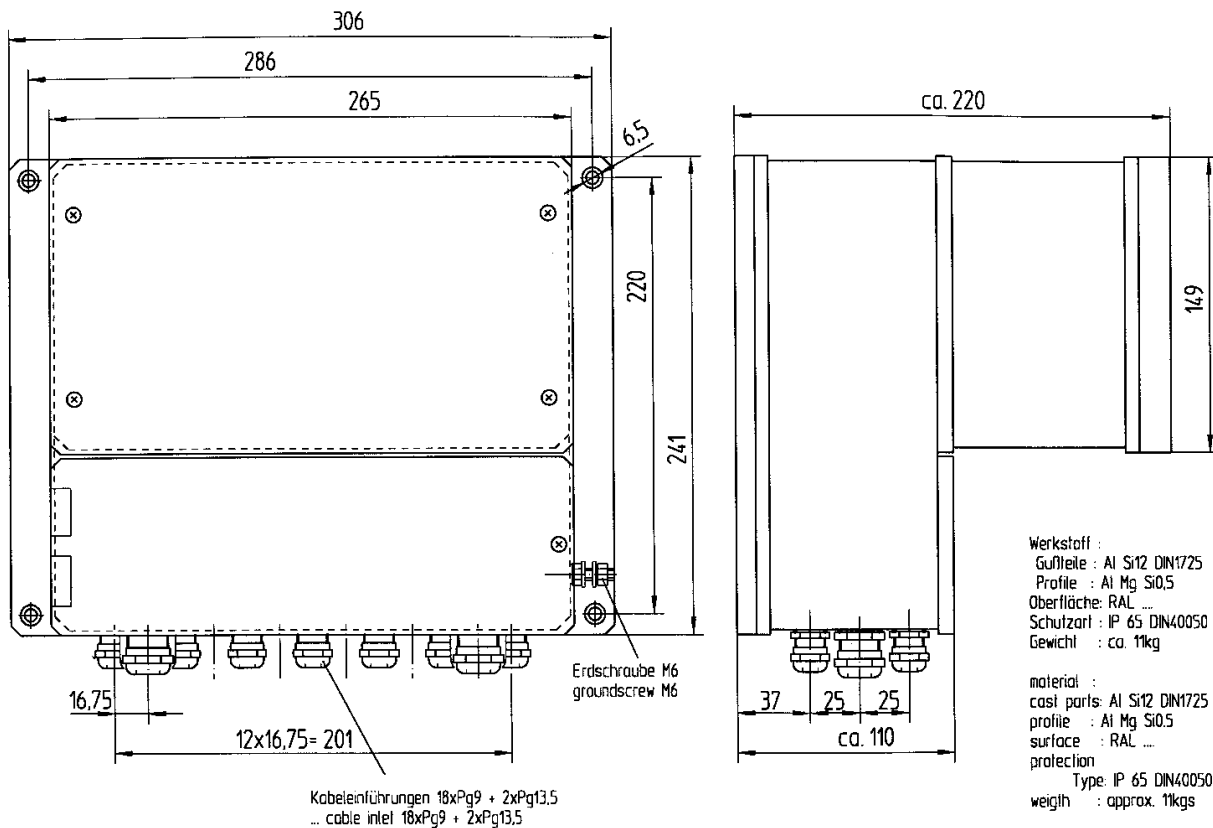


Figure: Housing dimensions and bore holes

4 Electrical connection

4.1 General

The electrical connection of the signal and supply lines is made according to the included wiring diagram. To facilitate the connection the connecting terminals for the individual sensors and outputs are designed as spring terminals.

The numbered terminal blocks of all inputs and outputs are plugged on a counter connector on the motherboard and can be separately disconnected. To make the electrical connection you only have to insert the bared wire end provided with an end sleeve into the terminal opening. The wire is fixed by an internal spring mechanism that ensures a good electrical connection. To disconnect the wire press down the orange button using a small screw driver. The corresponding wire can then be removed.

All orange power supply connectors on the left side of the terminal box are designed as screw terminals.

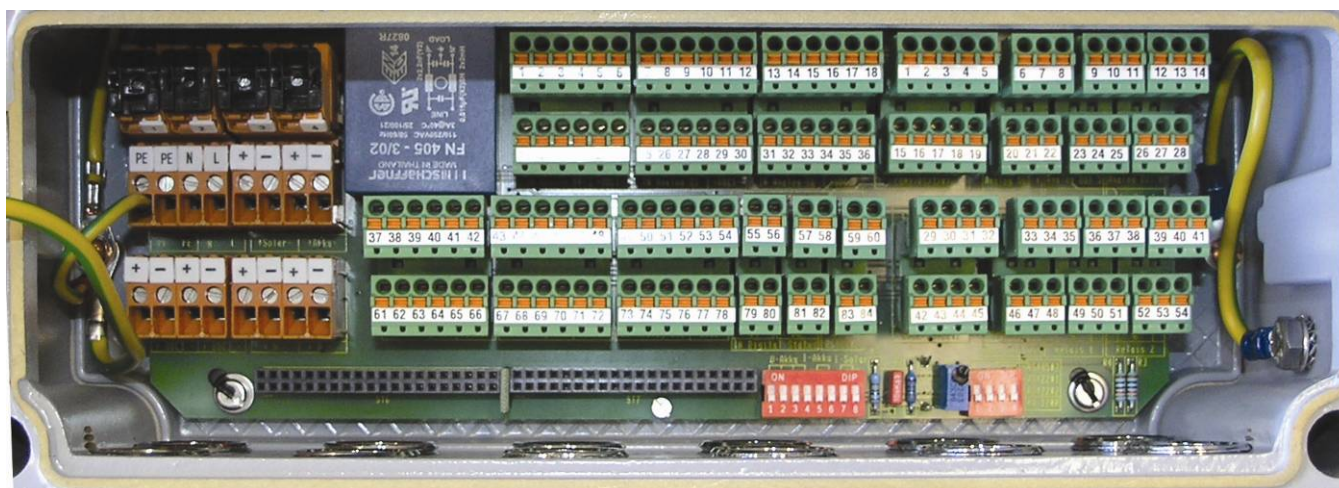


Figure: SYNMET housing with opened terminal cabinet

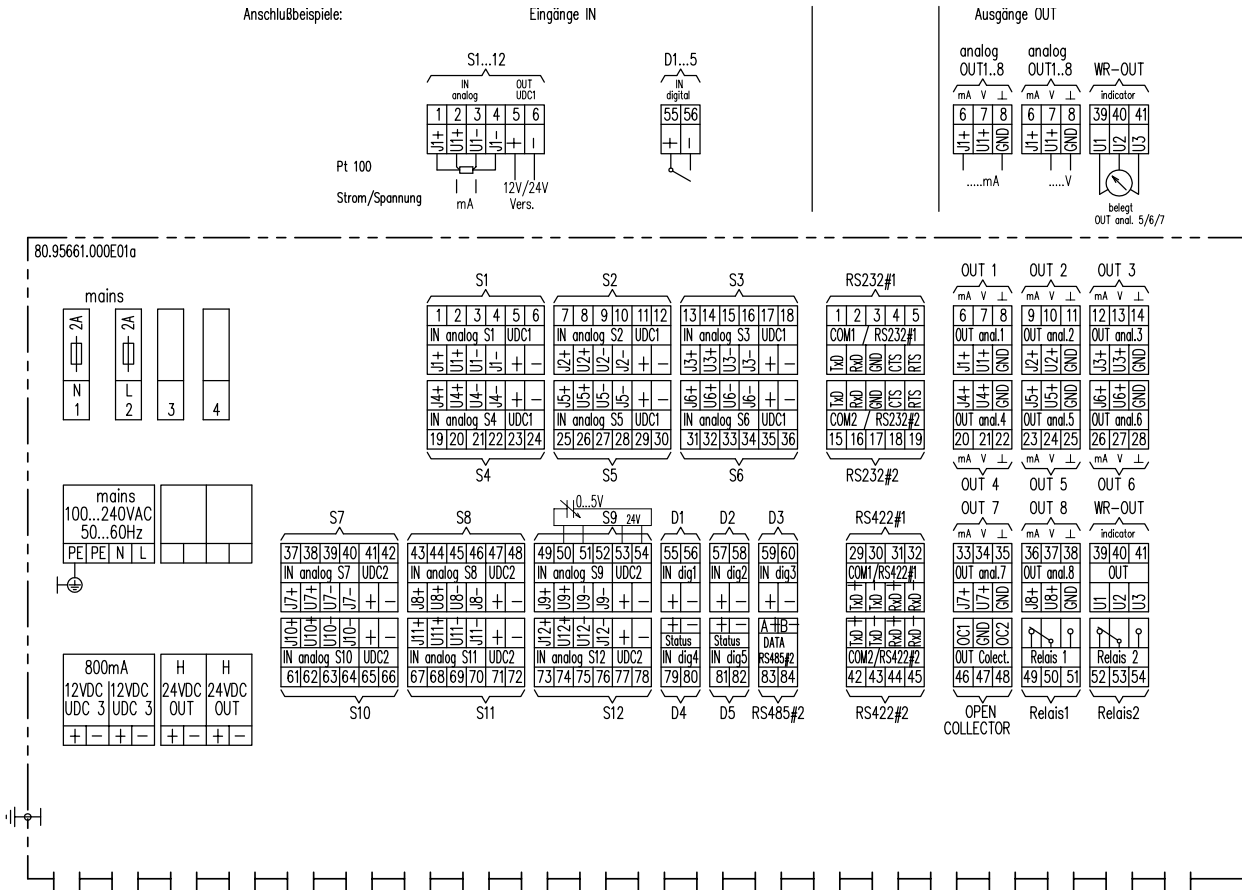


Figure: Illustration of the terminals

4.2 Signal lines

LAMBRECHT almost exclusively recommends shielded AWG cables to be used for the connection of sensors and for other signal lines. This cable has a wide temperature range and is very resistant to UV radiation. During many years of experience this specific cable type has turned out to be particularly appropriate. The cable is commercially available and can be purchased from your local wholesaler for electrical equipment.

The cable consists of several coloured wires with a common shielding and an outer coating. The colour code of the individual wires of a cable with up to 12 wires is shown below:

Wire No.	AWG - Colour code
1	black (bk)
2	brown (br)
3	red (rd)
4	orange (or)
5	yellow (ye)
6	green (gn)
7	blue (bl)
8	violet (vio)
9	grey (gr)
10	white (wt)
11	white-black (wt-bl)
12	white-brown (wt-br)

Table: AWG – Cable Codes

4.3 Preparing the cable glands SYNMET / IND

The housing of the SYNMET data acquisition station has high-quality cable glands which when installed expertly do not affect the housing's system of protection IP 65 and its EMC behaviour. When the device is delivered all cable glands are closed with round brass plates. To ensure the housing is tight verify that cable glands, which are not used, are closed with round plates. The following figures show the required stripping lengths and how to mount the cable shielding.

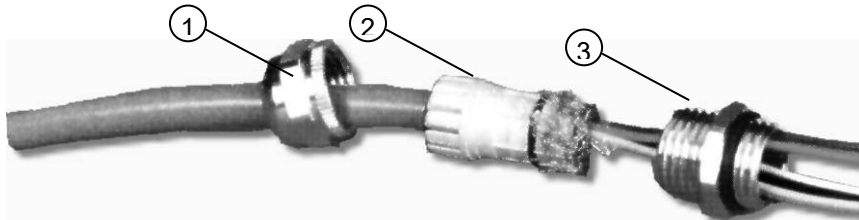


Figure: Preparing the cable glands

To introduce a cable first remove the upper cap nut and pull out the interior part. The lower part with the O-ring – as shown on the photograph – remains in the housing.

After pushing the nut and the interior part (please take notice of the correct order) onto the prepared cable, the entire shield braiding is bent backward so that it rises above the O-ring on the plastic body.

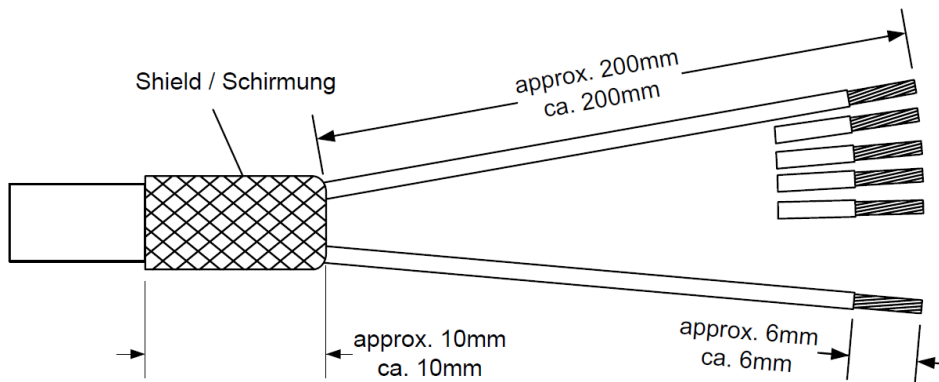


Figure: Termination of the shielded cable

Since the outer diameters of the cables may differ two different types of cable glands are available. Please make sure the brass plate is left as a lock or sealing in unused cable glands.

Type	Amount	Diameter of cable	Wrench size
PG 9	18	4 – 8 mm	SW 17
PG 13,5	2	7 – 12 mm	SW 22

Table: Table of the cable glands

4.4 Preparing of the wire ends

The ends of the copper strands of the AWG cables should generally be provided with core cable ends to ensure secure contact and to avoid short circuits caused by protruding strand wires, respectively. The sleeves are pinched onto the wire ends using special pliers.

If you have a greater number of cables it may also be useful to mark each wire with the number of the corresponding terminal.

4.5 Connecting the terminal connectors

Depending on the cable to be connected (e.g. sensor, serial interface) the terminal plugs that can be disconnected from the motherboard have a different number of poles (from 2 to 6 wires for individual cables).

To facilitate the connection, the individual connectors can be removed from the sockets. According to the wiring diagram the cables supplied with end sleeves must now be introduced into the appropriate openings. They are fixed by self-locking spring terminals. To unlock the cable press down the orange button using a small screw driver.



Figure: SYMMET spring terminal blocks

After making the connections the terminal blocks can be reinserted in their appropriate places. The corresponding labels are printed on the components side of the motherboard.

Amount	Poles	Use
12	6	Sensors and their supply voltages (I+, I-, U+, U-, DC1/2; DC§)
2	5	Data interfaces COM1/COM2 (RS 232c)
2	4	Data interfaces COM1/COM2 (RS 422)
12	3	Outputs: analogue outputs (DAC), Open Collector, Relays
6	2	Digital sensors, event, COM2/RS 485

Table: Distribution of the spring terminal blocks

Cross sections of conductors: 0.14 to 1.5 mm² without end sleeves
 0.25 to 1.5 mm² for end sleeves without plastic collars
 0.25 to 0.5 mm² for end sleeves with plastic collars

AWG – cable types: AWG 28 to AWG 16 seizures

4.6 Connecting the screw terminals

The appropriate supply voltage of logger is connected to the orange screw terminals on the left side of the terminal box.

Depending on the version of the data acquisition device – see also the EDP number code in this manual – the DC3 voltage listed here will also be available to supply external consumers (sensor supply).

Number	Number of poles	Use
1	4	Output for external consumers (UDC3) (optional: 12 V _{DC} or 24 V _{DC}) max. 10 W
1	4	Sensor excitation (heating device) 24 V _{DC} , max. 30 W (optional)

Table: Division of the screw-terminal blocks

Cross sections of conductors: 0.50 to 2.5 mm² without end sleeves
0.50 to 1.5 mm² for all end sleeves with and without plastic collars
AWG – Cables: AWG 26 to AWG 14 sizes

5 Data transmission

5.1 Interface converter RS 422

At this point, we should like to insert some brief remarks on the most frequent way to transfer data to the personal computer. Since the computer usually is not more than 1,000 meters away from the weather station a simple short distance or line driver modem which converts the RS 422 signal of the data acquisition station into an RS 232c signal for the PC will do.

5.2 On-site connection using a laptop

You can use a portable computer to read out data at the station or to check the station.

The data cable must be a 9-pole cable wired according to the following diagram.

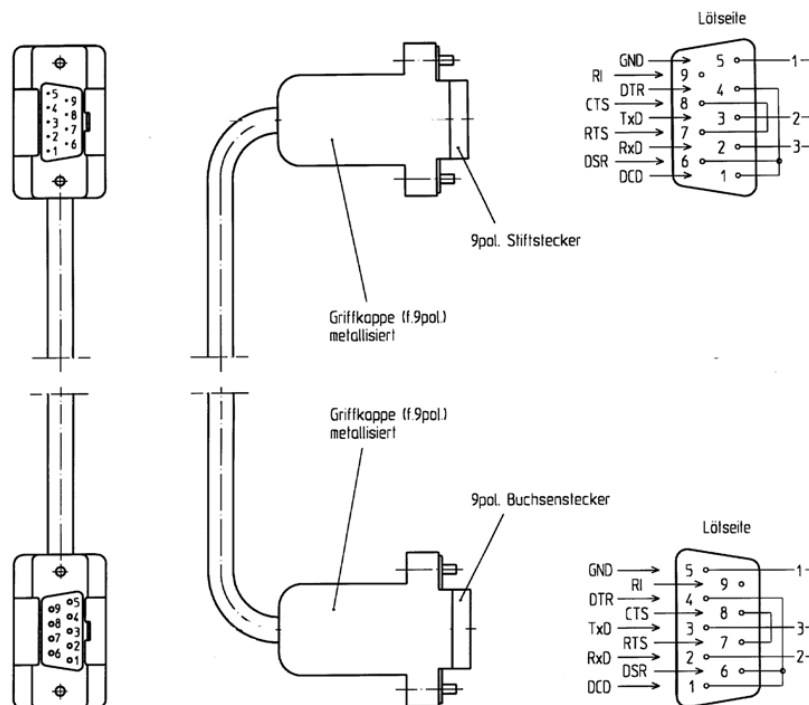


Figure: Wiring of a 9-pole data cable

If this kind of data cable is temporarily connected make sure the serial interface COM1 in the terminal box is not occupied at the same time. This restriction also applies to different standards, e.g. RS 232c and RS 485 connected to a serial port. You may have to disconnect the green connector from the motherboard.

Alternatively, a PC or a laptop can be connected with the SYNMET for the configuration via a mini USB cable (mini USB to USB). (See "service" connection in chapter 7, picture "SYNMET panel").

5.3 GSM modems, telephone modems and radio modems

Putting into operation and configuring other modems are described in separate operating instructions.

6 Start of the measuring system

6.1 Before switching on

Before you switch on the supply voltage it is recommended to use the specific wiring diagram for the measuring station to verify that all electrical connectors are correct and firmly inserted.

6.2 Power on

For switching on the SYNMET-IND firstly the case cover has to be opened. For opening the case cover of the SYNMET-NAV, the 4 screws in the corners have to be loosed.

Before interconnecting the supply voltage, the switches for "AC power" and "DC output" must be turned "OFF".

After unlock the supply voltage, the counter for "AC power" will be switched "ON", whereon the LED "AC power" shines. Subsequently the counter for "DC power" can be switched "ON" wherewith the internal supply voltages +/- 12 VDC and 5 VDC are switched on and the LED's "DC output", "+12 VDC", "-12 VDC", "5 VDC" shine. (See chapter 7, picture "SYNMET panel")

As all configuration parameters are already preset at the factory according to the client's requirements, no further inputs are necessary. Wiring correctly, the SYNMET goes into service automatically after switching on the supply voltage.

After having started successfully the system, the case cover has to be closed again. In case of the SYNMET-NAV, all screws have to be tightened again in order to avoid the penetration off dirt or water.

7 Operating and control elements

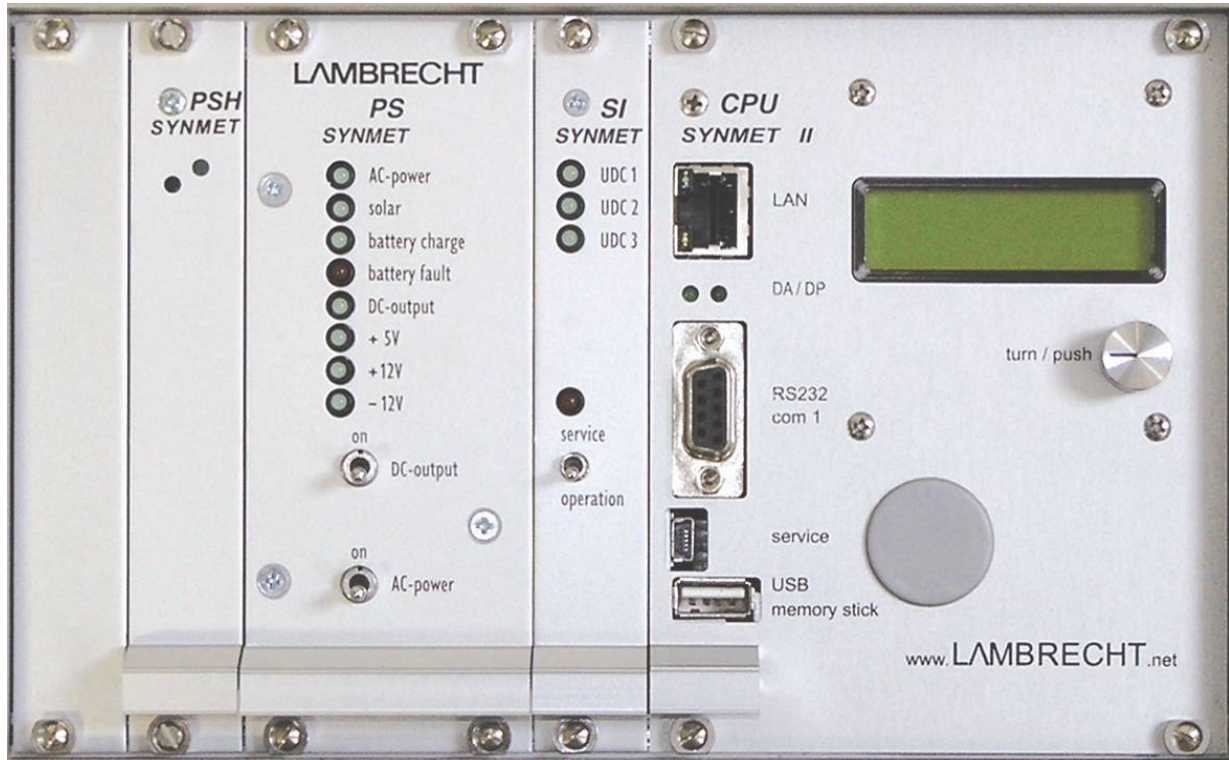


Figure: Illustration of the SYNMET front panel

7.1 Switches and buttons on the front panel

Power Supply Module / Power Supply / PS		
„AC – power“		AC power supply is switched on / off
"DC – output"		All DC-outputs (+5 V, +12 V – 12 V) are switched on / off
Sensor – Interface – Board / SI		
"SERVICE"	"OPERATION"	status record of service activities (refer also to clause 11.2)
Controller Board / CPU		
"reset"		Turn-push button for menu navigation

7.2 Light emitting diodes on the front panel (LED's)

Power Supply Module / Power Supply / PS	
"AC-power"	external AC – power supply is present and switched on
"solar"	N/A
"battery charge"	N/A
"battery fault"	N/A
"DC-output"	internal DC – power supply voltages are present and switched on
"+5 V" "+12 V" "-12 V"	Individual display of internal voltages
Sensor – Interface – Board / SI	
"SERVICE" "OPERATION"	indication of switch position service "SERVICE"
UDC 1	<i>internal DC supply DC 1 for external consumers is present</i>
UDC 2	<i>internal DC supply DC 2 for external consumers is present</i>
UDC 3	<i>internal DC supply DC 3 for external consumers is present</i>
Controller Board / CPU	
"DA"	mode of operation: "Data Acquisition"
"DP"	mode of operation: "Data Processing"

Remark: optional equipment functions are printed in cursive letters

7.3 DIP switches in the terminal cabinet

Next to the ESD overvoltage protection module there are two groups of DIP switched. Purpose and function are mentioned below.

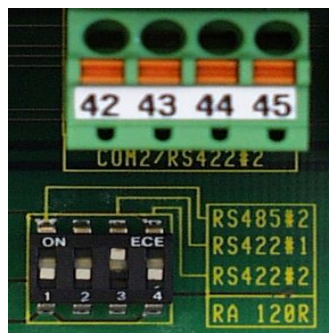


Figure: Dip switches

No.	Description	Function
S 1.1	RS 485#2	ON: 120 Ohm resistor in the receive channel is active
S 1.2	not in use	N/A
S 1.3	RS 422#1	ON: 120 Ohm resistor in the receive channel is active
S 1.4	RS 422#2	ON: 120 Ohm resistor in the receive channel is active

Table: 120 Ohm load resistor for serial interfaces

8 Software

8.1 “MeteoWare“ for data evaluation

To communicate with the SYNMET data logger LAMBRECHT provides several versions of the data evaluations software “MeteoWare” (Version 2.80 or higher). For land-based stations for example the “MeteoWare-CS” is in several increments available. Especially for marine applications, the “MeteoWare-NAV” is used.

For information about installing and operating of this software see the separate operating instructions.

8.2 “SYNMET-Commander“ for test and configuration purposes

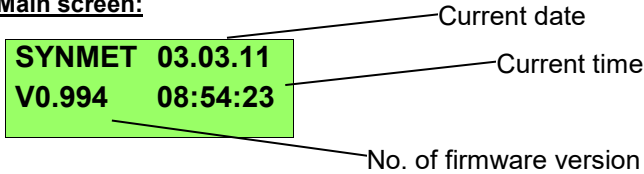
The powerful SYNMET-Commander test program provides advanced test and configuration functionality. Because this program enables you to change important system parameters it should be used by experienced users only.

9 Display menu

The controller unit have a jog-dial and a double spaced display for simple operating functions.

The display will be activated by pushing the jog-dial. The user can scroll the main menu by turning the jog-dial as listed below:

Main screen:



After pushing the jog-dial the next menu level will be displayed. By turning the jog-dial the following menu items can be selected:

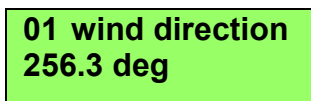
Menu items:



For selecting a menu item the jog-dial have to be pushed. The different menu items are described here after. If no enter will be executed for one minute, the display will be switched off automatically. Afterwards the display is in the main menu again.

9.1 Realtime Values

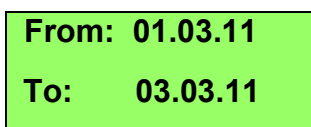
The menu item "Realtime Values" is for showing the current measuring values of the configured sensors.



By turning the jog-dial the current measuring values of the different sensors can be scrolled.

9.2 Data Export

The menu item "Data Export" allows to store measurement values of free defined space of days on a plugged USB-Stick. In the example below all measuring values from beginning of 01.03.11 to close of 03.03.11 will be stored.



The format of date is **dd.mm.yy**. By pushing the jog-dial the cursor jumps to the next input field. Turn the jog dial for setting the respective numeric characters. Afterwards all inputs are done, push the jog-dial for starting the data export.

The data are stored encoded per day in files with the name format "yyyyymmdd.kmh". For example the file „20110308.kmh“ is including the measuring values of 08.03.2011 and the file „20110309.kmh“ include the measuring values of 09.03.2011.

Additional to the measuring values the configuration of the SYNNMET will be stored on the USB-Stick as shown below. The configuration file „synmet.cfg“ will be stored in the folder "synmet". The folder "synmet" will be created automatically if it does not exist.



Please note the data export overwrites all existing files in the "synmet"-folder.



9.3 Config Import



ATTENTION! The import of a new SYNMET configuration by means of a USB-stick erase automatically all stored measuring values on the SYNMET.

For configuration of the SYNMET by means of a USB-Stick use the menu item “Config Import”. Before “Config Import” can be started an USB-Stick with a SYNMET configuration file „synmet.cfg“ in the folder “synmet” have to be plugged in. The figure below shows the request for configuration password. The password is the current date (of the SYNMET) in the format **ddmmyy**.

Enter Password
000000

By pushing the jog-dial the cursor jumps to the next input field. Turn the jog dial for setting the respective numeric characters. Afterwards all inputs are done; push the jog-dial for showing the screen below:

Update?
y/n left/right

Turn left the jog-dial for “YES”, starts the import of configuration. Or turn right the jog-dial for “NO”, which cancel the import. After import of configuration the CPU restarts automatically.

9.4 Firmware Update

The menu item “Firmware Update” allows the installation of a new SYNMET firmware. The description of the firmware update will be delivered with the new Firmware in a separate document.

9.5 Display Off

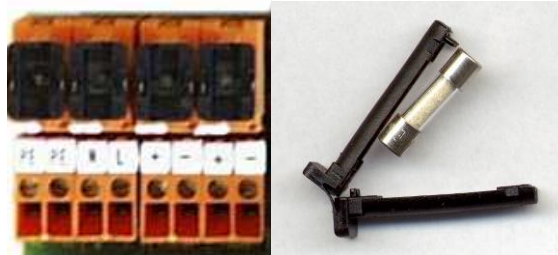
The menu item “Display Off” deactivates the display until the jog dial will be moved again. Afterwards the display is in the main menu again.

10 Fuse elements

10.1 Fine wire fuses

The device is equipped with several fine-wire fuses, so-called G fuse 5 x 20 mm on the left hand side. The fuse carriers are in the upper left corner of the terminal box. In case of a failure you must find the reason why the fuse was blown (e.g. short circuit, overload) before inserting the new fuse with the same electrical values. The fuse easily can be exchanged after having pulled out the black fuse holder from the socket (see figures below).

Defective items cannot be repaired and have to be replaced by spare fuses with the same values.



Figures: Location of the fuses and fuse holder

Fuse type:

G fuse 5x 20 mm, 2.0 A, (Type 521), version with semi time-lag (M) switch-off (M 250V / 2.0 A)

A set of spare fuses is included with the new device and is fixed inside the terminal box cover when the device is delivered.

10.2 ESD module (Over voltage protection)

As an option an ESD module (*ESD = electro static discharge*) is available that protects the measuring inputs and interfaces against overvoltage influences (electro static discharge). The protection concerns:

- Direct discharge: 8 kV
- Air discharge: 15 kV
- Current pulse: $\pm 3 \text{ A} / 20 \mu\text{s}$; $\pm 2 \text{ A} / 100 \mu\text{s}$; $\pm 5 \text{ A} / 4 \mu\text{s}$

When the module reacts error messages will be displayed for one or more channels. After removing the module these error messages should not reappear.

The unprotected measuring station can continue to operate. The ESD module cannot be repaired and should be replaced as soon as possible, to maintain the overvoltage protection.

You can obtain this module from LAMBRECHT as a spare part under the Id-No. 32.95661.009 000.

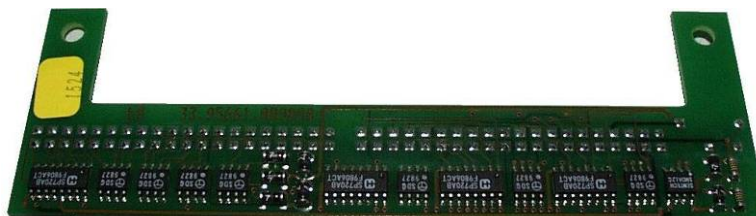


Figure: ESD module (components side)

11 Error messages and failures

11.1 Error messages

General

If failures or other events occur the following messages may appear both on the display of the SYNMET data logger module and on the PC monitor.

“BAD-SIG“ = Bad Signal

Depending on the specific measuring station configuration this error may have different causes:

A digital filter (over sampling) is enabled in the analogue measuring inputs, and the number of acceptable individual measurements is too small.

If sensors with serial output signals are used an error occurred when the received string was converted into a numerical value.

“CAL-ERR“ = Calculation error

Depending on the specific measuring station configuration this error may have different causes:

A wrong setting caused an error in the formula interpreter of the data logger module.

When the dew point temperature is calculated the message may be caused by an undefined hygrometer if a formula is executed internally.

“NO-S-DATA“ = No Serial Data

This message only appears when serial sensors are connected which have not sent any data to the system within the previously specified timeout period.

“OPEN-CH“ = Open Channel

There is no sensor connected to one of the configured analogue channels 1 to 12. The message appears if the corresponding sensor interface board (SI) does not use shunts or bleeder chains, e.g. if a Pt 100 platinum measuring resistor is connected with a four-wire circuit.

“OV-FLOW“ = Parameter Overflow

A sensor's given limits (beginning and end of measuring range) were exceeded or were not reached.

“OV-MSUM“ = Not enough individual measurements

When representative mean values are calculated the internal factory setting requires that at least 95% of the individual measured values within this interval be correct. If this limit is not reached, this message will be displayed always.

“REF-ERR“ = Correction value incorrect

Depending on the specific measuring station configuration this error may have different causes:

For analogue sensors the internal precision reference on the SYNMET CPU is not measured correctly. The module must be replaced for repair.

The configured defaults of a serial sensor at the COM ports COM1 to COM6 of the SYNMET data logger module are not correct.

“SERVICE“ = Service & Maintenance

This message is displayed for control purposes depending on the position of the service switch on the sensor interface board of the SYNMET data logger module if the switch has been configured and enabled as a service sensor.

The switch can be set when you begin the service and maintenance work, and it must be set to its normal position when you've finished your work.

11.2 Support by the LAMBRECHT service department

If problems occur during or after the startup of your system please contact our service department.

Please send us a fax or email with a short error description and a copy of the current configuration settings together with the following device data:

- type number
- number of the wiring diagram
- serial number
- contact with telephone and fax number

The above mentioned information can be found at the configuration-label inside the SYNMET or the terminal cabinet on the cover plate.

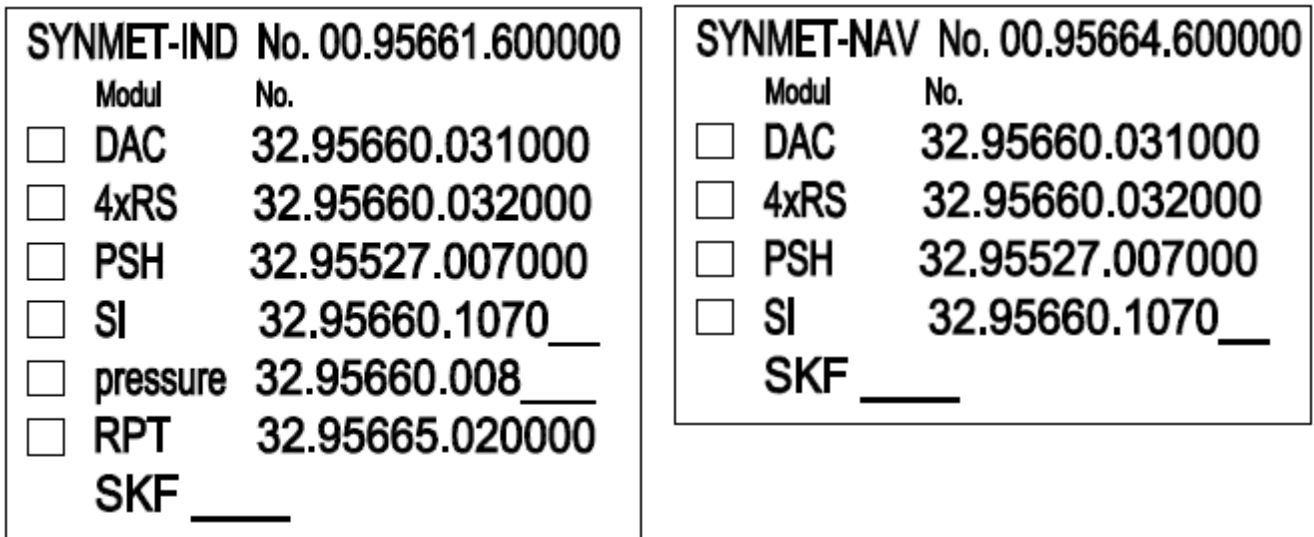


Figure: SYNMET-IND and SYNMET-NAV configuration label (blank)

The fitted components of the SYNMET are marked on the configuration label. If fitted the complete ident-no. of the sensor-interface-module (SI) or the fitted pressure-sensor can be found on the label.

The SKF-No of the corresponding wiring diagram is written at the lower part of the label.

12 Interface parameter

If not negotiated otherwise the interface parameters of the SYNMET interface system have been configured as follows:

PC interface:	COM1
Interface standard:	RS 422 in connection with interface driver or RS 232c
Baudrate:	115200
Data format:	8 N 1 = 8 data bits – no parity bit (no parity) – 1 stop bit
Sampling rate:	1 measurement per second
Average calculation:	10 minutes mean values
Extreme values:	configured

Changes of these parameters can be carried out by means of the test and configuration software SYNMET – Commander.

13 Optional extension modules

13.1 Sensor Interface Module (SI Module)

The Sensor-Interface-Module provides the adjustments of several sensor signals to the signal acquisition of the SYNMET. The SI-Module is available in several stages of extensions. The maximum extension stage provides the following options:

- Resistor array for sensor specific impedance (e.g. generator or voltage divider for 5...30 VDC) or voltage divider for 12 analogue inputs
- 2 DC/DC-converters 12 / 24 VDC for sensor excitation up to 3 W (DC1 & DC2)
- 1 DC/DC-converter 12 VDC / 10 W or 1 DC/DC-converter 24 VDC / 10 W
- 2 relays with computable contacts, 230 V / 2 A
- Interface driver RS 422/RS 485 for COM2-Port
- Switchable power supply for external devices like sensors or modem
- Programmable alarm output, threshold monitor and time control of electricity consumer
- Connection of serial sensors or additional PC / modem for distance up to 1000 m

Standard versions:

Id-No.: 32.95660.107020

Sensor Interface Module with:

- 2 DC/DC-converter 12 / 24 VDC for sensor excitation up to 3 W (DC1 & DC2)

Id-No.: 32.95660.107060

Sensor Interface Module with:

- 2 DC/DC-converter 12 / 24 VDC for sensor excitation up to 3 W (DC1 & DC2)
- Interface driver RS 422/RS 485 for COM2-Port

Id-No.: 32.95660.107080

Sensor Interface Module with:

- 2 relays with computable contact, 230 V / 2 A
- 2 DC/DC-converter 12 / 24 VDC for sensor excitation up to 3 W (DC1 & DC2)
- 1 DC/DC-converter 12 VDC / 10 W (DC3 12 V)
- Interface driver RS 422/RS 485 for COM2-Port

Id-No.: 32.95660.107090

Sensor Interface Module with:

- 2 relays with computable contact, 230 V / 2 A
- 2 DC/DC-converter 12 / 24 VDC for sensor excitation up to 3 W (DC1 & DC2)
- 1 DC/DC-converter 24 VDC / 10 W (DC3 24 V)
- Interface driver RS 422/RS 485 for COM2-Port

Further versions of the sensor interface module acc. to the above listed options are available on request.

13.2 Analogue output module (DAC-Module) or additional serial interface (RS-Module)

The CPU board of the SYNMET can be expanded either by a DAC module (digital analogue converter module) or a RS module with 4 additional interfaces.

13.2.1 Analogue output module (DAC-Module)

The DAC module expands the SYNMET by 8 high-precision outputs with 16 bit resolution. The outputs for example are used to drive analogue wind direction and wind speed indicator. The allocation of the sensors to the output signals and the corresponding resolution can be configured freely and allows thereby an easy adaptation to existing analogue systems. Following outputs are possible:

- Output current: 0/4...20 mA (burden max. 600 Ohm)
- Output voltage: 0...10 VDC / 3 x 50 mA, 5 x 10 mA

The outputs of the DCA-Module are galvanically separated and short-circuit-proof.

DAC-Module Id-No.: 32.95660.031000

13.2.2 Serial interface extension module (RS-Module)

RS-Module (COM3-COM6)

The RS module expands the SYNMET by 4 additional serial interfaces for 3*RS422 / RS232 and 1*RS485 / RS232 for the connection of serial sensors or computers. The used port driver for RS422 or RS485 are galvanically separated and increase thereby clearly the interference immunity and the measurement reliability of the system.

RS-Module Id-No.: 32.95660.032000

13.3 Power supply (PSH-Module)

The PSH board is an upgrading with a 30 W power supply unit with a 24 VDC output, for example for providing of wind sensor heatings. The power supply has a wide input voltage range from 90...260 VAC at 50...60 Hz.

PSH-Module Id-No.: 32.95527.007000

13.4 Connection Kit for Ethernet Interface

The SYNMET IND and the SYNMET NAV have got an Ethernet interface, which allows the SYNMET to be integrated into a local intranet (LAN) or by a router into the Internet. The Ethernet connection kit leads the Ethernet interface over a special M12

connection outward and ensures with mounted plug (or gate) the class of protection IP65. At outdoor applications the external cable of the Ethernet-Connection-Kit has to be laid in a conduit (armoured conduit) or similar.

Ethernet Interface Connection Kit for SYNMET LOG / IND Id-No.: 32.95660.035000

Ethernet Interface Connection Kit for SYNMET NAV Id-No.: 32.95660.036000

- Ethernet installation kit with M12 panel jack
- 10 m Ethernet cable M12-plug to RJ45

13.5 Barometer mounting kit

The SYNMET IND can be expanded by various barometers of different measuring ranges and different accuracies.

Integrated electronic barometric air pressure sensor with analogue output 0...5 VDC with mounting kit for subsequent upgrade:

- Measuring range: 800-1100 hPa
- Accuracy: $\pm 0,3$ hPa (800...1100 hPa)

Id-No.: 32.95665.020010

or

- Measuring range: 600-1100 hPa
- Accuracy: ± 0.5 hPa (600...1100 hPa)

Id-No.: 32.95665.020030

Integrated digital, high precise barometric air pressure sensor with mounting kit and RS 485-interface:

- Measuring range: 35...1310 hPa
- Accuracy: ± 0.1 hPa

For the precision air pressure sensor a SI board with the interface driver RS422 / RS485 or the RS module are recommended. The air pressure sensor also can be connected to the COM1 and a RS422 interface. In this case the COM1 cannot be used for the configuration of the SYNMET IND. But it is also possible, to configure the SYNMET by the mini USB service interface.

Id-No.: 32.95665.020 000

14 Technical alterations

All technical alterations in terms of developments and improvements are reserved.



Quality System certified by DQS according to
DIN EN ISO 9001:2015 Reg. No. 003748 QM15

Subject to change without notice.

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