Leaflet
Data logger SYNMET-LOG (95665)

Picture without housing cover

SYNMET-LOG

Configurable and modular data logging and processing system - the standard for industrial applications under rough conditions.

The perfect combination of the system's components offers a high degree of flexibility and reliability. The two-piece housing divides high quality electronics and installation. The galvanic separation of the measuring system, remote configuration and diagnosis are representative of a multitude of modern future-proof features.

The sturdy and reliable data logger in an aluminium diecast housing with EMC cable glands has free configurable sensor inputs.

- 12 analogue sensor inputs for voltage, current, resistance
- 5 digital inputs: 3 x for frequency, impulse and status, 2 x for status only
- Integrated sensor supply and optional barometric pressure sensor

- ► 1 year ring buffer
- ► 17 sensor channels and 43 virtual channels
- ► Able to communicate via Internet with a router *
- ► LAN integration via Ethernet-Interface *
- ► Integrated sensor and hardware control

New Features SYNMET-LOG

Id-No. 00.95665.600 000

- ► System configuration with USB stick
- ► Reading data with USB stick
- ► USB host
- ► USB client (internal)
- ► Optional Ethernet Connection Kit: Simultaneous communication with up to 10 users
- ► 16 bit-sampling ADC for bipolar and unipolar measurements
- ► Resolution: 16 bit-ADC with 300...1024-fold over-sampling
- ► Proven installation concept

Applications

- Rough industrial surroundings
- Under all climatic conditions
- Agricultural Meteorology
- Measuring networks

  etc.

* Ethernet connection kit required

Leaflet
Data logger SYNMET-LOG (95665)

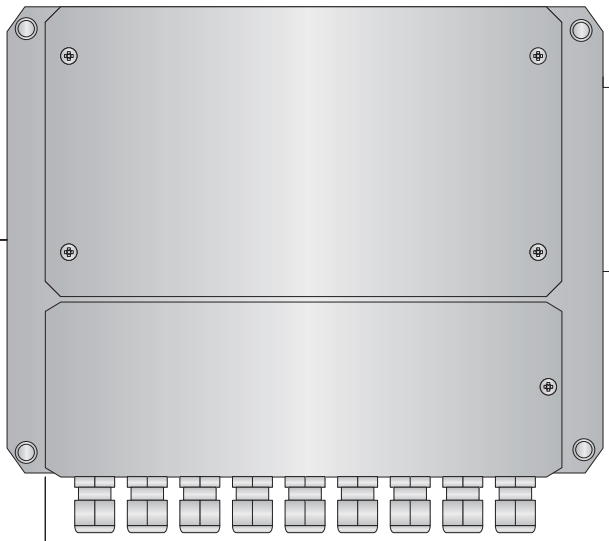
LAMBRECHT
METEOROLOGICAL INSTRUMENTS GERMANY

Microcontrollersystem and firmware
- 32 bit multiprocessor system with power-fail-detection and watchdog
- 64 MB-RAM
- 16 MB flash memory for operating system and application-memory
- 1 GB flash memory for measuring values
- Firmware for meteorological applications, for sensors and data acquisition
- Configuration of sensors and interface by SYNMET Commander
- Comfortable firmware update by means of USB stick
- Real time clock

Analogue and digital free configurable sensor inputs
- 12 analogue sensor inputs for voltage, current, resistance
- 5 digital sensor inputs; 3x for frequency and status as well as 2x for just status
- Differential inputs with programmable amplification and low pass filter
- Sensor supply 12/24 VDC, short-circuit-save and galvanically separated
- Four-wire-circuit and constant current source 1mA / 10 mA for resistance measurement
- 16 bit-sampling ADC for bipolar and unipolar measurements
- Resolution: 16 bit-ADC with 300...1024-fold over-sampling
- 16 bit-counter for frequency, events and binary status
- Resistance measuring range: Pt100, 500, 5000 Ohm
- Voltage measuring range DC: ±50 mV / ±5.0 V and 5.0 V (unipolar)
- 3 digital inputs for frequency, events and binary status ([log.0]<2 V and [log.1]>2.5 V…30 V)
- Frequency input for up to 10 kHz
- 2 digital only status inputs
- Supports inductive proximity switch according to NAMUR
- Connections for several sensor types in meteorological and industrial applications
- Processing of up to 60 channels (17 sensor-channels and 43 serial/virtual channels with formulas)
- Automatic reference measurement of offset and amplification for temperature-drift-compensation
- Digital software filter for peak-detection and sensor signal quality control
- Detailed failure identification like over range, bad-signal and open-channel

Digital switching outputs
2 switching outputs for alarm or time control as open-collector, optional with relay

Operation and display elements
- LCD with 2 lines – 16 signs each
- Turn-push button
- Easy functional test
- Measured value display and error control of the sensors
- Reading of the measuring values on USB stick
- Download of the SYNMET-configuration from the USB-stick respectively storage on the USB stick
- Firmware update via USB stick
- LED-service-field for power supply, internal tensions and sensor supply
- Operating switch for power supply
- 8 codable precision shunt resistance 100 Ohm for 0/4…20 mA



Serial interfaces
- 9-pin RS-232-C Sub-D-connector (COM1) for interconnection to PC, as diagnostic and configuration interface of SYNMET Commander
- COM1 as RS-232 or galvanically separated RS-422, COM2 as RS-232 (RS-422/485 optional)
- Simultaneous and independent operation for 2 serial devices like: PC, modem, serial sensors, digital indicators (Meteo-LCD)
- Data transmission RS-422 (up to 1000 m), telephone-, GSM- or radio-modem
- With optional RS-module (COM3...6)
  - Galvanically separated RS-422/485 interface
  - RS-485 network with several SYNMET-stations

USB host interface
- Read-out of measuring values and storage on USB-stick
- USB-stick as portable memory medium
- Load SYNMET configuration from USB stick or storage on USB stick
- Firmware update by means of USB stick

USB client interface (internal)
just for service use

Power supply
- Power supply: 18…32 VDC
- Power consumption of the CPU approx. 1.5 W
- 12/24 VDC sensor supply 3 watt
- Max. power consumption 30 watt (DAC-module, 10 watt-module (on sensor interface module))

Leaflet
Data logger SYNMET-LOG (95665)

LAMBRECHT
METEOROLOGICAL INSTRUMENTS GERMANY

Exchangeable ESD module

ESD module Id-No. 32.95661.009 000
- ESD- / overvoltage protection module for all analogue and digital sensor inputs according to Human-Body-Model for direct- / air-discharge and current-peaks
- Continuous data acquisition / logging as well after removing of ESD module in service case
- Direct discharge: 8 kV
- Air discharge: 15 kV
- Current pulse: ±3 A / 20 µsec; ±2 A / 100 µsec; ±5 A / 4 µsec

Optional extension modules

Optional sensor interface unit

Sensor interface unit Id-No. 32.95665.008 030
- Voltage divider for 4 analogue inputs
- 1 DC/DC-converter 12 VDC / 10 W
- 2 switching relays with changeover contact, 230 V / 2 A
- Interface driver RS-422 / RS-485 for COM2-Port
- Resistor array for sensor specific impedances (e.g. generator or voltage divider for 5...30 VDC)
- Switchable power supply for extern devices like sensors or modem
- Programmable alarm output, threshold monitor and time control of electric consumers
- Connection of serial sensors or additional PC / modem for distance up to 1000 m

(Further expansion stages on request.)

Optional Ethernet connection kit

Connection kit for Ethernet interface Id-No. 32.95660.035 000
- SYNMET Integration into Intranet (LAN) and Internet (additional router needed)
- Support of up to 10 simultaneous links to SYNMET Commander and MeteoWare CS
- High-speed-communication world wide

Optional extension modules: either DAC-module or RS-module

DAC-module Id-No. 32.95660.031 000
- High-precision analogue outputs with 16 bit resolution
- Programmable output current: 0/4…20 mA (burden max. 600 Ohm)
- Output voltage: 0…10 VDC / 3 x 50 mA, 5 x 10 mA
- Configurable sensor allocation and scaling
- Easy adaptation to existing analogue systems
- Outputs, galvanically separated and short-circuit-proof

RS-module (COM3-COM6) Id-No. 32.95660.032 000
- 4 additional serial interfaces for 3 x RS-422 / RS-232 and 1 x RS-485 / RS-232
- Galvanically separated RS-422, RS-485 interface driver
- Connection of serial sensors or computers

Optional Barometer

Barometer Id-No. 32.95665.020 010
Integrated electronic barometric air pressure sensor with analogue output 0...5 VDC with mounting kit for subsequent upgrade
Measuring range: 600...1100 hPa
Accuracy: ± 0.5 hPa

Barometer Id-No. 32.95665.020 030
Integrated electronic barometric air pressure sensor with analogue output 0...5 VDC with mounting kit for subsequent upgrade
Measuring range: 800...1100 hPa
Accuracy: ± 0.3 hPa

Barometer Id-No. 32.95665.020 000
Integrated digital, high precise barometric air pressure sensor with mounting kit (RS-485: SI- or RS-module needed)
Measuring range: 35...1310 hPa
Accuracy: ± 0.1 hPa

Available configuration software SYNMET Commander

Id-No. 36.09335.000 001

- ► PC software for WINDOWS 2000/ XP/ Win7
- ► Call of stored measured values and storage as CSV file
- ► Visualisation of the CSV file
- ► Centralized station management and remote maintenance via modem and Internet
- ► Free definition of new analogue and digital sensors
- ► Configuration of the SYNMET:
  - Set measuring value cycle 1 Hz or 2 Hz
  - Interface parameters
  - Determination mean value times 1, 2, 3, 5, 6, 10, 15, 20, 30, 60 minutes
  - Optional global acquisition of the extreme values
  - Setting of the communication parameters of each interface:
    - Baud rate 150...115200 baud
    - Allocation of communication protocols to interfaces (NMEA, SNAP, serial pressure sensor)
    - Determining of IP address, Sub-Net-Mask, gateway address
    - Communication port
  - Allocation of sensor parameters to the individual channels
  - Definition of serial and virtual sensors
  - Selection of up to 2 wind sensor pairs for moving mean values
  - Definition of the switch outputs for process control, error control or measuring range control
  - If DAC module is available: allocation of channels to the analogue outputs and scaling of the outputs
  - Definition of the NMEA data output
  - Setting of date and time

General environmental conditions

- Temperature operation range: -30...+70 °C
- Relative air humidity operation range: 0...100 % r.h. (non-condensing)

Housing

- Aluminium diecast housing with 20 EMC cable glands, dimensions 306 x 241 x 136 (W x H x D), weight 8 kg
- Appropriate for mast-outside-installation over the whole temperature range
- Divided housing for the electronic module and the installation room
- Terminal plugs for extension modules (DAC- and RS-modules)

Associated system components

- Plug connector power supply unit or power supply unit
- Several sensors incl. cable
- Mast system stationary and transportable
- Interface-converter and modem
- PC software for WINDOWS 2000/ XP/ Win7

Standards

- Construction and low voltage standard according to 72/23 EWG and VDE 100
- EMC directive according to EN 50082/81, interference immunity and interference emission
- ESD protection according to IEC 1000-4-2/1000-4-5 and MIL STD 3015.7

Wilh. LAMBRECHT GmbH
Friedländer Weg 65-67
37085 Göttingen
Germany

Tel +49-(0)551-4958-0
Fax +49-(0)551-4958-312
E-Mail info@lambrecht.net
Internet www.lambrecht.net