



Code 3700

HEADlab Overview

Modular multi-channel frontend system for mobile data acquisition of sound and vibration examinations

OVERVIEW

HEADlab

Code 3700

HEADlab is a second-generation, modular, high-quality data acquisition system that includes controllers, input and playback modules, Power Boxes (battery), and a wide range of accessories.

For various applications, a wide range of input modules is available. HEADlab systems can contain several hundred channels and allow sampling rates from 2.048 kHz up to 204.8 kHz. Thanks to the integrated locking mechanism, the modules can be assembled into robust units that can be easily separated again.

Operation with the versatile ArtemiS SUITE software is very simple and intuitive. This enables HEADlab systems to be used successfully even by beginners.



KEY FEATURES

- › Flexible connection of HEADlab hardware to sample-accurately synchronized systems with several hundred channels
- › Connection of binaural sensors, headsets, RPM, pressure, charge, temperature sensors, measuring bridges, ICP and condenser microphones, ...
- › Acquisition of CAN FD, CAN, OBD-2 (incl. WWH-OBD), and FlexRay signals
- › Sampling rates from 2.048 kHz to 204.8 kHz
- › High-dynamic input range (HD mode, Dual ADC)
- › Synchronization of several HEADlab systems via HEADlink, navigation satellite systems, or PTP (Precision Time Protocol)
- › Stand-alone measurements with labSAR (industrial PC, SAR web interface, ...)
- › Power Boxes (rechargeable battery) for a stand-alone power supply of several hours
- › Easy and intuitive operation with the ArtemiS SUITE software
- › A wide range of accessories for reliable measurements in all environments
- › Additional modules extending the product family are in preparation

APPLICATIONS

- › Sound and vibration analysis
- › Troubleshooting
- › Sound engineering
- › Quality control
- › Acoustic environmental protection

DETAILS

HEADlab systems can be individually and customized configured with controllers, various input, playback, and power supply modules, as well as with additional accessories.

Controller

The heart of a HEADlab system is the powerful controller. *labCTRL II.1* takes care of sample-accurate data concentration and synchronization, supplies up to 10 input modules with voltage, and establishes the connection to the PC via USB or LAN.

With 10 *labV24 II* input modules connected, for example, a *labCTRL II.1* controller enables measurements with up to 240 channels with a sampling rate of 24 kHz or with up to 30 channels with a sampling rate of 204.8 kHz.

Via USB, two controllers can be connected to a PC forming a HEADlab system. Via LAN, the number of controllers and external channels used in a HEADlab system depends on the capacity of the network and the processing power of the PC. Using a standard PC, several hundred channels can be recorded with sample rates from 2.048 kHz up to 204.8 kHz.

Input modules

It is up to the user which input modules are connected to a controller. All modules are rugged, can be flexibly combined, are fanless and noiseless. Thanks to the integrated locking mechanism, the modules can be assembled into a stable unit and can be separated again just as easily.

Power supply modules

The rugged and noiseless power supply modules (Power Boxes) supply HEADlab systems without an external power supply for several hours, depending on the configuration.

Second generation HEADlab systems



The second generation is characterized in particular by the HEADlink 2.0 transmission protocol with up to 204.8 kHz, which allows twice the sampling rate with the same number of channels compared to the HEADlink 1.0 transmission protocol of the first generation (with up to 102.4 kHz).

In addition to the *labCTRL II.1* controller, diverse input modules are available. For example, *labV24 II* has 24 channels, flexibly adjustable measuring ranges between 10 mV and 30 V, a low lower cut-off frequency, an input impedance of 1 M Ω , and many other excellent features. With Dual Link the total sampling rate can be doubled.

Second and first generation controllers and modules are compatible with each other. Users can combine first generation input modules with a second generation controller and vice versa. Mixed operations are also possible, whereby it is negotiated per HEADlink connection which protocol can be used.

SUPPORTED SENSORS

Controllers and input modules

Various types of sensors can be connected either directly or via adapters.

- › Artificial heads of the HMS generations, head-shoulder units HSU, ...
- › Binaural headsets BHS II, head microphones BHM, ...
- › ICP microphones (TEDS), ...
- › Condenser microphones, low-noise microphones (TEDS)
- › RPM, pressure, temperature sensors (DC), ...
- › Measuring bridges (Strain Gauges)
- › Charge sensors
- › CAN FD, CAN, OBD-2 (incl. WWH-OBD), FlexRay
- › High impedance voltage sources
- › Receiver for navigation satellite systems
- › Seismic sensors
- › Audio, ADAT, AES devices, ...



STAND-ALONE MEASUREMENTS

labSAR

labSAR enables stand-alone measurements with HEADlab systems even in difficult environments for test benches and production lines, automated quality testing (e.g., EoL), long-term monitoring, acoustic environmental protection, etc. With labSAR, users can also remotely control their measurements manually via smartphone, tablet, or PC.

- › Switching the rugged labSAR I.1 on and off via the power supply (protected IoT operating system)
- › Interfaces: USB, LAN, WLAN
- › Connection of up to four controllers via USB (and HEADlink)
- › The number of controllers which can be connected to a system via LAN depends on the performance of the network and the PC
- › LAN switch device for synchronizing several HEADlab systems via PTP (Precision Time Protocol)
- › External SSD storage device (1 T or 2 T)
- › Wireless control of a labSAR system via web interface with smartphone, tablet, or PC
- › Multi-client measurements (with labCTRL II.1 as of firmware 1.2) with other PCs and Recorders of ArtemiS SUITE (or labSAR-Systems) for monitoring, back-ups, ...

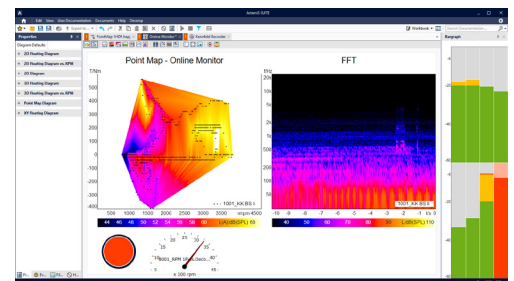
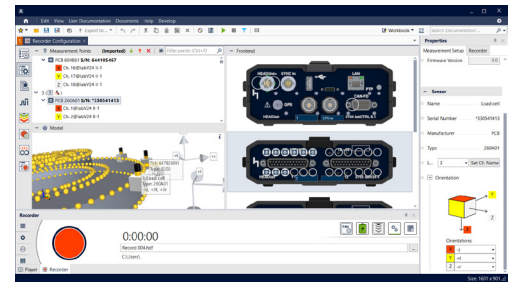


SOFTWARE – CONTROL

ArtemiS SUITE

Characteristic for ArtemiS SUITE is the task-oriented, clearly structured user interface and the ease of use. One example is the visual representation of the measurement chain, which enables users to intuitively configure the entire measurement system via drag-and-drop and with the help of the Properties Tool Window. This and further functions enables even inexperienced users to perform their measurements more safely.

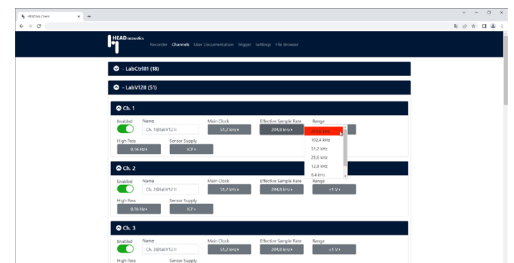
- › Fast system configuration
 - › Assistance functions for automatic sensor calibration, TEDS queries, channel leveling, ...
 - › Offline Frontends for virtual configuration of the measurement equipment
 - › Extensive, individually expandable Sensor Libraries
- › Transparent measurement setup
 - › 3D grid model for visualization of measurement points for easy configuration
 - › Drag-and-drop connection of sensors from the Sensor Library to input modules and to the measurement points of the 3D grid model
 - › Fast and easy sensor adjustments
- › Individually adjustable triggers (start, stop, pre, post, ...)
- › Direct online monitoring
 - › Online control of incoming signals
 - › 2D and 3D analyses (Point Map, XY Floating, ...), tachometer, single values, bargraph, ...
- › Effective decoding
 - › Easy signal decoding: CAN FD, CAN, OBD-2 (incl. WWH-OBD), FlexRay, navigation satellite systems, RPM, and Resolvers
- › Flexible Flow Control for recurring tasks, ...
 - › Programming skills are not required
- › Hands-on User Documentation for effective reporting, ...



Web interface

Users can control *labSAR* 1.1 by means of the web interface via cable or wirelessly via WLAN using a smartphone, tablet or PC (a web connection is required). ArtemiS SUITE is not required.

- › Clear display of all channels in the configurable Channel List
- › Easy-to-use Recorder
- › Pre-definition of Sensor Configurations, triggers and User Documentation up to complete Recorder Configurations in ArtemiS SUITE for import via the web interface
- › Presets for varying measurement tasks



For *labCTRL* II.1 and *labHSU*, web interfaces are available, too. Via web interface, users can configure *labCTRL* II.1 without ArtemiS SUITE and perform stand-alone measurements with *labHSU*.

SECOND GENERATION

Controller

labCTRL II.1 (Code 3704)

Central connection unit of a HEADlab system



- › USB or LAN connection to the PC
- › Connection of up to 10 input modules
- › Simple, radial cabling
- › HEADlink 2.0 transmission protocol
- › Sampling frequencies from 2.048 kHz to 204.8 kHz
- › Receiver for navigation satellite systems, configurable RPM inputs, CAN FD interface with programmable termination
- › Auto-on function enables remote switching on a HEADlab-System, e.g., in places difficult to access
- › Power supply for connected input modules
- › HEADlink, navigation satellite systems, and PTP (Precision Time Protocol) for sub-sample accurate synchronization of several HEADlab systems
- › Multi-client measurements with several HEADlab systems for monitoring a measurement, for back-ups, ...

Input modules

labVF6 II (Code 3752)

6 channels for analog and ICP sensors (TEDS)



- › Sampling frequencies from 2.048 kHz to 204.8 kHz
- › Flexible measuring ranges between 10 mV and 30 V
- › Analog highpass and lowpass filters
- › 60 V electric strength
- › 0.14 Hz lower cutoff frequency
- › 1 MΩ input impedance
- › Switchable coupling: DC, AC, ICP, ICP-DC

labV12 II (Code 3753)

12 channels for analog and ICP sensors (TEDS)



- › Sampling frequencies from 2.048 kHz to 204.8 kHz
- › Dual Link for measurements with double total sampling rate
- › Flexible measuring ranges between 10 mV and 30 V
- › 60 V electric strength
- › 0.14 Hz lower cutoff frequency
- › 1 MΩ input impedance
- › Switchable coupling: DC, AC, ICP, ICP-DC

labV24 II (Code 3755)

24 channels for analog and ICP sensors (TEDS)



- › Sampling frequencies from 2.048 kHz to 204.8 kHz
- › Dual Link for measurements with double total sampling rate
- › Flexible measuring ranges between 10 mV and 30 V
- › 60 V electric strength
- › 0.14 Hz lower cutoff frequency
- › 1 M Ω input impedance
- › Switchable coupling: DC, AC, ICP, ICP-DC

labM6 II (Code 3754)

6 channels for condenser microphones, analog and ICP sensors (TEDS)



- › Sampling frequencies from 2.048 kHz to 204.8 kHz
- › 10 V HD wide-range input (HD mode, Dual ADC technology) to measure signals with high dynamics and strongly fluctuating levels
- › Conventional ranges between 30 mV and 30 V
- › 15 V or 60 V supply voltage for impedance converter of the module
- › 200 V polarization voltage, switchable channel by channel
- › 1.58 Hz lower cutoff frequency
- › Analog highpass filters
- › Switchable coupling: DC, AC, ICP, ICP-DC

FIRST GENERATION

Controller / frontend

labHSU (Code 3710)

2-channel frontend for one HEADlab input module



- › Frontend for ICP and RPM sensors, condenser microphones, artificial head measurement systems, and other binaural measurement systems from HEAD acoustics
- › Three operation modes available:
 - » Frontend mode: USB/LAN connection to a PC (control via Recorder from ArtemiS SUITE)
 - » HEADlab module mode: Connection to a controller or another labHSU
 - » Stand-alone mode: Remote control of labHSU without a connected computer and without ArtemiS SUITE via web interface with a smartphone or tablet
- › Connection of a HEADlab input module in frontend mode
- › Extremely high dynamic range of 174 dB (Dual-ADC technology)
- › Auto-on function for switching on the labHSU system remotely, e.g., when using it in places that are difficult to access

Input modules

labV6HD (Code 3728)

6-channels for analog and ICP sensors with high-dynamic input range



- › 10 V HD wide-range input (HD mode, Dual-ADC technology) for recording high dynamic signals, e.g., run-up measurements with level ranges differing over time or with fluctuating signal levels
- › Ranges between 10 mV and 30 V
- › 30 V high-mode measuring range
- › Extremely high dynamic range of 168 dB (Dual-ADC technology)
- › Analog highpass filters
- › 1 M Ω input impedance
- › 0 Hz ICP-DC coupling from HEAD acoustics

labCF6 (Code 3725)

6-channels for charge and ICP sensors



- › Charge or ICP mode adjustable channel by channel
- › Charge mode
 - » Charge amplifiers for charge sensors (individually shielded)
 - » Measuring ranges can be adjusted per channel:
10 pC, 100 pC, 1 nC, 10 nC, 100 nC, 1 μ C
- › ICP mode
 - » ICP switchable for AC/DC coupling
 - » Measuring ranges can be adjusted per channel: 10 mV, 100 mV, 1 V, 10 V, 30 V
- › Peak detector function (for each channel)
- › Charge overload function (e.g., when connecting mismatched sensors)
- › 0 Hz ICP-DC coupling from HEAD acoustics

labT6 (Code 3726)

6-channels for thermocouples type K or RTD



- › Selectable channel by channel: thermocouple type K or RTD (PT100, PT1000)
- › Cold Junction Compensation for each channel (in thermocouple mode)
- › Module equipped with a measurement curve linearization
- › Automatic sensor failure detection and cable break detection
- › 100 Hz maximal sampling frequency
- › >500 k Ω input impedance
- › Electrical isolation channel by channel

labSG6 (Code 3727)

6-channels for resistive measuring bridges (Strain Gauges) as well as sensors with symmetric or asymmetric outputs and unipolar or bipolar supply



- › Connecting full, half, and quarter bridges with 1000 Ω , 750 Ω , 350 Ω , and 120 Ω
- › Connecting sensors with output signals, such as ± 10 V, ± 5 V, 0 V to 10 V, 0 V to 5 V, 0 mA to 20 mA, 3-wire, 4 mA to 20 mA 3-wire, 4 mA to 20 mA 2-wire
- › Auto zero function for the automatic bridge balancing
- › Shunt calibration of measuring bridges
- › Adjustable power supply for sensors or measuring bridges channel by channel
- › Electrical isolation channel by channel

labDX (Code 3741)

6-channels for RPM, CAN FD, CAN, OBD, FlexRay, HMS IV, HMS III, and navigation satellite systems



- › Acquisition of CAN FD, CAN, OBD-2, and FlexRay signals
- › Two pulse inputs, separately configurable for recording
 - » a high maximum pulse rate without signal conditioning
 - » a low maximum pulse rate with signal conditioning and offset compensation
- › Connecting and controlling an HMS III or HMS IV artificial head
- › Connecting a receiver for navigation satellite systems

labHRT6 (Code 3743)

6-channels for high-resolution measurement of rotational speeds



- › Two operation modes: Pulse sampling or pulse duration
- › Measurement inputs in single-ended and differential mode
- › Switchable termination for the differential mode
- › Switchable pull-up resistors for the single-ended mode
- › Adjustable voltage supply for sensors
- › Aggregation of multiple input channels for achieving a sampling rate up to 6.9 MHz
- › Edge detection

POWER SUPPLY MODULES

Power Boxes

labPWR I.1 (Code 3711)



- > Power supply of individual HEADlab modules or smaller HEADlab systems up to 40 W
- > Power: 55 Wh
- > Uninterrupted switching between external supply and battery operation
- > Direct power supply via vehicle electrical system is possible
- > Noiseless operation without fan

labPWR I.2 (Code 3712)



- > Power supply of larger HEADlab systems up to 100 W
- > Power: 55 Wh
- > Uninterrupted switching between external supply and battery operation
- > Direct power supply via vehicle electrical system is possible
- > Noiseless operation without fan

labPWR I.3 (Code 3713)



- > Power supply of individual HEADlab modules or smaller HEADlab systems up to 35 W
- > Power: 50 Wh
- > Uninterrupted switching between external supply and battery operation
- > Direct power supply via vehicle electrical system is possible
- > Noiseless operation without fan
- > Auto-on function for activating a HEADlab system by switching an external power supply (with labHSU)

Power consumption

> labCTRL II.1	8 W	> labHSU	10 W	> labP2	10 W
> labV24 II	12.5 W	> labV6HD	7 W	> labP2-V1	10 W
> labV12 II	8.7 W	> labCF6	8 W	> labO2	10 W
> labV6 II	6.5 W	> labHRT6	10 W	> labO2-V1	10 W
> labM6 II	12 W	> labDX	7 W		
		> labSG6	9.5 W		
		> labT6	2 W		

PLAYBACK MODULES

2-channel playback modules

labP2 (Code 3732)



- › Aurally-accurate playback with two headphones from HEAD acoustics
- › Connection to a PC via USB or to a controller via HEADlink
- › Equalization filters: ID (Independent of Direction), FF (Free Field), DF (Diffuse Field), USER
- › Up to four IIR filters can be loaded additionally
- › Operation via control switch (OLED display for status indication) or via software from HEAD acoustics
- › Cascadable, e.g., for use in listening studios with the SQala jury testing software

labP2-V1 (Code 3732-V1)



- › Variant of labP2 with identical range of functions for fastening in a 19" rack

labO2 (Code 3731)



- › Aurally-accurate playback with subwoofers, loudspeakers, HEADphone Distribution Amplifiers, shakers, ...
- › Connection to a PC via USB or to a controller via HEADlink
- › Equalization filters: ID (Independent of Direction), FF (Free Field), DF (Diffuse Field), USER
- › Up to four IIR filters can be loaded additionally
- › Operation via control switch (OLED display for status indication) or via software from HEAD acoustics
- › Cascadable, e.g., for use in listening studios with the SQala jury testing software

labO2-V1 (Code 3731-V1)



- › Aurally-accurate playback with a pair of headphones from HEAD acoustics, subwoofers, loudspeakers, HEADphone Distribution Amplifiers, shakers, ...
- › Connection to a PC via USB or to a controller via HEADlink
- › Equalization filters: ID (Independent of Direction), FF (Free Field), DF (Diffuse Field), USER
- › Up to four IIR filters can be loaded additionally
- › Operation via control switch (OLED display for status indication) or via software from HEAD acoustics
- › Cascadable, e.g., for use in listening studios with the SQala jury testing software
- › Fastening in a 19" rack

FASTENING ACCESSORIES

Second generation HEADlab systems

CONNECTION PLATES

- › Connection plates *labCP I.3* (three modules or two modules → *labCTRL II.1*)
- › Connection plates *labCP I.2* (two modules or one module → *labCTRL II.1*)

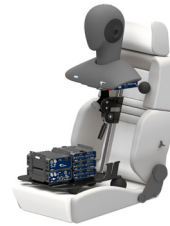


labCP I.2, labCP I.3

Second and first generation HEADlab systems

FASTENING

- › Mount adapters *labMA-a* (active), *labMA-p* (passive)
- › HEAD Seat Mount Adapter HSM V
- › System Mounting Plate *labSMP I.1*
- › Retractable carry handle *labRCH I.1*



*labCP I.2, labCP I.3,
labMA-a, labMA-p,
HSM V*



*labCP I.2, labCP I.3,
labMA-a, labMA-p,
labSMP I.1*

MDM Isofix measuring instrument mount system

For a secure fastening of HEADlab systems of the second and first generation in vehicles, the KWH-Computerhalter GmbH provides the MDM Isofix measuring instrument mount system. In a few simple steps the MDM I.0 base chassis can be installed on car seats, which are equipped with an Isofix attachment system. For a secure fastening of MDM I.0 on car seats, which are not equipped with an Isofix attachment system, the MDM I.1 Isofix adapter can be used. MDM I.1 is mounted on the rear side of the car seat and connected with the MDM I.0 base chassis via two stable metal brackets.

MDM I.3 enables the secure fastening of HEADlab systems of the second and first generation. The modules can be fastened with tensioning straps. MDM I.0 allows the use of up to two MDM I.3.



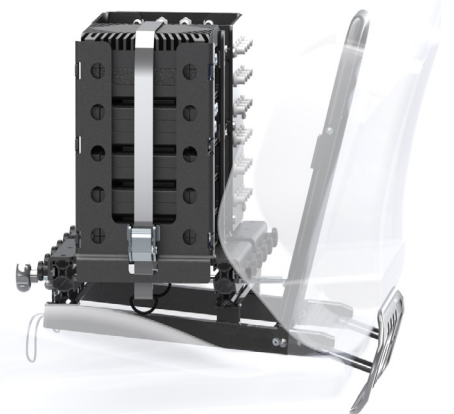
*MDM I.0, MDM I.3,
MDM I.1, MDM I.4,
MDM I.5*

KWH-COMPUTERHALTER GMBH

- › Measuring instrument mount with Isofix attachment – base chassis MDM I.0
- › Isofix adapter MDM I.1
- › Protective covers MDM I.2

HEAD acoustics

- › HEADlab fastening holder MDM I.3
- › Multi-channel connector plate (front or rear) MDM I.4
- › Multi-channel connector plate (side) MDM I.5



MDM I.0, MDM I.3, MDM I.1, MDM I.4, MDM I.5

ACCESSORIES

Software

ARTEMIS SUITE

- Basic Framework (Code 5000)
 - › Required for using ArtemiS SUITE, central functions
- Data Acquisition (Code 5004)
 - › Recorder
 - › Configuration and control of controllers and connected modules
- Decoder (Code 5009)
 - › Decoding signals: CAN FD, CAN, OBD-2, FlexRay, navigation satellite systems, RPM, Resolver
- SQala (Code 5050)
 - › Jury testing software
 - › Playback via *labP2*, *labO2*, ...
- Additional ArtemiS SUITE modules
 - › Processing and analyzing measurements, ...

WEB INTERFACES FOR CONFIGURATION AND MEASUREMENT WITHOUT ARTEMIS SUITE

- Available for:
 - › *labCTRL* II.1 (configuration)
 - › *labSAR* (configuration and measurement)
 - › *labHSU* (configuration and measurement)

Hardware

ARTIFICIAL HEADS, BINAURAL SENSORS

- HMS V (Code 1502)
 - › Artificial head measuring system
- HSU III (Code 1323)
 - › Head-shoulder unit
 - › Condenser microphones
- HSU III.2 (Code 1391)
 - › Head-shoulder unit
 - › ICP microphones
- HSU III.3 (Code 1326)
 - › Head-shoulder unit
 - › Condenser microphones
- BHS II (Code 3322)
 - › Binaural headset
- BHM III.3 (Code 1303)
 - › ICP binaural head microphone

HEADPHONES

- Headphones from HEAD acoustics

LOUDSPEAKERS

- HPL (Code 2968)
 - › 2 x High Precision Loudspeaker

SUBWOOFERS

- HSW I (Code 2950)
 - › 2 x HEAD subwoofer incl. KMT power amplifier DC 5
- HSW II.1 (Code 2952)
 - › HEAD subwoofer incl. KMT power amplifier DC 3

RECEIVER FOR NAVIGATION SATELLITE SYSTEMS

- CDG I.1 (Code 3796)
 - › Navigation satellite systems receiver
- CGA I.1 (Code 9856)
 - › Active navigation satellite systems rod antenna
- CGA I.0 (Code 9855)
 - › Active navigation satellite systems antenna with cable

WLAN ADAPTERS

- USB WLAN adapter (Code 0275)

USB STORAGE DEVICES

- HUSB III.64 (Code 3334)

REMOTE CONTROLS

- RC X.1 (Code 9850)
- RC X.2 (Code 9851)
 - › Radio module for controlling RC X.1

Power supply

POWER SUPPLIES

PS 24-60-L4

24 V, 60 W, LEMO 4-pin
(Code 0617B)

- > For HEADlab systems up to max. 60 W

PS 24-150-L4

24 V, 150 W, LEMO 4-pin
(Code 0620B)

- > For HEADlab systems with more than 40 W and up to max. 150 W

PS 15-60-X4

15 V, 60 W, XLR 4-pin
(Code 0610)

- > For labP2-V1, labO2-V1

POWER BOXES

labPWR I.1 (Code 3711)

- > HEADlab systems up to max. 40 W

labPWR I.2 (Code 3712)

- > For HEADlab systems up to max. 100 W

labPWR I.3 (Code 3713)

- > For HEADlab systems up to max. 35 W

POWER SUPPLIES FOR POWER BOXES

PS 24-60-L2

24 V, 60 W, LEMO 2-pin
(Code 0623B)

- > For labPWR I.1, labPWR I.3

PS 24-150-L2

24 V, 150 W, LEMO 2-pin.
(Code 0621B)

- > For labPWR I.1, labPWR I.2, labPWR I.3

labSAR

INDUSTRIAL PC

labSAR I.1 (Code 3705.1)

- > Industrial PC with web interface

ACCESSORIES

labSAR I.2 (Code 3705.2)

- > Power adapter
- > LEMO 4-pin → terminal plug, LEMO 4-pin

labSAR I.3 (Code 3705.3)

- > USB cable
- > Type A → type C, with screw connection

LAN switch (standard)

- > More information on request

labSWP-4 (Code 3707.2-4)

- > 4-port LAN switch (PTP, Precision Time Protocol)

labSWP-8 (Code 3707.2-8)

- > 8-port LAN switch (PTP, Precision Time Protocol)

labSSD I (Code 3706.1)

- > Removable frame for Solid State Discs (SSD)

SSD-1 (Code 3706.2-1)

- > Solid State Disc (SSD)
- > 1 TB, internal SSD, 2.5", SATA

SSD-2 (Code 3706.2-2)

- > Solid State Disc (SSD)
- > 2 TB, internal SSD, 2.5", SATA

FASTENING

labCP I.1 (Code 3765.1)

- > 2 x connection plate
- > labSAR I.1 → labCTRL II.1

labCP I.5 (Code 3765.5)

- > 2 x connection plate
- > labSAR I.1 → labSWP-x, labCTRL II.1

Adapters, adapter cables, cables

CONNECTION TO THE PC

CUSB II.xx (Code 5478-xx)

- › USB cable
- › Type A → type B
- › Available cable lengths: 1.5 m, 3 m, 5 m

CUSB IV.1 (Code 5476-1)

- › USB cable
- › Typ A → type C, with screw connection, 1 m

CONNECTION BETWEEN MODULES

CLL X.xx (Code 3780-xx)

- › HEADlink cable
- › LEMO 8-pin → LEMO 8-pin
- › Available cable lengths: 0.17 m, 0.26 m, 0.36 m, 0.5 m, 1 m, 1.5 m, 2.5 m, 5 m, 10 m, 20 m, 25 m, 30 m, 40 m, 50 m, 60 m

labRFC (Code 3789)

- › Active adapter for loss-free extension of HEADlink connections with a CAT5 cable
- › HEADlink → RJ45

labOA (Code 3785)

- › Optical adaptor (optical, electrical) for data transmission between controller → input module
- › SC/PC → SC/PC

LWL-patch cable multimode Duplex

- › Optical cable
- › SC/PC → SC/PC

POWER SUPPLY – ADAPTERS / CABLES

labSPA (Code 3715)

- › Safe Power Adapter
- › LEMO 2-pin → LEMO 4-pin

CLL XI.xx (Code 3781-xx)

- › Power supply cable
- › LEMO 4-pin → LEMO 4-pin
- › Available cable lengths: 0.19 m, 0.42 m, 1 m, 5 m, 10 m, 15 m

CSL X.3 (Code 3787-3)

- › Speakon cable
- › Speakon 2-pin → LEMO 2-pin, 3 m

CLO X.3 (Code 3782-3)

- › Power supply cable
- › Connection of DC power sources
- › 2 x cable lug → LEMO 2-pin, 3 m

CLL XII.xx (Code 3795-xx)

- › Extension cable
- › LEMO 4-pin → LEMO 4-pin
- › Available cable lengths: 1 m, 2,5 m, 10 m

PDB II.1 (Code 3716)

- › Passive Power Distribution Box
- › 2 x cable lug → 4 x XLR 4-pin, 1 x Speakon 2-pin

PDB II.1-V1 (Code 3716-V1)

- › Passive Power Distribution Box
- › LEMO 2-pin → 4 x XLR 4-pin, 1 x Speakon 2-pin

CONNECTION OF ANALOG SENSORS / BNC SENSORS

labV24 II

CDB XII-V1.1 (Code 9894-V1-1)

- › Breakout cable
- › D-Sub 25-pin → 12 x BNC, female, 1 m (channels 1 to 6, 13 to 18)

CDB XII-V2.1 (Code 9894-V2-1)

- › Breakout cable
- › D-Sub 25-pin → 12 x BNC, female, 1 m (channels 7 to 12, 19 to 24)

CDB XI-V1.1 (9893-V1-1)

- › Breakout cable
- › D-Sub 25-pin → 12 x BNC, male, 1 m (channels 1 to 6, 13 to 18)

CDB XI-V2.1 (9893-V2-1)

- › Breakout cable
- › D-Sub 25-pin → 12 x BNC, male, 1 m (channels 7 to 12, 19 to 24)

CDM II.1 (Code 3571-1)

- › Adapter cable
- › D-Sub 25-pin → 4 x Microtech, 1 m

labV12 II

CDB X.1 (Code 3792)

- › Breakout cable
- › D-Sub 25-pin → 6 x BNC, female, 1 m

CDB II.1 (Code 3556)

- › Breakout cable
- › D-Sub 25-pin → 6 x BNC, male, 1 m

CDM X.03 (Code 3793-03)

- › Breakout cable
- › D-Sub 25-pin → 6 x Microdot, 0.3 m

labM6 II

- CBL X.01 (Code 3791-01)
 - › Adapter cable
 - › LEMO 7-pin → BNC, 0.1 m

labCF6

- SCU-V2 (Code 3394)
 - › 2-channel impedance converter
 - › Connection of high-impedance voltage sources

BHS II

- CLB I.2 (Code 9847)
 - › Adapter cable
 - › LEMO 14-pin → 2 x BNC, male

HEAD VISOR

- CDB II-V1 (Code 3556-V1)
 - › Breakout cable
 - › D-Sub 25-pin → 6 x BNC, male, 4 x 1.5 m, 2 m, 2.5 m
- CDB II-V2 (Code 3556-V2)
 - › Breakout cable
 - › D-Sub 25-pin → 6 x BNC, male, 1.35 m, 2 x 3.9 m, 2 x 4.45 m, 5.5 m
- CDB II-V3 (Code 3556-V3)
 - › Breakout cable
 - › D-Sub 25-pin → 6 x BNC, male, 2 x 2.95 m, 2.5 m, 3 x 3.2 m

Extension cable

- CBB I.xx (Code 1175.xx)
 - › BNC extension cable
 - › BNC, male → BNC, male
 - › Available cable lengths: 0.25 m, 0.5 m, 1 m, 1.5 m, 2 m, 3 m, 5 m, 10 m

DIGITAL CONNECTIONS

- labADAT (Code 3794)
 - › ADAT adapter
 - › HEADlink, 2 x LWL (TOSLINK)
- CLX X.1 (Code 3797-1)
 - › AES/EBU adapter cable
 - › LEMO 8-pin → XLR 3-pin, male, XLR 3-pin, female, 1 m
- CXX II.xx (Code 5177-xx)
 - › AES/EBU cable
 - › XLR 3-pin, male → XLR 3-pin, female
 - › Available cable lengths: 0.3 m, 1 m, 3 m, 10 m, 20 m, 30 m, 40 m

- CDX X.3 (Code 3783-3)
 - › HMS connecting cable
 - › XLR 3-pin, male, XLR 3-pin, female, D-Sub 9-pin → D-Sub 9-pin, 3 m

CAN FD, CAN, OBD-2, FlexRay, RPM CONNECTIONS

- CDO X.3 (Code 3786-3)
 - › OBD connecting cable
 - › OBD plug, type B → D-Sub 9-pin, 3 m
- CMD 0.12 (Code 3788)
 - › CAN/FlexRay adapter cable
 - › D-Sub 9-pin → 3 x D-Sub 9-pin (CAN 1, CAN 2, FlexRay), 0.1 m
- CMD II.0 (Code 3788.2)
 - › CAN adapter cable
 - › D-Sub 9-pin → 2 x D-Sub 9-pin (CAN 1, CAN 2), 0.12 m, 0.2 m
- SCU-P2 (Code 3393)
 - › Adapter for pulse signal conditioning
 - › 2-channel pulse conditioning
 - › D-Sub 9-pin → 2 x BNC

STRAIN GAUGES CONNECTIONS

- CDL III.1 (Code 9818-1)
 - › Adapter cable
 - › LEMO 8-pin → D-Sub 9-pin, 1 m

CHARGE CONNECTIONS

- CMB I (Code 3798)
 - › Microdot adapter
 - › BNC → Microdot

CURRENT MEASUREMENTS

- SCU I6 (Code 3395)
 - › Adapter with signal conditioning
 - › Current measurements
 - › 6 x 2 screw terminals → 6 x BNC

Fastening / transport

CONNECTION PLATES FOR SECOND GENERATION HEADlab SYSTEMS

labCP I.2 (Code 3765.2)

- › 2 x connection plate
- › Three modules or two modules → *labCTRL II.1*

labCP I.3 (Code 3765.3)

- › 2 x connection plate
- › Two modules or one module → *labCTRL II.1*

FASTENING ACCESSORIES FOR SECOND AND FIRST GENERATION HEADlab SYSTEMS

labMA-a (Code 3760)

- › Mount adapter, active lock

labMA-p (Code 3761)

- › Mount adapter, passive lock

HSM V (Code 1520)

- › HEAD Seat Mount Adapter for HEADlab systems, ...

labTMA (Code 3768)

- › Tripod mount with active locking device for *labHSU*

labSMP I.1 (Code 3762)

- › System Mounting Plate for car seats, ...

labRCH I.1 (Code 3763)

- › Retractable carry handle

CARRYING CASE

labCASE I.1 (Code 3770)

- › Carrying case

RACK MOUNT BRACKET

RMB IV.3 (Code 9852.1)

- › 2 x 19" rack mount bracket
- › For *labP2-V1*, *labO2-V1*

MDM MEASURING INSTRUMENT MOUNT SYSTEM WITH ISOFIX ATTACHMENT FOR SECOND AND FIRST GENERATION HEADlab SYSTEMS

MDM I.0 (Code 3764.0)

- › Measuring instrument mount with Isofix attachment – base chassis
 - » MDM I.1 (Code 3764.1)
Isofix adapter
 - » MDM I.2 (Code 3764.2)
Protective covers

MDM I.3 (Code 3764.3)

- › HEADlab fastening holder

MDM I.4 (Code 3764.4)

- › Multi-channel connector plate (front or rear)

MDM I.5 (Code 3764.5)

- › Multi-channel connector plate (side)

ICP is a registered trademark of the PCB Piezotronics Inc.; LEMO is a registered trademark of the LEMO SA., ADAT is a registered trademark of the Alesis corporation, TOSLINK is a registered trademark of the Toshiba corporation



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