HEAD acoustics

DATA SHEET

Code 3726

labT6

6-channel input module for connecting up to six thermocouples (type K) and resistance temperature detectors (Pt100, Pt1000)

OVERVIEW

*lab*T6

Code 3726

*lab*T6 is a 6-channel input module for connecting up to six thermocouples (type K) and resistance temperature detectors (RTD) (Pt100 and Pt1000). Each channel has a characteristic curve correction including Cold Junction Compensation (CJC). The device provides an automatic thermocouple break/cable break detection.

The connection of a thermocouple or resistance temperature detector can be set for each channel. High reliability and efficiency as well as the module's special functionalities enable users to make recordings with ease. For example, automatic sensor failure detection provides feedback when a sensor or cable is damaged, allowing faults to be identified immediately and without time-consuming searches.

KEY FEATURES

Input module for six miniature thermocouple connectors type K and RTD (Pt100, Pt1000)

Selectable by channel: type K or RTD

Characteristic curve correction in the module

Cold Junction Compensation for each channel (in thermocouple operation)

Automatic thermocouple break/cable break detection

DC coupling

ADC resolution: 16 bit

Maximum sampling rate: 100 Hz

Input impedance: >500 kΩ

Electrical isolation of the inputs from each other and from those of other modules in a HEAD*lab* system and from the PC interface

Low power consumption (2 W)

Noiseless (without fan), rugged design

Integrated locking mechanism (the modules can be easily connected to form a system)

APPLICATIONS

Data acquisition from up to six temperature sensors

DETAILS

Modular HEAD*lab* system

HEAD*lab* systems can be individually customized and tailored from controllers, various input, playback, and power supply modules, as well as other accessories. *lab*T6 can be connected to other HEAD*lab* modules in just a few simple steps, forming a stable, rugged, and easily transportable unit.

In combination with a controller and a supply module, a maximum of ten *lab*T6 devices can be combined to form a system with 60 channels.

Larger systems consisting of several controllers, supply modules, and *lab*T6 modules can record up to 300 channels simultaneously at a sampling rate of 24 kHz, depending on network load and computer processing power.

Second-generation controllers and modules are compatible with first-generation controllers and modules. First-generation input modules can be combined with second-generation controllers and vice versa. In mixed operation, the HEAD*link* transmission protocol HEAD*link* 1.0 is automatically used between the controller and the module.

Scope of Delivery

3726	*lab*T6	6-channel input module for connecting up to six thermocouples (type K) and resistance temperature detectors (Pt100, Pt1000)

Hardware Accessories

Required (one of the following devices)

3701	*lab*CTRL I.1	Controller	HEAD*link* 1.0	No longer available
3702	*lab*CTRL I.2	Controller	HEAD*link* 1.0	No longer available
3704	*lab*CTRL II.1	Controller	HEAD*link* 1.0	Available

3708	*lab*COMPACT12	Compact system	HEAD*link* 1.0	No longer available
3708-VI	*lab*COMPACT12-V1	Compact system	HEAD*link* 1.0	No longer available
3709	*lab*COMPACT24	Compact system	HEAD*link* 1.0	No longer available
3709-VI	*lab*COMPACT24-V1	Compact system	HEAD*link* 1.0	No longer available
31020	*lab*COMPACT12 II	Compact system	HEAD*link* 1.0	Available
31021	*lab*COMPACT24 II	Compact system	HEAD*link* 1.0	Available

1502	HMS V	Digital artificial head measurement system	HEAD*link* 1.0	Available

3313	MMF III.0	BrakeOBSERVER frontend	HEAD*link* 1.0	Available

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3324	SQuadriga III	Mobile recording and playback system	HEAD*link* 1.0 (as of firmware version 2.5)	Available

3710	*lab*HSU	2-channel frontend	HEAD*link* 1.0	Available

Required (HEAD*link* Cable)

3780-xx	CLL X.xx	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

Software Accessories

Required (when connecting a controller, ... to a computer)

50000	APR 000	APR Framework	Basis of ArtemiS SUITE	Prerequisite
50040	APR 040	Recorder	Universal recorder	Data acquisition

CONNECTIONS

Control/Power Supply

Connection to Controller / Frontend

HEAD*link* Protocol 1.0 via HEAD*link* cable

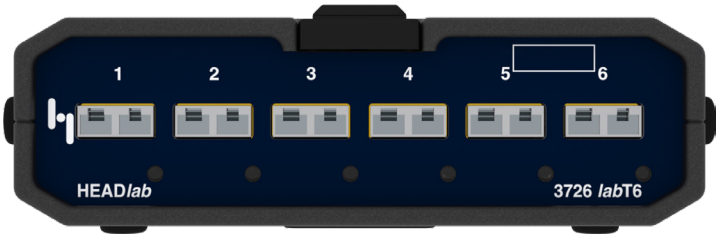
Single Link (HEAD*link*)

- Controller *lab*CTRL II.1
- Compact system *lab*COMPACT12 II
- Compact system *lab*COMPACT24 II
- Artificial head HMS V
- BrakeOBSERVER frontend MMF III.0
- Mobile 8-channel recording and playback system SQuadriga III
- High-End 2-channel frontend *lab*HSU

Power supply

- Via HEADlink

Data Acquisition



Connection of Sensors

Thermocouple: type K

Resistance temperature detectors:
RTD (Pt100 and Pt1000)

TECHNICAL DATA

General

Number of channels	6
Interfaces	Miniature connectors (type K)
Sampling rates (Fs)	1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz, 50 Hz, 100 Hz
Coupling	DC
Power supply	10 V_{DC} to 28 V_{DC}
Electric strength between In+ and In-	max. +3.7/-0.7 V
Electric strength Common Mode	85 V
Resolution	16 bit
Digital filter	Yes
Power consumption	2 W at +25 °C, +77 °F
Electrical isolation	Yes
Max. cable length to the controller	60 m (using a CLL X cable)
Cooling	Convection, without fan
Dimensions with locking mechanism and rubber feet	140 x 173 x 42 mm (W x D x H) 148 x 173 x 48 mm (W x D x H)
Weight	610 g
Operating temperature	-10 °C to +60 °C, +14 °F to +140 °F
Storage temperature	-20 °C to 70 °C, -4 °F to +158 °F

Temperature Inputs

Number of channels	6
Interfaces	Miniature connectors (type K)
Operating mode › Thermocouple type K › Pt100 › Pt1000	 › -100 °C to +1200 °C, -148 °F to +2192 °F › -200 °C to +850 °C, -328 °F to +1562 °F › -200 °C to +850 °C, -328 °F to +1562 °F
Input impedance › Thermocouple type K › Pt100 › Pt1000	 › >500 kΩ › >2.2 MΩ › >6.5 MΩ
Power supply Pt100 / Pt1000	370 µA, ±0.5%
Accuracy (if the max. cable length is observed)	±2 °C, ±3.6 °F (-200 °C to 400 °C, -328 °F to +752 °F) ±0.5% of the measured value (400 °C to 1200 °C, +752 °F to +2192 °F)

HEAD*link*

Plug connectors	1 x LEMO 8-pin.
Number of interfaces	1
HEAD*link* version	HEAD*link* 1.0

Recommended Maximum Cable Length for Different Cable Diameters

Due to the cable break detection, there may be an offset in the determined temperature with very thin cables.

Cable Designation	Diameter	Cross Section	Max. Cable Length (ΔT < 1K)
1 / 0.2	1 x 0.2 mm	0.0314 mm^2	1 m
1 / 0.315	1 x 0.315 mm	0.078 mm^2	2.5 m
1 / 0.508	1 x 0.508 mm	0.20 mm^2	6 m
7 / 0.2	7 x 0.2 mm	0.22 mm^2	6 m

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