CSI-B-7
ConditionSensor Interface

Operating Instruction
English (translation of original instructions)
Valid from firmware versions V 1.10 up

Documentation no.: 3733328
Imprint

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Preface

For you, as the owner of a product manufactured by us, we have produced this manual, comprising the most important instructions for its operation and maintenance.

It is intended to help you become acquainted with the ins and outs of the product and use it properly.

You should keep it in the vicinity of the product so it is always at your fingertips.

Note that the information on the unit's engineering contained in the documentation was that available at the time of publication. Consequently, there might be deviations in technical details, illustrations and dimensions.

If you discover errors while reading the documentation or have suggestions or other useful information, please don't hesitate to contact us:

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Technische Dokumentation
Postfach 12 51
66273 Sulzbach / Saar
Germany

We look forward to receiving your input.

“Putting experience into practice”
Technical Support
If you have any questions, suggestions, or encounter any problems of a technical nature, please don’t hesitate to contact us. When contacting us, please always include the model/type designation and article no. of the product:
Fax: +49 (0) 6897 / 509 - 846
e-mail: filtersystems@hydac.com

Modifications to the Product
We would like to point out that changes to the product (e.g. purchasing options, etc.) may result in the information in the operating instructions no longer being completely accurate or sufficient.

When making modifications or performing repair work to components affecting the safety of the product, the product may not be put back into operation until it has been examined and released by a HYDAC representative.

Please notify us immediately of any modifications made to the product whether by you or a third party.

Warranty
For the warranty provided by us, please refer to the General Terms of Sale and Delivery of HYDAC Filter Systems GmbH.

You will find these under www.hydac.com -> General terms and conditions.
Using the documentation

Please note that the method described above of locating specific information does not release you from your responsibility for carefully reading the entire manual prior to starting the unit up for the first time and carefully rereading the manual at regular intervals later on.

WHAT do I want to know?
I determine which topic I am looking for.

WHERE can I find the information I'm looking for?
The document has a table of contents at the beginning. I select the chapter I'm looking for and the corresponding page number.

The documentation number with its index enables you to order another copy of the operating and maintenance instructions. The index is incremented every time the manual is revised or changed.
General

With the ConditionSensor Interface (henceforth only referred to as CSI), HYDAC HSI sensors can be integrated in a network. For example:

- ContaminationSensor CS1000
- AquaSensor AS1000
- MetallicConatmination Sensor MCS1000

The CSI-B-7 can integrate at most two sensors in a network.

Using the operating instructions

In order to keep the instructions simple, the software is explained using examples with the CS1000 sensor. These explanations naturally also apply analogously to the AS1000.

In this manual, we assume that the user has a working knowledge of Windows, as well as how Windows programs are structured and installed.

Explanation of Symbols and Warnings

The following designations and symbols are used in this manual:

- **Important** information is summarized under this symbol.

- This symbol designates tips for use and other particularly useful information.

- This symbol provides important tips for the proper handling and operation of the product. The non-observance of these instructions can lead to false use or malfunction of the product.

For any questions or queries regarding FluMoS light, please contact our technical sales department.

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Checking the scope of delivery

The ConditionSensor Interface comes packed and factory-assembled. Before starting up the CSI-B-7, check that the content of the package is complete.

The following items are supplied:

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ConditionSensor Interface CSI-B-7</td>
</tr>
<tr>
<td>1</td>
<td>Operating Instruction (this document)</td>
</tr>
</tbody>
</table>
CSI-B-7 Features

The ConditionSensor interface module is used to transmit digital sensor signals (Hydac Sensor Interface HSI) into a network protocol (HSI TCP/IP).

On the CSI-B-7 you can connect up to two sensors via the screw terminals and supply them with power. Parameterize the desired IP address, subnet mask, and standard gateway once via the 5-pin male connection M12x1. The network connection is made using a commercially available network cable (patch) with an RJ45 connector. The interface module has been developed for top hat rail installation in control cabinets.

The special features of the CSI-B-7 include:

- 2 input channels for HYDAC HSI sensors
- Direct connection of the sensors via screw terminals
- Network connection via RJ45 socket
- Very compact design
- Suitable for installation on top hat rails
- Protection class IP 40
Assembling the CSI-B-7

The CSI-B-7 is intended for installation on size 35 top hat rails in accordance with EN 60715. The CSI-B-7 has a corresponding fastening profile on its rear side for this purpose.

(t = component height. All dimensions in mm)
CSI-B-7 Connection Overview

Connect the CSI-B-7 as described below:
Connecting the CS1000

Connect the pins 1/3/5 of the CS1000 sensor to the terminals S1 for sensor 1 or S2 for sensor 2 on the terminal block.

Connecting AS1000

Connect the pins 1/3/5 of the AS1000 sensor to the terminals S1 for sensor 1 or S2 for sensor 2 on the terminal block.
Connecting MCS1000

Connect the pins 1/3/5 of the MCS1000 sensor to the terminals S1 for sensor 1 or S2 for sensor 2 on the terminal block.

Connecting the CSI-B-7 Voltage Supply

Connect the 12 ... 24 V DC voltage supply with terminals 1 and 2 on the terminal strip. Check that the polarity is correct.

After the voltage has been switched on, the CSI begins to operate; the sensors are supplied with voltage. The "On" LED lights up red.
Setting up IP address

Before connecting the CSI-B-7 to your network, set up a valid IP address that is free for your network. The following settings are set ex works:

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP address</td>
<td>192.168.0.30</td>
</tr>
<tr>
<td>Subnet mask</td>
<td>255.255.255.0</td>
</tr>
<tr>
<td>Standard gateway</td>
<td>192.168.0.1</td>
</tr>
</tbody>
</table>

To set up the IP address, use an HMG3000 or a CSI-B-2 with FluMoS light of version 1.5x or higher and follow the corresponding instructions for the equipment/software for setting up the IP address.
Connecting the CSI-B-7 to the network

Use a patch cable to connect the CSI-B-7 to your network.
When connecting it directly to a PC, use a crossover cable.
Evaluating measured values / measurement data

To evaluate the measured values / measurement data we offer you the following software:

**FluidMonitoring Software - FluMoS**

The FluidMonitoring Software FluMoS is used to process HYDAC fluid sensor measured data on a PC.

The data from the connected sensors is displayed online as a table and graphics and is also automatically stored in files.

The files can be opened again in the software and can be exported in different formats (e.g. MS Excel format, different graphics formats).

Moreover, the currently displayed graphic can be printed using this software.

FluMoS Light and Professional differ as products.

FluMoS Professional can process up to 16 sensors / devices, FluMoS Light on the other hand is limited to 3 sensors/ devices.

FluMoS Professional enables communication and thus sensor / device parameterization.

Furthermore, FluMoS Professional releases can be updated for free within the version purchased.

FluMoS Light is available as freeware at [www.hydac.com](http://www.hydac.com).
FluMoS Professional can be purchased as a license product. Purchase includes the license key.

The applications of FluMoS are remote monitoring of the measurement data of up to 16 devices/sensors and condition-based maintenance.

The special features of FluMoS are:
- the tabular and graphic online depiction of the measurement values on the PC
- the automatic storage of the measured values in a file on the hard disk
- the export of the saved files e.g. to MS Excel
- printing out current graphics
FluidMonitoring Toolkit FluMoT - FluMoT

The FluidMonitoring Toolkit FluMoT is a package of drivers and programs which is used for connecting HYDAC fluid sensors to your own software.

For this purpose you have access to all HYDAC program libraries, a detailed description and help, and example programs in various software languages.

FluMoT can be ordered as a license product. Purchase includes the license key.

Upon licensing and registration you receive a support e-mail (to answer questions during programming, etc.) and the ability to upgrade to new releases within the version acquired.

The FluMoT driver package consists of the following components:

- dll
  - HSI
  - HSITP including CS2000 Ethernet
  - DIN-Messbus
- Example programs
  - Delphi
  - LabView
  - VB/VBA
  - C/C++
- OPC server
The application for FluMoT is the integration of HYDAC fluid sensors in your own software.

The special features of the FluMoT are that you:

- receive one driver package for ALL fluid sensors
- evaluate the measured values in your own software
- receive easy example programs as well
## Accessories

### Plugs

<table>
<thead>
<tr>
<th>Connector female with screw clamp, screened</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Connector" /></td>
<td>6049128</td>
</tr>
<tr>
<td><img src="image" alt="Connector" /></td>
<td>ZBE 08 6006786</td>
</tr>
<tr>
<td><img src="image" alt="Connector" /></td>
<td>ZBE 44 3281243</td>
</tr>
<tr>
<td><img src="image" alt="Connector" /></td>
<td>ZBE 0P 6055444</td>
</tr>
</tbody>
</table>

### Connection Cable, Shielded

<table>
<thead>
<tr>
<th>Connector female ↔</th>
<th>Cable ending open</th>
<th>Length</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Connector" /> ↔ <img src="image" alt="Cable" /></td>
<td>8 + screen</td>
<td>2 m</td>
<td>ZBE 42S-02 3281220</td>
</tr>
<tr>
<td><img src="image" alt="Connector" /> ↔ <img src="image" alt="Cable" /></td>
<td>8 + screen</td>
<td>5 m</td>
<td>ZBE 42S-05 3281239</td>
</tr>
<tr>
<td><img src="image" alt="Connector" /> ↔ <img src="image" alt="Cable" /></td>
<td>8 + screen</td>
<td>10 m</td>
<td>ZBE 42S-10 6072262</td>
</tr>
<tr>
<td><img src="image" alt="Connector" /> ↔ <img src="image" alt="Cable" /></td>
<td>5 + screen</td>
<td>2 m</td>
<td>ZBE 08S-02 6019455</td>
</tr>
<tr>
<td><img src="image" alt="Connector" /> ↔ <img src="image" alt="Cable" /></td>
<td>5 + screen</td>
<td>5 m</td>
<td>ZBE 08S-05 6019456</td>
</tr>
<tr>
<td><img src="image" alt="Connector" /> ↔ <img src="image" alt="Cable" /></td>
<td>5 + screen</td>
<td>10 m</td>
<td>ZBE 08S-10 6023102</td>
</tr>
</tbody>
</table>
# Cable Coding

![Cable Coding Diagram](image)

# Model Code

<table>
<thead>
<tr>
<th>Product series</th>
<th>Body</th>
<th>Signal output</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSI = ConditionSensor Interface</td>
<td>B = Top hat rails housing</td>
<td>7 = HSI -&gt; Ethernet</td>
<td>000 = Standard</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CSI</th>
<th>B</th>
<th>7</th>
<th>000</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSI-B-7</td>
<td>-</td>
<td>7</td>
<td>000</td>
</tr>
</tbody>
</table>

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en(us)  
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## Technical data

<table>
<thead>
<tr>
<th>General data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimensions</strong></td>
</tr>
<tr>
<td><strong>Housing</strong></td>
</tr>
<tr>
<td><strong>Mounting position</strong></td>
</tr>
<tr>
<td><strong>Ambient temperature range</strong></td>
</tr>
<tr>
<td><strong>Storage temperature range</strong></td>
</tr>
<tr>
<td><strong>Relative humidity</strong></td>
</tr>
<tr>
<td><strong>CE mark</strong></td>
</tr>
<tr>
<td><strong>Protection class to DIN 40050</strong></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
</tr>
</tbody>
</table>

### Electrical data

<table>
<thead>
<tr>
<th><strong>Electrical connection</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- 8-pole terminal block, RM 5 with cross section max. 2.5 mm²</td>
</tr>
<tr>
<td>- RJ45 Ethernet</td>
</tr>
<tr>
<td><strong>Supply voltage</strong></td>
</tr>
<tr>
<td><strong>Current consumption</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Parameterization</strong></td>
</tr>
<tr>
<td><strong>HSI (HYDAC Sensor Interface)</strong></td>
</tr>
</tbody>
</table>
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