

## GSM Communication Module CSI-F-10

### Description:

The GSM communication module CSI-F-10 is an all-purpose electronic instrument for transferring data and digital signals via the GSM mobile communication network. As part of the HYDAC Condition Monitoring concept, amongst other functions, the CSI-F-10 links the sensor level with the interpretation level.

The device is designed for both stand-alone operation and for use as a GSM modem on a CMU 1000 (HYDAC Condition Monitoring Unit). Up to two HYDAC SMART sensors such as HYDACLab®, AS 1000 or CS 1000, can be connected to its input sockets. In addition, it is also possible to monitor various different system conditions via the four integrated digital inputs and to relay the data in binary form with the aid of the two integrated digital outputs. Via these digital outputs, the device can also directly access the machine/system being monitored.

The CSI-F-10 processes and monitors the input signals using the application program stored in it. Which data is to be monitored, and how, and at what point a particular message is to be given, is defined in detail in this program. This application program can be created easily and conveniently (in accordance with IEC 61131) using the **CM Editor**, which forms part of the HYDAC PC software **CMWIN** Version V03 or higher.

Depending on the application, the user can choose independently between two operating modes of the CSI-F-10 and hence define the type and content of the communication.



### Special features:

- 2 input channels for HYDAC SMART sensors
- 4 input channels for digital signals
- 2 output channels for digital signals
- Status indication for:
  - Network strength (4 LEDs)
  - Signals (2 LEDs, programmable)
  - Device status (1 LED)
  - GSM status (1 LED)
- Can be connected to CMU 1000
- Simplest form of programming using "Drag & Drop" on graphical user interface
- Up to 5 telephone numbers can be stored (for access via GSM)
- Parameters can be set online
- Sensors connected via M12x1 male connector
- Very compact design

## CM-Editor:

The CM Editor is part of the HYDAC PC software **CMWIN** Version 03 or higher and provides a wide variety of tools and functions for designing, integrating and testing the application program.

An application program consists of many individual functions which can be linked together. During subsequent operation, this user program is processed as for a PLC, cyclically.

The program is created according to the IEC 61131 (the standard for PLC programming).

The screenshot displays the CMWIN CM-Editor interface. The main workspace shows a ladder logic program with a 'Start' function at the top left, followed by a series of 'Setzen Text' (Set Text) functions (1a through 1g, 2, 3, 4) and 'Text' display functions. The 'Function properties' panel on the left shows details for 'Input1', including its position and functionality. The 'Function list' panel at the bottom left provides a table of available functions.

Function	Name	Caption
And	Logik69	
And	Logik71	
And	Logik72	
And	Logik73	
Boolean input value	Eingabe2	Start
Boolean input value	Input1	Start
Display message	Aktion1	Text
Display message	Aktion10	Text
Display message	Aktion11	Text
Display message	Aktion12	Text
Display message	Aktion13	Text
Display message	Aktion14	Text
Display message	Aktion15	Text

This screenshot shows a context menu opened over the 'Start' function in the ladder logic diagram. The menu options include: Display, Simulate, Transfer into device, Receive from device, Deleting in the device, and Online debugging.

This screenshot shows a context menu opened over a function block in the ladder logic diagram. The menu options include: Apply from file, Apply from device, Uninstall, Saving to a file..., and Display.

The screenshot shows the 'Simulation' window in CMWIN. It contains two tables: 'Sources' and 'Actions'. The 'Sources' table shows input values for 'Eingabe2' and 'Input1'. The 'Actions' table shows the status of various actions (Aktion1, Aktion17, Aktion18, Aktion19) as 'not triggered'.

Name	Input value	Name	Value	Cycle	Time
Eingabe2	1	Aktion1	not triggered		
Input1	1	Aktion17	not triggered		
		Aktion18	not triggered		
		Aktion19	not triggered		

This screenshot shows the variable declaration for the simulation in the CMWIN interface. It lists variables such as 'Eingabe2', 'Input1', 'Intervall1', 'Pulse generation1', and 'Flankenkenntnis?' with their respective data types and initial values.

## Technical specifications:

### Supply

Input voltage	10.5 .. 35.0 V DC
Residual ripple	≤ 5 %
Current consumption without sensors and outputs	Typically: ≤ 90 mA in stand-by ≤ 200 mA for wireless connection Pulsed: ≤ 2 A (recomm. power supply 3.5 A)
Reverse pol. protect.:	-35 V

### Sensor Inputs

Quantity	for 2 SMART sensors
Output voltage	+U <sub>B</sub> – 0.5 V
Current supply	500 mA max. at 50 °C

### Logic Measurement Channels

Quantity	32 A measurement channel can be a sub-channel of a SMART sensor* or a value derived (calculated) from sensor data.
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### Digital Inputs

Quantity	4
Input voltage:	0 .. 35 V DC
Trigger threshold	Low: < 0.8 V; High: > 5.0 V
Current consumption	approx. 4 mA
Output voltage	+U <sub>B</sub> – 0.5 V
Current supply (incl. outputs)	500 mA max. at 50 °C

### Digital Outputs

Quantity	2
Switching capacity (per output)	+U <sub>B Out</sub> x 0.2 A

### Interfaces

HSI bus	
Mobile comm. network	GSM 850/950 (2 W EGSM) GSM 1800/1900 (1 W EGSM)
Antenna	50 Ω FME plug
SIM	3V SIM card

### Environmental Conditions

Operating temperature	-20 .. +55 °C (GSM 850/900) -10 .. +55 °C (GSM 1800/1900)
Storage temperature	-30 .. +65 °C
Relative humidity	0 .. 70 %, non-condensing

### Dimensions and Weight

Dimensions	approx. 140 x 95 x 55 without antenna
Weight	approx. 350 g

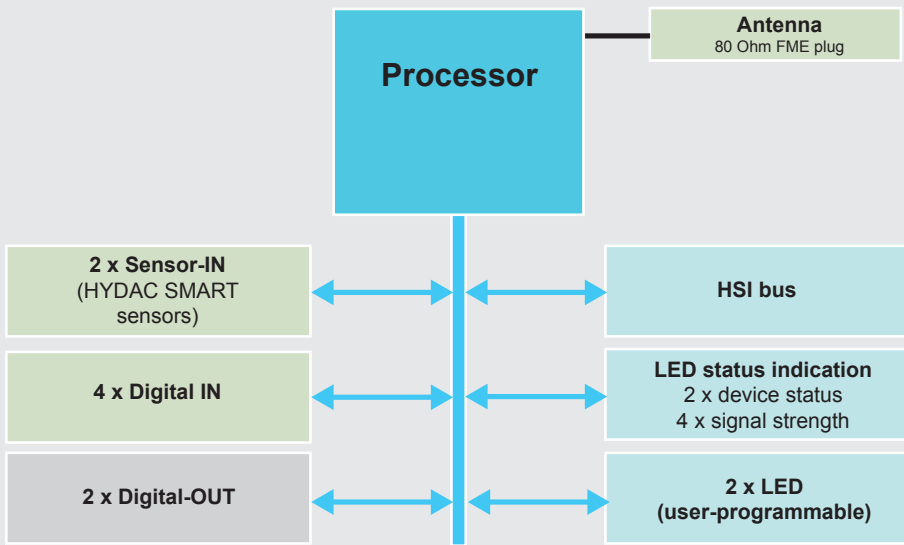
### Technical Standards

EMC	Conforms to R&TTE Directive 1999/5/EC
CE mark	EN 61000 - 6 - 1 / 2 / 3 / 4
Safety:	EN 60950 / EN 61010
Protection class	IP 65

#### Note:

\* SMART sensors (Condition Monitoring Sensors) are a generation of sensors from HYDAC, which can provide a variety of different measured values.

## Block circuit diagram:



## Note:

The information in this brochure relates to the operating conditions and applications described. For applications and operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

## Model code:

CSI - F - 10 - 000 - X

### Modification number

000 = Standard

### Operating manual and documentation

D = German  
E = English  
F = French

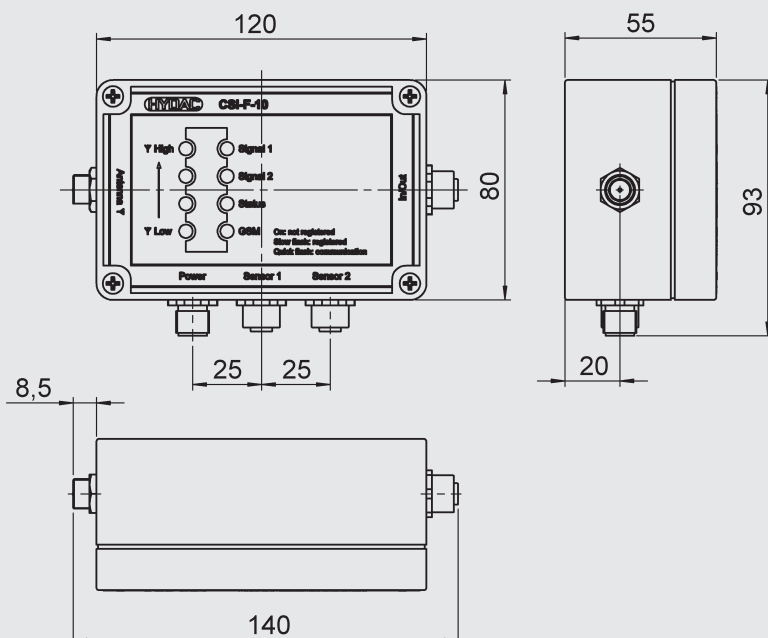
### Note:

On instruments with a different modification number, please read the label or the technical amendment details supplied with the instrument.

### Accessories:

Appropriate accessories, such as sensor lines for the electrical connection can be found in the Accessories section.

## Dimensions:



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