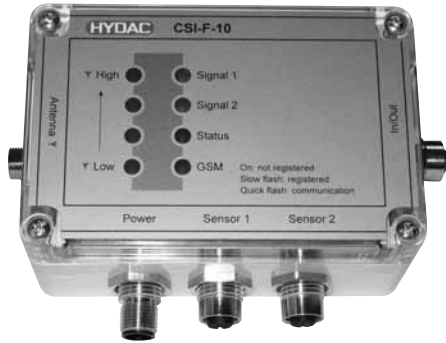# HYDAC | Fluid Condition Sensors

CSI-F-10 Series
GSM Radio Module

Applications

Description

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

The unit is designed both for 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. Through these digital outputs the device can also access the monitored machine / system directly.

The CSI-F-10 processes and monitors the input signals using the application program stored in it. Which data are to be monitored, and how, and at what point a particular message is sent, 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

- 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 user interface

- Up to 5 telephone numbers can be stored *(for access via GSM)*

Technical Details

Supply	
Input voltage	10.5 to 35.0 V DC
Residual ripple	≤ 5%
Current consumption without sensors and outputs	Typically ≤ 90 mA in stand-by mode ≤ 200 mA for radio connection Pulsed: ≤ 2 A *(recomm. power supply 3.5 A)*
Reverse polarity protect.	-35 V
Sensor Inputs	
Quantity	for 2 SMART sensors
Output voltage	$+U_B$ – 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.
Digital Inputs	
Quantity	4
Input voltage	0 to 35 V DC
Trigger threshold	Low: < 0.8 V; High: > 5.0 V
Current consumption	approx. 4 mA
Output voltage	$+U_B$ – 0.5 V
Current supply *(incl. outputs)*	500 mA max. at 50°C
Digital Outputs	
Quantity	2
Switching capacity *(per output)*	$+U_B$ Out x 0.2 A
Interfaces	
HSI bus	
Mobile radio network	GSM 850/950 (2 W EGSM) GSM 1800/1900 (1 W EGSM)
Antenna	50Ω FME plug
SIM	3V SIM card
Operating Conditions	
Operating temperature	-4 to 130°F (-20° to 55°C) (GSM 850/900) -14 to 130°F (-25° to 55°C) (GSM 1800/1900)
Storage temperature	-22 to 150°F
Relative humidity	0 to 70 %, non-condensing
Dimensions and Weight	
Dimensions	approx. 5.6" x 3.8" x 2.2" 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

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

- Parameters can be set online
- Sensors connected via M12x1 male connector
- Very compact design

Approvals

CE mark is a mandatory conformity mark on many products placed on the single market in the European Economic Area

Model Code

CSI - F - 10 - 0 - 000 - X

Modification Number
000 = Standard

Operating Manual and Documentation
D = German
E = English
F = French

Note: On units with a different modification number, please read the label or the technical amendment details supplied with the unit.

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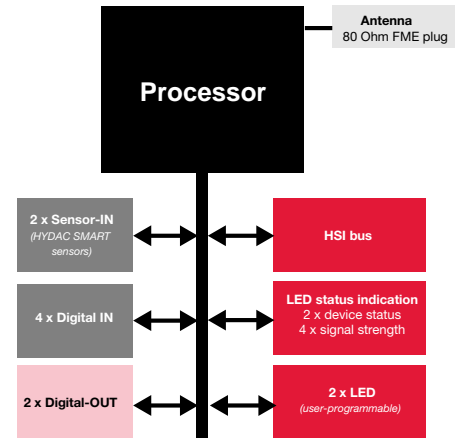
CM Editor

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)*.
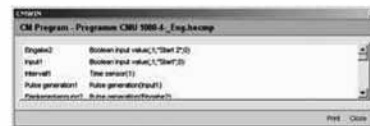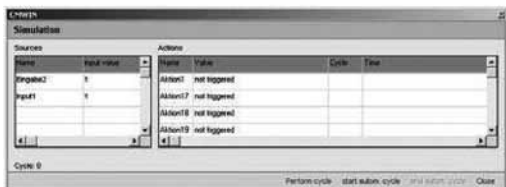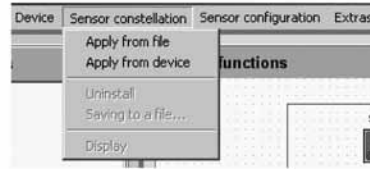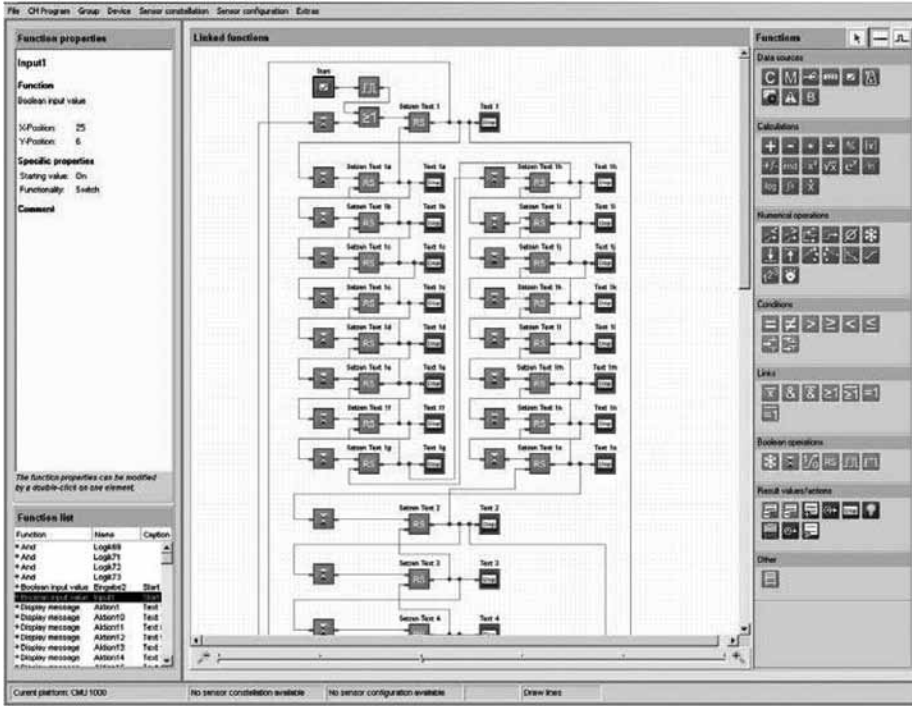
Block Circuit Diagram

Dimensions