



Contamination Sensor CS 1939 Series

Description

The Contamination Sensor CS 1939 is an online fluid sensor for permanent monitoring of particle contamination in fluids.

The cleanliness results are presented according to ISO/SAE classifications.

This instrument combines the latest materials and technologies with proven engineering and provides the user with a compact and robust stationary sensor.

The attractive price/performance ratio makes it particularly advantageous for OEM applications for Condition Monitoring.

Applications

- Industrial hydraulic and lubrication systems
- Mobile hydraulics

Advantages

- Critical machine conditions are identified in early stages
- Continuous monitoring of oil conditions
- Condition-based maintenance planning

Technical specifications

General data

Self diagnosis	Continuous with error display via status LED
Measured variables	ISO 4406 SAE AS 4059 (D)
Service parameters	Flow (status) Drive (%) Temp (°C) and (°F)
Installation position	Optional (Recommended: Vertical direction of flow)
Ambient temperature range	-30 °C to +80 °C / -22 °F to 176 °F
Storage temperature range	-40 °C to +80 °C / -40 °F to 176 °F
Relative humidity	max. 95%, non-condensing
Seal material	FPM for CS1939-0 / EPDM for CS1939-1
Protection class	III (safety extra-low voltage)
IP class	IP 67 (provided it is correctly connected)
Weight	1.3 kg

Hydraulic data

Measuring range	Sensor measures from Class ISO 9/8/7 (MIN) to Class ISO 25/24/23 (MAX) Calibrated in the range ISO 13/11/10 to 23/21/18
Accuracy	+/- ½ ISO class in the calibrated range
Operating pressure	max. 350 bar / 5075 psi
Hydraulic connection	Inline or hose connection (A,B): thread G1/4, ISO 228 or flange connection (C,D): DN 4
Permitted measurement flow rate	30 to 500 ml/min
Permitted viscosity range	1 to 1000 mm ² /s
Fluid temperature range	0 to +85°C, +32 to +185°F

Electrical data

Connection, male	M12x1, 5-pole, to DIN VDE 0627 or IEC61984
Supply voltage	9 to 36 VDC, residual ripple < 10%
Power consumption	3 watts max.
CAN interface	2-wire, half duplex SAE CAN J1939 protocol
HSI (HYDAC Sensor Interface)	1 wire, half duplex

Model code

CS 1939 - 0 - 0 / - 000

Typ

CS = ContaminationSensor

Series

1939 = Contamination codes
= ISO 4406;
SAE AS 4059 (D) /
>4 $\mu\text{m}_{(c)}$ >6 $\mu\text{m}_{(c)}$
>14 $\mu\text{m}_{(c)}$ >21 $\mu\text{m}_{(c)}$
interface / protocol:
CAN / CAN SAE J1939
without Display
Electrical connection
Plug M12x1, 5-polig,

Media

0 = based on mineral oil
1 = phosphate ester

Hydraulischer Anschluss

0 = Inline or hose connection
1 = Flange connection

Modifikationsnummer

000= Standard

Items supplied

- ContaminationSensor
- Calibration certificate
- CD with FluMoS light
(fluid monitoring software to operate
and parameterize the sensor)
- CD with detailed operating and
maintenance instructions in different
languages (PDF viewer software
required)
- 2 x O-ring
(only for flange connection version)

Accessories

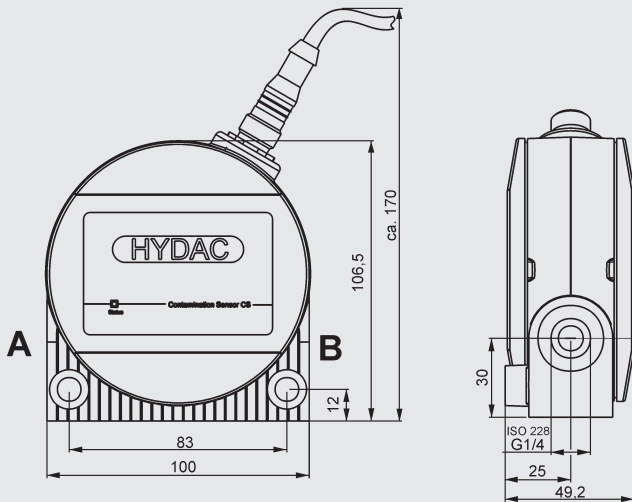
- Female connector with 5 m cable,
screened, 5-pole, M12x1,
Part No.: 3527626
- Female connector with 10 m cable,
screened, 5-pole, M12x1,
Part No.: 3527627
- Extension cable 5 m,
female connector 5-pole, M12x1 /
Male connector 5-pole, M12x1,
Part No.: 6040852
- Female connector with screw
terminal, 5-pole, M12x1,
Part No.: 6049128

Preferred models

Model code	Part no.
CS1939-0-0/000 Hydraulic pipe connection	4271701
CS1939-0-1/000 Hydraulic flange connection	4271768

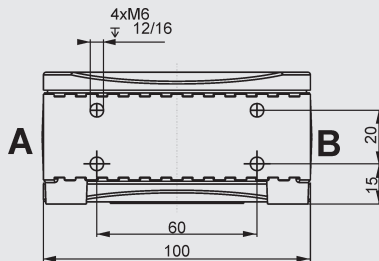
Dimensions

CS1939 without display

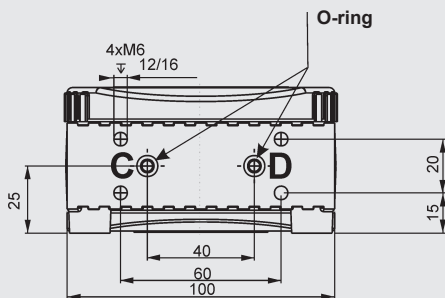


Bottom view

Pipe or hose connection

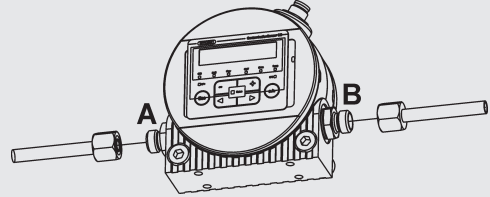


Flange connection

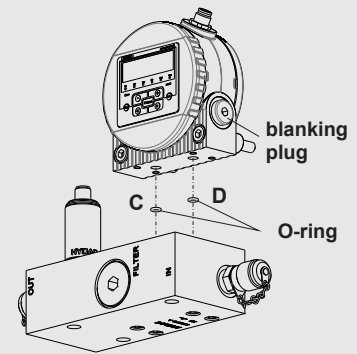


Hydraulic connection types

Pipe or hose connection

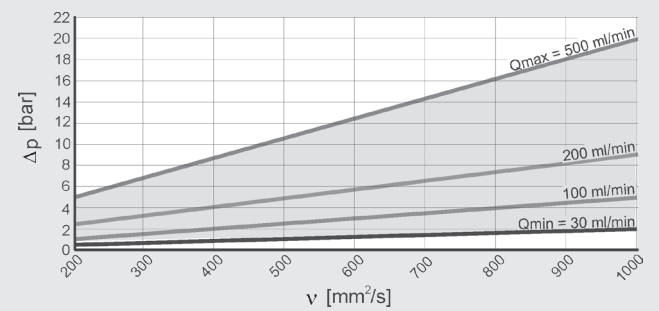
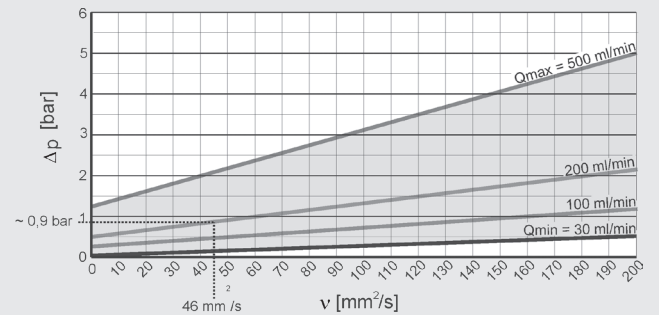


Flange connection



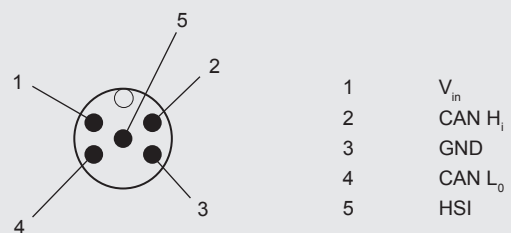
Pressure viscosity range

Δp : pressure
 v : viscosity



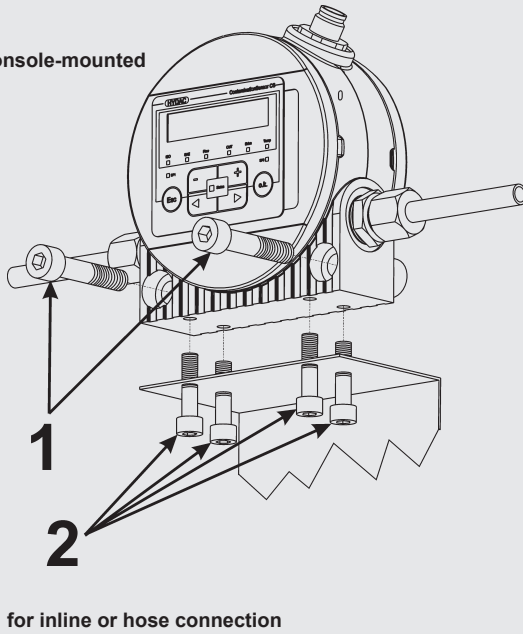
Electrical connection

Pin assignment

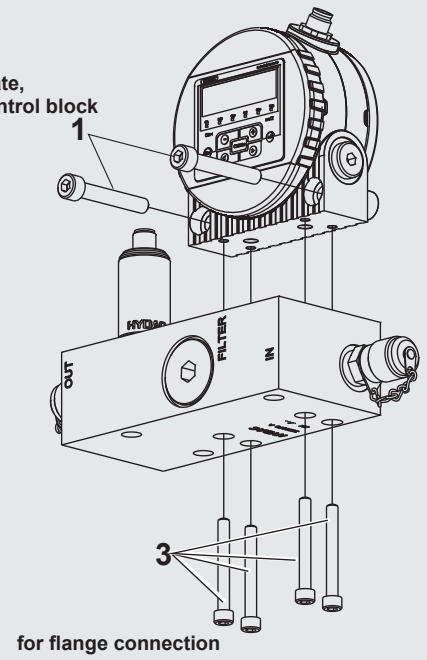


Types of installation (examples)

Wall-mounted or console-mounted



Mounting on flange plate,
connection plate or control block



1 : with 2 x M8 (ISO 4762) or
2, 3 : with 4 x M6

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.

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