

ICM – Inline Contamination Monitor

ICM

The ICM automatically measures and displays particulate contamination, moisture and temperature levels in various hydraulic fluids.

It is designed specifically to be mounted directly to systems, where ongoing measurement or analysis is required, and where space and costs are limited.

Features & Benefits

- ◆ 8 channel contamination measurement & display
- ◆ Measures and displays the following international standard formats; ISO 4406, NAS 1638, AS 4059E and ISO 11218
- ◆ Moisture and temperature sensing fluid dependant
- ◆ Data logging and 4000 test result memory
- ◆ Manual, automatic and remote control flexibility available
- ◆ Multicolour LED and remote alarm signals (R version)
- ◆ Robust die cast aluminium construction
- ◆ LPA View software (included)
- ◆ Pressure max. 400 bar
- ◆ Environmental protection IP 65/67

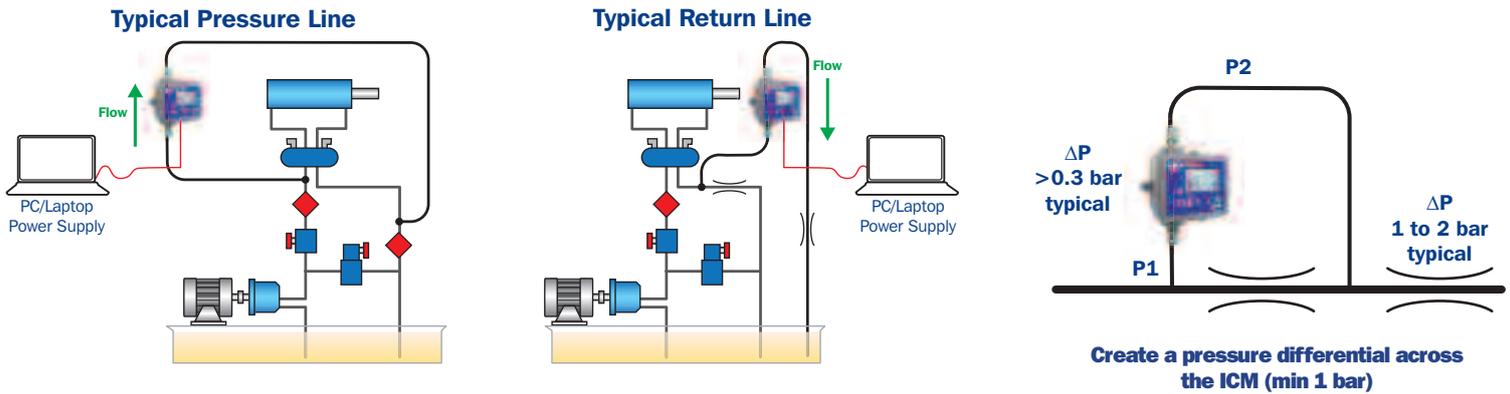


Technical data

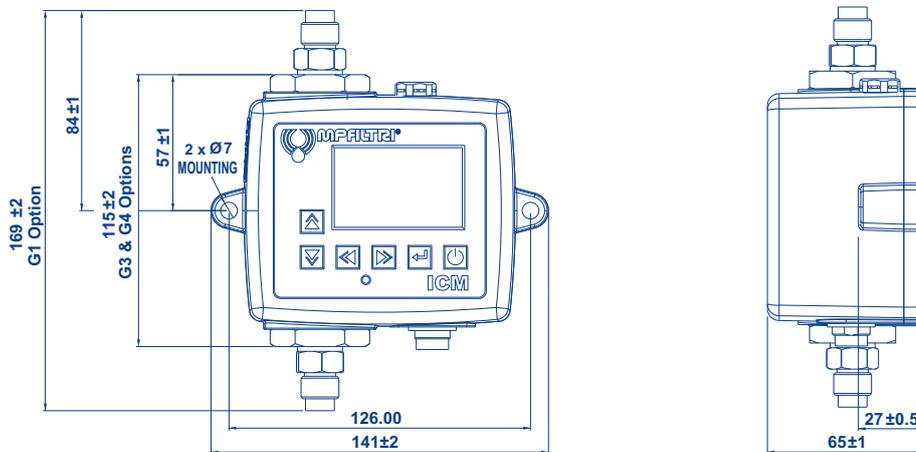
Technology	LED Based Light Extinction Automatic Optical Contamination Monitor
Particle Sizing	>4,6,14,21,25,38,50,70 µm(c) to ISO 4406 Standard
Analysis range	ISO 4406 Code 0 to 25, NAS 1638 Class 00 to 12, AS4059 Rev.E. Table 1&2 Sizes A-F: 000 to 12 ISO 11218 00-12 (Lower Limits are Test Time dependent)
Accuracy	± ½ code for 4,6,14µm(c) ± 1 code for larger sizes
Calibration	Each unit individually calibrated with ISO Medium Test Dust (MTD) based on ISO 11171, on equipment certified by I.F.T.S. ISO 11943
Operating Flow Rate	20 - 400 ml/minute
Viscosity range	≤ 1000 cSt
Fluid temperature	From +25 °C to +80 °C (For high frequency pressure pulse and out range temperature applications contact MP Filtri)
Pressure Max	400 bar (For high frequency pressure pulse and out range temperature applications contact MP Filtri)
Test Time	Adjustable 10 - 3600 seconds. Factory set to 120 seconds. Start delay & programmable test intervals available as standard
Moisture Sensing	% RH (Relative Humidity) ±3%
Temperature Measurement	±3 °C
Flow rate measurement	Indicator only
Data Storage	4000 test
Communication options	RS485, RS232, MODBUS, CANBUS as standard
Ambient Temperature min/max	From -25 °C to +80 °C non K version - From -25 °C to +55 °C K version
Environmental Protection	IP 65/67 IK04 Impact Protection
Weight	1.15 kg
Electrical Supply	Voltage 9-36V DC
Power consumption	<2.2W
Outer Casing Finish	Polyurethane BS X34B. Colour BS381-638 (Dark Sea Grey) Approval: BS2X34A & BS2X34B, MM0114 & SP-J-513-083 T. II Cl. A Performance: MIL-PRF-85285

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Installation Guidelines



ICM Dimensions



The ICM can be used as a standalone product or can be controlled by external PC, PLC or the ICM - RDU Remote Display Unit. 3m control cable supplied as standard.

Ordering information

Example: **1** **2** **3** **4** **5** **6**
ICM **W** **M** **K** **R** **G1**

1 - Product

ICM

2 - Moisture Sensor (RH%)

- 0** Without moisture and temperature sensor
- W** With moisture and temperature sensor

3 - Fluid compatibility

- M** Mineral oil
- N** Subsea fluids and water based fluids⁽¹⁾
- S** Phosphate ester and aggressive fluids⁽¹⁾

4 - Keypad/Display

- 0** Without keypad/display
- K** With keypad/display

5 - Relays

- 0** Without Relays
- R** With Relays

6 - Connections

- G1** ICM complete with minimes connections M16 x 2
- G3** 1/4" BSP - Female port
- G4** 7/16" UNF - Female port

⁽¹⁾ **N** and **S** version, moisture sensor (W) not available

ICM - Options and additional Products

ICM-RDU – Remote Display Unit

The ICM-RDU is advantageous when the ICM is out of reach or in a location unsuitable for viewing. The ICM can also be controlled via the remote display unit. The RDU is supplied as standard with a 3m cable.

Features & Benefits

- ◆ Large backlit display
- ◆ Keypad interface
- ◆ Robust die cast aluminium construction



Ordering information

ICM **RDU**

ICM-USBi and ICM-ETHi

Auxiliary Communications

Two auxiliary communication devices are available to order with the ICM. A USB interface which allows for communication via a laptop (RS485 to RS232 converter) & an ethernet device for remote access via a network hub.

Both devices can transmit power to the ICM/RDU electrical circuit using a DC power adapter.

The USBi has the additional benefit of supplying power via the USB cable directly. Both devices come with a DC Power adapter and 3m twisted pair cable as standard.

Features & Benefits

- ◆ Compact
- ◆ Plug and play solution
- ◆ Robust aluminium construction



Ordering information

ICM - USBi

ICM - ETHi

ICM-FC1-Flow Control Valve

FC1 – Flow Control Valve

The FC1 is a flow control valve which can operate across a range of fluid types and is compatible with the ICM where flow rate exceeds operating parameters.

Max pressure rating 400 bar at normal hydraulic system temperatures.

Features & Benefits

- ◆ Various connection options.
- ◆ Viscosity independent.
- ◆ Hexagonal form for ease of installation.



Ordering information

Example: **1** **2** **3**
ICM - FC1 **M** **G1**

1 - Product

ICM - FC1

2 - Fluid compatibility

- | | |
|----------|---------------------------------------|
| M | Mineral oil |
| N | Subsea fluids and water based fluids |
| S | Phosphate ester and aggressive fluids |

3 - Port options

- | | |
|-----------|--|
| G1 | ICM complete with minimess connections M16 x 2 |
| G3 | 1/4" BSP - Female port |
| G4 | 7/16" UNF - Female port |