

ICM

In-line Contamination Monitor

Optional Related Products

ICM "USBi" Connector

The USBi transmits power and allows the ICM to communicate with a PC or laptop. Where customers wish to wire to external devices the USBi also has an extra terminal block inside for this purpose. An external DC adaptor can be used to power the complete system, or if a computer is always connected during use, the ICM can be powered directly from the USB cable.

How to order
Order 1 x ICM-USBi



ICM-RDU

The ICM RDU (Remote display unit) is advantageous when the ICM is out of reach or in a location unsuitable for viewing. The ICM can be controlled via the RDU, as it shares unique design features such as a 128 x 64 backlit display and keypad.

*Note; Installation dimensions are the same as the ICM.

How to order
Order 1 x ICM-RDU



ICM-FC1

A pressure compensated flow control valve specifically designed to fit the ICM. This may be needed if the application produces an oil flow greater than 400ml/min through the ICM.

ICM-FC1 - is supplied with adaptors which enable the valve to be fitted to the ICM. The valve outlet port has a minimess fitting installed as a standard option.

Max Pressure - 400barg
Usable Flow Range - 4bar to 400bar ΔP
Flowrate - 100ml/min to 340ml/min
Accuracy - ± 15%

How to order
Order 1 x ICM-FC1



Caution

Hydraulic systems contain dangerous fluids at high pressures and temperatures. Installation, servicing and adjustment are only to be performed by qualified personnel. Do not tamper with this device. Do not use this product outside the parameters specified in this document & other related literature.

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www.hydraulicparticlecounter.com



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.



www.hydraulicparticlecounter.com

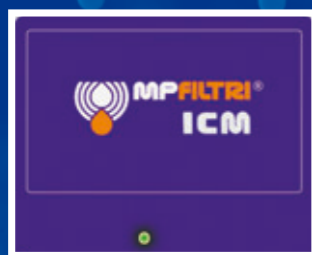
ICM In-line Contamination Monitor



K Keypad Option



K version



Non K version

- 8 Channel solid contamination measurement
- Measures and displays the following international standard formats; ISO 4406:1999, NAS 1638, AS 4059E and ISO 11218
- Moisture and temperature sensing
- Large, backlit display screen
- Data logging and 4000 test result memory
- Manual, automatic and remote control flexibility
- RS485 Communication
- Multicolour LED and remote alarm signals
- Choice of hydraulic connection sizes and types
- Robust die cast aluminium construction
- LPA View software (included)

Installation

The ICM must be in a vertical orientation, with the oil flowing upwards through it.

R Relays



The ICM "R" option displays & operates over 8 channels comprehensively covering all of the applied standard formats. It allows fully customisable alarm settings and indicates these via a multicolour LED and/or remote devices.

Alarm Types

- Contamination codes and/or individual particle sizes
- Water content
- Temperature

* Note: When purchasing an "R" model, the alarms are factory set to off, and must be activated via LPA View

LED alarm colours

- - Test OK
- - Lower cleanliness level exceeded. Upper limit ok
- - Upper cleanliness level exceeded
- - Upper water content limit exceeded
- - Red/Blue Alternating indicates cleanliness and water limit have been exceeded
- - Upper temperature limit exceeded

* Note: Alarm limits shall be defined and enabled by the user

LPA View Software

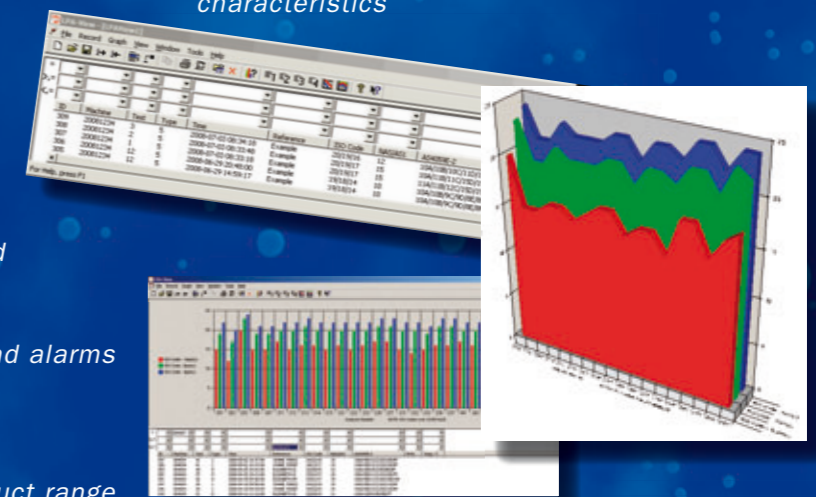
When connected to LPA View, the ICM can transfer results in realtime, or alternatively historical results can be downloaded from the ICM's inbuilt memory.

- Runs on Windows 2000, XP & Vista
- Full adjustment & control of product settings, test times and alarms
- Easy test report generation
- Trend analysis
- Graphical display options
- Universal format across our contamination monitoring product range

W Water and Temperature Sensing

The ICM "W" option indicates water content as a percentage of saturation and oil temperature in degrees centigrade. 100% RH corresponds to the point at which free water can exist in the fluid. i.e. the fluid is no longer able to hold the water in a dissolved solution. The sensor provides early indication of costly failure due to;

- Corrosion
- Metal surface fatigue e.g. bearing failure
- Reduced lubrication & load carrying characteristics

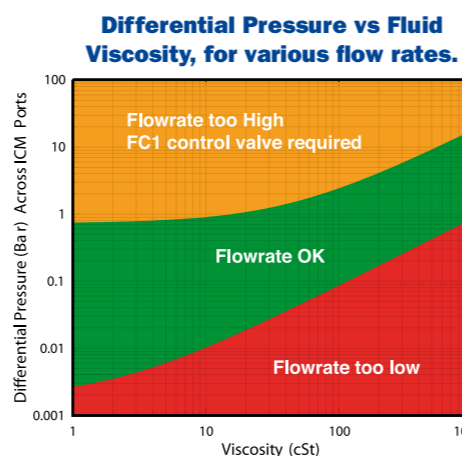


Specification

Technology	LED Based Light Extinction Automatic Optical Particle Counter
Particle Sizing	>4,6,14,21,25,38,50,70 µm(c) to ISO 4406 1999 Standard
Analysis Range \ Formats	ISO 4406: 1999 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 (1999), on equipment certified by IFTS.
Hydraulic Fluid Compatibility	Mineral oil & petroleum based fluids (consult MP Filtri for other fluids)
Flow Rate	20 - 400 ml/minute
Viscosity Range	≤ 1000 cSt
Fluid Temperature	-25 to +80 °C

Pressure Max	400 bar static. * For high frequency pressure pulse applications contact MP Filtri Ltd
Seal Material	Nitrile (NBR). Contact MP Filtri regarding any fluids that are incompatible with Nitrile seals.
Test Time	Adjustable 10 - 3600 seconds. Factory set to 120 seconds
Moisture Sensing	% RH (Relative Humidity) ±3%
Temperature Measurement	±3°C
Flow rate measurement	Indication only
Data Storage	4000 tests.
Comms Port	RS 485
Ambient Temperature	-25°C to 80°C non K version -25°C to 55°C K version
IP Rating	IP 65/67 versatile
Physical Dimensions	117(H) x 142(W) x 65(D)mm.
Fixing Holes	Centres 126mm apart, Diameter 6.9mm (for M6).

Weight	1.15kg
Electrical Supply	Voltage 9-36V DC
Supply Current	12V 24V 36V Basic Unit 70mA 40mA 30mA With -K (Keypad) 150mA 80mA 60mA
Power Consumption	<2.2W



How to Order

Example: ICM - W - M - K - R - G2

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

W Water and Temperature Sensing

* For high frequency pressure pulse applications contact MP Filtri Ltd.

Enter W if required, or 0 if not.

M Mineral Oil Fluid Compatibility .

K Keypad - Adds 6 key keypad and 128 x 64 pixel back-lit graphical display.

Enter K if required, or 0 if not.

R Relays. **Enter R if required, or 0 if not.**

Port Options

G1 ICM Standard minimess connections M16 x 2.

G2 1/8" BSP Ports.

G3 1/4" BSP Ports.

G4 7/16" UNF.

Warranty and Recalibration

Warranty The ICM is guaranteed for 12 months from date of receipt.

Re-calibration The ICM is recommended to be recalibrated every 12 months. Return to MP Filtri for recalibration.

As a policy of continual improvement, MP Filtri reserve the right to alter the specification without prior notice.