

Part number:

**HYDROMA**  
HYDRAULICKÉ SYSTÉMY

**HIDROMA**  
SYSTEMS  
UKŁADY HYDRAULICZNE

**HYDROMA**  
ГИДРАВЛИЧЕСКИЕ СИСТЕМЫ

## 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
- ◆ Enviromental protection IP 65/67

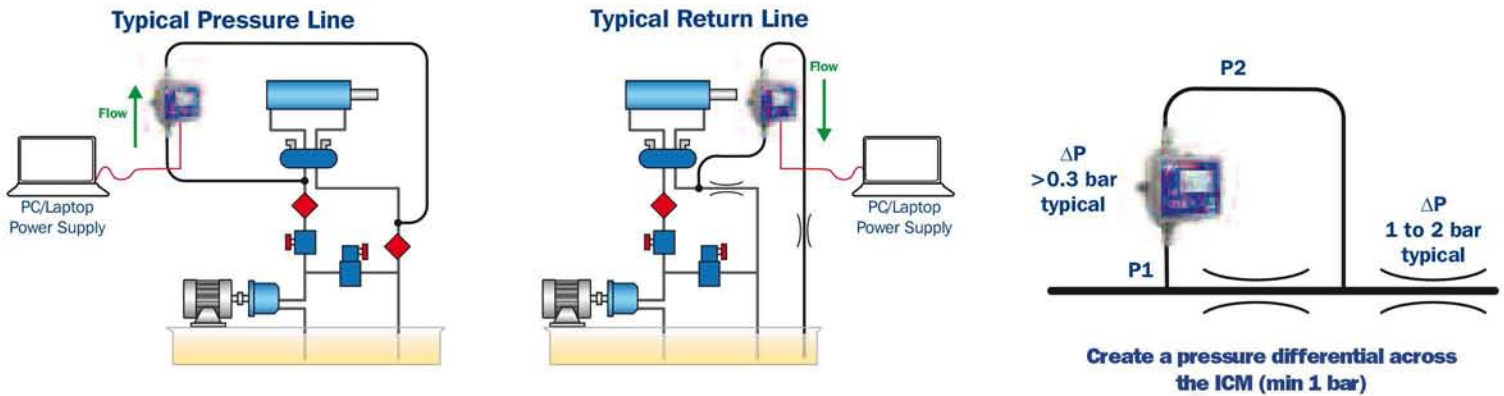


## Technical data

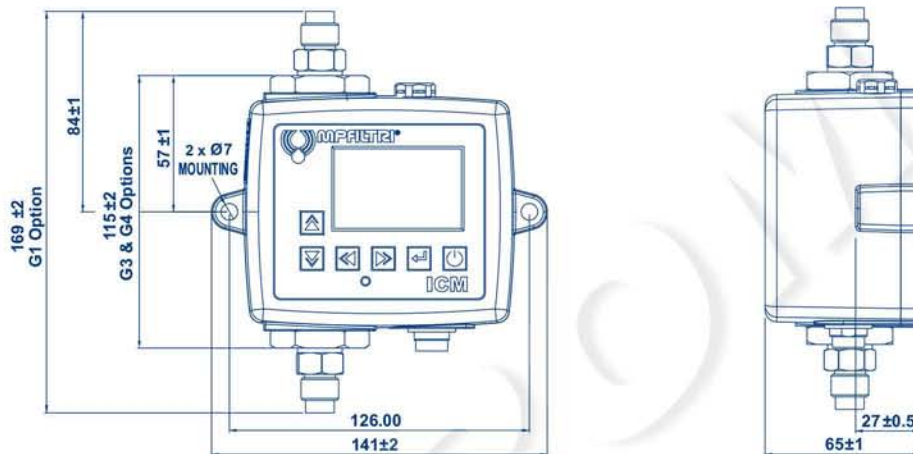
<b>Technology</b>	LED Based Light Extinction Automatic Optical Contamination Monitor
<b>Particle Sizing</b>	>4,6,14,21,25,38,50,70 µm(c) to ISO 4406 Standard
<b>Analysis range</b>	ISO 4406 Code 0 to 25, NAS 1638 Class 00 to 12, AS4059 Rev.E. Table 1&2 Sizes A-F: 000 to 12 ISO 11218 00-12 (Lower Limits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

# ICM – Inline Contamination Monitor

## 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<sup>(1)</sup>
- S** Phosphate ester and aggressive fluids<sup>(1)</sup>

### 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 minimess connections M16 x 2
- G3** 1/4" BSP - Female port
- G4** 7/16" UNF - Female port

<sup>(1)</sup> **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

<b>M</b>	Mineral oil
<b>N</b>	Subsea fluids and water based fluids
<b>S</b>	Phosphate ester and aggressive fluids

### 3 - Port options

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