FMU Δp-Indicators and Pressure Indicators

Indicators Series

MAX 420 bar
**Features & Benefits**

<table>
<thead>
<tr>
<th>Features</th>
<th>Advantages</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicators fatigue tested to full pressure rating</td>
<td>Reliable indicators for heavy duty applications</td>
<td>Reliable and continuous control of the filter in all applications</td>
</tr>
<tr>
<td>Cartridge screw-in type indicators</td>
<td>Easy mounting</td>
<td>Reliable sealing, no leakage</td>
</tr>
<tr>
<td>Visual, electrical and electronic indicators available</td>
<td>Check element condition at a glance</td>
<td>Optimises element life, prevents bypassing</td>
</tr>
<tr>
<td>Several indication settings</td>
<td>Optimized for each bypass setting</td>
<td>Match your system’s electrical connections</td>
</tr>
<tr>
<td>Visual indicators</td>
<td>Local monitoring of the element condition</td>
<td>Reliable low cost indicator</td>
</tr>
<tr>
<td>Electrical indicator with change-over switch</td>
<td>Option of Normally Open (N.O.) and Normally Closed (N.C.) function</td>
<td>Approved for low voltage and high voltage use including machine control systems and PLC’s</td>
</tr>
<tr>
<td>Electrical indicator with 4 LEDs</td>
<td>Thermal lock-out</td>
<td>No false alarm because of low temperature oil</td>
</tr>
<tr>
<td></td>
<td>Visual early warning with yellow LED</td>
<td>Allows time to schedule element change</td>
</tr>
<tr>
<td></td>
<td>Pre-alarm with yellow LED and wired output</td>
<td>Indicates upcoming element change</td>
</tr>
<tr>
<td></td>
<td>Alarm with red LED and wired output</td>
<td>Clear indication for element change</td>
</tr>
<tr>
<td>Programmable and ATEX certified indicators available</td>
<td>Right indicators for special applications</td>
<td>Improved machine surveillance</td>
</tr>
</tbody>
</table>

**Typical Applications**

- Industrial equipment
- Mobile equipment
- Marine/offshore applications

**The Parker FMU Series**  
**Differential Pressure Indicators**

The FMU range of filter condition indicators, are designed for use on a wide range of Parker filters and suitable for competitive interchange (consult Parker Filtration for details).

Ideal for giving accurate visual, electronic or electrical feedback of filter element condition, in order to facilitate effective maintenance and ensuring hydraulic systems, marine/mobile or industrial are protected from particulate contamination.
### Specification

Maximum operating pressure: 420 bar (250 bar for aluminium).

Maximum differential pressure: 210 bar.

Working temperature range: -20°C to +85°C.

Material of housing: Brass, aluminium or stainless steel.

Seals: Fluoroelastomer, Nitrile or EPDM.

The differential pressure values of standard indicator models:
- 1.2 bar ± 0.1
- 1.5 bar ± 0.2
- 2.5 bar ± 0.2
- 5.0 bar ± 0.4
- 7.0 bar ± 0.5
- 8.5 bar ± 0.5

(Indicators for other differential pressure values are optional).

### FMU Δp – Indicators are typically used with the following filters:

| Marine filters: 2020, 2035, 2040, 2045, 2060, 2065, 2070, 2110 and 2520. Types: 2035, 2040, 2045 and 2060 require FMU-Block for connecting indicator to the filter. U12H 1.5 bar |
| Medium pressure filters series: 45M and 130M. High pressure filters series: 70L, 70T, 70B, 5000, 7100 and 7200. U12H 2.5 bar |
| High pressure filters without bypass valve: 70L, 70T, 70B, 7100 and 7200. U12H 7.0 bar |
| Medium and low pressure filter series; Note for PD Range only 2.5 bar indicators are available 15CN, 40CN, 80CN, 22PD, 32PD, 15P, 30P, 40RF, 50RF, IL8, 12M, 22M, 16P, 26P, 36P U14M 1.2 and 2.5 bar |
| High pressure filters 18P, 28P, 38P, FDA, FDB U14H 2.5 and 5.0 bar |
**FMU Δp-Indicators**

**Indicators Series**

**FMUT Electrical**

Contact configuration U12H model

![U12H model]

Contact configuration U14M & U14H

![U14M model]

![U14H model]

**Enclosure class** IP65

**Electrical connector** DIN 43650

**Overvoltage category** II (EN61010-1)

**Operation**

<table>
<thead>
<tr>
<th>U12H</th>
<th>U14M</th>
<th>U14H</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>98</td>
<td>105</td>
</tr>
<tr>
<td>B</td>
<td>27.5</td>
<td>32</td>
</tr>
<tr>
<td>C</td>
<td>Ø16.2 ±0.05</td>
<td>Ø18.78 ±0.06</td>
</tr>
<tr>
<td>D</td>
<td>1/4-16 UNF-2A</td>
<td>7/16-14 UNF-2A</td>
</tr>
</tbody>
</table>

**Rated voltage**

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Resistive load (A)</th>
<th>Inductive load (A)</th>
<th>Motor load (A)</th>
<th>Inrush current (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>125Vac</td>
<td>5</td>
<td>1.5</td>
<td>0.7</td>
<td>2.5</td>
</tr>
<tr>
<td>250Vac</td>
<td>5</td>
<td>3</td>
<td>0.4</td>
<td>1.3</td>
</tr>
<tr>
<td>8Vdc</td>
<td>2</td>
<td>1.0</td>
<td>0.5</td>
<td>1.5</td>
</tr>
<tr>
<td>14Vdc</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>30Vdc</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>125Vdc</td>
<td>0.4</td>
<td>0.05</td>
<td>0.05</td>
<td>0.7</td>
</tr>
<tr>
<td>250Vdc</td>
<td>0.2</td>
<td>0.03</td>
<td>0.2</td>
<td>0.03</td>
</tr>
</tbody>
</table>

**Note:** Only FPUM3 visual auto reset available for models U14M and U14H. FMUM1 not available.

**FMUM3 Visual Auto Reset/FMUM1 Visual Manual Reset**

**Operation**

- **U12H model**: Red colour visible when indicator on
- **U14M model**: Red colour visible when indicator on
- **U14H model**: Red colour visible when indicator on
**FMUF Electronic**

**Contact configuration**

- **NPN**
  - FMU F
  - Normally open (N.O)
  - Fixed part
  - Rotating part 360°
  - Green LED
  - Yellow LED's
  - Red LED

- **PNP**
  - FMU F
  - Normally open (N.O)
  - Fixed part
  - Rotating part 360°
  - Green LED
  - Yellow LED's
  - Red LED

**Load max 300 mA**

**Thermal lock-out (standard setting +20°C)**

- Indicator operates only when temperature is above setting.
- Green LED is blinking if temperature is lower. (not in U12H)

<table>
<thead>
<tr>
<th>Ind. press.</th>
<th>LED status</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>Y1</td>
<td>Y2</td>
</tr>
<tr>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>75%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Enclosure class**

- IP65
- Electrical connector: DIN 43650, cable connection PG9 or optionally M12 4-pin
- Input supply voltage: +10 to 36 Vdc
- Indication output: max. 300 mA/36 Vdc
- Output type: N.O. or N.C., NPN or PNP

**Note:** Do not connect output terminals 1 or 2 directly (without load) to power supply terminals, because this will damage the equipment.

**FPUL1 Programmable**

**Programmable Δp-indicator**

- All settings adjustable (settings made via PC) Connections cable and software available from Parker
- 4 LEDs giving visual indication:
  - Green (G): Power ON
  - Yellow 1 (Y1): Pre-alarm 1 (presetting 50%)
  - Yellow 2 (Y2): Pre-alarm 2 (presetting 75%)
  - Red (R): Indication (presetting 100%)
- Two independently programmable indication outputs
- Can be set independently from each other and LED setting
- Output type: NPN or PNP
- Switching type: N.O. or N.C.
- Setting range: 0.5 ... 10 bar
- Thermal lock-out range: 0 ... 100°C
- Includes a microchip with memory logs
- Number of alarms: max 65535
- Time indication on (output 1): max 1092 hours
- Time power on (running hours): max 7 ½ years
- Upload and reset via PC

**Dimensions:** see FMUF electronic Δp-indicator

**Safety feature:** The 250 bar U14M indicator does not fit into the U14H cavity, which is used in 420 bar filters
# FMU Δp-Indicators

## Indicators Series

### Ordering Information

<table>
<thead>
<tr>
<th>Product configurator</th>
<th>Box 1</th>
<th>Box 2</th>
<th>Box 3</th>
<th>Box 4</th>
<th>Box 5</th>
<th>Box 6</th>
<th>Box 7</th>
<th>Box 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>FMU</td>
<td>M3</td>
<td>K</td>
<td>V</td>
<td>M</td>
<td>U14</td>
<td>H</td>
<td></td>
</tr>
</tbody>
</table>

### Box 1

**Code**
- **Indicator series**: Code
- **Filter monitoring unit**: FMU

### Box 2

**Filter type**
- **Differential pressure indicator**: Code
  - Visual manual set: M1
  - Visual autoreset: M3
  - Electrical: T1
  - Electronic 4 LED, PNP, N.O.: F1
  - Electronic 4 LED, NPN, N.O.: F2
  - Electronic 4 LED, NPN, N.C.: F3
  - Programmable with memory logs: L1
- **Ex version**: X1

* available only with U12 thread

### Box 3

**Indicator setting**
- **Indicator setting**: Code
  - 1.0 bar (14 psi): a
  - 1.2 bar (17 psi): b
  - 1.5 bar (21 psi): c
  - 2.5 bar (35 psi): a, b, c
  - 5.0 bar (70 psi): b
  - 7.0 bar (98 psi): c
  - 8.5 bar (125 psi): P

**Standard settings:***
- a: U14M, former -W3
- b: U14H, former -W6
- C: U12H, former -F6

### Box 4

**Seal type**
- **Seal material**: Code
  - Nitrile: B
  - Fluoroelastomer: V
  - EPDM: L
  - Neoprene: N

### Box 5

**Indicator body**
- **Code**
  - Aluminium (Box 7, code M): A
  - Brass (Box 7, code H): M
  - Stainless steel: N

### Box 6

**Thread connection**
- **Code**
  - 3/4" - 16UNF-2A: U12
  - 5/8" - 14UNF-2A: U14

### Box 7

**Max Pressure**
- **Max pressure**: Code
  - High pressure housings (<250 bar): M
  - High pressure housings (<420 bar): H

### Box 8

**Options**
- **Options**: Code
  - Standard: M
  - Other options: factory supplied

### Indicator type X1: ATEX Δp-indicator

Electronic indicator accordant with ATEX 94/9/EC directive: (Ex) II 2 GD Eex mII T6. Degree of protection IP66. For details contact Parker Filtration.

### Connection cable + software for programmable indicator L1

Connection cable for PC serial connection and software for indicator settings and utilising memory logs.

Ordering Code: 905075030

**Seal kits (fluoroelastomer)**
- Indicators with thread connection U12H (former -F6): 911045078
- Indicators with thread connection U14M (former -W3): 911045086
- Indicators with thread connection U14H (former -W6): 911045087

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Note 1: Part numbers featured with bold highlighted codes will ensure a ‘standard’ product selection.

Note 2: Alternate displayed part number selection will require you to contact Parker Filtration for availability.
### Pressure Indicators for Low Pressure Filters

#### ETF Filter
- **Visual pressure indicator**
  - **Code G2**
    - mm (inches)
  - **48 Vdc electrical indicator 1.2 bar**
  - **250 VAC electrical indicator 1.2 bar**

#### Options
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Connection/Voltage</th>
<th>Wiring</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>G2</td>
<td>Visual indicator 1.2 bar</td>
<td>N/A</td>
<td>N/A</td>
<td>FMUG2FBMGl02L</td>
</tr>
<tr>
<td>S2/S3</td>
<td>Electrical indicator 1.2 bar</td>
<td>42 Vdc max</td>
<td></td>
<td>FMUS2FBMGl02L or FMUS3FBMGl02L</td>
</tr>
<tr>
<td>S4</td>
<td>Electrical indicator 1.2 bar</td>
<td>250 Vac max</td>
<td></td>
<td>FMUS4FBMGl02L</td>
</tr>
</tbody>
</table>

#### Indicator PS pressure switch
- **Visual indicator**
  - 1.2 bar
  - Code G2
  - 42 Vdc / max

- **Electrical indicator**
  - 1.2 bar
  - Code S2/S3
  - 250 Vac /max

#### Indicator PS NO/NC pressure switch
- **Visual indicator**
  - 1.2 bar
  - G1/8: Code FMUG2EBPM10L
  - M10: Code FMUS2EBMGl02L

#### Specifications
<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>42V / 4A</td>
<td></td>
</tr>
<tr>
<td>M10x1</td>
<td></td>
</tr>
<tr>
<td>AMP 6.3x8 terminals + protective cap</td>
<td></td>
</tr>
<tr>
<td>IP65 (terminals IP00)</td>
<td></td>
</tr>
<tr>
<td>FMUS1EBMGl02L (switch)</td>
<td></td>
</tr>
<tr>
<td>FMUG2FBMGl02L (NO switch)</td>
<td></td>
</tr>
<tr>
<td>FMUS3FBMGl02L (NC switch)</td>
<td></td>
</tr>
<tr>
<td>Normally open contacts</td>
<td></td>
</tr>
</tbody>
</table>