Radiometric level and density measurement Gammapilot FMG50

Compact transmitter for point level detection, continuous level, interface and density measurement

Benefits:
- First real 2-wire loop-powered compact transmitter minimizes engineering and installation efforts
- Reduced installation and engineering costs thanks to the first 2-wire loop powered compact transmitter
- Increased plant safety, efficiency and availability even under extreme process and ambient conditions
- Designed according to IEC 61508 with SIL2/3 approval for all measuring tasks
- Reduced verification effort and minimized plant shut-downs due to state-of-art Heartbeat Technology
- Usage in up to +80°C (+176°F) ambient temperature without additional cooling thanks to innovative sensor technology
- Bluetooth® wireless technology for remote operation out of the radiation beam

Specs at a glance
- Process temperature Any
- Process pressure / max. overpressure limit Any
- Max. measurement distance Unlimited measuring range, Cascade
- Accuracy +/-1%
- Main wetted parts Non-contact

Field of application: The Gammapilot FMG50 compact transmitter is designed for non-contact point level detection, continuous level, interface and density measurement in liquids, solids, suspensions or
sludges. As the first true 2-wire loop powered compact transmitter it minimizes engineering and installation efforts.

Features and specifications

<table>
<thead>
<tr>
<th>Continuous / Liquids</th>
<th>Measuring principle</th>
<th>Radiometric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristic / Application</td>
<td>Compact transmitter for extreme process conditions (temperature, pressure);</td>
<td>Non-contact measuring technique</td>
</tr>
<tr>
<td>Interface measurement</td>
<td>Interfaces liquid / liquid also with emulsion layers</td>
<td>Interfaces liquid / solid</td>
</tr>
<tr>
<td>Specialities</td>
<td>Heartbeat Technology,</td>
<td>SIL 2/3 according to IEC 61508,</td>
</tr>
<tr>
<td></td>
<td>Bluetooth® commissioning, operation and maintenance with the SmartBlue App</td>
<td></td>
</tr>
<tr>
<td>Supply / Communication</td>
<td>2-wire loop powered</td>
<td></td>
</tr>
<tr>
<td>Accuracy</td>
<td>+/-1%</td>
<td></td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-40 °C...+80 °C,</td>
<td>(-40 °F...+176 °F)</td>
</tr>
<tr>
<td>Process temperature</td>
<td>Any</td>
<td></td>
</tr>
<tr>
<td>Process pressure / max. overpressure limit</td>
<td>Any</td>
<td></td>
</tr>
</tbody>
</table>
### Continuous / Liquids

**Main wetted parts**
Non-contact

**Process connection**
Non-contact

**Sensor length**
PVT scintillator
400 mm...3000 mm,
>3000 mm cascade mode

**Max. measurement distance**
Unlimited measuring range,
Cascade

**Communication**
4...20 mA HART

**Certificates / Approvals**
ATEX, IEC Ex, CSA C/US, NEPSI, INMETRO, EAC Ex, JPN Ex, KC Ex

**Safety approvals**
Overfill protection WHG
SIL 2/3

**Design approvals**
EN 10204-3.1

**Options**
Display

**Components**
Isotope: FSG60, FSG61,
Source container: FQG60, FQG61, FQG62, FQG63, FQG66,
Mounting accessories: FHG61
Continuous / Solids

**Measuring principle**
Radiometric

**Characteristic / Application**
Compact transmitter for extreme process conditions (temperature, pressure);
Non-contact measuring technique

**Specialities**
Heartbeat Technology,
SIL 2/3 according to IEC 61508,
Bluetooth® commissioning, operation and maintenance with the SmartBlue App

**Supply / Communication**
2-wire loop powered

**Accuracy**
+/-1%

**Ambient temperature**
-40 °C...+80 °C,
(-40 °F...+176 °F)

**Process temperature**
Any

**Process pressure / max. overpressure limit**
Any

**Main wetted parts**
Non-contact

**Process connection**
Non-contact
Continuous / Solids

**Sensor length**
PVT scintillator
400 mm...3000 mm,
>3000 mm cascade mode

**Max. measurement distance**
Unlimited measuring range,
Cascade

**Communication**
4...20 mA HART

**Certificates / Approvals**
ATEX, IEC Ex, CSA C/US, NEPSI, INMETRO, EAC Ex, JPN Ex, KC Ex

**Safety approvals**
Overfill protection WHG
SIL 2/3

**Design approvals**
EN 10204-3.1

**Options**
Display

**Components**
Isotope: FSG60, FSG61,
Source container: FQG60, FQG61, FQG62, FQG63, FQG66,
Mounting accessories: FHG61

Point Level / Liquids

**Measuring principle**
Radiometric Limit

**Characteristic / Application**
Compact transmitter for extreme process conditions (temperature, pressure);
Non-contact measuring technique
Point Level / Liquids

Specialities
Heartbeat Technology,
SIL 2/3 according to IEC 61508,
Bluetooth® commissioning, operation and maintenance with the SmartBlue App

Supply / Communication
2-wire loop powered

Ambient temperature
-40 °C...+80 °C,
(-40 °F...+176 °F)

Process temperature
Any

Process pressure / max. overpressure limit
Any

Main wetted parts
Non-contact

Process connection
Non-contact

Sensor length
PVT scintillator:
200 mm...400 mm,
NAI scintillator:
50 x 50 mm,
50 x 100 mm

Communication
4...20 mA HART

Certificates / Approvals
ATEX, IEC Ex, CSA C/US, NEPSI, INMETRO, EAC Ex, JPN Ex, KC Ex
### Point Level / Liquids

**Safety approvals**
- Overfill protection WHG
- SIL 2/3

**Design approvals**
- EN 10204-3.1

**Options**
- Display

**Components**
- Isotope: FSG60, FSG61,
- Source container: FQG60, FQG61, FQG62, FQG63, FQG66,
- Mounting accessories: FHG61

### Point Level / Solids

**Measuring principle**
- Radiometric Limit

**Characteristic / Application**
- Compact transmitter for extreme process conditions (temperature, pressure);
- Non-contact measuring technique

**Specialities**
- Heartbeat Technology,
- SIL 2/3 according to IEC 61508,
- Bluetooth® commissioning, operation and maintenance with the SmartBlue App

**Supply / Communication**
- 2-wire loop powered

**Ambient temperature**
- -40 °C...+80 °C,
  (-40 °F...+176 °F)
## Point Level / Solids

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Process temperature</strong></td>
<td>Any</td>
</tr>
<tr>
<td><strong>Process pressure / max. overpressure limit</strong></td>
<td>Any</td>
</tr>
<tr>
<td><strong>Main wetted parts</strong></td>
<td>Non-contact</td>
</tr>
<tr>
<td><strong>Process connection</strong></td>
<td>Non-contact</td>
</tr>
</tbody>
</table>
| **Sensor length**             | PVT scintillator:  
  200 mm...400 mm,  
  NAI scintillator:  
  50 x 50 mm,  
  50 x 100 mm |
| **Communication**             | 4...20 mA HART                                    |
| **Certificates / Approvals**  | ATEX, IEC Ex, CSA C/US, NEPSI, INMETRO, EAC Ex, JPN Ex, KC Ex |
| **Safety approvals**          | Overfill protection WHG  
  SIL 2/3                                              |
| **Design approvals**          | EN 10204-3.1                                      |
| **Options**                   | Display                                          |
| **Components**                | Isotope: FSG60, FSG61,  
  Source container: FQG60, FQG61, FQG62, FQG63, FQG66,  
  Mounting accessories: FHG61 |
Density

**Measuring principle**
Radiometric Density

**Characteristic / Application**
Compact transmitter for extreme process conditions (temperature, pressure);
Non-contact measuring technique

**Supply / Communication**
2-wire loop powered

**Ambient temperature**
-40 °C...+80 °C,
(-40 °F...+176 °F)

**Process temperature**
Any

**Process pressure**
Any

**Wetted parts**
Non-contact

**Sensor length**
PVT scintillator:
200 mm...400 mm,
NAI scintillator:
50 x 50 mm,
50 x 100 mm

**Output**
4...20 mA HART

**Certificates / Approvals**
ATEX, IEC Ex, CSA C/US, NEPSI, INMETRO, EAC Ex, JPN Ex, KC Ex

**Options**
Display
Density

**Specialities**
Heartbeat Technology,
SIL 2/3 according to IEC 61508,
Bluetooth® commissioning, operation and maintenance with the SmartBlue App

**Components**
Isotope: FSG60, FSG61,
Source container: FQG60, FQG61, FQG62, FQG63, FQG66,
Mounting accessories: FHG61

More information [www.us.endress.com/FMG50](http://www.us.endress.com/FMG50)