Digispec RF

**RF With Pulse Output, Connector Type, 11/16-24**

<table>
<thead>
<tr>
<th>VO, PULSE OUT</th>
<th>FEATURE</th>
<th>PRODUCT CODE</th>
<th>MARKING #</th>
<th>P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 5 V, NPN</td>
<td>50 kHz</td>
<td>RF-5Vo HS 50kHz-MO3 K11/16-24x1.1/2.8&quot; 2TE</td>
<td>FM DR-001-50kHz</td>
<td>0097-11C00</td>
</tr>
<tr>
<td></td>
<td>w/ LED</td>
<td>RF-5Vo LED-MO3 K11/16-24x1.1/2.8&quot; (100°C)</td>
<td>FM DR-001L</td>
<td>0097-11A00</td>
</tr>
<tr>
<td></td>
<td>w/ RTD</td>
<td>RF-5Vo HS RTD-B6 K11/16-24x1.1/2.8&quot; 3TE</td>
<td>FM DR-001RTD</td>
<td>0097-5A100</td>
</tr>
<tr>
<td></td>
<td>w/ RTD &amp; LED</td>
<td>RF-5Vo LED RTD-B6 K11/16-24x1.1/2.8&quot; (100°C)</td>
<td>FM DR 001LRTD</td>
<td>0097-5AA00</td>
</tr>
<tr>
<td></td>
<td>w/ LED</td>
<td>RF-10Vo LED-MO3 K11/16-24x1.1/2.8&quot; (100°C)</td>
<td>FM DR-003L</td>
<td>0097-11B00</td>
</tr>
<tr>
<td></td>
<td>w/ LED</td>
<td>RF-Vs OC PNP LED-MO3 K11/16-24x1.1/2.8&quot; (100°C)</td>
<td>FM DR-004L</td>
<td>0097-11D00</td>
</tr>
<tr>
<td></td>
<td>w/ LED</td>
<td>RF-Vs OC LED-MO3 K11/16-24x1.1/2.8&quot; (100°C)</td>
<td>FM DR-005L</td>
<td>0097-11E00</td>
</tr>
</tbody>
</table>

**Operating Frequency:** ≤ 0.5 Hz TO 5000 Hz

**Construction:**
- Housing: 303 SS, solid epoxy encapsulation
- Connector (gold plated contacts)
- MO3: MS-3102-10SL-3P MATE: MS-3106-10SL-3S
- B6: PT02A-10-6P MATE: PT06A-10-6S
- High shock and vibration resistance (impact: 25Gs min., vibration: 2Gs at 2000 Hz min.)

**Supply Voltage:** 11 - 30 VDC @ ≤ 25mA (≤ 18mA max for OC versions)

**Temperature Range:**
- LED: -40° to +212° F (-40° to +100° C)
- 2TE: -40° to +250° F (-40° to +120° C)
- 3TE: -40° to +284° F (-40° to +140° C)

**Temperature Probe:** RTD 100Ω; Accuracy: Class A [±0.15 +0.002*T (°C)]

**CE Compliance:** EN 55011, EN 50082-2
Digispec RF

**RF With Pulse Output, Lead Wire Type, 11/16-24**

<table>
<thead>
<tr>
<th>VO, PULSE OUT</th>
<th>FEATURE</th>
<th>PRODUCT CODE</th>
<th>MARKING #</th>
<th>P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 5 V, NPN @ ≤ 20mA sink</td>
<td>w/ LED</td>
<td>RF-5Vo LED-L12&quot; K11/16-24x1.1/2.3&quot; (100°C)</td>
<td>FM DR-001LX</td>
<td>0098-11A01</td>
</tr>
<tr>
<td>0 - 5 V, NPN @ ≤ 20mA sink</td>
<td>w/ RTD</td>
<td>RF-5Vo HS RTD-L12&quot; K11/16-24x1.1/2.3&quot; 3TE</td>
<td>FM DR-001RTDX</td>
<td>0098-1A101</td>
</tr>
<tr>
<td>0 - 5 V, NPN @ ≤ 20mA sink</td>
<td>w/ RTD &amp; LED</td>
<td>RF-5Vo LED RTD-L12&quot; K11/16-24x1.1/2.3&quot; (100°C)</td>
<td>FM DR-001LRTDX</td>
<td>0098-1AA01</td>
</tr>
<tr>
<td>0 - 10 V, NPN @ ≤ 20mA sink</td>
<td>w/ LED</td>
<td>RF-10Vo LED-L12&quot; K11/16-24x1.1/2.3&quot; (100°C)</td>
<td>FM DR-003LX</td>
<td>0098-11B01</td>
</tr>
<tr>
<td>0 - Vs, OC, PNP @ ≤ 20mA source</td>
<td>w/ LED</td>
<td>RF-Vs OC PNP LED-L12&quot; K11/16-24x1.1/2.3&quot; (100°C)</td>
<td>FM DR-004LX</td>
<td>0098-11D01</td>
</tr>
<tr>
<td>0 - Vs, OC, NPN @ ≤ 20mA sink</td>
<td>w/ LED</td>
<td>RF-Vs OC LED-L12&quot; K11/16-24x1.1/2.3&quot; (100°C)</td>
<td>FM DR-005LX</td>
<td>0098-11E01</td>
</tr>
</tbody>
</table>

**OPERATING FREQUENCY:** ≤ 0.5 Hz TO 5000 Hz

DEPENDING ON TARGET MASS AND AIR GAP

**CONSTRUCTION:**

HOUSING: 303 SS, SOLID EPOXY ENCAPSULATION

20 AWG, TFE INSULATED

**LEAD WIRES:**

HIGH SIGNAL OUTPUT

HIGH SHOCK AND VIBRATION RESISTANCE

(IMPACT: 25Gs MIN., VIBRATION: 2Gs AT 2000 Hz MIN.)

**SUPPLY VOLTAGE:**

11 - 30 VDC @ ≤ 25mA (≤ 18mA max for OC versions)

**TEMPERATURE RANGE:**

LED: -40° to +212° F (-40° to +100° C)

2TE: -40° to +250° F (-40° to +120° C)

3TE: -40° to +284° F (-40° to +140° C)

**TEMPERATURE PROBE:**

RTD 100Ω; ACCURACY: CLASS A [±0.15 +0.002°T (°C)]

**CE COMPLIANCE:**

EN 55011, EN 50082-2
# Digispec RF

**RF/ HFL With, Pulse Output, Connector Type, 1/2-20**

<table>
<thead>
<tr>
<th>FLOWMETRICS P/N</th>
<th>Vs Supply Voltage</th>
<th>Vo Pulse Out</th>
<th>PRODUCT CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0425-01</td>
<td>7 - 30 VDC @ 18 mA max.</td>
<td>0 -5 V, NPN 25 mA sink</td>
<td>RF-5Vo-LED-MO3 K 1/2-20x1.0/3.3&quot;, 2TE</td>
</tr>
<tr>
<td>0425-02</td>
<td></td>
<td>0 -Vs, OC, PNP 20 mA source</td>
<td>RF-Vs PNP LED-MO3, K 1/2-20x1.0/3.3&quot;, 2TE</td>
</tr>
<tr>
<td>0425-22</td>
<td>7 - 30 VDC @ 20 mA max.</td>
<td>0 -Vs, OC, PNP 20 mA source</td>
<td>HFL-Vs PNP LED-MO3 K 1/2-20x1.0/3.3&quot;, 2TE</td>
</tr>
</tbody>
</table>

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**SENSOR TYPE:**
- RF SENSOR WITH LED INDICATOR
- HFL SENSOR WITH LED INDICATOR

**CONSTRUCTION:**
- HOUSING: 303 OR 304 SS, INCLUDING FACE
- SOLID EPOXY ENCAPSULATION
- POLARITY PROTECTED
- CONNECTOR: MS3: MS-3102-10SL-3P

**TEMPERATURE RANGE:**
- -40° to 257° F (-40° to 125° C)

**CE COMPLIANCE:**
- EN 55011, EN 50082-2
Digispec RF

Intrinsically Safe, Connector Type, 11/16-24

<table>
<thead>
<tr>
<th>OUTPUT TYPE</th>
<th>PRODUCT CODE</th>
<th>P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5V, NPN</td>
<td>RF-IS-5Vo-MO3 K11/16-24x1.1/2.8&quot;</td>
<td>IS100-K3111</td>
</tr>
<tr>
<td>0-10V, NPN</td>
<td>RF-IS-10Vo-MO3 K11/16-24x1.1/2.8&quot;</td>
<td>IS100-K3112</td>
</tr>
<tr>
<td>0-Vs, NPN OC</td>
<td>RF-IS-Vs OC-MO3 K11/16-24x1.1/2.8&quot;</td>
<td>IS100-K3114</td>
</tr>
</tbody>
</table>

**SPECIFICATIONS**

**Supply Voltage & Current:** 8-30Vdc @ ≤ 15mA

**Output Voltage:** See table above

(20 mA max. current sink)

Reverse polarity protected

**Frequency Range:** ≥ 0.5 Hz to ≤ 5 kHz

**Air Gap:** ≤ .20” Depending on target mass

**Connector:** MS3102A10SL-3P

3 Gold Plated Pins

**Temperature**

Class & Range: T5 -40 to 85°C

T6 -40 to 65°C

**Construction:** 300 Series Stainless Steel

Solid Epoxy Encapsulation

**CERTIFICATIONS**

Please refer to Installation Instruction Document # 85047 and marking on product for appropriate certification information.

**INSTALLATION**

CAUTION: This sensor MUST be installed with an approved barrier and follow the details specified in the Installation Instruction Document # 85045. Refer to Bulletin 4003 for recommended barriers.
**Digispec RF**

*Intrinsically Safe, Lead Wise Type, 11/16-24*

<table>
<thead>
<tr>
<th>OUTPUT TYPE</th>
<th>PRODUCT CODE</th>
<th>P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5V, NPN</td>
<td>RF-IS-5Vo-LS120&quot; K11/16-24x1.1/2.3&quot;</td>
<td>IS101-K3131</td>
</tr>
<tr>
<td>0-10V, NPN</td>
<td>RF-IS-10Vo-LS120&quot; K11/16-24x1.1/2.3&quot;</td>
<td>IS101-K3132</td>
</tr>
<tr>
<td>0-Vs, NPN OC</td>
<td>RF-IS-Vs OC-LS120&quot; K11/16-24x1.1/2.3&quot;</td>
<td>IS101-K3134</td>
</tr>
</tbody>
</table>

**SPECIFICATIONS**

Supply Voltage & Current: 8-30Vdc @ ≤ 15mA

Output Voltage: See table above
(20 mA max. current sink)
Reverse polarity protected

Frequency Range: ≥ 0.5 Hz to ≤ 5 kHz

Air Gap: ≤ .20”
Depending on target mass

Cable: 22 AWG, PVC insulated
3 conductor shielded cable

Temperature Class & Range: T5 -40 to 85°C
T6 -40 to 65°C

Construction: 300 Series Stainless Steel
Solid Epoxy Encapsulation

**CERTIFICATIONS**

Please refer to Installation Instruction Document # 85047
and marking on product for appropriate certification information.

**INSTALLATION**

CAUTION: This sensor MUST be installed with an
approved barrier and follow the details specified in
the Installation Instruction Document # 85045.
Refer to Bulletin 4003 for recommended barriers.
**Digispec RF**

**Intrinsically Instruction, Intrinsically Safe**

### Non-Hazardous Location

- **I.S. Barrier**
  - See note 1
  - (Associated Equipment)
    - $V_{\text{max}, UI} \geq U_0, V_{oc} + V_f$
    - $I_{\text{max}, II} \geq I_0, I_{sc} + I_t$
    - $C_{or} \geq C_{or} + C_c$

- **Cable seal**

### Hazardous Location

- **(Intrinsically Safe Equipment)**
  - $V_{\text{max}, UI} = 30 \text{ Vdc}$
  - $I_{\text{max}, II} = 100 \text{ mA}$
  - $C = 0 \text{ nF}$ (for IS100, IS101, IS100A, IS101A, IS120, IS121, IS1220 & IS1221)
  - $C = 12 \text{ nF}$ (for IS90, IS90A, IS91, IS91A, IS160, IS160A, IS161, IS161A, IS170, IS170A, IS171 & IS171A)
  - $U_0 = 0 \text{ mH max.}$
  - $P_{\text{max}, PI} \leq 0.66 \text{ watts}$

- **ATEX:** II 1 G Ex ia IIC T6...T4 Ga
- **FM08ATEX0066X**
- **IECEx:** Ex ia IIC T6...T4 Ga
- **IECEx FMG 16.0003X**
  - $T_4 @ -40^\circ \text{C} \leq T_{\text{amb}} \leq +100^\circ \text{C}$
  - $T_5 @ -40^\circ \text{C} \leq T_{\text{amb}} \leq +85^\circ \text{C}$
  - $T_6 @ -40^\circ \text{C} \leq T_{\text{amb}} \leq +65^\circ \text{C}$

#### CE:
- Compliance with
  - EN55011, EN50082-2

### 1. Barrier must satisfy the electrical requirements listed above.

Barrier manufacturer's installation drawing must be followed when installing the system. For US installations, the Barrier configuration must be FM Global approved. See Bulletin 4003 for recommended barriers.

### 2. Installation

To be in accordance with the following standards:
- for US installations follow ANSI/ISA RP12.6 and the National Electrical Code ANSI/NFPA 70,
- for Canadian installations follow the Canadian Electrical Code,
- for ATEX installations follow EN 60079-14, for IECEx installations follow IEC 60079-14.

### 3. Control Equipment

Connected to associated equipment must not use or generate more than 250V.

### 4. Sensor must be mounted as part of a bonded structure.

### 5. Sensor should be de-energized before separating connector and sensor.

### 6. Aluminum housings: The mounting bracket contains aluminum and is considered to constitute a potential risk of ignition by impact or friction and must be taken into account during installation.

### 7. Lead Wires: Red/Vs+, Black/Common-, White/Vo Output A, Yellow/Vo Output B, Green/Direction

**Connector:**

- **MO3**
  - Molex: Amphenol MS3080A150L-05
  - Molex: Amphenol MS31163-45

- **B4**
  - Amphenol MS31163-45

- **MC3**
  - Turck: KS 37
  - Turck: RE 4.47

- **MD4**
  - Turck: KS 37
  - Turck: RE 87

- **MC5**
  - Turck: KS 37
  - Turck: RE 87

- **MD6**
  - Turck: KS 37
  - Turck: RE 87

- **B6**
  - Amphenol MS31163-45