

## IntelliPoint RF Series

### Point Level Switch



The **IntelliPoint RF** From  
**DREXELBROOK®**  
*Auto-Calibration!*

#### Intelligent Electronics

- No calibration or setpoint adjustments.
- Ignores changes in dielectric or conductivity.
- Automatically recognizes and ignores coatings to prevent false alarms.
- Continuous self-test monitors circuits and sensing elements for faults.
- Universal power supply automatically detects input power source.

#### Diverse Applications

- Detects the absence or presence of liquids, slurries, interfaces and granulars.

#### Output

- (2) SPDT relays; relay#2 can be configured as an alarm or fault.

#### Dual Compartment Housing

- Power Supply is isolated from intrinsically-safe sensing element and circuit board.

#### Remote or Integral Electronics

- Unlike many technologies, electronics can be remote mounted to a convenient or safe location

### One of the Drexelbrook RF Point Level Switches You Won't Have to Calibrate

Simply install the IntelliPoint RF Series into the tank and apply power...that's it! Unlike other RF or capacitance systems that require calibration via setpoint potentiometers, jumpers, magnets, or pushbuttons, the IntelliPoint RF Series reliably detects the absence or presence of material without any adjustments.

The IntelliPoint RF Series software continuously monitors the application for changes in composition, dielectric or conductivity, and maintains a repeatable trip point on the probe. Other RF and capacitance systems require calibration adjustments when the process material is changed. Since the IntelliPoint RF Series recognizes changes in material, it is ideal for non-dedicated tanks that are used for a wide variety of products.

#### Universal Power Supply

The IntelliPoint electronics use a universal power supply module that can be powered from a 85 to 250 Vac or 21 to 100 Vdc supply without moving jumpers.

#### Self-Test Feature

Automatic and manual test functions ensure proper system operation. An AutoVerify™ self-check circuit continuously monitors that the complete system is functioning properly. The Manual Certify not only checks the function of the system, but also checks the AutoVerify self-test circuits to make sure that they are also working properly.

#### Dual Compartment Housing

New dual compartment housing separates the customer wiring and power supply from the sensing element and operating circuits. The encapsulated power supply/terminal block design eliminates the possibility of damage caused by moisture in the conduit.



# Point Level Measurement

## IntelliPoint RF Series

### Specifications

**Technology:**  
RF Admittance.

**Calibration:**  
None.

**Modes Of Operation:**  
High and Low Level.

**Repeatability:**  
2 mm (0.08 inch) conductive liquids.

**Response Time:**  
Less than one second.

**Ambient Electronic Temperature:**  
-30 to 70°C (-28 to 158°F) ATEX.  
-40 to 70°C (-40 to 158°F) FM / FMc.

**Storage Temperature:**  
-40 to 85°C (-40 to 185°F).

**Indicators:**  
LEDs: Green Power, Red Relay 1, Red Relay 2.

**Self-Check:**  
AutoVerify automatically and continuously checks electronics and sensing element for faults. Manual Certify checks that the AutoVerify circuits are functioning.

**Time Delay:**  
0-60 seconds, forward or reverse-acting.

**Supply Voltage:**  
85-250 Vac  
21-100 Vdc auto-detecting without jumpers  
DC to 400 Hz.

**Power Consumption:**  
2 watts maximum.

**Relay Contacts:**  
(2) SPDT.

**Maximum Contact Load:**  
5A/30 Vdc.  
5A/250 Vac.

**Maximum Switching Capacity:**  
2000 VA/150 Watt.

**Minimum Contact Load (DC):**  
100 mA/12 Vdc.  
0 to 200 mA / 12 VDC (Optional)



**Housing:**  
Dual Compartment, Powder-Coated aluminum with two cable entries.

**Cable Entry:**  
M20 x 1.5 CENELEC  
¾-inch NPT FM / FMc.

**Ingress Protection:**  
IP66 NEMA 4X.



### Approvals:

Integral

 II 2 (1) G Ex d [ia] IIC T5... T2  
II 2 (1) D Ex tb [ia] IIIC T90°C  
FM14ATEX0049  0575

Temperature Class	Process Temperature
T5	100°C
T4	135°C
T3	200°C
T2	230°C

Remote

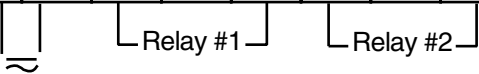
 II 2 (1) G Ex d [ia] IIC T5... T2  
II 2 (1) D Ex tb [ia] IIIC T90°C  0575



Explosionproof for Class I, Division 1, Groups A, B, C and D; Dust-Ignitionproof for Class II, III, Division 1, Groups E, F and G; Nonincendive for Class I, Division 2, Groups A, B, C & D; Suitable for Class II, III, Division 2, Groups F & G hazardous outdoor Type 4, 4X, IP66 (classified) locations with Intrinsically Safe connections to Class I, II, III, Division 1, Groups A, B, C, D, E, F and G hazardous (classified) locations in accordance with Control Drawing 420-0004-144-CD.

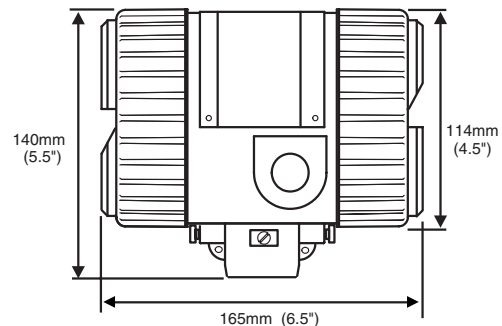
### Wiring

1	2	3	4	5	6	7	8
L1	L2	NO	C	NC	NO	C	NC



85 to 250 Vac  
21 to 100 Vdc  
Auto-Detecting

### Dimensions



# Point Level Measurement

## IntelliPoint RF Series

### Model Numbering (continued on next page)

#### Technology

R RF Admittance

#### Measurement Type

L No Calib., 2 pF Fixed Preload

P No Calib., 0.5 pF Fixed Preload (High Sensitivity)

M Manual Calibration

G Manual Calibration (High Sensitivity)

V No Calib., 10 pF Fixed Preload

#### Input

L Universal Power Supply 21-100 VDC, 85-250 VAC, 0-400 Hz

#### Housing

- 0 No Approvals, NEMA 4X/IP66, M20 X 1.5 conduit entries
- 1 No Approvals, NEMA 4X/IP66, ¾" NPT conduit entries
- 2 ATEX Approved, NEMA 4X/IP66, M20 X 1.5 conduit entries
- 3 FM / FMc Approved, NEMA 4X/IP66, ¾" NPT conduit entries
- 5 No Approvals, NEMA 4X/IP66, M20 X 1.5 conduit entries, Dual Seal, Perm-a-Seal sensors – only
- 6 No Approvals, NEMA 4X/IP66, ¾" NPT conduit entries, Dual Seal, Perm-a-Seal sensors – only
- 7 FM / FMc Approved, NEMA 4X/IP66, ¾" NPT conduit entries, Dual Seal, Perm-a-Seal sensors – only
- 9 No Approvals, NEMA 4X/IP66, M20 X 1.5 conduit entries, Dual Seal, Non Perm-a-Seal sensors – only
- A No Approvals, NEMA 4X/IP66, ¾" NPT conduit entries, Dual Seal, Non Perm-a-Seal sensors – only
- B FM / FMc Approved, NEMA 4X/IP66, ¾" NPT conduit entries, Dual Seal, Non Perm-a-Seal sensors – only

#### Electronics

- |                                      |   |   |
|--------------------------------------|---|---|
| 0 Integral                           | 7 Rmt. w/ (25 ft.) Tri-Ax Cable           | E Rmt. w/ (75 ft.) 1st 10ft Hi-Temp. Cbl. |
| 1 Remote, no cable                   | 8 Rmt. w/ (50 ft.) Tri-Ax Cable           | F Rmt. w/ (5 ft.) G.P. Cable              |
| 2 Rmt. w/ 3 m (10 ft.) G.P. Cable    | 9 Rmt. w/ (75 ft.) Tri-Ax Cable           | G Rmt. w/ (5 ft.) Tri-Ax Cable            |
| 3 Rmt. w/ 7.6 m (25 ft.) G.P. Cable  | A Rmt. w/ (10 ft.) Hi-Temp. Cable         | H Rmt. w/ (10 ft.) Tri-Ax Cable           |
| 4 Rmt. w/ 10.6 m (35 ft.) G.P. Cable | B Rmt. w/ (25 ft.) 1st 10ft Hi-Temp. Cbl. | J Rmt. w/ (35 ft.) Tri-Ax Cable           |
| 5 Rmt. w/ 15.2 m (50 ft.) G.P. Cable | C Rmt. w/ (35 ft.) 1st 10ft Hi-Temp. Cbl. | K Rmt. w/ (5 ft.) Hi-Temp. Cable          |
| 6 Rmt. w/ 23 m (75 ft.) G.P. Cable   | D Rmt. w/ (50 ft.) 1st 10ft Hi-Temp. Cbl. |   |

#### Output

- 1 Two SPDT Relays, relay #2 configured as alarm or fault (Min=100 mA / 12 VDC)
- 2 Two SPDT Relay, gold plated contacts (Max 200 mA / 12 VDC)

#### Sensing Element

Application	Sensing Element	Pressure/Temperature	Wetted Parts
00 General purpose	700-1202-001 remote 700-1202-021 integral	13.8 bar @ 232°C (200 PSI @ 450°F)	316SS and PEEK
01 Floating roof with cable attachment and brass bottom weight	700-1202-012 remote 700-1202-022 integral	13.8 bar @ 232°C (200 PSI @ 450°F)	316SS, Brass, and PEEK
02 General purpose, longer insertion lengths with cable attachment and 316SS bottom weight	700-1202-014 remote 700-1202-024 integral	13.8 bar @ 232°C (200 PSI @ 450°F)	316SS and PEEK
03 Proximity	700-1202-018 remote 700-1202-028 integral	13.8 bar @ 232°C (200 PSI @ 450°F)	316SS and PEEK with 76 mm (3) 316SS proximity plate
04 General purpose, high temperature and pressure	700-1202-041 remote 700-1202-042 integral	69 bar @ 121°C (1000 PSI @ 250°F) 20.7 bar @ 232°C (300 PSI @ 450°F)	316SS and PEEK
06 General purpose with FDA approved materials of construction	700-1202-031 remote 700-1202-032 integral	13.8 bar @ 232°C (200 PSI @ 450°F)	316SS and FDA grade PEEK
07 General purpose Granular materials	700-1202-010 remote 700-1202-020 integral	13.8 bar @ 232°C (200 PSI @ 450°F)	316SS and PEEK with 7/8 inch dia. 316SS collar
09 General purpose Granular materials with FDA approved materials of construction	700-1202-033 remote 700-1202-034 integral	13.8 bar @ 232°C (200 PSI @ 450°F)	316SS and FDA grade PEEK with 7/8 inch dia. 316SS collar
10 Corrosive liquids (2)(4)(9)	700-0001-018 remote	3.4 bar @ 149°C (50 PSI @ 300°F)	PFA
11 General purpose, higher pressure TFE compatibility required	700-0201-005 int/rem	69 bar @ 38°C (1000 PSI @ 100°F) 34.5 bar @ 149°C (500psi @ 300°F)	316SS and TFE
12 Corrosive material, higher pressure	700-0201-005 int/rem Hastelloy C	69 bar @ 38°C (1000 PSI @ 100°F) 34.5 bar @ 149°C (500psi @ 300°F)	Hastelloy C and TFE
14 General Purpose, low pressure	700-0202-002 int/rem	3.4 bar @ 149°C (50 PSI @ 300°F)	316SS and TFE
15 Heavy duty, agitated tanks or material with high bulk density (1)	700-0202-043 remote	69 bar @ 38°C (1000 PSI @ 100°F) 34.5 bar @ 149°C (500psi @ 300°F)	316SS and TFE
16 High Integrity Seal for Hazardous Materials	700-0002-360 int/rem	34.5 bar @ 149°C (500 PSI @ 300°F)	PFA
18 Corrosive material, higher pressure with waterlike viscosity (4)	700-0001-022 int/rem	69 bar @ 38°C (1000 PSI @ 100°F) 34.5 bar @ 149°C (500 PSI @ 300°F)	TFE
19 Interface Measurement	700-0002-023 int/rem	69 bar @ 38°C (1000 PSI @ 100°F) 34.5 bar @ 149°C (500 PSI @ 300°F)	316SS and TFE
20 Miniature Pilot Plant Sensor (1)(7)	700-0209-002 remote	6.9 bar @ 121°C (100 PSI @ 250°F) 0 bar @ 232°C (0 PSI @ 450°F)	316 SS and TFE

Continued on Next Page

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### Model Numbering (continued)

Plugged Chute Detection (1) (5)					
Application	Sensing Element	Pressure/Temperature	Wetted Parts		
50 Flush Mount Sensor 305mm <sup>2</sup> (12 inches <sup>2</sup> ) heavy duty	700-0207-001 remote	0.1 bar @ 82°C (1 PSI @ 180°F)	304 SS and Polyurethane		
51 Flush Mount Sensor 305mm <sup>2</sup> (12 inches <sup>2</sup> ) higher temperature	700-0207-002 remote	0.1 bar @ 149°C (1 PSI @ 300°F)	304 SS and TFE		
52 Flush Mount Sensor 305mm <sup>2</sup> (12 inches <sup>2</sup> ) with curved radius 153, 229, 305 mm (6, 9, or 12 inches)	700-0207-003 remote	0.1 bar @ 82°C (1 PSI @ 180°F)	304 SS and Neoprene		
53 Flush Mount Sensor 305mm <sup>2</sup> (12 inches <sup>2</sup> ) extra heavy duty	700-0207-004 remote	0.1 bar @ 82°C (1 PSI @ 180°F)	410 SS and UHMW Polyethylene		
55 Flush Mount Sensor 203mm <sup>2</sup> (8 inches <sup>2</sup> ) heavy duty	700-0207-006 remote	0.1 bar @ 82°C (1 PSI @ 180°F)	304 SS and Polyurethane		
High Pressure / High Temperature					
60 High Pressure & Temp.	700-0204-038 remote	137.9 bar @ 93°C (2000 PSI @ 200°F) 68.9 bar @ 260°C (1000 PSI @ 500°F)	316SS and Ceramic		
61 High Temperature	700-0204-002 remote	0 bar @ 816°C (0 PSI @ 1500°F)	316SS and Ceramic		
62 High Pressure & Temp.	700-0204-048 remote	275.8 bar @ 316°C (4000 PSI @ 600°F)	316SS		
ZZ Sensing Element <b>Not Listed</b>					
Mounting Type (See separate Mounting Chart for first three digits)					
	IL	CSL		IL	CSL
xxx1	457 mm (18")	152 mm (6")	xxxG	457 mm (18")	0 mm (0")
xxx2	305 mm (12")	152 mm (6")	xxxH	914 mm (36")	254 mm (10")
xxxA	152 mm (6")	51 mm (2")	xxxJ	914 mm (36")	0 mm (0")
xxxB	305 mm (12")	51 mm (2")	xxxK	1219 mm (48")	254 mm (10")
xxxC	305 mm (12")	89 mm (3.5")	xxxL	1524 mm (60")	254 mm (10")
xxxD	457 mm (18")	51 mm (2")	P00X	IL/CSL Other	
xxxE	457 mm (18")	89 mm (3.5")	A1BX	IL/CSL factory set for Fly Ash	
xxxF	457 mm (18")	254 mm (10")	xxxZ	Other	

Not all mounting options available with all sensing elements

**Notes:** CSL (Cote-Shield Length) should extend through Nozzle + Typical "Wall Buildup" + 2 Inches  
 (1) Available with remote electronics only (6) Use A1B mounting option  
 (2) Use A1P mounting option (7) Use A8B mounting option (1/4-inch NPT)  
 (3) Choose only sanitary mounting options (8) Choose from flange mounting only  
 (4) Available with 0-inch CSL only (9) FM approved with remote electronics only  
 (5) Use P00X mounting option

#### NPT Threads

A1B 3/4"NPT	316SS	A2B 1"NPT	316SS
A1C 3/4"NPT	Hastelloy C	A2C 1"NPT	Hastelloy C
A1P 3/4"NPT	PFA		

#### DIN Flanges

E01 25 mm 16 bar	RF 316/316L SS	E02 25 mm 16 bar	RF CS
EP1 25 mm 40 bar	RF 316/316L SS	EP2 25 mm 40 bar	RF CS
EQ1 50 mm 16 bar	RF 316/316L SS	EQ2 50 mm 16 bar	RF CS
ER1 50 mm 40 bar	RF 316/316L SS	ER2 50 mm 40 bar	RF CS
ES1 80 mm 16 bar	RF 316/316L SS	ES2 80 mm 16 bar	RF CS
ET1 80 mm 40 bar	RF 316/316L SS	ET2 80 mm 40 bar	RF CS
EU1 100 mm 16 bar	RF 316/316L SS	EU2 100 mm 16 bar	RF CS
EV1 100 mm 40 bar	RF 316/316L SS	EV2 100 mm 40 bar	RF CS
EW1 150 mm 16 bar	RF 316/316L SS	EW2 150 mm 16 bar	RF CS
EX1 150 mm 40 bar	RF 316/316L SS	EX2 150 mm 40 bar	RF CS

#### Sanitary TriClamps

C2B 1"TriClamp	316SS	C4B 2"TriClamp	316SS
C3B 1 1/2"TriClamp	316SS		

#### ANSI Flanges

DA1 1" 150#	RF 316/316L SS	DA2 1" 150#	RF CS
DB1 1 1/2" 150#	RF 316/316L SS	DB2 1 1/2" 150#	RF CS
DC1 2" 150#	RF 316/316L SS	DC2 2" 150#	RF CS
DD1 2 1/2" 150#	RF 316/316L SS	DD2 2 1/2" 150#	RF CS
DE1 1" 300#	RF 316/316L SS	DE2 1" 300#	RF CS
DF1 1 1/2" 300#	RF 316/316L SS	DF2 1 1/2" 300#	RF CS
DG1 2" 300#	RF 316/316L SS	DG2 2" 300#	RF CS
DH1 2 1/2" 300#	RF 316/316L SS	DH2 2 1/2" 300#	RF CS
DI1 3" 150#	RF 316/316L SS	DI2 3" 150#	RF CS
DJ1 3" 300#	RF 316/316L SS	DJ2 3" 300#	RF CS
DK1 4" 150#	RF 316/316L SS	DK2 4" 150#	RF CS
DL1 4" 300#	RF 316/316L SS	DL2 4" 300#	RF CS
DM1 6" 150#	RF 316/316L SS	DM2 6" 150#	RF CS
DN1 6" 300#	RF 316/316L SS	DN2 6" 300#	RF CS



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