

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 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) KEMA.
-40 to 70°C (-40 to 158°F) FM / CSA.

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/CSA.

Ingress Protection:

IP66 NEMA 4X.

Approvals:

Integral

 II 1/2 GD EEx d[ia] IIC T5...T2  0344
T90°C KEMA 01 ATEX 2187X
Temperature Class Process Temperature
T5 100°C
T4 135°C
T3 200°C
T2 230°C

Remote

 I 1/2 GD EEx d[ia] IIC T5  0344
T90°C KEMA 01 ATEX 2187X

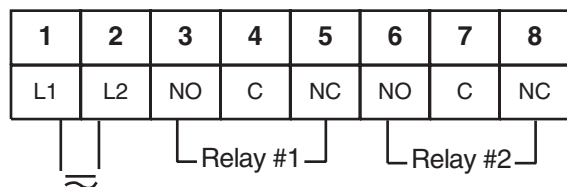


Explosionproof for Class I, Division 1, Groups A, B, C and D; Dust-Ignitionproof for Class II, III, Division 1, Groups E, F and G; Nonincendive for Class I, Division 2, Groups A, B, C & D; Suitable for Class II, III, Groups F & G hazardous outdoor Type 4X, IP66 (classified) locations with Intrinsically 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.



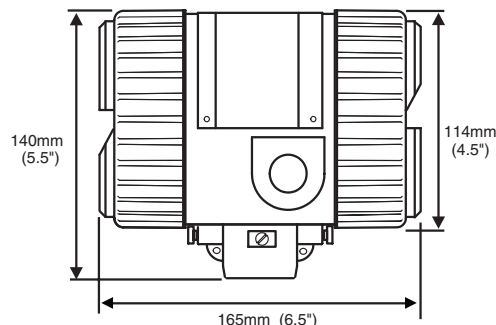
XP with Intrinsically Safe sensing element for Class I, Division 1, Groups A, B, C and D; Class II, Division 1, Groups E, F, G and Class III, Division 1 Class I, Division 2, Groups A, B, C, D with Intrinsically Safe sensing element for Class I, Division 1, Groups A, B, C, D; Class II, Division 2, Groups F & G and Class III, Division 1 with Intrinsically Safe sensing element for Class II, Division 1, Groups F & G and Class III, Division 1. **Max. Amb. +70C Install per 420- 0004-145-CD** Ex d [ia] IIC T5 zone 0/1/2
A seal shall be installed within 50mm of enclosure.

Wiring



85 to 250 Vac
21 to 100 Vdc
Auto-Detecting

Dimensions



Point Level Measurement

IntelliPoint RF Series

Model Numbering (continued on next page)

IntelliPoint RF™

Technology

R RF Admittance

Measurement Type

N	No Calib., 2 pF Preload	T	No Calib., 10 pF Preload	M	Manual Calibration
H	No Calib., 0.5 pF Preload, w/ High Sens.	V	No Calib., 10 pF Fixed Preload	G	Manual Calibration (High Sensitivity)
L	No Calib., 2 pF Fixed Preload	P	No Calib., 0.5 pF Fixed Preload (High Sensitivity)		

Input

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

Housing

- 0 No Approvals, Dual Compartment NEMA 4X/IP66, M20 x 1.5 conduit entries
- 1 No Approvals, Dual Compartment NEMA 4X/IP66 ¾" NPT conduit entries
- 2 ATEX Approved, Dual Compartment NEMA 4X/IP66 M20x1.5 conduit entries
- 3 FM Approved, Dual Compartment NEMA 4X/IP66 ¾" NPT conduit entries
- 4 CSA Approved, Dual Compartment NEMA 4X/IP66 ¾" NPT conduit entries

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 @ 177°C (200 PSI @ 350°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 @ 177°C (200 PSI @ 350°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
10	Corrosive liquids (2)(4)(9)	700-0001-018	3.4 bar @ 149°C (50 PSI @ 300°F)	PFA
11	General purpose, higher pressure TFE compatibility required	700-0201-005	69 bar @ 38°C (1000 PSI @ 100°F) 13.8 bar @ 232°C (200 PSI @ 450°F)	316SS and TFE
12	Corrosive material, higher pressure	700-0201-005 Hastelloy C	69 bar @ 38°C (1000 PSI @ 100°F) 13.8 bar @ 232°C (200 PSI @ 450°F)	Hastelloy C and TFE
13	Sanitary (3)	700-0201-036	69 bar @ 38°C (1000 PSI @ 100°F) 13.8 bar @ 232°C (200 PSI @ 450°F)	316/316L SS and TFE
14	General Purpose, low pressure	700-0202-002	3.4 bar @ 149°C (50 PSI @ 300°F) 1.4 bar @ 232°C (20 PSI @ 450°F)	316SS and TFE
15	Heavy duty, agitated tanks or material with high bulk density (1)	700-0202-043	69 bar @ 38°C (1000 PSI @ 100°F) 13.8 bar @ 232°C (200 PSI @ 450°F)	316SS and TFE
16	High integrity seal for hazardous material (8)	700-0002-360 (Seal Tyte™)	34.5 bar @ 149°C (500 PSI @ 300°F)	PFA (flange mounting only)
18	Corrosive material, higher pressure with waterlike viscosity (4)	700-0001-022	69 bar @ 38°C (1000 PSI @ 100°F) 34.5 bar @ 149°C (500 PSI @ 300°F)	TFE
19	Interface Measurement	700-0002-023	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	6.9 bar @ 121°C (100 PSI @ 250°F) 0 bar @ 232°C (0 PSI @ 450°F)	316 SS and TFE
60	Highest pressure and temperature (1)	700-0204-038	138 bar @ 93°C (2000 PSI @ 200°F) 69 bar @ 260°C (1000 PSI @ 500°F)	316SS and Ceramic

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Point Level Measurement

IntelliPoint RF Series

Model Numbering (continued)

Fly Ash Precipitators, Baghouse, and Economizers (1) (6)			
Application	Sensing Element	Pressure/Temperature	Wetted Parts
31 No hopper installation	700-0029-001	0.1 bar @ 260°C (2 PSI @ 500°F)	316SS and TFE (CS Inactive)
32 Hopper installation up to 200mm (8 inches)	700-0029-002	0.1 bar @ 260°C (2 PSI @ 500°F)	316SS and TFE (CS Inactive)
33 Hopper installation up to 250mm (10 inches)	700-0029-003	0.1 bar @ 260°C (2 PSI @ 500°F)	316SS and TFE (CS Inactive)
35 Hopper installation up to 400mm (16 inches)	700-0029-005	0.1 bar @ 260°C (2 PSI @ 500°F)	316SS and TFE (CS Inactive)
Plugged Chute Detection (1) (5)			
Application	Sensing Element	Pressure/Temperature	Wetted Parts
50 Flush Mount Sensor 305mm ² (12 inches ²) heavy duty	700-0207-001	0.1 bar @ 82°C (1 PSI @ 180°F)	304 SS and Polyurethane
51 Flush Mount Sensor 305mm ² (12 inches ²) higher temperature	700-0207-002	0.1 bar @ 149°C (1 PSI @ 300°F)	304 SS and TFE
52 Flush Mount Sensor 305mm ² (12 inches ²) with curved radius 153, 229, 305 mm (6, 9, or 12 inches)	700-0207-003	0.1 bar @ 82°C (1 PSI @ 180°F)	304 SS and Neoprene
53 Flush Mount Sensor 305mm ² (12 inches ²) extra heavy duty	700-0207-004	0.1 bar @ 82°C (1 PSI @ 180°F)	410 SS and UHMW Polyethylene
55 Flush Mount Sensor 203mm ² (8 inches ²) heavy duty	700-0207-006	0.1 bar @ 82°C (1 PSI @ 180°F)	304 SS and Polyurethane
ZZ Sensing Element Not Listed			
Mounting Type (See separate Mounting Chart for first three digits)			
	IL	CSL	
xxxA 152 mm (6")	51 mm (2")	xxxH 914 mm (36")	254 mm (10")
xxxB 305 mm (12")	51 mm (2")	xxxJ 914 mm (36")	0 mm (0")
xxxC 305 mm (12")	89 mm (3.5")	xxxK 1219 mm (48")	254 mm (10")
xxxD 457 mm (18")	51 mm (2")	xxxL 1524 mm (60")	254 mm (10")
xxxE 457 mm (18")	89 mm (3.5")	P00X IL/CSL Other	
xxxF 457 mm (18")	254 mm (10")	A1BX IL/CSL factory set for Fly Ash	
xxxG 457 mm (18")	0 mm (0")	xxxZ Other	

Notes: (1) Available with remote electronics only
 (2) Use A1P mounting option
 (3) Choose from sanitary mounting options only
 (4) Available with 0-inch CSL only
 (5) Use P00X mounting option
 (6) Use A1B mounting option
 (7) Use A8B mounting option (1/4-inch NPT)
 (8) Choose from flange mounting only
 (9) FM approved with remote electronics only

Not all mounting options available with all sensing elements

Mounting Chart

NPT Threads			DIN Flanges (cont.)			ANSI Flanges (cont.)		
A1B	3/4" NPT	316SS	E02	25 mm 16 bar	RF Carbon Steel	DJ1	3" 300#	RF 316/316L SS
A1C	3/4" NPT	Hastelloy C	EP2	25 mm 40 bar	RF Carbon Steel	DK1	4" 150#	RF 316/316L SS
A1P	3/4" NPT	PFA	EQ2	50 mm 16 bar	RF Carbon Steel	DL1	4" 300#	RF 316/316L SS
A2B	1" NPT	316SS	ER2	50 mm 40 bar	RF Carbon Steel	DM1	6" 150#	RF 316/316L SS
A2C	1" NPT	Hastelloy C	ES2	80 mm 16 bar	RF Carbon Steel	DN1	6" 300#	RF 316/316L SS
Sanitary TriClamps			ET2	80 mm 40 bar	RF Carbon Steel	DA2	1" 150#	RF Carbon Steel
C2B	1" TriClamp	316SS	EU2	100 mm 16 bar	RF Carbon Steel	DB2	1 1/2" 150#	RF Carbon Steel
C3B	1 1/2" TriClamp	316SS	EV2	100 mm 40 bar	RF Carbon Steel	DC2	2" 150#	RF Carbon Steel
C4B	2" TriClamp	316SS	EW2	150 mm 16 bar	RF Carbon Steel	DD2	2 1/2" 150#	RF Carbon Steel
DIN Flanges			EX2	150 mm 40 bar	RF Carbon Steel	DE2	1" 300#	RF Carbon Steel
E01	25 mm 16 bar	RF 316/316L SS	ANSI Flanges			DF2	1 1/2" 300#	RF Carbon Steel
EP1	25 mm 40 bar	RF 316/316L SS	DA1	1" 150#	RF 316/316L SS	DG2	2" 300#	RF Carbon Steel
EQ1	50 mm 16 bar	RF 316/316L SS	DB1	1 1/2" 150#	RF 316/316L SS	DH2	2 1/2" 300#	RF Carbon Steel
ER1	50 mm 40 bar	RF 316/316L SS	DC1	2" 150#	RF 316/316L SS	DJ2	3" 300#	RF Carbon Steel
ES1	80 mm 16 bar	RF 316/316L SS	DD1	2 1/2" 150#	RF 316/316L SS	DK2	4" 150#	RF Carbon Steel
ET1	80 mm 40 bar	RF 316/316L SS	DE1	1" 300#	RF 316/316L SS	DL2	4" 300#	RF Carbon Steel
EU1	100 mm 16 bar	RF 316/316L SS	DF1	1 1/2" 300#	RF 316/316L SS	DM2	6" 150#	RF Carbon Steel
EV1	100 mm 40 bar	RF 316/316L SS	DG1	2" 300#	RF 316/316L SS	DN2	6" 300#	RF Carbon Steel
EW1	150 mm 16 bar	RF 316/316L SS	DH1	2 1/2" 300#	RF 316/316L SS			
EX1	150 mm 40 bar	RF 316/316L SS	DI1	3" 150#	RF 316/316L SS			

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