

DREXELBROOK[®]

IntelliPoint RF Series

Point Level Switch



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.

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 (-22 to 158°F) ATEX

-30 to 58°C (-22 to 136°F) IECEx

-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 (ATEX / IECEx)

¾-inch NPT (FM / FMc)

Ingress Protection: IP66 NEMA 4X

Approvals:



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.

ATEX: (FM14ATEX0049)

Integral

II 2 (1) G Ex d [ia] IIC T5... T2

II 2 (1) D Ex tb [ia] IIIC T90°C

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

IECEx: (FTZU 18.0007X)

System: Ex db ia [ia Ga] IIC T5 Gb/Ga

Ex db ia [ia Ga] IIIC T90° Db/Da

-30°C ≤ Ta ≤ 58°C

Sensor: Ex ia IIC T5 Ga

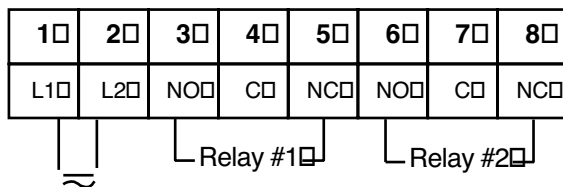
Ex ia IIIC T90°C Da

-30°C ≤ Ta ≤ 58°C

Reference control drawing 420-0004-563-CD for entity and installation requirements



Wiring

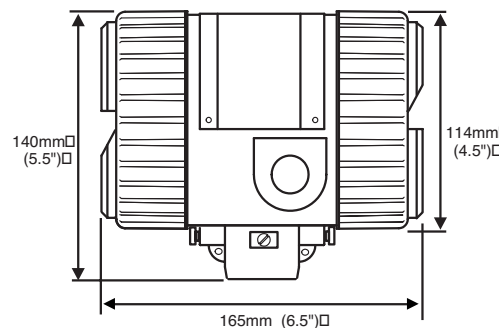


85 to 250 Vac□

21 to 100 Vdc□

Auto-Detecting□

Dimensions



AMETEK®

DREXELBROOK

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IntelliPoint RF™ Series

Model Numbering (continued on next page)

IntelliPoint RF™

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

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 Hastelloy C	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

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IntelliPoint RF™ Series

Model Numbering (continued from previous page)

		Fly Ash Precipitators, Baghouse, and Economizers (1) (6)					
		Application	Sensing Element	Pressure/Temperature	Wetted Parts		
		31 No hopper Installation	700-0029-001 remote	0.1 bar @ 260°C (2 PSI @ 500°F)	316SS and TFE		
		32 Hopper Installation up to 200mm (8 inches)	700-0029-002 remote	0.1 bar @ 260°C (2 PSI @ 500°F)	316SS and TFE		
		33 Hopper Installation up to 406mm (16 inches)	700-0029-003 remote	0.1 bar @ 260°C (2 PSI @ 500°F)	316SS and TFE		
		34 Hopper Installation up to 521mm (20.5 inches)	700-0029-004 remote	0.1 bar @ 260°C (2 PSI @ 500°F)	316SS and TFE		
		35 Hopper Installation up to 635mm (25 inches)	700-0029-005 remote	0.1 bar @ 260°C (2 PSI @ 500°F)	316SS and TFE		
		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 remote	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 remote	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 remote	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 remote	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 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 Not Listed					
		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
 - (2) Use A1P mounting option
 - (3) Choose only sanitary mounting options
 - (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

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