

Safety IntelliPoint RF™ Series

Two-Wire, Point Level, SIL Conforming Safety Switch



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

Intelligent Electronics

- Meets Title 49 Part 195 DOT and API 2350 regulations.
- For use in safety related systems with requirements for functional safety for SIL2 (SIL 3 with Redundant Switch) In accordance to IEC61508-2, Sec. 7.4.3.1 1999 (Conforms to SIL, FMEDA Requirements - Exida)
- No calibration or setpoint adjustments.
- Automatically recognizes and ignores coatings to prevent false alarms.
- Continuous self-test monitors circuits and sensing elements for faults.
- Remote or Integral Electronics

Diverse Applications

- Liquids, Slurries, Interfaces and Granulars.

Dual Compartment Housing

The dual compartment housing separates the customer wiring 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.

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

The RF switch you won't 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.

Self-Test Feature

Automatic and Local or Remote Manual test functions ensure proper system operation.

Auto Verify™

Each IntelliPoint™ is supplied with a continuous self-test feature that constantly monitors the integrity of not just the electronics, but the sensing element and interconnecting cable. If a fault is detected, the IntelliPoint Auto Verify™ feature alerts plant personnel.

Manual Certify™

The IntelliPoint™ provides a method to manually test the entire system without removing the sensor from the tank. The Manual Certify Test checks that the Auto Verify circuits are operating and confirms the probe and cables are properly connected. The Manual Certify also allows the IntelliPoint™ electronics to sense changes in the probe that simulate contact with the media or a floating roof. This provides the user with a method to insure working performance without having to climb the tank. At the completion of the Certify test routine, the output is momentarily held in the alarm state so personnel can confirm that the control circuits connected to the Final Control Element are functioning properly.

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Registered in England No: 01851002
VAT No: GB 417 2481 61



Specifications

Technology:

RF Admittance

Calibration:

None

Modes Of Operation:

High Level Fail Safe

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)

Storage Temperature:

-40 to 85°C (-40 to 185°F)

Indicators:

LEDs: Green Power, Red Alarm

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 acting

Supply Voltage:

13-30 Vdc

Power Consumption:

2 watts maximum

Output:

8 mA - Alarm		8 mA - Normal
16 mA - Normal	or	16 mA - Alarm
22 mA - Fault		5 mA - Fault

Housing:

Dual Compartment, Powder-Coated aluminum with two cable entries

Cable Entry:

M20 x 1.5 GENELEC
¾-inch NPT FM/CSA

Ingress Protection:

IP66 NEMA 4, 4X

Approvals:



FM approved. Explosion-proof for use in Class I, Division 1, Groups A, B, C, & D; Dust-Ignition proof for Class II, III, Division 1, Groups E, F, & G; Non-incendiary for use in Class I, Division 2, Groups A, B, C & D; Suitable for Class II, III, Division 2, Groups F & G Hazardous (Classified) Indoor and Outdoor Type 4, 4X, IP66 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 entity requirements and control drawing 420-0004-173-CD.



Class I, Groups A, B, C, and D with Intrinsically Safe sensing element; Class II, Groups E, F & G; Class III



II 1G EEx ia IIC T5 Ta = -30°C - +75°C
II 1D T90°C



MTTF (Mean Time to Failure):

110 Years, Independently Tested

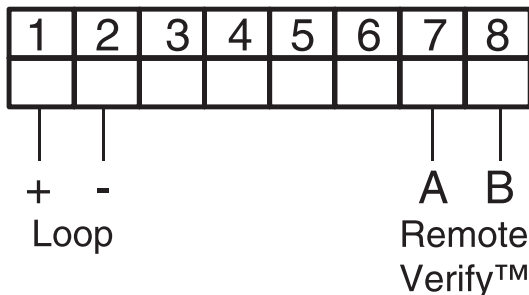
Safety

SIL2 (SIL 3 with Redundant Switch)

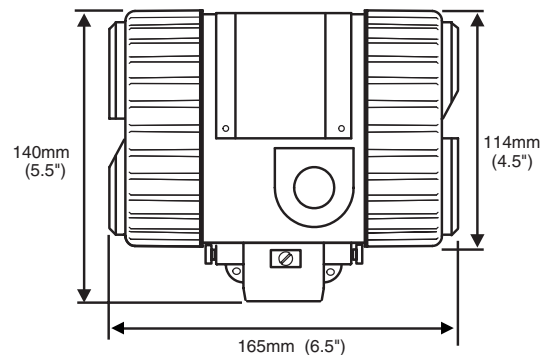
IEC61508-2, Sec. 7.4.3.1 1999

FMEDA Tested for conformity by Exida.com®

Wiring



Dimensions



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Model Numbering (continued on next page)

S	Safety Switch								
1	SIL1								
2	SIL2								
R	Technology								
	RF Admittance								
L	Measurement Type								
	No Calib., 2 pF Fixed Preload								
T	Input								
	Two Wire Power Supply 13-30 VDC								
0-9	Housing								
0	No Approvals, NEMA 4X/IP66, M20 X 1.5 conduit entries								
1	No Approvals, NEMA 4X/IP66, 3/4" NPT conduit entries								
2	ATEX Approved, NEMA 4X/IP66, M20 X 1.5 conduit entries								
3	FM Approved, NEMA 4X/IP66, 3/4" NPT conduit entries								
4	CSA Approved, NEMA 4X/IP66, 3/4" 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, 3/4" NPT conduit entries, Dual Seal, Perm-a-Seal sensors – only								
7	FM Approved, NEMA 4X/IP66, 3/4" NPT conduit entries, Dual Seal, Perm-a-Seal sensors – only								
8	CSA Approved, NEMA 4X/IP66, 3/4" 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, 3/4" NPT conduit entries, Dual Seal, Non Perm-a-Seal sensors – only								
B	FM Approved, NEMA 4X/IP66, 3/4" NPT conduit entries, Dual Seal, Non Perm-a-Seal sensors – only								
C	CSA Approved, NEMA 4X/IP66, 3/4" NPT conduit entries, Dual Seal, Non Perm-a-Seal sensors – only								
0-6	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.						
0	Output								
0	8-16mA Output								
00-19	Sensing Element	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					
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) 13.8 bar @ 232°C (200 PSI @ 450°F)	316SS and TFE					
12	Corrosive material, higher pressure	700-0201-005 int/rem 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 int/rem	69 bar @ 38°C (1000 PSI @ 100°F) 13.8 bar @ 232°C (200 PSI @ 300°F)	316/316L SS and TFE					
14	General Purpose, low pressure	700-0202-002 int/rem	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 remote	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 Materials	700-0002-360 int/rem	34.5 bar @ 149°C (500 PSI @ 300°F)	PFA					
17	Sanitary (3) lowpressure	700-0202-036 int/rem	3.4 bar @ 149°C (50 PSI @ 300°F)	316SS and TFE					
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 from Previous Page)

High Pressure / High Temperature	
60 High Pressure & Temp.	700-0204-038 remote 137.9 bar @ 93°C (2000 PSI @ 200°F) 316SS and Ceramic 68.9 bar @ 260°C (1000 PSI @ 500°F)
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
xxxH	914 mm (36") 254 mm (10")
xxxJ	914 mm (36") 0 mm (0")
xxxK	1219 mm (48") 254 mm (10")
xxxL	1524 mm (60") 254 mm (10")
P00X	IL/CSL Other
xxxZ	Other

IMPORTANT:
Minimum Active Length for SIL Compliance is 24" (610mm)
Consult Factory for Shorter Lengths

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

Not all mounting options are available with all sensing elements

NPT Threads		Sanitary TriClamps	
A1B 3/4"NPT	316SS	C2B 1"TriClamp	316SS
A1C 3/4"NPT	Hastelloy C	C3B 1 1/2"TriClamp	316SS
A1P 3/4"NPT	PFA	C4B 2"TriClamp	316SS

DIN Flanges		ANSI Flanges	
E01 25 mm 16 bar	RF 316/316L SS	DA1 1" 150#	RF 316/316L SS
EP1 25 mm 40 bar	RF 316/316L SS	DB1 1 1/2" 150#	RF 316/316L SS
EQ1 50 mm 16 bar	RF 316/316L SS	DC1 2" 150#	RF 316/316L SS
ER1 50 mm 40 bar	RF 316/316L SS	DD1 2 1/2" 150#	RF 316/316L SS
ES1 80 mm 16 bar	RF 316/316L SS	DE1 1" 300#	RF 316/316L SS
ET1 80 mm 40 bar	RF 316/316L SS	DF1 1 1/2" 300#	RF 316/316L SS
EU1 100 mm 16 bar	RF 316/316L SS	DG1 2" 300#	RF 316/316L SS
EV1 100 mm 40 bar	RF 316/316L SS	DH1 2 1/2" 300#	RF 316/316L SS
EW1 150 mm 16 bar	RF 316/316L SS	DI1 3" 150#	RF 316/316L SS
EX1 150 mm 40 bar	RF 316/316L SS	DJ1 3" 300#	RF 316/316L SS
E02 25 mm 16 bar	RF CS	DK1 4" 150#	RF 316/316L SS
EP2 25 mm 40 bar	RF CS	DL1 4" 300#	RF 316/316L SS
EQ2 50 mm 16 bar	RF CS	DM1 6" 150#	RF 316/316L SS
ER2 50 mm 40 bar	RF CS	DN1 6" 300#	RF 316/316L SS
ES2 80 mm 16 bar	RF CS	DA2 1" 150#	RF CS
ET2 80 mm 40 bar	RF CS	DB2 1 1/2" 150#	RF CS
EU2 100 mm 16 bar	RF CS	DC2 2" 150#	RF CS
EV2 100 mm 40 bar	RF CS	DD2 2 1/2" 150#	RF CS
EW2 150 mm 16 bar	RF CS	DE2 1" 300#	RF CS
EX2 150 mm 40 bar	RF CS	DF2 1 1/2" 300#	RF CS
		DG2 2" 300#	RF CS
		DH2 2 1/2" 300#	RF CS
		DI2 3" 150#	RF CS
		DJ2 3" 300#	RF CS
		DK2 4" 150#	RF CS
		DL2 4" 300#	RF CS
		DM2 6" 150#	RF CS
		DN2 6" 300#	RF CS