

Safety IntelliPoint RF™ Series

Two-Wire, Point Level, SIL Conforming Safety Switch



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

The only 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.

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.

Intelligent Electronics

- 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.
- 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.

Diverse Applications

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

Output

- 8mA (Alarm) 16mA (Normal) or 8mA (Normal) and 16 mA (Alarm)

Remote or Integral Electronics

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

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 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 (For most applications)

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 CENELEC
3/4-inch NPT FM/CSA

Ingress Protection:
IP66 NEMA 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, 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

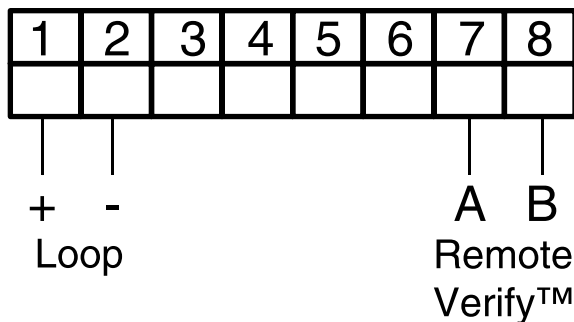
Safety

SIL2 (SIL 3 with Redundant Switch)

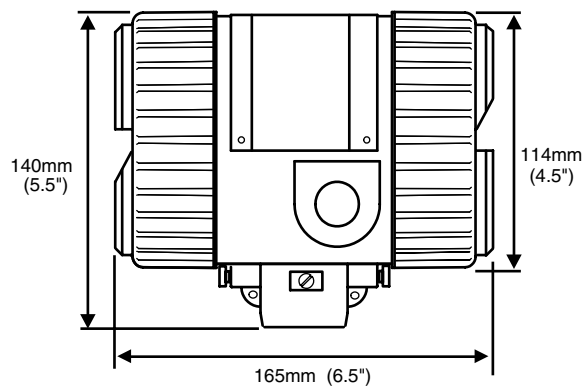
IEC61508-2, Sec. 7.4.3.1 1999

FMEDA Tested for conformity by Exida.com®

Wiring



Dimensions



Point Level Measurement

IntelliPoint RF™ Series

Model Numbering (continued on next page)

● Safety Switch
S

● SIL
 1 SIL1
 2 SIL2

● Technology
R RF Admittance

● Measurement Type
N No Calibration, Point Level
H No Calibration, Point Level, High Sensitivity

● Input
T Two Wire Power Supply 13-30 VDC

● 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 CENELEC/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
 1 Remote, no cable
 2 Remote with 3 m (10 feet) cable
 3 Remote with 7.6 m (25 feet) cable
 4 Remote with 10.6 m (35 feet) cable
 5 Remote with 15.2 m (50 feet) cable
 6 Remote with 23 m (75 feet) cable

● Output
 0 8-16mA Output

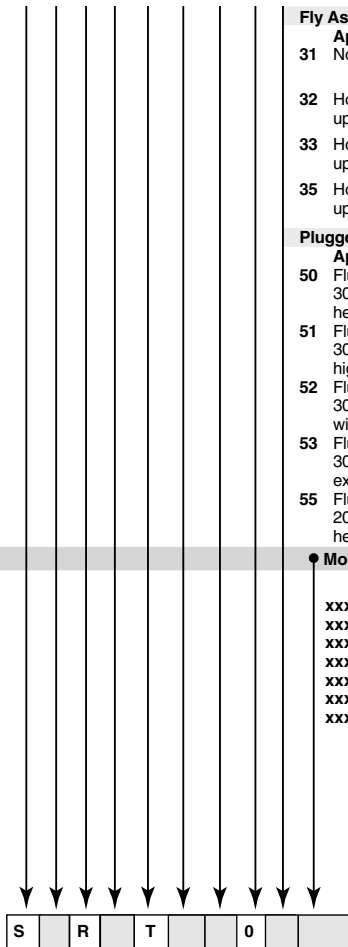
Application	Sensing Element	Pressure/Temperature	Wetted Parts
00 General purpose	700-1202-001 remote 700-1202-021 integral	13.8 bar @ 232°C (200 PSI @ 450°F)	316SS and PEEK
01 Floating roof with cable attachment and brass bottom weight	700-1202-012 remote 700-1202-022 integral	13.8 bar @ 177°C (200 PSI @ 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
06 General purpose, 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 in 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 in dia. 316SS collar
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) (Seal Tyte™)	700-0002-360	34.5 bar @ 149°C (500 PSI @ 300°F)	PFA (flange mounting only)
17 Sanitary (3) low pressure	700-0202-036	3.4 bar @ 149°C (50 PSI @ 300°F) 1.4 bar @ 232°C (20 PSI @ 450°F)	316SS and TFE
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
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
61 High temperature	700-0204-002	0.1 bar @ 371°C (1 PSI @ 700°F)	316SS and Ceramic
62 High pressure and temperature	700-0204-048	275 bar @ 316°C (4000 PSI @ 600°F)	316SS and Ceramic

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Point Level Measurement

IntelliPoint RF™ Series

Model Numbering



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 305mm² (12 inches²) heavy duty	700-0207-001	0.1 bar @ 82°C (1 PSI @ 180°F)	304 SS and Polyurethane
51 Flush Mount Sensor 305mm² (12 inches²) higher temperature	700-0207-002	0.1 bar @ 149°C (1 PSI @ 300°F)	304 SS and TFE
52 Flush Mount Sensor 305mm² (12 inches²) 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 305mm² (12 inches²) extra heavy duty	700-0207-004	0.1 bar @ 82°C (1 PSI @ 180°F)	410 SS and UHMW Polyurethane
55 Flush Mount Sensor 203mm² (8 inches²) heavy duty	700-0207-006	0.1 bar @ 82°C (1 PSI @ 180°F)	304 SS and Polyurethane

● **Mounting Type** (See separate **Mounting Chart** for first three digits)

IL		CSL		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 factory set for Plugged Chute		
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

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

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

DIN Flanges		
E01	25 mm 16bar	RF 316/316L SS
EP1	25 mm 40 bar	RF 316/316L SS
EQ1	50 mm 16 bar	RF 316/316L SS
ER1	50 mm 40 bar	RF 316/316L SS
ES1	80 mm 16 bar	RF 316/316L SS
ET1	80 mm 40 bar	RF 316/316L SS
EU1	100 mm 16 bar	RF 316/316L SS
EV1	100 mm 40 bar	RF 316/316L SS
EW1	150 mm 16 bar	RF 316/316L SS
EX1	150 mm 40 bar	RF 316/316L SS

DIN Flanges (cont.)		
E02	25 mm 16 bar	RF Carbon Steel
EP2	25 mm 40 bar	RF Carbon Steel
EQ2	50 mm 16 bar	RF Carbon Steel
ER2	50 mm 40 bar	RF Carbon Steel
ES2	80 mm 16 bar	RF Carbon Steel
ET2	80 mm 40 bar	RF Carbon Steel
EU2	100 mm 16 bar	RF Carbon Steel
EV2	100 mm 40 bar	RF Carbon Steel
EW2	150 mm 16 bar	RF Carbon Steel
EX2	150 mm 40 bar	RF Carbon Steel

ANSI Flanges		
DA1	1" 150#	RF 316/316L SS
DB1	1 1/2" 150#	RF 316/316L SS
DC1	2" 150#	RF 316/316L SS
DD1	2 1/2" 150#	RF 316/316L SS
DE1	1" 300#	RF 316/316L SS
DF1	1 1/2" 300#	RF 316/316L SS
DG1	2" 300#	RF 316/316L SS
DH1	2 1/2" 300#	RF 316/316L SS
DI1	3" 150#	RF 316/316L SS

ANSI Flanges (cont.)		
DJ1	3" 300#	RF 316/316L SS
DK1	4" 150#	RF 316/316L SS
DL1	4" 300#	RF 316/316L SS
DM1	6" 150#	RF 316/316L SS
DN1	6" 300#	RF 316/316L SS
DA2	1" 150#	RF Carbon Steel
DB2	1 1/2" 150#	RF Carbon Steel
DC2	2" 150#	RF Carbon Steel
DD2	2 1/2" 150#	RF Carbon Steel
DE2	1" 300#	RF Carbon Steel
DF2	1 1/2" 300#	RF Carbon Steel
DG2	2" 300#	RF Carbon Steel
DH2	2 1/2" 300#	RF Carbon Steel
DI2	3" 150#	RF Carbon Steel
DJ2	3" 300#	RF Carbon Steel
DK2	4" 150#	RF Carbon Steel
DL2	4" 300#	RF Carbon Steel
DM2	6" 150#	RF Carbon Steel
DN2	6" 300#	RF Carbon Steel

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