DREXELBROOK®

A Leader In Level Measurement Solutions

AMETEK®

Safety IntelliPoint RF™ Series

Two-Wire, Point Level, SIL Conforming Safety Switch

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.

Point Level Measurement

IntelliPoint RF™ Series

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 CENELEC
¾-inch NPT FM/CSA

Ingress Protection:
IP66 NEMA 4, 4X

Approvals:

FM APPROVED 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, Division2, 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 = -30ºC - +75ºC
II 1D T90ºC

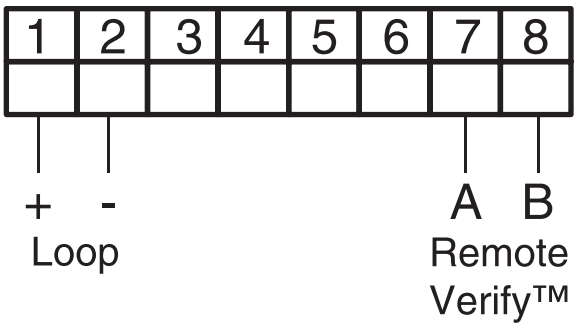
CE 0344

MTTF (Mean Time to Failure):
110 Years, Independently Tested

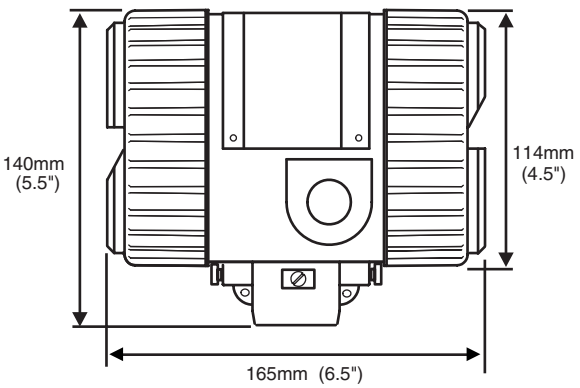
Safety
SIL2 (SIL 3 with Redundant Switch)
IEC61508-2, Sec. 7.4.3.1 1999

FMEDA Tested for conformity by Exida.com®

Wiring



Dimensions



IntelliPoint RF™ Series

Model Numbering (continued on next page)

Safety Switch

S

SIL

1 SIL1

2 SIL2

Technology

R RF Admittance

Measurement Type

L No Calib., 2 pF Fixed Preload

Input

T Two Wire Power Supply 13-30 VDC

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 Approved, NEMA 4X/IP66, ¾" NPT conduit entries
4 CSA 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 Approved, NEMA 4X/IP66, ¾" NPT conduit entries, Dual Seal, Perm-a-Seal sensors – only
8 CSA 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 Approved, NEMA 4X/IP66, ¾" NPT conduit entries, Dual Seal, Non Perm-a-Seal sensors – only
C CSA 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

0 8-16mA Output

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
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

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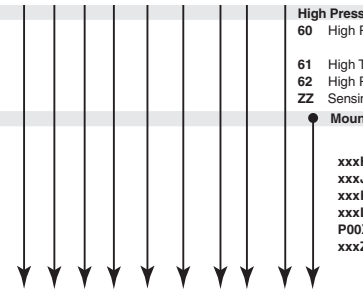
IntelliPoint RF™ Series

Model Numbering (Continued from Previous Page)



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

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
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	

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 (¼-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

A1B	¾"NPT	316SS		**A2B**	1"NPT	316SS	
A1C	¾"NPT	Hastelloy C		**A2C**	1"NPT	Hastelloy C	
A1P	¾"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	1½"TriClamp	316SS					

ANSI Flanges

DA1	1"	150#	RF 316/316L SS		**DA2**	1"	150#	RF CS
DB1	1½"	150#	RF 316/316L SS		**DB2**	1½"	150#	RF CS
DC1	2"	150#	RF 316/316L SS		**DC2**	2"	150#	RF CS
DD1	2½"	150#	RF 316/316L SS		**DD2**	2½"	150#	RF CS
DE1	1"	300#	RF 316/316L SS		**DE2**	1"	300#	RF CS
DF1	1½"	300#	RF 316/316L SS		**DF2**	1½"	300#	RF CS
DG1	2"	300#	RF 316/316L SS		**DG2**	2"	300#	RF CS
DH1	2½"	300#	RF 316/316L SS		**DH2**	2½"	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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