

SMART Pressure Transmitter

Differential/Gage/Absolute

FT 3351 Series



The Proven Industry Leader in Pressure Measurement

- Best-in-Class performance with 0.04% reference accuracy
- Coplanar™ platform enables integrated pressure, flow and level solutions
- Power Advisory Diagnostics provide predictive visibility to the health of your entire electrical loop
- Selectable HART™ Revision prepares your plant for the latest HART capabilities while ensuring seamless integration with today's systems
- Local Operator Interface (LOI) offers easy to use configuration capabilities at the transmitter



Setting the standard for pressure measurement

Proven best-in-class performance, reliability and safety

- Meet your application needs with extensive offering
- Real world total performance of $\pm 0.14\%$
- Reference accuracy of $\pm 0.075\%$

Maximize Installation Flexibility with Coplanar Platform

- Improve reliability and performance with integrated DP Flowmeters, DP Level and manifolds
- Easy installation with all solutions fully assembled, leak-tested and calibrated
- Meet your application needs with an unsurpassed offering

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Technical Information

➤ FT3351 series digital differential pressure transmitter, multi-functional smart pressure transmitter, is designed for industrial pressure measurement applications, based on our years of rich industrial manufacturing experience, adopting modern advanced, mature, reliable capacitive sensor technology, also combined with advanced single-chip computer technology and sensor digital conversion technology.

➤ CPU adopts sixteen single chips, whose powerful features and high-speed computing power ensures the transmitter with good quality and performance. The software has digital signal processing technology making transmitter with excellent anti-interference ability and zero stability, with zero automatic stable tracking ability (ZSC) and automatic temperature compensation ability (TSC).

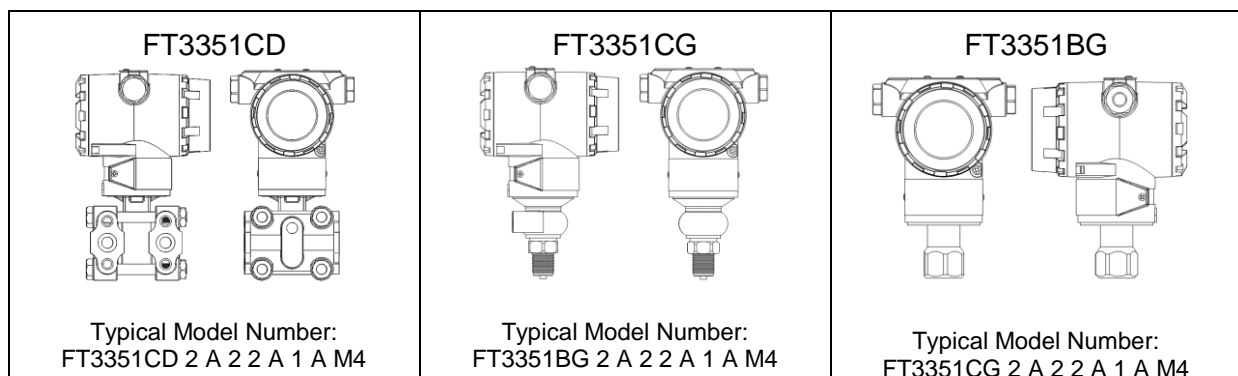
➤ Powerful interface features without hand held communicator are able to ensure good interaction. LCD indicator can display the digital pressure, temperature, current three kinds of physicals and 0-100% analog indication. In case of non-standard pressure source, parameter setting zero shift, range setting damping adjustment can be by press key button; and also re-calibration on the transmitter are greatly convenient for on-site calibration.

➤ Serial interface communication can be converted to 4-20mA DC current signal output by via specified converter module, also available through Hart protocol(RS485 module) to set and monitor remote transmission, directly connecting with master device, such as paperless recorder, controller, indicator etc. instrument, HMI, IPC, PC, Industrial Lan.

➤ FT3351 are used to measure differential pressure, gauge pressure, absolute pressure. parameters for gas, liquid, vapor, widely applied in petroleum, metallurgy, chemicals, power, light industry, mechanical and environmental protection fields.

➤ FT3351 are available in 2 categories, 0.075% Accuracy and 0.15% Accuracy which is shown as below.

System design



Order Code

Table 01: Pressure Transmitter , Class C, 0.075% Accuracy

Model		Transmitter type	
3351C		Pressure transmitter 0.075% Accuracy	
Measurement type			
Standard			
D	Differential		
G	Gage		
A	Absolute		
Pressure Range	3351CD	3351CG	3351CA
0	-1 to 1 kPa (-10 to 10 mbar)	Not Applicable	Not Applicable
1	-6 to 6 kPa (-60 to 60 mbar)	-6 to 6 kPa (-60 to 60 mbar)	Not Applicable
2	-40 to 40 kPa (-400 to 400 mbar)	-40 to 40 kPa (-400 to 400 mbar)	0 to 40 kPa (0 to 400 mbar)
3	-250 to 250 kPa (-2.5 to 2.5 bar)	-98 to 250 kPa (-0.98 to 2.5 bar)	0 to 250 kPa (0 to 2.5 bar)
4	-3000 to 3000 kPa (-30 to 30 bar)	-98 to 3000 kPa (-0.98 to 30 bar)	0 to 3000 kPa (0 to 30 bar)
5	Not Applicable	-0.098 to 10 MPa (-0.98 to 100 bar)	Not Applicable
6	Not Applicable	-0.098 to 40 MPa (-0.98 to 400 bar)	Not Applicable
Transmitter Output			
A	4-20 mA with Digital Signal Based on HART Protocol		
F	FOUNDATION fieldbus Protocol		
W	PROFIBUS PA Protocol		
Materials of Construction			
	Process Flange Type	Flange Material	Drain/Vent
2	Coplanar	SST	SST
3	Coplanar	Cast C-276	Alloy C-276
4	Coplanar	Cast Alloy 400	Alloy 400/K-500
5	Coplanar	Plated CS	SST
7	Coplanar	SST	Alloy C-276
8	Coplanar	Plated CS	Alloy C-276
Isolating Diaphragm			
2	316L SST		
3	Alloy C-276		
O-ring			
A	Glass-filled PTFE		
B	Graphite-filled PTFE		

Sensor Fill Fluid			
1	Silicone		
Housing Material		Conduit Entry Size	
A	Aluminum	½–14 NPT	
B	Aluminum	M20 × 1.5	
J	SST	½–14 NPT	
K	SST	M20 × 1.5	

Options:

Plantweb Control Functionality	
A01	FOUNDATION fieldbus Advanced Control Function Block Suite
Plantweb Diagnostic Functionality	
DA0	Power Advisory HART Diagnostic
D01	FOUNDATION fieldbus Diagnostics Suite
Alternate Flange	
H2	Traditional Flange, 316 SST, SST Drain/Vent
H3	Traditional Flange, Alloy C, Alloy C-276 Drain/Vent
H4	Traditional Flange, Cast Alloy 400, Alloy 400/K-500 Drain/Vent
H7	Traditional Flange, 316 SST, Alloy C-276 Drain/Vent
HJ	DIN Compliant Traditional Flange, SST, 1/16 in. Adapter/Manifold Bolting
FA	Level Flange, SST, 2 in., ANSI Class 150, Vertical Mount
FB	Level Flange, SST, 2 in., ANSI Class 300, Vertical Mount
FC	Level Flange, SST, 3 in., ANSI Class 150, Vertical Mount
FD	Level Flange, SST, 3 in., ANSI Class 300, Vertical Mount
FP	DIN Level Flange, SST, DN 50, PN 40, Vertical Mount
FQ	DIN Level Flange, SST, DN 80, PN 40, Vertical Mount
Manifold Assembly	
S5	Assemble to Rosemount 305 Integral Manifold
S6	Assemble to Rosemount 304 Manifold or Connection System
Mounting Bracket	
B1	Traditional Flange Bracket for 2-in. Pipe Mounting, CS Bolts
B2	Traditional Flange Bracket for Panel Mounting, CS Bolts
B3	Traditional Flange Flat Bracket for 2-in. Pipe Mounting, CS Bolts
B4	Coplanar Flange Bracket for 2-in. Pipe or Panel Mounting, all SST
Integral Mount Primary Element	
S3	Assemble to 405 Compact Orifice Plate
S4	Assemble to 1195 Integral Orifice

Mounting Bracket	
B1	Traditional Flange Bracket for 2-in. Pipe Mounting, CS Bolts
B2	Traditional Flange Bracket for Panel Mounting, CS Bolts
B3	Traditional Flange Flat Bracket for 2-in. Pipe Mounting, CS Bolts
B4	Coplanar Flange Bracket for 2-in. Pipe or Panel Mounting, all SST
B7	B1 Bracket with Series 300 SST Bolts
B8	B2 Bracket with Series 300 SST Bolts
B9	B3 Bracket with Series 300 SST Bolts
BA	SST B1 Bracket with Series 300 SST Bolts
BC	SST B3 Bracket with Series 300 SST Bolts
Product Certifications	
I1	ATEX Intrinsic Safety and Dust EEx ia IIC T5
E5	FM Explosion-proof, Dust Ignition-Proof Ex D IIC T5
Bolting Material	
L4	Austenitic 316 SST Bolts
L5	ASTM A 193, Grade B7M Bolts
L6	Alloy K-500 Bolts
Display and Interface Options	
M4	LCD Display with Local Operator Interface
M5	LCD Display
Calibration Certificate	
Q4	Calibration Certificate
QG	Calibration Certificate and GOST Verification Certificate
QP	Calibration certification and tamper evident seal
Material Traceability Certification	
Q8	Material Traceability Certification per EN 10204 3.1
Quality Certification for Safety	
QS	Prior-use certificate of FMEDA data
QT	Safety certified to IEC 61508 with certificate of FMEDA
Configuration Buttons	
D4	Analog Zero and Span
DZ	Digital Zero Trim
Transient Protection	
T1	Transient Protection Terminal Block
Software Configuration	
C1	Custom Software Configuration (Completed CDS 00806-0100-4001 for wired and 00806-0100-4100 for Wireless required with order)
Gage Pressure Calibration	
C3	Gage Calibration (Model 3351CA4 only)

Alarm Levels	
C4	Analog Output Levels Compliant with NAMUR Recommendation NE 43, Alarm High
CN	Analog Output Levels Compliant with NAMUR Recommendation NE 43, Alarm Low
CR	Custom alarm and saturation signal levels, high alarm (requires C1 and Configuration Data Sheet)
CS	Custom alarm and saturation signal levels, low alarm (requires C1 and Configuration Data Sheet)
CT	Low alarm (standard alarm and saturation levels)
Pressure Testing	
P1	Hydrostatic Testing with Certificate
Cleaning Process Area	
P2	Cleaning for Special Service
P3	Cleaning for <1 PPM Chlorine/Fluorine
Pressure Calibration	
P4	Calibrate at Line Pressure (Specify Q48 on order for corresponding certificate)
High Accuracy	
P8	0.04% Accuracy to 5:1 turndown (Range 2-4)
Flange Adapters	
DF	1/2 -14 NPT flange adapter(s)
Vent/Drain Valves	
D7	Coplanar Flange Without Drain/Vent Ports
Conduit Plug	
DO	316 SST Conduit Plug
RC1/4 RC1/2 Process Connection	
D9	RC ¼ Flange with RC ½ Flange Adapter - SST
Max Static Line Pressure	
P9	4500 psig (310 bar) Static Pressure Limit (3351CD Ranges 2–5 only)
Ground Screw	
V5	External Ground Screw Assembly
Surface Finish	
Q16	Surface finish certification for sanitary remote seals
Toolkit Total System Performance Reports	
QZ	Remote Seal System Performance Calculation Report
Conduit Electrical Connector	
GE	M12, 4-pin, Male Connector (eurofast®)
GM	A size Mini, 4-pin, Male Connector (minifast®)
HART Revision Configuration	
HR5	Configured for HART Revision 5
HR7	Configured for HART Revision 7
Typical Model Number: FT3351CD 2 A 2 2 A 1 A M4	

Table 02: Pressure Transmitter , Class B, 0.15% Accuracy

Model		Transmitter type	
3351B		Pressure transmitter 0.15% Accuracy	
Measurement type			
Standard			
D	Differential		
G	Gage		
A	Absolute		
Pressure Range	3351BD	3351BG	3351BA
0	-1.5 to 1.5 kPa (-15 to 15 mbar)	Not Applicable	Not Applicable
1	-7 to 7 kPa (-70 to 70 mbar)	-7 to 7 kPa (-70 to 70 mbar)	Not Applicable
2	-40 to 40 kPa (-400 to 400 mbar)	-40 to 40 kPa (-400 to 400 mbar)	Not Applicable
3	-200 to 200 kPa (-2 to 2 bar)	-200 to 200 kPa (-0.98 to 2 bar)	0 to 200 kPa (0 to 2 bar)
4	-700 to 700 kPa (-7 to 7 bar)	-98 to 700 kPa (-0.98 to 7 bar)	0 to 700 kPa (0 to 7 bar)
5	-2 to 2 MPa (-20 to 20 bar)	-0.098 to 2MPa (-0.98 to 20 bar)	0 to 2 MPa (0 to 20 bar)
6	-7 to 7 MPa (-70 to 70 bar)	-0.098 to 7 MPa (-0.98 to 70 bar)	Not Applicable
7	-20 to 20 MPa (-200 to 200 bar)	-0.098 to 20MPa (-0.98 to 200 bar)	Not Applicable
8	-35 to 35 MPa (-350 to 350 bar)	-0.098 to 35 MPa (-0.98 to 350 bar)	Not Applicable
Transmitter Output			
A	4-20 mA with Digital Signal Based on HART Protocol		
F	FOUNDATION fieldbus Protocol		
W	PROFIBUS PA Protocol		
Materials of Construction			
	Process Flange Type	Flange Material	Drain/Vent
2	Coplanar	SST	SST
3	Coplanar	Cast C-276	Alloy C-276
4	Coplanar	Cast Alloy 400	Alloy 400/K-500
5	Coplanar	Plated CS	SST
7	Coplanar	SST	Alloy C-276
8	Coplanar	Plated CS	Alloy C-276
Isolating Diaphragm			
2	316L SST		
3	Alloy C-276		

O-ring			
A	Glass-filled PTFE		
B	Graphite-filled PTFE		
Sensor Fill Fluid			
1	Silicone		
Housing Material		Conduit Entry Size	
A	Aluminum	½–14 NPT	
B	Aluminum	M20 × 1.5	
J	SST	½–14 NPT	
K	SST	M20 × 1.5	

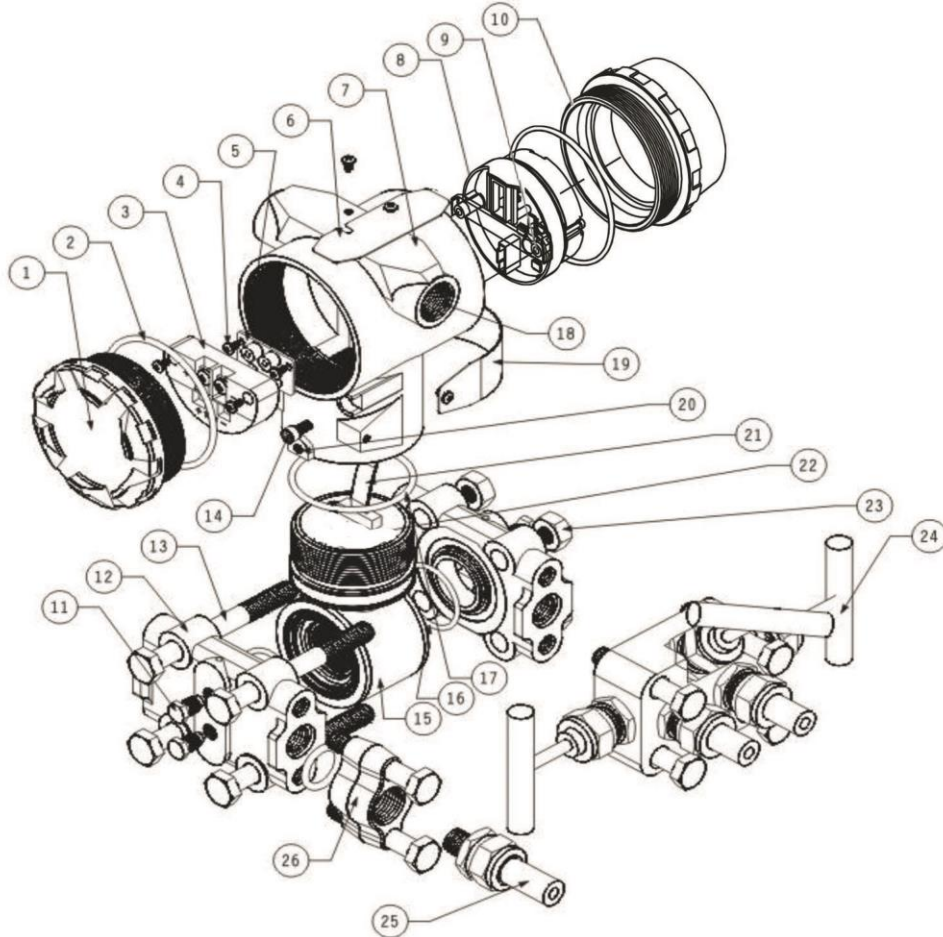
Options:

Plantweb Control Functionality	
A01	FOUNDATION fieldbus Advanced Control Function Block Suite
Plantweb Diagnostic Functionality	
DA0	Power Advisory HART Diagnostic
D01	FOUNDATION fieldbus Diagnostics Suite
Alternate Flange	
H2	Traditional Flange, 316 SST, SST Drain/Vent
H3	Traditional Flange, Alloy C, Alloy C-276 Drain/Vent
H4	Traditional Flange, Cast Alloy 400, Alloy 400/K-500 Drain/Vent
H7	Traditional Flange, 316 SST, Alloy C-276 Drain/Vent
HJ	DIN Compliant Traditional Flange, SST, 1/16 in. Adapter/Manifold Bolting
FA	Level Flange, SST, 2 in., ANSI Class 150, Vertical Mount
FB	Level Flange, SST, 2 in., ANSI Class 300, Vertical Mount
FC	Level Flange, SST, 3 in., ANSI Class 150, Vertical Mount
FD	Level Flange, SST, 3 in., ANSI Class 300, Vertical Mount
FP	DIN Level Flange, SST, DN 50, PN 40, Vertical Mount
FQ	DIN Level Flange, SST, DN 80, PN 40, Vertical Mount
Manifold Assembly	
S5	Assemble to Rosemount 305 Integral Manifold
S6	Assemble to Rosemount 304 Manifold or Connection System
Mounting Bracket	
B1	Traditional Flange Bracket for 2-in. Pipe Mounting, CS Bolts
B2	Traditional Flange Bracket for Panel Mounting, CS Bolts
B3	Traditional Flange Flat Bracket for 2-in. Pipe Mounting, CS Bolts
B4	Coplanar Flange Bracket for 2-in. Pipe or Panel Mounting, all SST
Integral Mount Primary Element	
S3	Assemble to 405 Compact Orifice Plate
S4	Assemble to 1195 Integral Orifice

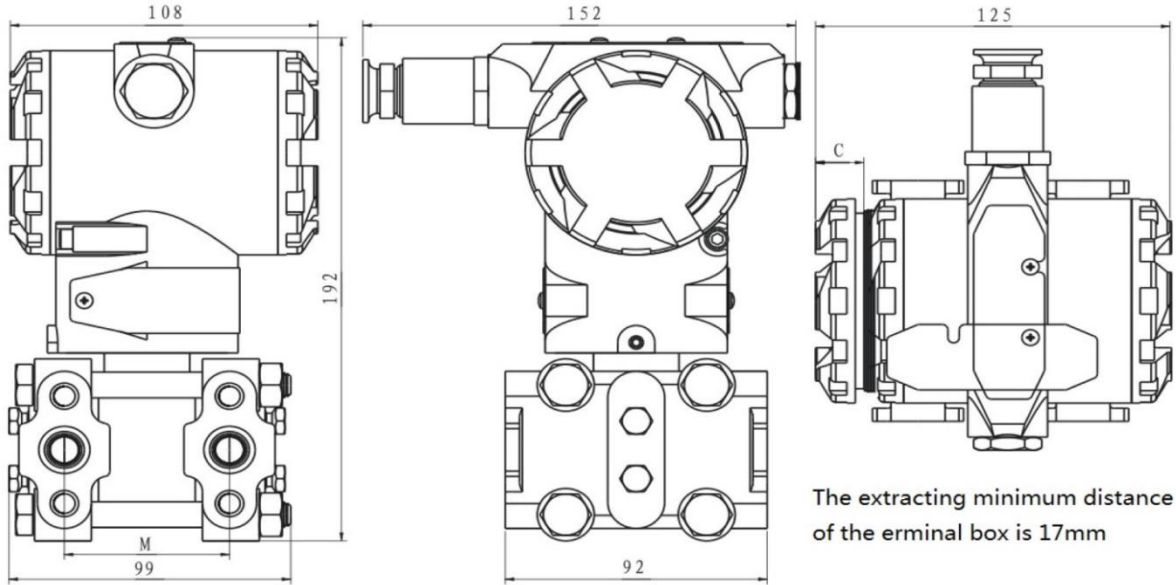
Mounting Bracket	
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B7	B1 Bracket with Series 300 SST Bolts
B8	B2 Bracket with Series 300 SST Bolts
B9	B3 Bracket with Series 300 SST Bolts
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Bolting Material	
L4	Austenitic 316 SST Bolts
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Display and Interface Options	
M4	LCD Display with Local Operator Interface
M5	LCD Display
Calibration Certificate	
Q4	Calibration Certificate
QG	Calibration Certificate and GOST Verification Certificate
QP	Calibration certification and tamper evident seal
Material Traceability Certification	
Q8	Material Traceability Certification per EN 10204 3.1
Quality Certification for Safety	
QS	Prior-use certificate of FMEDA data
QT	Safety certified to IEC 61508 with certificate of FMEDA
Configuration Buttons	
D4	Analog Zero and Span
DZ	Digital Zero Trim
Transient Protection	
T1	Transient Protection Terminal Block
Software Configuration	
C1	Custom Software Configuration (Completed CDS 00806-0100-4001 for wired and 00806-0100-4100 for Wireless required with order)
Gage Pressure Calibration	
C3	Gage Calibration (Model 3351CA4 only)

Alarm Levels	
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CN	Analog Output Levels Compliant with NAMUR Recommendation NE 43, Alarm Low
CR	Custom alarm and saturation signal levels, high alarm (requires C1 and Configuration Data Sheet)
CS	Custom alarm and saturation signal levels, low alarm (requires C1 and Configuration Data Sheet)
CT	Low alarm (standard alarm and saturation levels)
Pressure Testing	
P1	Hydrostatic Testing with Certificate
Cleaning Process Area	
P2	Cleaning for Special Service
P3	Cleaning for <1 PPM Chlorine/Fluorine
Pressure Calibration	
P4	Calibrate at Line Pressure (Specify Q48 on order for corresponding certificate)
High Accuracy	
P8	0.04% Accuracy to 5:1 turndown (Range 2-4)
Flange Adapters	
DF	1/2 -14 NPT flange adapter(s)
Vent/Drain Valves	
D7	Coplanar Flange Without Drain/Vent Ports
Conduit Plug	
DO	316 SST Conduit Plug
RC1/4 RC1/2 Process Connection	
D9	RC ¼ Flange with RC ½ Flange Adapter - SST
Max Static Line Pressure	
P9	4500 psig (310 bar) Static Pressure Limit (3351CD Ranges 2–5 only)
Ground Screw	
V5	External Ground Screw Assembly
Surface Finish	
Q16	Surface finish certification for sanitary remote seals
Toolkit Total System Performance Reports	
QZ	Remote Seal System Performance Calculation Report
Conduit Electrical Connector	
GE	M12, 4-pin, Male Connector (eurofast®)
GM	A size Mini, 4-pin, Male Connector (minifast®)
HART Revision Configuration	
HR5	Configured for HART Revision 5
HR7	Configured for HART Revision 7
Typical Model Number: FT3351CD 2 A 2 2 A 1 A M4	

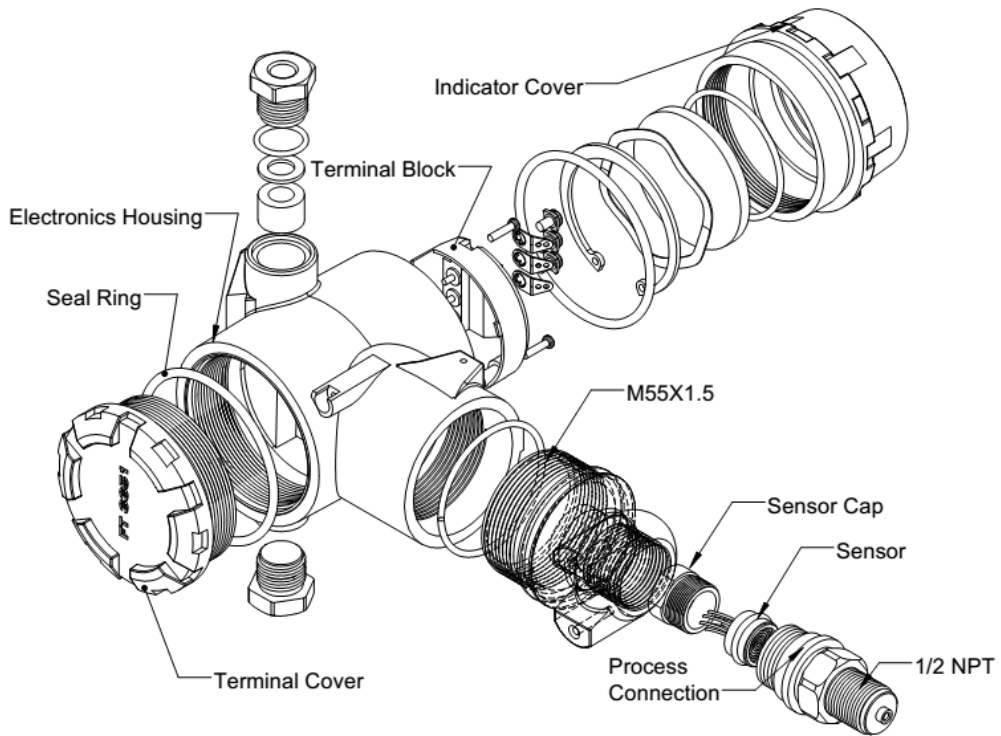
Standard FT 3351CD Dimensional Drawings

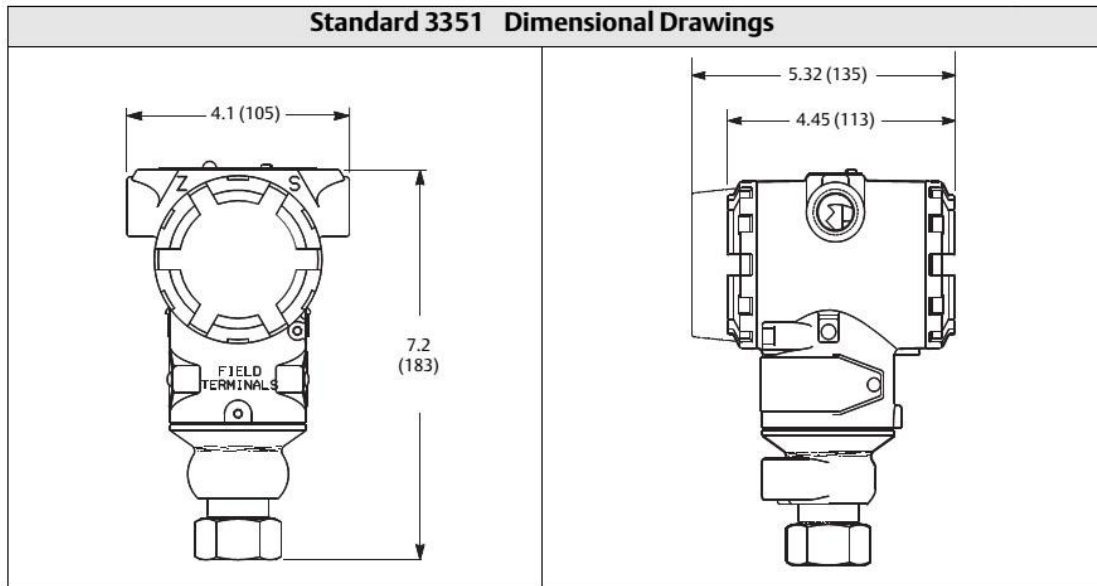


01	Terminal Cover	02	Seal Ring	03	Wire Terminal Cover	04	Mounting Bolt of Circuit Board	05	Connection Circuit Board for lightning-Stricken Proof
06	Tag Plate	07	Housing	08	Indicator & Circuit Board	09	Mounting Bolt of Indicator	10	Indicator Cover
11	Drains/Vents	12	Molding Board	13	Bolt M10	14	Cover Bolt	15	Sensor
16	Seal Ring	17	Seal Ring	18	Position No. Plate	19	Name Plate for Zero Adjustment	20	Housing Bolt
21	Wire	22	Sensor Module	23	Nut M10	24	Integrated Three-Valves Manifolds (Option)	25	Welded Connector 9(Optional)
26	Oval Flange (Option)	27	Electrical Connector						

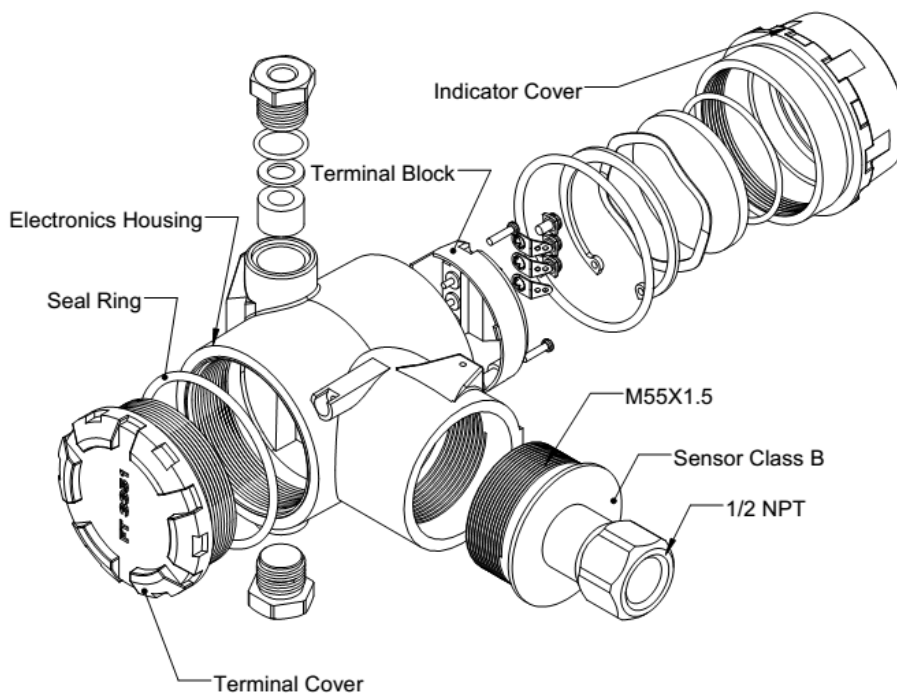


Standard FT 3351BG Drawings

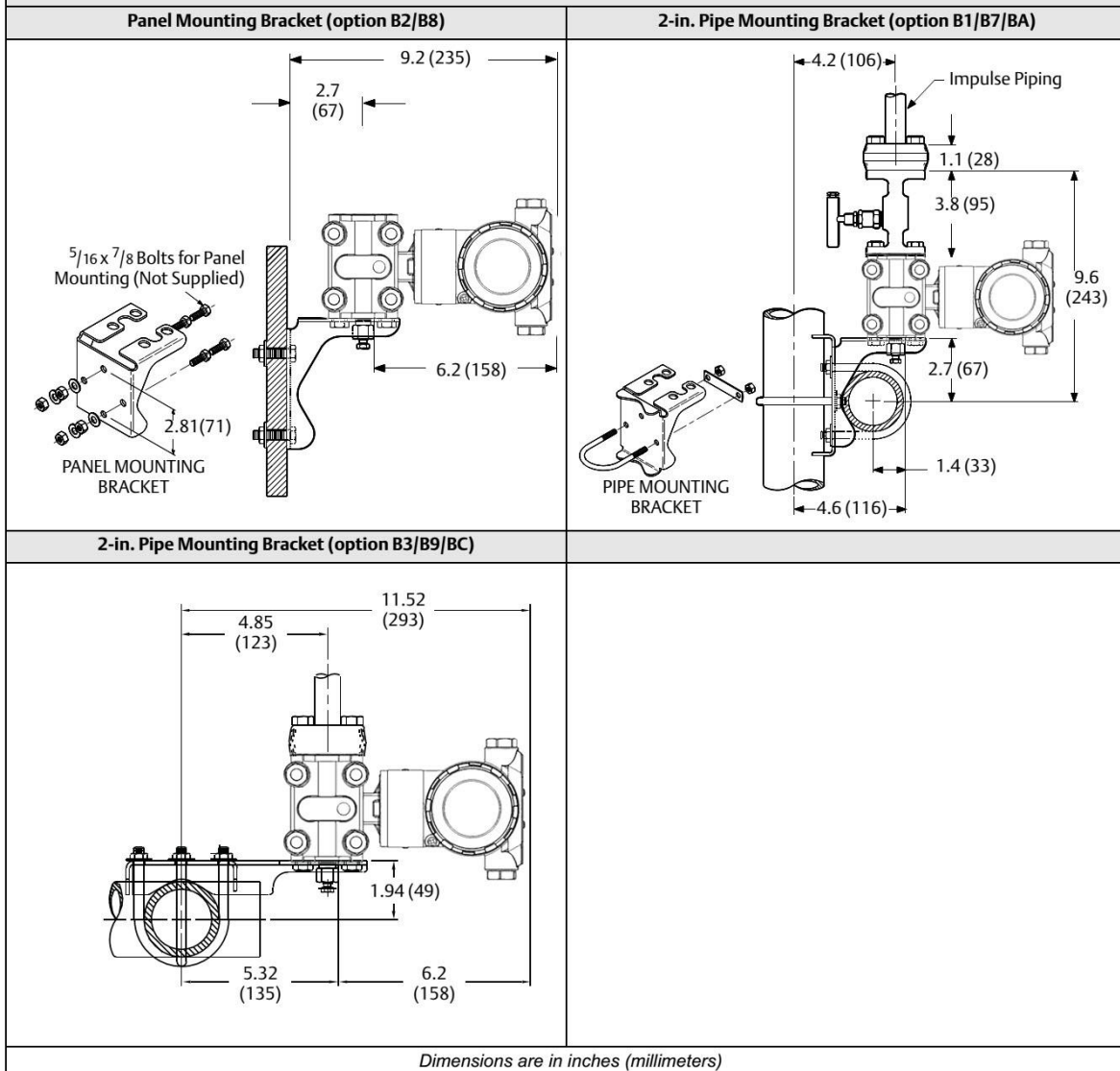




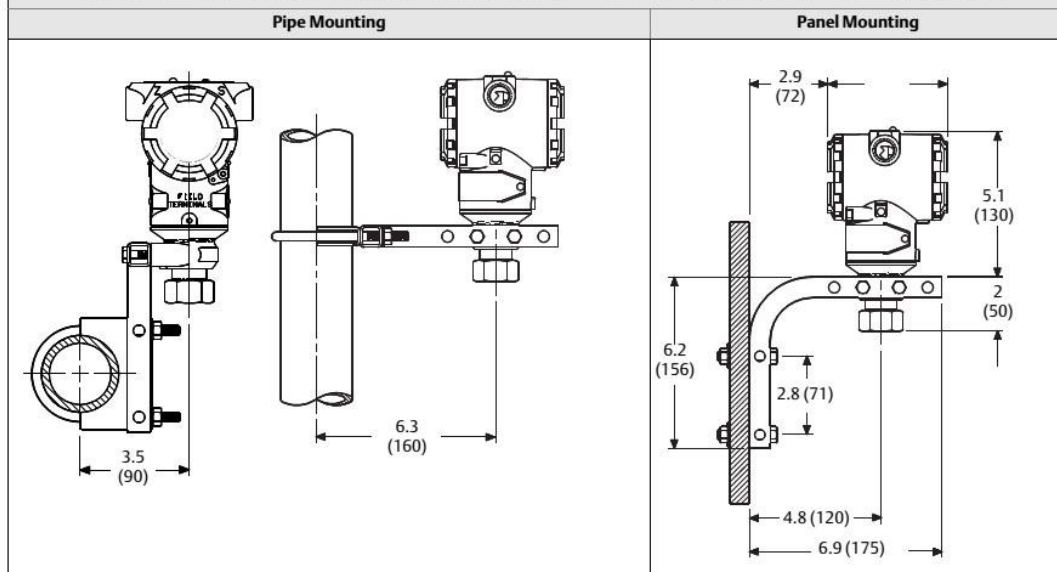
Standard FT 3351CG Drawings



Traditional Flange Mounting Configurations with Optional Brackets for 2-in. Pipe or Panel Mounting



Standard 3351 Typical Mounting Configurations with Optional Mounting Bracket





FAHM Co.

FARABOARD HOUSHMAND MIHAN

Main Office: Unit 8, 4th Floor, No.37, Tohid St., Tehran, Iran

Tel: +98 21 66123710-13 Fax: +98 21 66123714

Factory: Garmsar Industrial Zone, Sanat 2 St.

E-Mail: sales@faraboard.com