

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*

AUTROL® AMERICA
AUTOMATION CONTROL

APT 3200

Smart Pressure Transmitter

For Gauge / Absolute Pressure Measurement

PRESSURE



www.autroltransmitters.com

Flow | Level | Temperature | Pressure | Valves | Analyzers | Accessories | TekValSys

APT 3200

Introduction

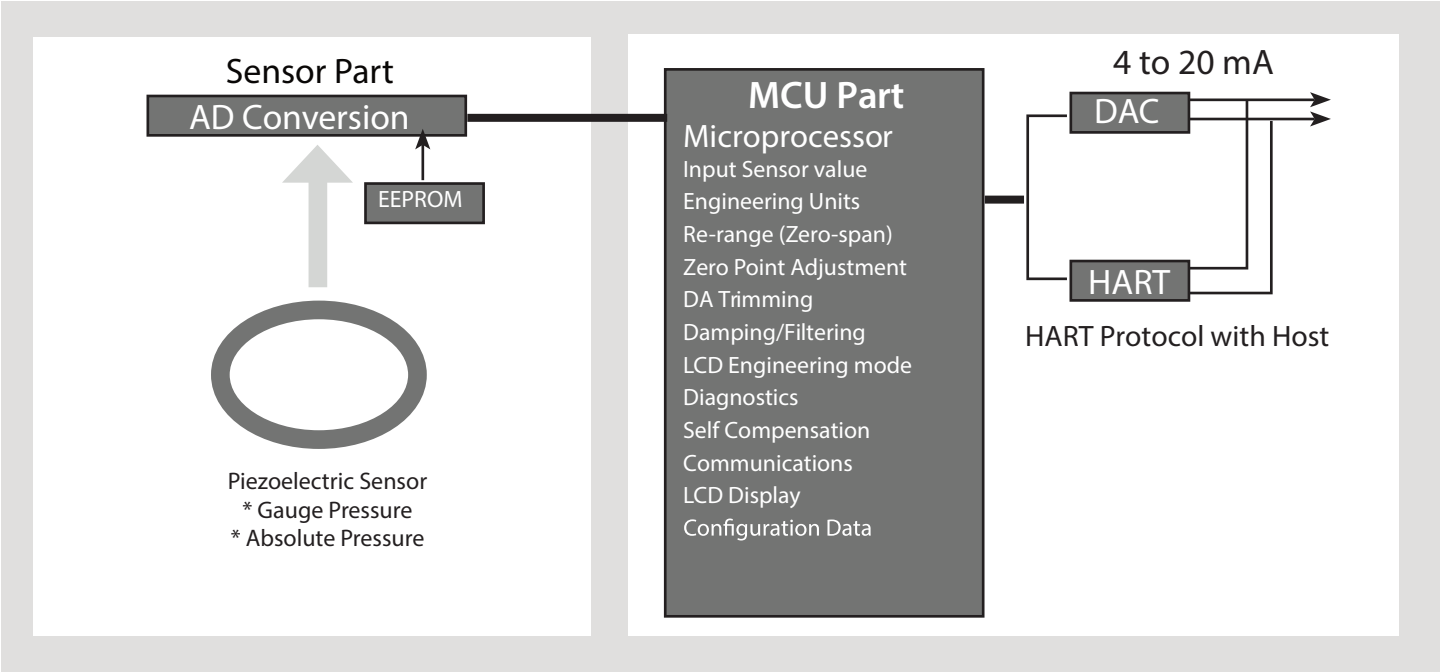


APT 3200 Smart Gauge Pressure Transmitter uses the world's most advance silicon pressure sensor technology and state of the art encapsulation technology. This is a high performance pressure transmitter with HART® communication protocol and is used to measure gauge pressure. It is used to measure liquid, gas, or steam flow as well as liquid level and density of medium. It an accuracy of up to 0.075% of URL and has IP66 water-proof protection.

Function

- Flexible Sensor Input : GP, AP, Flush Mount
- Various Output : 4-20mA, Digital Signals
- Setting Various Parameters : Zero/Span, Trim, Unit, Fail-mode, etc.
- Self Diagnostic Function : Sensor, Memory A/D Converter, Power, etc.
- Digital Communication with HART protocol
- Explosion-proof Approval & Intrinsic Safety Approval: ATEX,FM, FM Canada, GOST, KCs, etc.
- Marine Certificate: ABS, LR, BV, DNV

Functional Block Diagram



Features

Superior Performance

- High Accuracy : ±0.075% of Calibrated Span (option : ±0.04% of Calibrated Span)
- Long-Term Stability
- High Rangeability (100:1)

Flexibility

- Measuring GP, AP
- Data Configuration with HART configurator

Reliability

- Continuous Self-Diagnostic Function
- Automatic Ambient Temperature Compensation
- Fail-mode Process Function
- EEPROM Write Protection
- CE EMC Conformity Standards (EN50081-2, EN50082-2)

Transmitter Description

ATP3200 Pressure transmitter can be easily configured from any host that support the HART protocol.

Basic Setup

- Operational Parameters.
- 4-20mA Points (Zero/Span)
- Damping Time : 0.25-60 sec
- Tag : 8 alphanumeric characters
- Descriptor : 16 characters
- Message : 32 characters.
- Date : day/month/year

An optional LCD module plugs into the MCU module and displays the digital output in user configured unit.

Calibration and Trimming

- Lower/Upper Range (zero/span)
- Sensor Zero Trimming
- Zero Point Adjustment
- DAC Output Trimming
- Transfer Function
- Self-Compensation

Self-Diagnosis and Others

- CPU & Analog Module Fault Detection
- Communication Error
- Fail-mode Handling
- LCD Indication
- Temperature Measurement of Sensor Module

Specifications

Range and Sensor Limits

- Refer to Table 1.

Zero and Span Adjustment Limits

- Zero and span values can be set anywhere within the range limits stated in Table 1.
  Span must be greater than or equal to the minimum span stated in Table 1.

Output *(Analog Current and Digital Data)*

- LCD Display & ENG Mode
- Two wire 4-20mA user configurable for linear. digital process value superimposed on 4-20mA signal, available to any host that conforms to the HART protocol

Power Supply & Load Requirement

- External power supply required.
  * 250 ohm load - 17.5 Vdc
  * up to a 550 ohm load - 24 Vdc
  Max. Loop Resistance = (E - 12) / 0.022
  (E = Power Supply Voltage)
- Voltage Range : 12 to 45 Vdc
- Voltage Rating : 24 Vdc ±30%
- Loop Load
  0-1500 ohm - Operation
  250-550 ohm - HART Communications

EMC Conformity Standards

- EMI (Emission) – EN50081-2:1993
- EMS (Immunity) – EN50082-2:1995

Failure Mode

- Fail High : Current ≥ 21.1 mA
- Fail Low : Current ≤ 3.78 mA

Storage Temperature

- -40°C to 85°C (without condensing)

Process Temperature Limits

(Range codes and approval codes may effect limits)

- -40°C to 120°C (-104°F to 248°F)

Isolation

- Input/output isolated to 500Vrms (707 Vdc)

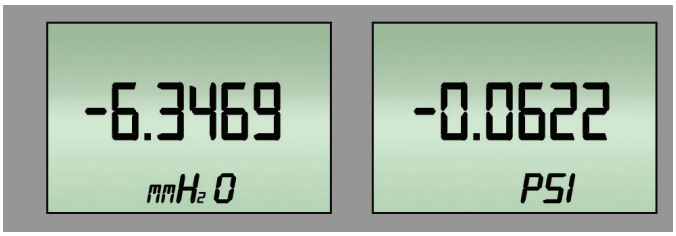
Working Pressure Limits (silicone oil)

- Model G
  - -15 - 43 psi - # 3
  - -15 - 436 psi - # 4
  - 0 -1,522 psi - # 5
  - 0-5802 psi - # 6
  - 0 - 10878 psi - # 7
- Model A
  - 0-77 psi - # 4
  - 0-436 psi - # 5
  - 0-752 psi - # 6

5 Digit LCD

- Express all pressure unit.
- Use 5 digit.
- Select decimal place (0 to 4)

User Define Unit Function



Change main parameter by Button

- Change Unit
- Change Upper range value
- Change Lower range value
- Change the Damping Second
- Select the Decimal Place
- Zero Trim
- Zero Adjustment



Moving within Menu : Zero

Moving to below Menu : Span

Moving Top Menu : Zero+Span

Physical Specifications

Wetted Materials

- Isolating Diaphragms: 316L SS, Tantalum, HAST-C

Non-wetted materials

- Fill Fluid : Silicone oil (DC200)
- Electronics Housing : Aluminum, SS 316L (option) Flameproof and Waterproof (IP67)
- Cover O-ring : Buna-N
- Paint : Epoxy-Polyester or Polyurethane
- Mounting Bracket : 304 SS with U-bolt (304 SS) for 2" pipe
- Nameplate : 304 SS

Process Connections

- 1/2-14 NPT Female
- 1/4-18 NPT (option)

Electrical connections

- 1/2-14 NPT conduit with M4 Screw Terminals

Weight

- 1.7 kg/3.74 lb (Standard - excluding options)
- 2.83 kg/ 6.23 lb (SS Housing- excluding options)

Hazardous Location Certifications (option)

KOSHA Approvals K1 Code:

* KOSHA: Korea Occupational Safety & Health Agency
Flameproof for Class I, Zone 1 : Ex d IIC T6, IP67
Ambient Temperature : -20°C to 60°C
Max. Process Temperature : 80°C
Power Supply : Max. 45 Vdc
Output : 4 to 20 mA + HART, Max. 22 mA

ATEX Approvals E1 Code:

CE 0344 II 2 G Ex d IIC T6, T5 or T4
Operating Temperature: -20°C≤ Tamb ≤+60°C T6 for process ≤ 85 C ; T5 for process ≤ 100°C T4 ≤ 130°C
APT3200 ATEX Certification is according to the below Standards : EN 60079-0 : 2006 EN 60079-1 : 2007

ATEX Certification E2 Code:

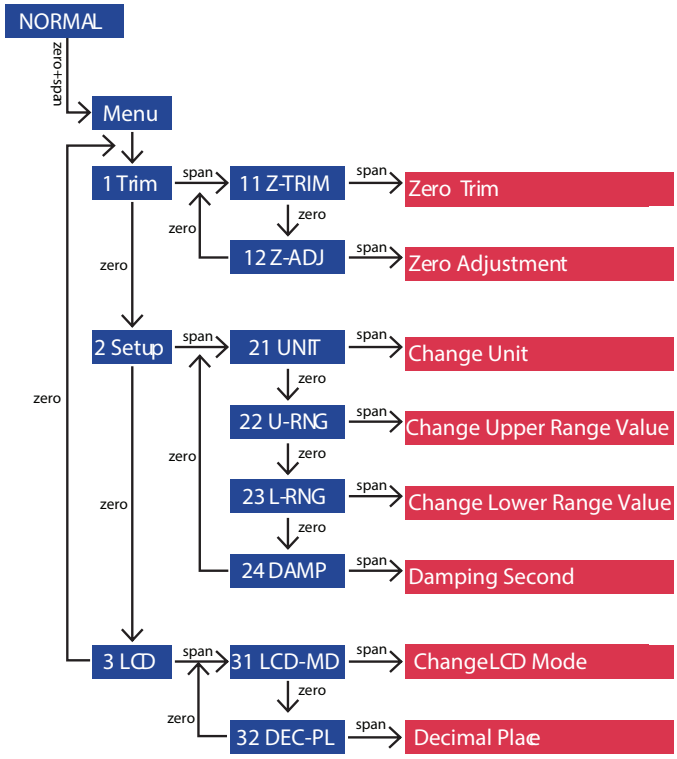
Intrinsic Safety: Ex ia T5 or T4
Ambient Temperature: -40°C to 80°C for T4,
-30°C to 40°C for T5Ui=30Vdc, Ii=200mA, Pi=0.9W, Ci=27nF, Li=104µH
Standards: EN 60079-0 : 2009, EN60079-11: 2007, EN60079-26: 2007

FM & FM Canada Approvals F1 Code :

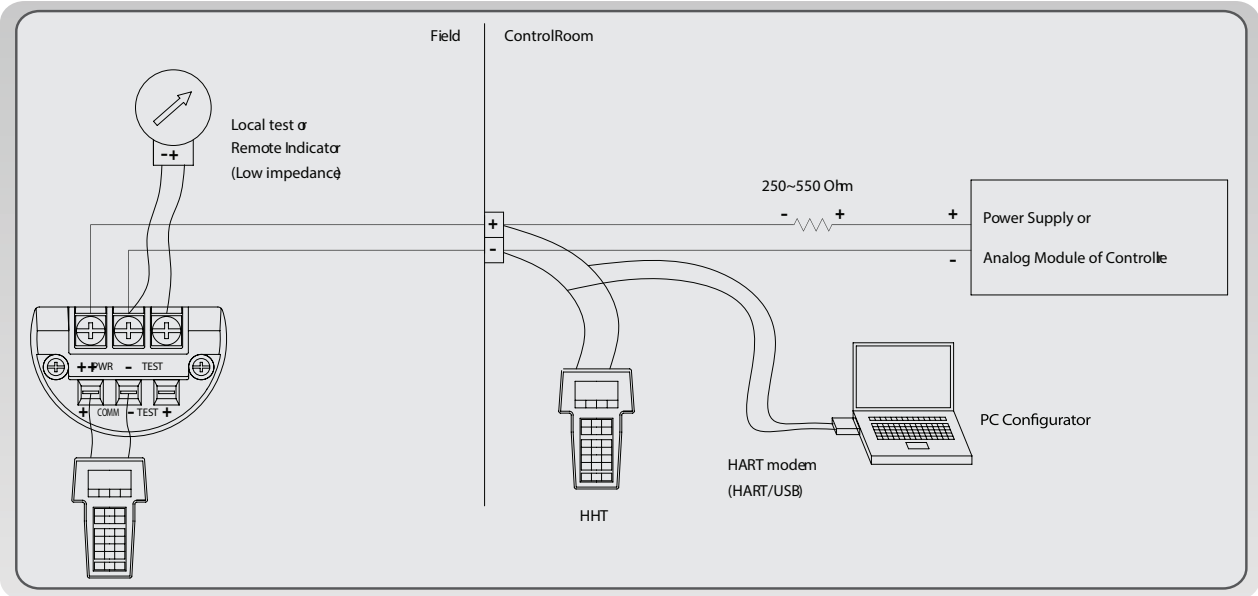
* FM: Factory Mutual explosion proof
* FM Canada: Canadian requirements
Explosion proof for Class I, Division 1
Groups A, B, C and D
Dust-ignition proof for Class II, Division 1,
Groups E, F and G
Dust-ignition proof for Class II, Division 1
"T6, see instruction for temperature code if Process Temperature above 85°C"
Ambient Temperature : -20°C to 60°C

Enclosure: indoors and outdoors, NEMA Type 4X
Conduit seal required within 18" for Group A only.
Nonincendive for Class I, Division 2, Groups A, B, C & D;
Class II, Division 2, Groups E, F & G; and Class III, Division 1, Temperature Code T4
Ambient Temperature : -20°C to 60°C

Button Menu tree

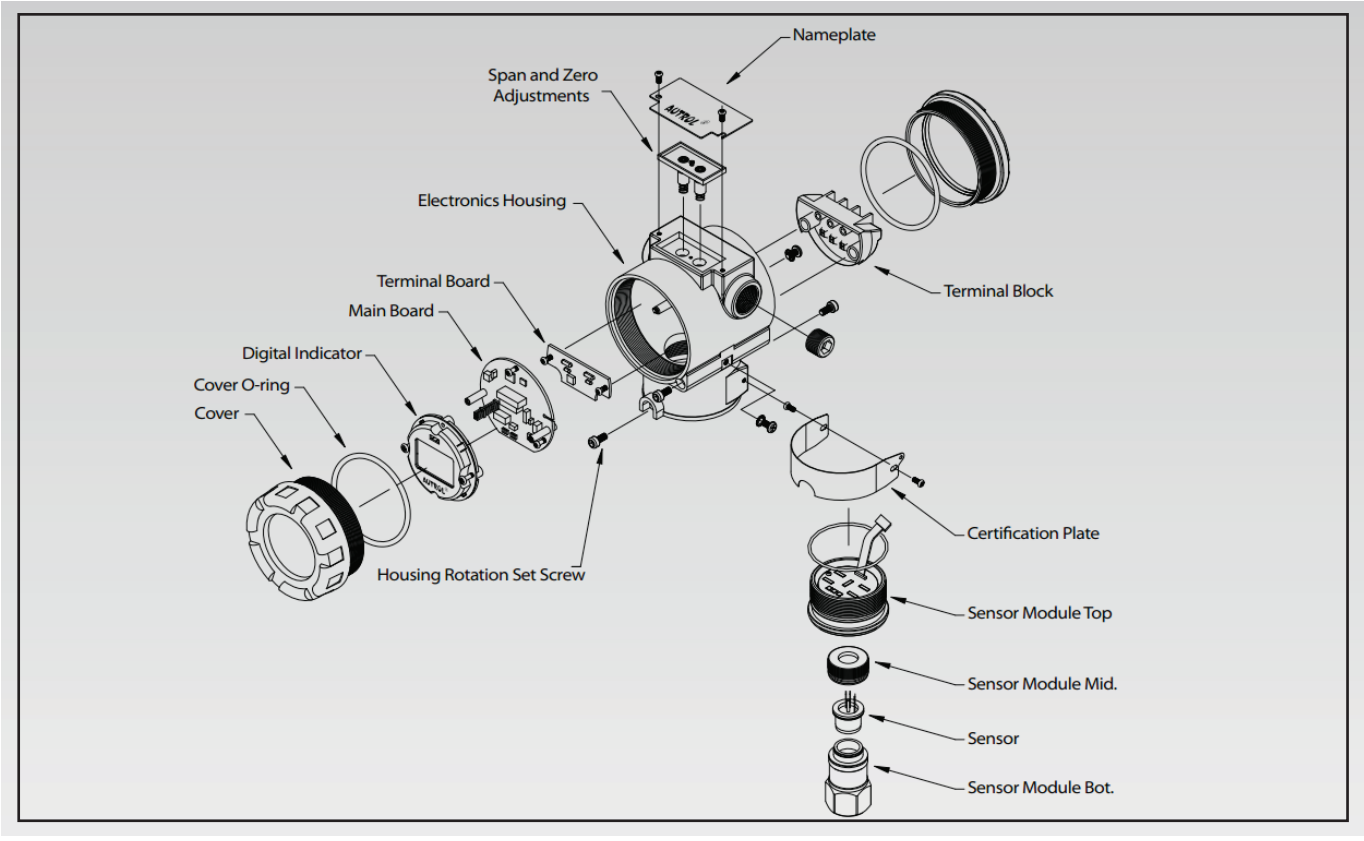


Connection Diagram of Signal, Power, HHT for Transmitter



1. HHT (HART Communicator) or PC Configurator may connected at any termination point in the signal loop.
2. HART Communication requires a loop resistance between 250 and 550 ohm @ 24 Vdc
3. Power Supply
   - Voltage Range : 12 to 45 Vdc
   - Voltage Rating : 24 Vdc ±30%

Exploded Drawing of APT3200



General Specifications

(Rangeability = 100 : 1)

1. APT3200 – G/A Pressure Sensor Range

	APT3200 – G		APT3200 - A	
	Range (PSI)	Calibrated Span (PSI)	Range (PSI)	Calibrated Span (PSI)
3	-15 - 150	0.2 - 22	NA	NA
4	-15 - 218	2 - 218	0 - 37	0.36 - 37
5	0 - 726	8 - 726	0 - 218	2.1 - 218
6	0 - 3626	37 - 3626	0 - 363	4 - 363
7	0 - 8703	88 - 8703	NA	NA

2. Electrical Specifications

Power Supply	Voltage Range : 12 to 45 Vdc, Voltage Rating : 24 Vdc ±30%
HART Loop Resistance	250-550 ohm
Output Signal	4-20 mA dc / HART
Isolation	500 Vrms (707 Vdc)

3. Performance Specifications

Reference Accuracy	± 0.075% of Span (0.1URL≤Span ≤URL) ± [0.025+0.005x(URL/Span)]% of Span (0.01URL≤Span<0.1URL)
Ambient Temp. Effect	± [0.019%URL+0.125% Span] /28°C
Ambient Temperature	-40°C - 85°C (-40°F - 185°F)
LCD Meter Ambient Temp.	-30°C - 80°C (-22°F - 176°F)
Humidity Limits	5% - 100% RH
Process Temp. Limit	-40°C -120°C (-40°F - 248°C)
Power Supply Effect	± 0.005 % of Span per Volt
Stability	± [0.125%URL for 36 months

4. Physical Specifications

Isolating Diaphragm	316L SS
Electrical Connections	1/2 – 14 NPT with M4
Process Connection Size	1/2 – 14 NPT Female
2" Pipe Stanchion Type Bracket	Angle or Flat type
Weight (Excluding options)	1.7 kg/3.74 lb (Standard) 2.83 kg/6.23 (SS Housing)
Electronic Housing	Aluminum
Housing Class	Waterproof (IP67)

Ordering Information

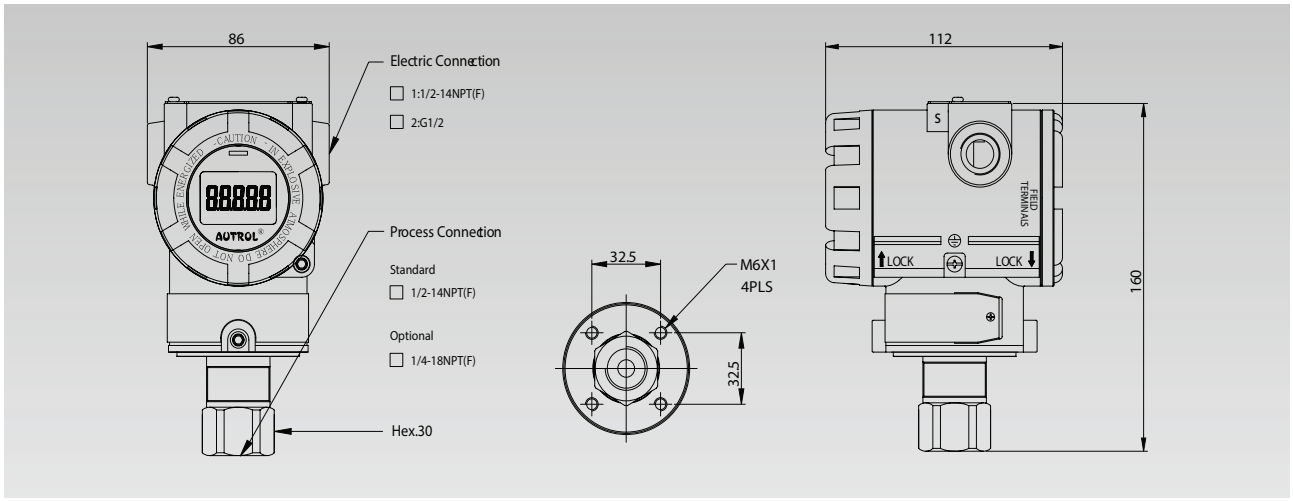
MODEL	Code	Description				
Type	D	Differential Pressure Transmitter (Static Pressure 13.79 MPa / 2000psi)				
	G	Gauge Pressure Transmitter				
	A	Absolute Pressure Transmitter				
Ranges		G/F		A		
		Range (PSI)	Min. Span (PSI)	Range (PSI)	Min. Span (PSI)	
	3	-15 - 22	0.2	NA	NA	
	4	-15 - 218	2.1	0 - 37	0.3	
	5	0 - 726	7.2	0 - 218	2.1	
	6	0 - 3626	36.2	0 - 363	3.6	
	7	0 - 8703	87	NA	NA	
	X	Special				
Mounting Flange /Material		DIAPHRAGM	OTHER			
	M11	316L SS	316 SS			
	*M12	HAST-C	316 SS			
	*M13	Tantalum	316 SS			
	*M21	HAST - C	HAST-C			
Hazardous Location Certifications	K0	Maker Standard (Waterproof : IP67)				
	K1	KCs Flameproof Approval	*K2	KCs Intrinsic Safety Approval		
	E1	ATEX (KEMA) Exposion proof	E2	ATEX (KEMA) Intrinsic Safety		
	F1	FM & FM Canada Explosion proof	*F2	FM & FM Canada Intrinsic Safety		
Fill Fluid	1	Silicone (DC 200)				
	*2	Inert fill (Halocarbon Oil)				
Process Connection	S	1/2 – 14 NPT Female (standard)				
	O	1/4 - 18 NPT Female (adapter)				
	X	Special				
Electrical Connection	1	1/2-14NPT Epoxy-Polyester Painted Aluminum				
	2	G1/2 Epoxy-Polyester Painted Aluminum (Adapter)				
	X	Special				
Option	M1	LCD Indicator				
	LPI	Lightning Protector (Internal)		**LPE**	Lightning Protector (External)	
	K	Oil Free Finish				
	2W	2 way Manifold Remote Type				
	BA	Stainless Steel Bracket (Angle type) with SS Bolts				
	BF	Stainless Steel Bracket (Flat type) with SS Bolts				
	ST	Stainless Steel Housing				
	X	Special				

Example: APT3200-G5-M11-K0-1-S-1-M1

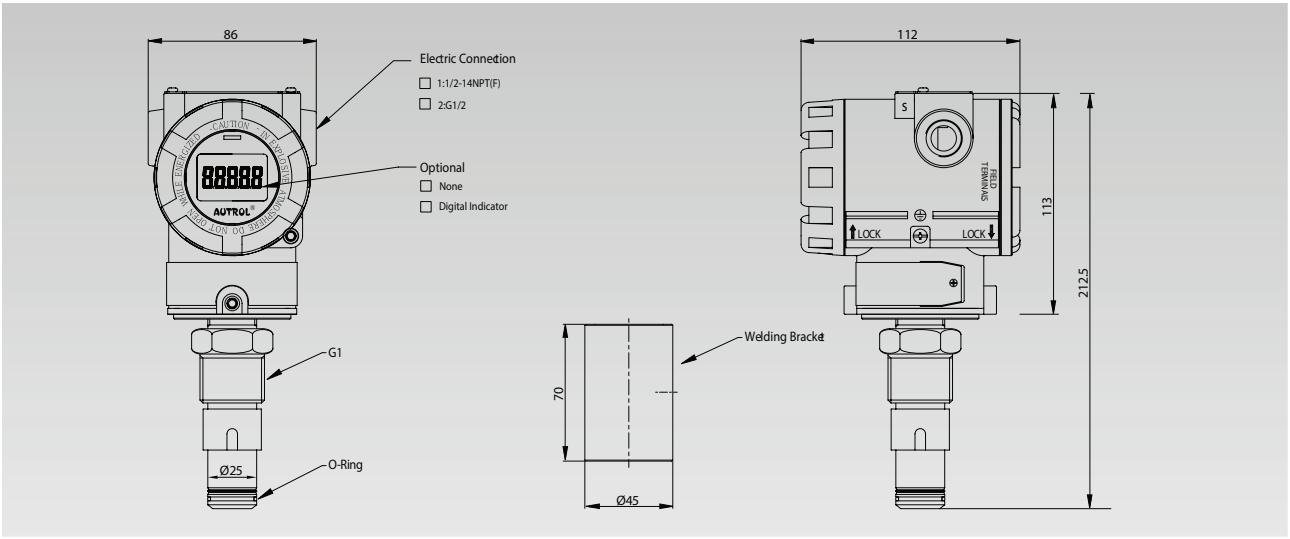
Note 1: Request to manufacturer for Draft Range, Absolute (small pressure and vacuum) and Items marked " * " before order.

Dimensions of Transmitter (mm)

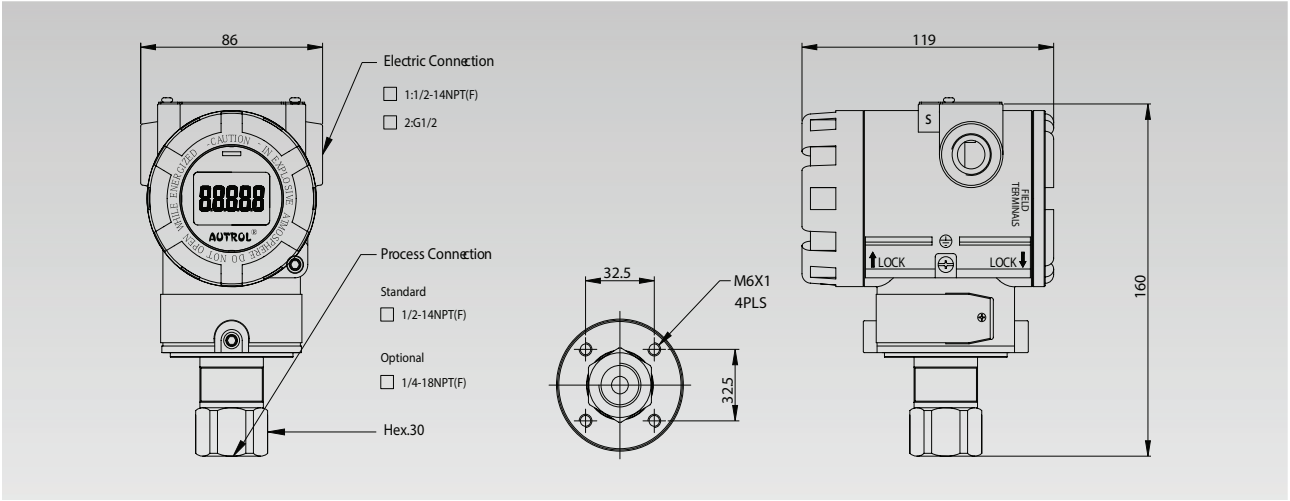
Standard Model



Flush Mount Model



Intrinsically Safe Model



Customer Service and Support



TEKMATION LLC reserves the right to change the designs and/or materials of its products without notice. The contents of this publication are the property of TEKMATION and cannot be reproduced by any other party without written permission. All rights reserved. Copyright © 2016 TEKMATION LLC
TEKMATION LLC
DOC # AUTROL/MR/190107/APT3200/A

AUTROL®
AMERICA
AUTOMATION CONTROL

www.autroltransmitters.com

AUTROL®, AUTROL™ are trade mark of smart transmitter brand series to measure Pressure, Temperature and Level, which is manufactured & owned by Autrol America System Co. td , since 1989. AUTROL®, AUTROL™ series also provide services of electric appliance installation, repair of electric, magnetic measuring instruments, electric appliance repair, repair of instruments and appliances for measuring and testing, repair of computer hardware, repair of electronic application machines and apparatus, repair of instruments and appliances for rotating, repair of electric power distribution machines and apparatus, repair of control machines and apparatus, computer hardware maintenance and administration, computer hardware installation. APT3500-Differential and high accuracy pressure Transmitter APT3100-Differential pressure Transmitter, APT3200-Gauge & Absolute pressure Transmitter, APT2100-Temperature Transmitter, AI100-Field Indicator.

Autrol Corporation Of America

796 Tek Drive, Crystal Lake, IL 60014, USA
Tel: +1 847-857-6062, +1 847-779-5000 Fax: +1 847-655-6062
Email: info@autroltransmitters.com
www.autroltransmitters.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP