

Redefining SMART

Autrol Transmitters outperform more conventional smart transmitters because of its ability to act as a "Multi- Functional Transmitter". Autrol's "MFT" has the ability to measure pressure, level And temperature.



Along with the unrivaled versatility to act as a:

- Process Meter
- Loop Powered Indicator
- HART Simulator
- Loop Tester



FUNCTION

TYPE - Temperature Transmitter(TIT), Field Mounting
CERTIFICATE - Ex d, FM, ATEX, TR CU(EAC), CE, KCS, IP66/67.
FEATURE - 4 to 20mA, HART, Loop Powered
 Digital Accuracy: RTD ±0.17 °C, T/C ±0.77 °C
 3 lines LCD display, Self Diagnostic Function, External Buttons, DAC, Zero Trim, Eng mode
INPUT - RTD input: a=0.00385(KS, JIS, DIN, IEC), a=0.00391(US)
 Thermocouple input: KSC 1602-1982, JISC 1602-1981, ANSI MC96.1-1982
 Millivolt, ohms
APPLICATION - Pressure, Flow, Level measurement for Oil & Gas, Liquid, Water, Main & offshore, Vessel, Power, Chemical Plants and Refinery

SPECIFICATION

Protocol..... Digital Communication, HART 5, 7
 Trim ability..... Zero, DAC
 Power supply & Load Requirement..... 250 to 550 ohm @ 24 Vdc, Loop Powered
 Failure Mode..... Low ≤ 3.78 mA, High ≥ 21.1 mA
 External Buttons..... Zero & Span 2 buttons for device configuration
 Process Temp. limit..... -40 to 85 °C (-104 to 185 °F)
 Stability..... RTD – 2 years (±0.12% of Reading or 0.15 °C whichever is greater),
 T/C – 1 years (±0.12% of Reading or 0.15 °C whichever is greater)



ATT2100

FUNCTION

TYPE - Head Mounted Type Temperature Transmitter
CERTIFICATE - ATEX Ex ia Intrinsic Safety
FEATURE - 4 to 20mA, HART, Loop Powered
INPUT - RTD input: a=0.00385 : KS, JIS, DIN, IEC, a=0.00391 : US.
 Thermocouple input : KSC 1602-1982, JISC 1602-1981, ANSI MC96.1-1982 Millivolt

SPECIFICATION

Protocol..... Digital Communication, HART 7
 Trim ability..... DAC
 Power supply & Load Requirement..... 250 to 550 ohm @ 24 Vdc, Loop Powered
 Failure Mode..... Low ≤ 3.8(3.5) mA, High ≥ 20.5(23) mA
 Ambient Temp. limit..... -40 to 85 °C (-104 to 185 °F)
 Dual Channel..... RTD Average, A+B, A-B, Highest, Lowest
 2 wires connections..... T/C Average, Redundancy, A+B, A-B, Highest, Lowest
 mA Average, A+B, A-B, Highest, Lowest



ATT2200



ATT2250



APPROVALS

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SMART TRANSMITTERS
 Differential | Gauge | Absolute | Temperature | Flow | Level

INTRODUCTION

Autrol Corporation of America - Smart Transmitters are "intelligent" microprocessor-based "smart" transmitters that features 2-wire loop powered 4 to 20mA analog current outputs & "digital" HART communication(s) for online pressure, differential pressure & temperature measurements in Water & Wastewater, Chemicals & Petrochemical, Oil & Gas, Pulp & Paper, Food & Beverage, Pharmaceutical, Energy & Power, Biofuels & Alternate Fuel processes.

The ATT2100, APT3100 and APT3200 series of smart transmitters have excellent stability, high accuracy and include features that facilitate easy installation, start up and minimum maintenance thereby lowering process downtime and overall cost of ownership in the long run. Autrol transmitters are equipments with analog (4/20mA- 2 wire) and digital (HART or Foundation Fieldbus) communication protocols for seamless integration with a host Control System such as DCS, PLC, SCADA, AMS, PDM and/or Hand Held Communicator(HHC). Through Digital HART Protocol one can easily acquire process measured variable, configure and modify its various Parameters (Range, Tag Name and Damping, Transfer Function, Trimming). These transmitters are equipped with a automatic temperature compensation function integrated into its advanced signal processing circuitry to ensure high reliability and performance corresponding to change of ambient temperature.

APPROVALS



APT3500

FUNCTION

TYPE
Pressure: Differential(DPIT), Gauge/ Absolute(PIT), Level(LIT), High Static Pressure, Flow Pressure(FIT)

CERTIFICATE - SIL2 (TUV, FMEDA), Ex d, Ex ia, FM, ATEX, TR CU(EAC), INMETRO, CE, Rohs, BV, LR, KR, DNV, ABS, KCS, IP66/67, NEMA 4X

FEATURE - 4 to 20mA, HART, Loop Powered
Accuracy $\pm 0.04\%$ of CS*

3 lines LCD display, Self Diagnostic Function, External Buttons, DAC, Zero Trim, Eng mode, Gold Plate

APPLICATION - Advanced performance. Pressure, Flow, Level measurement for Oil & Gas, Liquid, Water, Marine & offshore, Vessel, Power, Chemical Plants and Refinery



SPECIFICATION

Protocol..... Digital Communication, HART 7, Fieldbus Foundation
Trim ability..... Zero, DAC, FULL
Power supply & Load Requirement..... 250 to 550 ohm @ 24Vdc, Loop Powered
Failure Mode..... Low ≤ 3.78 mA, High ≥ 21.1 mA
External Buttons..... Zero & Span 2 buttons for device configuration
Process Temp. limit..... -40 to 120°C (-104 to 248°F)
Range Ability..... 100:1
Stability..... 0.125% URL for 60 months

APT3100

FUNCTION

TYPE
Pressure: Differential(DPIT), Gauge/ Absolute(PIT), Level(LIT), High Static Pressure, Flow Pressure(FIT)

CERTIFICATE - SIL2 (TUV, FMEDA), Ex d, Ex ia, FM, ATEX, TR CU(EAC), INMETRO, CE, Rohs, BV, LR, KR, DNV, ABS, KCS, IP66/67, NEMA 4X

FEATURE - 4 to 20mA, HART, Loop Powered
Accuracy $\pm 0.075\%$ (option $\pm 0.04\%$) of CS*

3 lines LCD display, Self Diagnostic Function, External Buttons, DAC, Zero Trim, Eng mode

APPLICATION - Pressure, Flow, Level measurement for Oil & Gas, Liquid, Water, Marine & offshore, Vessel, Power, Chemical Plants and Refinery



SPECIFICATION

Protocol..... 4 to 20mA + Digital Communication, HART 5
Trim ability..... Zero, DAC, FULL
Power supply & Load Requirement..... 250 to 550 ohm @ 24 Vdc, Loop Powered
Failure Mode..... Low ≤ 3.78 mA, High ≥ 21.1 mA
External Buttons..... Zero & Span 2 buttons for device configuration
Process Temp. limit..... -40 to 120°C (-104 to 248°F)
Range Ability..... 100:1
Stability..... $\pm 0.125\%$ URL for 36 months

APT3700N

FUNCTION

Flexible Sensor Input: DP, GP, AP, Vacuum
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 KOSHA

Qualified per IEEE Std 344-1987/2004 and IEEE Std 323-1983/2003, NRC Regulatory Guide 1.180 (Rev.1)



SPECIFICATION

Protocol..... 4 to 20mA+Digital Communication, HART 5
Trim ability..... Zero, DAC, FULL
Power supply & Load Requirement..... 250 to 550 ohm @ 24 Vdc, Loop Powered
Failure Mode..... Low ≤ 3.78 mA, High ≥ 21.1 mA
External Buttons..... Zero & Span 2 buttons for device configuration
Process Temp. limit..... -40 to 120°C (-104 to 248°F)
Range Ability..... 100:1
Stability..... 0.125% URL for 36 months

APT3200

FUNCTION

TYPE
Gauge/ Absolute(PIT), Level (LIT), High Static pressure

CERTIFICATE - SIL2 (TUV, FMEDA), Ex d, Ex ia, FM, ATEX, TR CU(EAC), INMETRO, CE, Rohs, BV, LR, KR, DNV, ABS, KCS, IP66/67, NEMA 4X

FEATURE - 4 to 20mA, HART, Loop Powered
Accuracy $\pm 0.075\%$ (option $\pm 0.04\%$) of CS*

3 lines LCD display, Self Diagnostic Function, External Buttons, DAC, Zero Trim, Eng mode

APPLICATION - Pressure, Level measurement for Oil & Gas(up & down stream), Liquid, Water, Marine & offshore, Vessel, Power, Chemical Plants and Refinery



SPECIFICATION

Protocol..... Digital Communication, HART 5
Trim ability..... Zero, DAC, FULL
Power supply & Load Requirement..... 250 to 550 ohm @ 24 Vdc, Loop Powered
Failure Mode..... Low ≤ 3.78 mA, High ≥ 21.1 mA
External Buttons..... Zero & Span 2 buttons for device configuration
Process Temp. limit..... -40 to 120°C (-104 to 248°F)
Range Ability..... 100 : 1
Stability..... $\pm 0.125\%$ URL for 36 months

Level & Chemical Seals

FUNCTION

TYPE
Flush/ Extension Diaphragm & Direct/ Capillary connection of Level pressure(LIT)

FEATURE - 4 to 20mA, HART, Loop Powered
Accuracy $\pm 0.2\%$ (option ± 0.1) of CS*

3 lines LCD display, Self Diagnostic Function, External Buttons, DAC, Zero Trim, Eng mode

ADVANTAGE- High temperature & Corrosive application, Special Diaphragm Material & Coating available

SPECIFICATION

Protocol..... 4 to 20mA+Digital Communication, HART 5, 7 (comply with transmitter model)
Trim ability..... Zero, DAC, FULL
Power supply & Load Requirement..... 250 to 550 ohm @ 24 Vdc, Loop Powered
Failure Mode..... Low ≤ 3.78 mA, High ≥ 21.1 mA
External Buttons..... Zero & Span 2 buttons for device configuration
Process Temp. limit..... Min -50, -40 Max 420 °C
Range Ability 100:1
Stability..... $\pm 0.125\%$ URL for 36 months



APT3100L



APT3200L



APT3500



APT3700N