Additel A20 Series
AccuCore Pressure Transmitters and Transducers

Metrology Made Simple

- **Accuracy up to 0.04%FS**
- **Long-term stability 0.1% FS / 3 years (includes compensated temperature ranges)**
- **Modular Design for Ultra-Fast Delivery**
- Pressure ranges from -14.5 to 10000 psi (-1 to 700 bar)
- Gauge, Sealed Gauge, Absolute
- 4-20 mA, 0~5 V / 0~10 V (configurable) or RS485 Outputs
- Frequency response to 1 kHz
- Operating temperature range up to -40 °C to 125 °C (-40 °F to 257 °F)

3-Year Stability Guaranteed!

OVERVIEW

The A20 is a high-performance, robust pressure measurement device offering market-leading long-term stability backed by a 3-year guarantee. Its highly stable, glueless sensor module and hermetically sealed electronics deliver exceptional reliability and stability in demanding applications. With high accuracy and extensive temperature compensation, the A20 provides outstanding performance across the full operating range.
The A20 is available in gauge, sealed gauge, and absolute configurations, with pressure ranges from -14.5 to 10000 psi (-1 bar to 700 bar).
To ensure easy integration, the A20 supports conventional analog output as well as RS485 Modbus-RTU for digital communication. Fast ASIC technology enables response times of <1 ms (1 kHz) and a power-on time of <60 ms. Digital communication also allows for simple calibration through an app.
Built for durability, the A20 features best-in-class construction designed to withstand high shock levels (1000 g half-sine for 1 ms per IEC 60068-2-27), vibration, and more than 10 million pressure cycles (0–100% FS at room temperature).
Additel is renowned for the long-term reliability of its calibration standards and portable calibrators, and the A20 family of pressure transmitters and transducers continues that legacy—delivering unmatched reliability, stability, and service.

Key Features

Metal Hermetic Packaging for Ultra-High Reliability

Metal or ceramic hermetic packaging is commonly used in aerospace and other applications that demand extremely high reliability. The A20 uses metal hermetic circuit packaging—a higher-cost approach that delivers superior performance. By fully isolating the electronics from moisture and environmental contaminants, this design ensures exceptional long-term stability and ultra-high reliability of the circuit.

Glue-Free Sensor Packaging for Exceptional Stability — Guaranteed 0.1% FS for 3 Years

The A20 utilizes a specialized glue-free solid packaging technology combined with a unique low-stress structural design. This approach minimizes long-term drift and delivers outstanding stability over the life of the sensor. By eliminating adhesive materials, the sensor can also withstand long-duration high-vacuum environments without hidden risks, ensuring highly reliable performance under demanding conditions.

Modular Design for Ultra-Fast Delivery

A20 adopts modular design and automated production lines. All key modules are pre-produced in advance, which can realize fast delivery after receiving from orders. Often within a couple of weeks as opposed to months.

Metrology-Driven, Full-Link Quality Management System

Additel operates a world-class, ISO 17025:2017-accredited pressure metrology laboratory equipped with primary standards offering uncertainties as low as ±(0.2 Pa + 12 ppm)—representing industry-leading metrology capability. Leveraging this robust metrology framework, every stage—from traceability and value transfer to product calibration—is standardized and tightly controlled. Each A20 unit undergoes rigorous calibration and testing, ensuring consistent accuracy and long-term reliability in every delivered product.

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Rev # 20261014

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SPECIFICATIONS

Electrical Specification

Interface Type	Connectivity	RS485 (4-wire)	mA (2-wire)	Voltage (3-wire)
	Outputs	RS485 Modbus-RTU	4~20 mA/ 20~4 mA	0~5 V/ 0~10 V
	Power supply	8~32 VDC	12~32 VDC	8/13~32 VDC
	Power consumption	< 8 mA	3.5~22.5 mA	< 3 mA
	*For Voltage Output versions, voltage range is configurable within 0 to 10 V, supply voltage must be 3 V greater than the output voltage selected (No-True zero); 3-wire voltage out, on-true zero, the output will saturate at < 50 mV *Customization available for other specs (e.g. pseudo 4-wire voltage output)			
Electrical connectors	Electrical connectors		Operating Temperature	IP Rating
	Raychem cable		(-55~125) ℃	IP65
	Micro-DIN (With matching plug)		(-40~80) ℃	IP65
	Polyurethane cable		(-40~80) ℃	IP68
	M12x1-4Pin (With matching plug)		(-40~125) ℃	IP67
	MIL-C-26482-6Pin		(-55~125) ℃	IP67
Power-on Time	＜ 60 ms			
Interface Protection	Short circuit of any interface			
	Overvoltage protection of power supply and analog signal ports: ± 33 VDC			
	Overvoltage protection of RS485 port: ± 80 VDC			
Insulation	>100 MΩ @ 500 VDC			
Load Characteristics	Current output: Rload ≤ (supply voltage - 8 V) / 25mA			
	Voltage output: Rload > 5 kΩ			
Response Frequency	1kHz (current and voltage output); 10Hz (RS485, user adjustable up to 1kHz via command)			

Pressure Specification

Specifications	A20	
Pressure Range	Pressure Type	Range
	Gauge ranges	-14.5 ~ 1000 psi (-1 ~ 70 bar)
	Sealed Gauge ranges (Sealed gauge pressure obtained by absolute pressure zero migration)	-14.5 ~ 10000 psi (-1 ~ 700 bar)
	Absolute ranges	0 ~ 10000 psi (0 ~ 700 bar)
Vacuum Compatible	For all pressure ranges, the vacuum will not affect the product	
Accuracy (NLH&R)@ RT(20...25°C) & zero/span setting		Accuracy @ RT
	A20	0.2% FS
	A10	0.1% FS
	A04	0.04% FS
	NLH&R (Non-linearity, hysteresis, repeatability) **& zero/span setting** Customization available for other specs	
Stability		Stability
	3 year	0.1% FS
	5 Year	0.2% FS
	Customization available for other specs	
Total Precision		Precision @ Compensated Temperature
	A20	0.5% FS
	A10	0.2% FS
	A04	0.1% FS
	NLH&R (Non-linearity, hysteresis, repeatability), zero/span setting, thermal effects Customization available for other specs	
Compensated Temperature Ranges	TA : -10 to + 50 °C TB : -20 to + 80 °C TC : -40 to + 80 °C TD : -40 to + 125 °C TX : Others	

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General Specification

Specification	Description
Dimensions	φ19 mm x 44 mm (excluding electrical connector)
Pressure Connectors	G1/4 Female, 1/4"-20 UNC Female, G1/2A Male, 1/8 VCR Male, 1/4 VCR Male 1/2 NPT Male, G1/4A Male, 1/4 NPT Female, 1/4 NPT Male, 1/8 NPT Male, G1/8A Male, M14x1.5 Male, M12x1 Male, M20x1.5 Male, G1/2B Male, G1/4B Male, G3/8B Male (Customization available for other specs)
Material	Housing: AISI 316L Diaphragm: AISI 316L Pressure fitting: AISI 316L Sealing material: 1) Thread end face seal: stainless steel gasket or red copper gasket, default stainless steel 2) Thread root seal: EPDM (-40…150 °C) or FKM (75 Shore, -20…200 °C), default FKM

Environmental Specification

Medium Temp.	Normal -55 °C~125 °C, short time 150 °C
Ambient Temp.	Normal -40 °C~125 °C
Storage Temp.	Normal -40 °C~125 °C
Pressure endurance	＞ 10 million pressure cycles @(0~100%FS,Room Temperature)
Vibration	Sinusoidal Vibration to DO-160G Curve W. 5 to 2000 Hz, 30 g peak.
	Random vibration to DO-160G Cat. R (robust) Curves D1+ E1. 10 to 2000 Hz, peak ASD 0.16 g^2/Hz.
	Random vibration to BS EN 61373:2010 5 to 250 Hz, peak ASD 6.12 g^2/Hz.
Shock	1000 g half-sine for 1 ms to IEC 60068-2-27

Certification

CE	IEC61326-1: 2013: Electrical Equipment for Measurement, Control and Laboratory Use	
	IEC61326-2-3: 2013: Particular Requirements for Pressure Transducers	
	EN50121-3-2: Railway applications – Electromagnetic compatibility – Rolling stock – Apparatus. 4-20 mA version only	
IECEx/ATEX/CSA	Ex ia I Ma Ex ia IIC T4-T6 Ga Ex ia IIIC T135℃ Da Ex tb IIIC T135℃ Db Ex db IIC T6…T4 Ga/Gb	Ui=30V Ii=200mA Pi= 0.8 W

Range table

Type	Range	Overload Pressure	Burst Pressure
Gauge pressure	1 psi	6XFS	150 psi
	2 psi	6XFS	150 psi
	5 psi	6XFS	150 psi
	15 psi	6XFS	150 psi
	30 psi	4XFS	6xFS
	100 psi	4XFS	6xFS
	150 psi	4XFS	6xFS
	1000 psi	4XFS	6xFS
sealed gauge pressure	1500 psi	4XFS	6xFS
	3600 psi	10000 psi	10000 psi
	6000 psi	10000 psi	10000 psi
	10000 psi	15000 psi	15000 psi
Absolute pressure	5 psi	6XFS	150 psi
	15 psi	6XFS	150 psi
	30 psi	4XFS	6xFS
	50 psi	4XFS	6xFS
	100 psi	4XFS	6xFS
	150 psi	4XFS	6xFS
	1000 psi	4XFS	6xFS
	1500 psi	4XFS	6xFS
	3600 psi	10000 psi	10000 psi
	6000 psi	10000 psi	10000 psi
	10000 psi	15000 psi	15000 psi

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ORDERING INFORMATION

Model Number

*** For simple model number configuration, please visit www.additel.com A20 product configurator."**

A20 — A — AX — TA — RS — E2 — P3 — C1 — EX[2] — *Range — Unit — Other

Model
A20

Pressure Type	
G	Gauge pressure
SG	Sealed gauge pressure
A	Absolute pressure

Accuracy	
A04	0.04%FS
A10	0.1%FS
A20	0.2%FS
AX	Others

Compensation Tempature	
TA	(-10~50)℃
TB	(-20~80)℃
TC	(-40~80)℃
TD	(-40~125)℃
TX	Others

Electrical Type	
RS	RS485
A	4~20 mA
B	0~5 V
C	0~10 V
D	0.5~4.5 V
X	Others

Electrical Connector	
NC	None
E1	Raychem cable (-55 ~125)℃
E2	Micro-DIN (-40 ~80)℃
E3	M12x1-4Pin (-40 ~125)℃
E4	MIL-C-26482 6pin (-55 ~125)℃
E5[1]	Polyurethane cable (-40 ~80)℃
EX	Others

Pressure Connector	
NC	None
P1	G1/4 Female
P2	G1/4A Male
P3	1/4 NPT Female
P4	1/4 NPT Male
P5	1/8 NPT Male
P6	G1/8A Male
P7	M14x1.5 Male
P8	M12x1 Male
P9	M20x1.5 Male
P10	1/4"-20 UNC Female
P11	G1/2A Male
P12	1/8 VCR Male
P13	1/4 VCR Male
P14	1/2 NPT Male
PX	Other requirements

Certificate	
C1	Five-point full range pressure certificate
C2	Five-point full range & full temperature
C3	17025 NVLAP
C4	EN10 204
CX	Other quirements

EX ATEX Certified[2]
Not ready yet

Range
Range table

Unit
bar
mbar
psi
kPa
MPa

Other
Customized

Note:
[1] Polyurethane cable is rated for IP68 applications. Contact Additel Sales to ensure product is appropriate for desired application.
[2] ATEX and CSA certifications are coming soon.

*Range Code:

For a pressure range, the model code is:
Model code = Lower limit code – Upper limit code

Each limit code is coded as: ABC = AB*10^C
(AB = significant figures, C = power of 10)

Special notes:
a. When C is 0, it is omitted.
  e.g. pressure range: 10 - code: 10
    pressure range: 70 - code: 70
b. R stands for the decimal point.
  e.g. pressure range: 0.1 - code: 0R1
    pressure range: 4.7 - code: 4R7
  If only a zero follows R, both R and the zero are omitted.
  e.g. pressure range: 1 - code: 1
c. N stands for minus.
  e.g. pressure range: -0.1 - code: N0R1
    pressure range: -100 - code: N101
d. when limit point is zero,which is coded as "0".
  e.g. pressure range: 0~100 - code: 0-101

Typical examples:

Pressure range	Model code
0~10	0-10
0~100	0-101
0~1000	0-102
-0.1~1000	N0R1-102
-100~100	N101-101
-100~0	N101-0
0~0.1	0-0R1
0~2.5	0-2R5
-2.5~2.5	N2R5-2R5
0~25	0-25
0~70	0-70

Note: The model code expresses range values only.
Pressure type and units are defined by other model fields.

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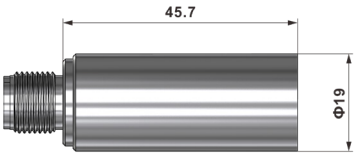
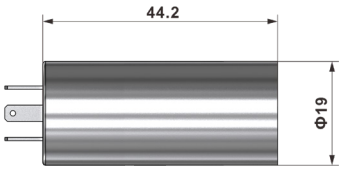
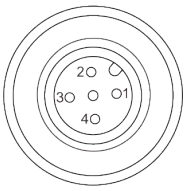
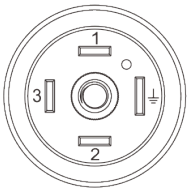
Dimensions and Options

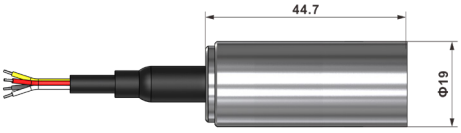
Electrical Connections

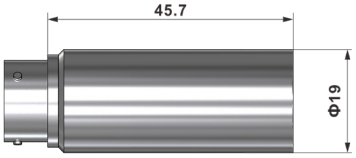


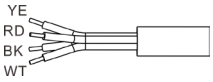


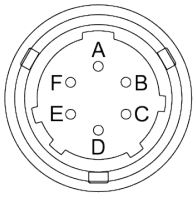
M12 x 1- 4 Pin		4…20mA	0…5/10V	RS485
	1	LOOP+	V+	V+
	2		OUT	485A
	3	LOOP-	GND	GND
	4			485B

MICRO-DIN		4…20mA	0…5/10V
	1	LOOP+	V+
	2	LOOP-	GND
	3		OUT
	E[1]	CASE	CASE





Cable[2]		4…20mA	0…5/10V	RS485
	BK[1]	LOOP-	GND	485B
	RD[1]	LOOP+	V+	V+
	BU[1]		OUT	485A
	WT[1]			485B

MIL-C-26482		4…20mA	0…5/10V	RS485
	A	LOOP+	V+	V+
	B		OUT	485A
	C			485B
	D	LOOP-	GND	GND
	E			
	F			

Note:
[1] E: earth BK: Black RD: Red BU:Blue WT: White
[2] The default cable length is 1meter, can be customized.

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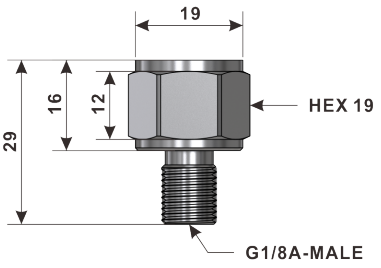
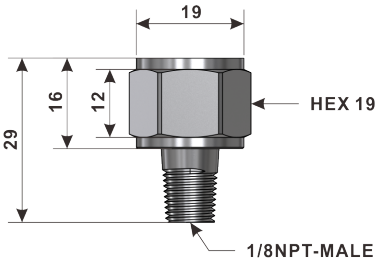
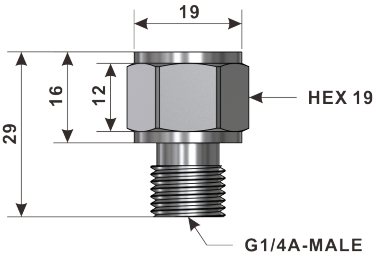
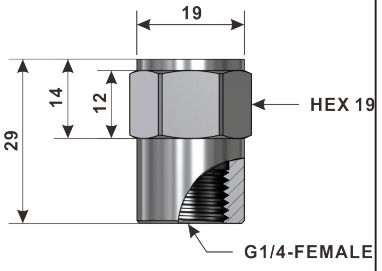
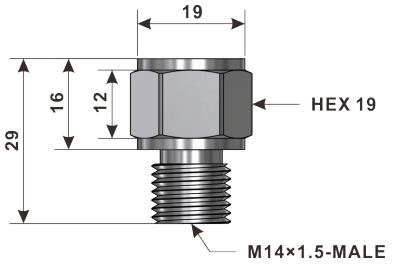
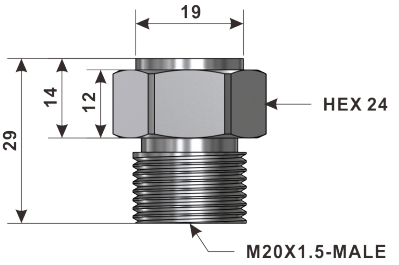
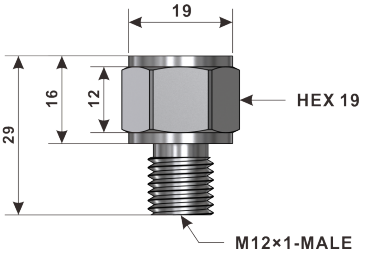
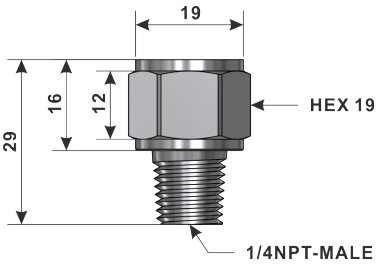
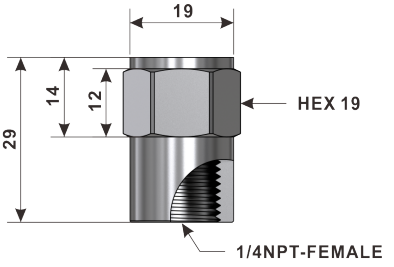
Available pressure connections

G 1/8A M	1/8 NPT M	G 1/4A M
		
G 1/4 F	**M14X1.5 M**	**M20X1.5 M**
		
M12X1 M	**1/4 NPT M**	**1/4 NPT F**
		

Additional connection types are available on request; please contact Additel for details.

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