

3A Sanitary Pressure Assembly

F-20-3A

- 3A Sanitary Pressure Assembly
- FDA Approved System Fill
- All-Welded Design



3/4" Connection



Standard 1.5" Connection

WIKA F-20-3A pressure transmitters are in compliance with “3A” third party criteria for pressure and level measurement in all sanitary applications. The process wetted surfaces of 316L stainless steel are electropolished to reduce cleaning time. This transmitter features 0.25% output linearity (BFSL) over a wide operating temperature range.

The transmitters are available with industry standard 3/4”, 1.5” and 2.0” Tri-Clamp® process connections. Mineral oil (KN62) is the standard system fill fluid behind the process connection diaphragm (glycerine for positive pressure 3/4” Tri-Clamp®) both approved by FDA. The transmitter assembly is designed for “Clean in Place” (CIP) and “Steam in Place” (SIP) maintenance procedures.

F-20-3A stocked part numbers

Type	F-20-3A		
Datasheet	F20-3A		
Pressure Conn.	3/4" Tri-Clamp®	1½" Tri-Clamp®	2" Tri-Clamp®
Power Supply	10-30 VDC		
Signal Output	4 -20 mA 2-wire		
Ranges			
0 - 15 psi	n/a	50236407	50236512
0 - 25 psi	n/a	50236415	50236521
0 - 30 psi	n/a	50236423	50236539
0 - 50 psi	n/a	50236431	50236547
0 - 60 psi	50236334	50236440	50236555
0 - 100 psi	50236351	50236458	50236563
0 - 160 psi	50236369	50236466	50236571
0 - 200 psi	50236377	50236474	50236580
0 - 300 psi	---	---	---
0 - 500 psi	---	---	---
0 - 1000 psi	---	---	---
Vacuum and Compound Ranges			
-30" Hg Vac	n/a	50236482	50236598
-30" Hg - 30 psi	n/a	50236491	50236601
-30" Hg - 60 psi	50236393	50236504	50236610
-30" Hg - 100 psi	---	---	---
-30" Hg - 200 psi	---	---	---

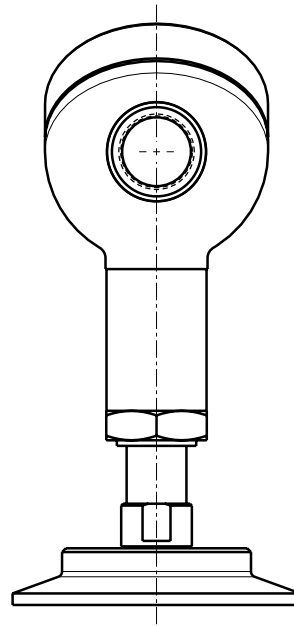
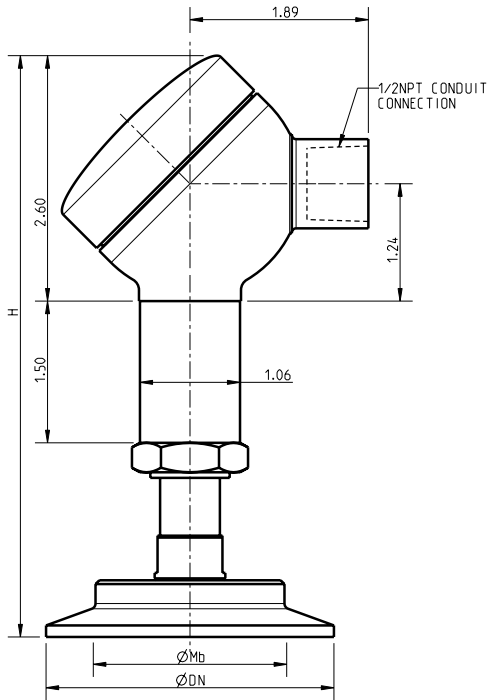
Datasheet: F-20-3A

Items shown with part numbers are available from stock (subject to prior sale).
Items without part numbers are available on special order.

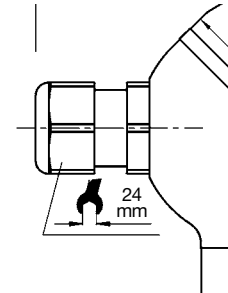
Specifications

Materials <ul style="list-style-type: none"> ■ Wetted parts ■ Case Internal transmission fluid		316L stainless steel, electropolished Stainless steel Mineral Oil, KN 62 (Glycerine for 3/4" Tri-Clamp® and positive pressure) {Listed by FDA for food applications 3/4" Tri-Clamp® - 60psi minimum 1.5" & 2.0" Tri-Clamp® - 15 psi 2.5" and larger Tri-Clamp® - Consult factory												
Power supply U_B Signal output and maximum load R_A Test circuit signal / max. load R_A Adjustability zero/span Response time (10 ... 90 %) Isolation voltage	VDC % of span ms VDC	10 U _B 30 (11 ... 30 with signal output 4 ... 20 mA, 14 ... 30 with signal output 0 ... 10 V) 4 ... 20 mA, 2-wire R _A (U _B - 11 V) / 0,02 A with R _A in Ohm and U _B in Volt 0 ... 20 mA, 3-wire R _A (U _B - 3 V) / 0,02 A with R _A in Ohm and U _B in Volt {0 ... 5 V, 3-wire} R _A > 5 kOhm, {0 ... 10 V, 3-wire} R _A > 10 kOhm Only for instruments with 4 ... 20 mA signal output. R _A < 15 Ohm ± 10 using potentiometers inside the instrument < 1 (base transmitter) 500												
Accuracy ¹⁾	% of span % of span	≤0.25 (BFSL) ≤0.5 (limit point calibration) ¹⁾ Including linearity, hysteresis and repeatability. Limit point calibration performed in vertical mounting position with pressure connection facing down.												
Repeatability 1-year stability Permissible Temperatures <ul style="list-style-type: none"> ■ Medium ■ Ambient ■ Storage 	% of span % of span	0.05 0.2 (at reference conditions) <table style="width: 100%; border: none;"> <tr> <td style="width: 33%; border: none;">3/4" Tri-Clamp®</td> <td style="width: 33%; border: none;">≥</td> <td style="width: 33%; border: none;">≥1.5" Tri-Clamp®</td> </tr> <tr> <td style="border: none;">+32°F (0°C) to +250°F (+121°C)</td> <td style="border: none;"></td> <td style="border: none;">-4°F (-20°C) to +300°F (+149°C)</td> </tr> <tr> <td style="border: none;">+32°F (0°C) to +140°F (+60°C)</td> <td style="border: none;"></td> <td style="border: none;">-4°F (-20°C) to +140°F (+60°C)</td> </tr> <tr> <td style="border: none;">-40°F (-40°C) to +212°F (100°C)</td> <td style="border: none;"></td> <td style="border: none;">-40°F (-40°C) to +212°F (100°C)</td> </tr> </table>	3/4" Tri-Clamp®	≥	≥1.5" Tri-Clamp®	+32°F (0°C) to +250°F (+121°C)		-4°F (-20°C) to +300°F (+149°C)	+32°F (0°C) to +140°F (+60°C)		-4°F (-20°C) to +140°F (+60°C)	-40°F (-40°C) to +212°F (100°C)		-40°F (-40°C) to +212°F (100°C)
3/4" Tri-Clamp®	≥	≥1.5" Tri-Clamp®												
+32°F (0°C) to +250°F (+121°C)		-4°F (-20°C) to +300°F (+149°C)												
+32°F (0°C) to +140°F (+60°C)		-4°F (-20°C) to +140°F (+60°C)												
-40°F (-40°C) to +212°F (100°C)		-40°F (-40°C) to +212°F (100°C)												
Temperature Coefficients (accumulative values, reference temperature +70°F)														
Transmitter Output <ul style="list-style-type: none"> ■ Stability, 1 Year ■ Ambient Effects ■ Medium Effects 	% of span ≤ psi / 10°C psi / 10°C	<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; border: none;">3/4" Tri-Clamp®</td> <td style="width: 33%; border: none;">≥</td> <td style="width: 33%; border: none;">1.5" Tri-Clamp®</td> </tr> <tr> <td style="border: none;">0.2 / 10°C</td> <td style="border: none;"></td> <td style="border: none;">≤0.2 / 10°C</td> </tr> <tr> <td style="border: none;">0.6</td> <td style="border: none;"></td> <td style="border: none;">0.03</td> </tr> <tr> <td style="border: none;">0.3</td> <td style="border: none;"></td> <td style="border: none;">0.02</td> </tr> </table>	3/4" Tri-Clamp®	≥	1.5" Tri-Clamp®	0.2 / 10°C		≤0.2 / 10°C	0.6		0.03	0.3		0.02
3/4" Tri-Clamp®	≥	1.5" Tri-Clamp®												
0.2 / 10°C		≤0.2 / 10°C												
0.6		0.03												
0.3		0.02												
CE- conformity		89/336/EWG interference emission and immunity see EN 61 326 interference emission limit class A and B 97/23/EG Pressure equipment directive (Module H)												
Shock resistance Vibration resistance	g g	600 according to IEC 60068-2-27 (mechanical shock) 10 according to IEC 60068-2-6 (vibration under resonance)												
Wiring protection		Protected against reverse polarity, overvoltage and short circuiting												
Electrical connection		Internal spring clip terminals; wire cross section 2.5 mm ² max, internal ground Terminal for brass nickel-plated or {stainless steel} threaded connection {additional external ground terminal for stainless steel threaded conduit connection}												
Weight	lb.	Approx. 1.3												

{ } Items in curved brackets are optional extras at additional cost.



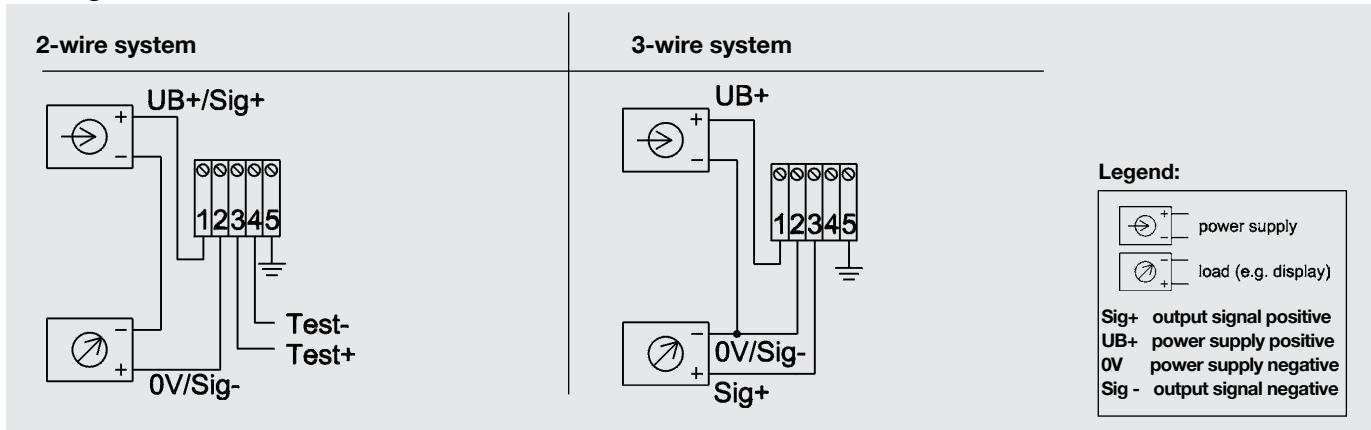
Optional cable gland:
Ingress protection
NEMA 6 / IP 68
per IEC 60 529



PROCESS CONNECTION	DN	Mb	H
3/4" Tri-Clamp®	0.98"	0.6"	6.3"
1.5" Tri-Clamp®	1.97"	1.0"	6.2"
2.0" Tri-Clamp®	2.52"	1.6"	6.2"

Output Signal: 4 to 20mA, 2-wire
 Conduit Connection: 1/2"npt-female
 Process Wetted Materials: 316L stainless steel, electropolished
 System Fill Fluid: Mineral oil, KN62 (Glycerine for 3/4" Tri-Clamp with positive pressure)

Wiring



Calibration

Remove the junction box cover. Attach a meter and power supply to the electrical connector. For gauge ranges the zero potentiometer can be adjusted to produce a null output when no pressure is applied. Span adjustment requires the use of a reference pressure source. Compound and absolute ranges require a vacuum and pressure source. When calibration is complete, reinstall the junction box cover hand tight.



F-20-3A Option List

Feature
Signal Output
4 ... 20 mA, 2-wire
0 ... 10 V, 3-wire (Supply 14-30 V)
0 ... 5 V, 3-wire
Other - Please specify
Units
psi
InWC
Other - Please specify
Pressure Range
-30 inHg ... 0 ¹
-30 inHg ... 30 psi ¹
-30 inHg ... 60 psi
-30 inHg ... 100 psi
-30 inHg ... 160 psi
-30 inHg ... 200 psi
0 InWC ... 50 InWC ^{1,2}
0 InWC ... 100 InWC ^{1,2}
0 psi ... 5 psi ^{1,2}
0 psi ... 10 psi ^{1,2}
0 psi ... 15 psi ¹
0 psi ... 30 psi ¹
0 psi ... 60 psi
0 psi ... 100 psi
0 psi ... 160 psi
0 psi ... 200 psi
0 psi ... 300 psi
0 psi ... 400 psi
0 psi ... 500 psi
0 psi ... 600 psi
0 psi ... 750 psi
0 psi ... 1000 psi
0 psi ... 1500 psi

Feature
Process Connection
3/4" Tri-Clamp®
1.5" Tri-Clamp®
2.0" Tri-Clamp®
2.5" Tri-Clamp®
3.0" Tri-Clamp®
4.0" Tri-Clamp®
Other - Please specify
Material of Wetted Parts
Stainless steel, 316L (1.4435) electropolished
Hastelloy® C276 (2.4819)
PFA coated 316L stainless steel (FDA approved)
Other - Please specify
System Fill Fluid
KN 7 - Glycerine ^{3,4}
KN 34 - Food grade silicone oil ³
KN 59 - NEOBEE® M20
KN 62 - Mineral oil (liquid paraffin)
Other - Please specify
Electrical Connection
1/2"NPT female conduit (IP 67)
Stainless steel cable gland (IP 68)
Other - Please specify
Quality Certificates
Without
Certificate - Electropolish w/ nominal surface finish
Certificate - EN 10 204 3.1B (material traceable)
Certificate of Compliance (C of C)
Certificate - NIST calibration
Other - Please specify
Additional Order Details
Without
Additional text

Notes:

- (1) Not available with 3/4" Tri-Clamp® process connection
- (2) Consult WIKA for suitable process connection size
- (3) Not recommended for vacuum or compound pressure ranges
- (4) Standard offering for 3/4" Tri-Clamp® with positive pressure ranges