Ultra High Purity Transducer, „Non-Incendive“ Model NWU-10, Single End

Applications

- Semiconductor and flat panel industry
- Microelectronics engineering
- Gas distribution systems
  (Gas sticks, gas panels, bulk-gas supply)
- Ultra high purity water supply

Special Features

- Classification II 3G EEx n A IIC T4 / T5 / T6 X
- Thin-film sensor
- Excellent long-term stability
- No span adjustment required
- Ingress protection IP 65

Fig. Transducer NWU-10

Description

Explosion protection
Generally Ex pressure transmitters are designed for applications which place high demands on pressure measuring instruments. These transmitters are an ideal solution for nearly all pressure measuring tasks in hazardous areas. Since the NWU-10 transmitters are classified as "non-incendive equipment" (zone 2, category 3G), there is no connection via IS line transformers or Zener barriers required.

Universal
As a result of its broad pressure range spectrum (vacuum up to 400 bar or 5000 psi respectively), its compact design and its excellent performance, model NWU-10 offers a perfect combination of an appealing design and proven measuring technology.

Reliable
Thin-film sensors produced by WIKA have ensured high accuracy, long-term stability in industrial pressure measurement instrumentation for decades. Special thin-film sensors made of Elgiloy® have been developed in order to meet the particular requirements of the ultra pure media industry.

By hermetically welding the thin-film sensor, a total seperation of medium has been reached, as well as a long-term high impermeability which is required by the user.

Versatile
The modular design makes it possible to configure a high number of variants in order to comply with the manifold requirements of UHP applications. All wetted parts are electropolished using state-of-the art equipment prior to the final assembly.

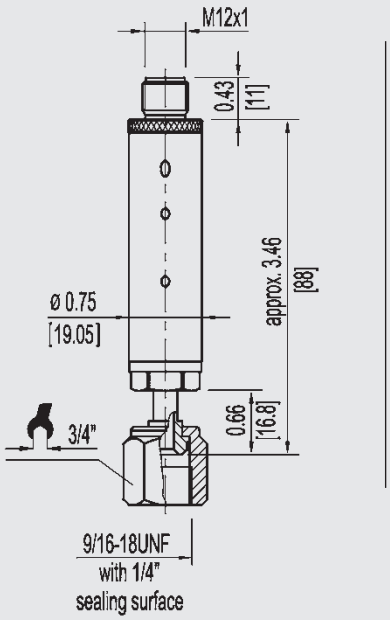
The high ingress protection (NEMA-4) allows operation even under the most difficult conditions.

Single End	*Model WU-10*	*see data sheet PE 87.01*
Flow Through Transducer	*Model WU-15*	*see data sheet PE 87.02*
MSM Transducer	*Model WU-16*	*see data sheet PE 87.03*
Attachable indicator	*Model WUR-1*	*see data sheet PE 87.20*

Specifications		Model NWU-10										
Pressure ranges	bar	4	7	10	16	25	40	60	100	160	250	400
	psi	60	100	160	250	300	500	1000	1500	2000	3000	5000
Over pressure safety [1]	bar	8	14	20	32	50	80	120	200	320	500	500
Burst pressure [1]	bar	40	70	100	160	250	400	550	720	720	720	720
		Other pressure ranges and pressure units (e.g. MPa, kg/cm²) on request										
Measuring principle		Thin-film sensor										
	[1] 1 bar = 14.50 psi											
Materials												
■ Wetted parts		2.4711Elgiloy® (Sensor); 316L VIM/VAR (Pressure connection)										
■ Case		Stainless steel										
Surface finish		Electropolished, typical Ra ≤ 0.18 µm (RA 7); max. ≤ Ra 0.25 µm (RA 10)										
Dead volume	mm³	< 1500										
Permissible Medium		Liquid / Gas / Vapour										
Power supply U_B	V DC	$10 < U_B \leq 24$										
Max. current output	mA	< 30										
Response tine (10 ... 90 %)	ms	≤ 2										
Dielectric strength	DC V	500										
Accuracy	% of span	≤ 0.25 for pressure ranges > 4 bar (BFSL)										
	% of span	≤ 0.5 for pressure ranges ≤ 4 bar (BFSL)										
		≤ 0.5 [2] for pressure ranges > 4 bar										
		≤ 1.0 [2] for pressure ranges ≤ 4 bar										
	[2] Including non-linearity, hysteresis, non-repeatability, zero point and full scale error (corresponds to error of measurement per IEC 61298-2). Adjusted in vertical mounting position with lower pressure connection.											
Non-linearity	% of span	≤ 0.15 for pressure ranges > 4 bar (BFSL) according to IEC 61298-2										
	% of span	≤ 0.3 for pressure ranges ≤ 4 bar (BFSL) according to IEC 61298-2										
1-year stability	% of span	≤ 0.2 (at reference conditions)										
Adjustability zero	% of span	± 5										
Permissible temperature range of												
■ Medium		-40 ... +100 °C						-40 ... +212 °F				
■ Ambience		-20 ... +85 °C						-4 ... +185 °F				
■ Storage		-40 ... +100 °C						-40 ... +212 °F				
Compensated temperature range		-20 ... +80 °C						-4 ... +176 °F				
Temperature coefficients within compensated temperature range:												
■ Mean TC of zero	% of span	≤ 0.3 / 10 K										
■ Mean TC of range	% of span	≤ 0.15 / 10 K										
⟨Ex⟩-protection		Category 3G										
Signal Output		4 ... 20 mA, 2-wire										
Ignition protection type		EEx nA IIC T4 X				EEx nA IIC T5 X				EEx nA IIC T6 X		
Conformity specifications												
■ Power supply	DC V	24				24				24		
■ Short circuit rating	mA	30				30				30		
■ Power limitation	W	1				1				1		
■ Medium temperature		-20...+80 °C	-4 ...+176 °F			-20...+50 °C	-4 ...+122 °F			-20...+40 °C	-4 ...+104 °F	
■ Ambient temperature		-20...+80 °C	-4 ...+176 °F			-20...+50 °C	-4 ...+122 °F			-20...40 °C	-4 ...+104 °F	
■ Storage temperature		-40...+100 °C	-40...+212 °F			-40...+100 °C	-40...+212 °F			-40...100 °C	-40...+212 °F	
■ Internal capacity Ci	nF	10										
■ Internal inductivity Li	µH	10										
		For further safety information please see the operating instructions										
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										
Shock resistance	g	500 according to IEC 60068-2-27 (mechanical shock)										
Vibration resistance	g	10 according to IEC 60068-2-6 (vibration under resonance)										
Wiring protection		Protected against reverse polarity on the instrument side										
Mass	kg	Approx. 0.1										

Dimensions in inch [mm]

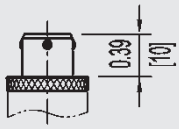
Circular connector
IP 65 (NEMA 4)
Odercode: M4



1/4“ Swivel Female
Face Seal,
Ordercode: WI

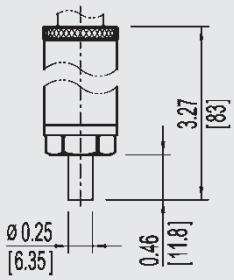
Variant electrical connection

Bayonet connector
IP 65 (NEMA 4)
Ordercode: O4

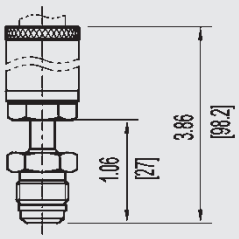


Process connection variants

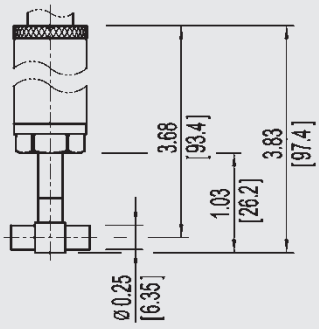
1/4“ Weld Stub
Order code: VN



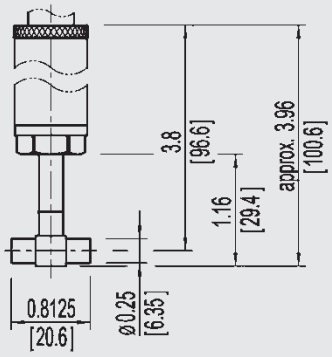
1/4“ Swivel Male Face Seal,
Order code: 71



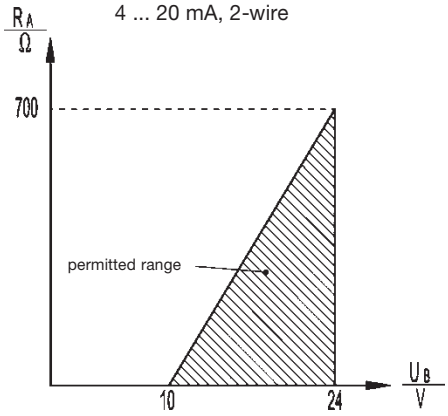
1/4“ T-Connector, Weld Stub
Order code: WT



1/4“ T-Connector, Weld Stub (1“)
Order code: WR



Signal output and allowed load

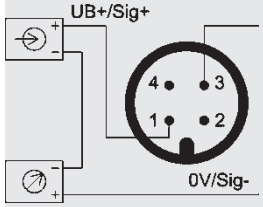


Output current (2-wire)
4 ... 20 mA:
$R_A \leq (U_B - 10\ V) / 0{,}02\ A$ with R_A in Ohm and U_B in Volt

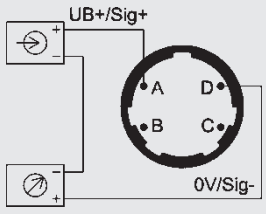
Wiring details

2 wire

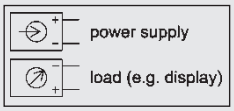
Circular connector
M 12x1, 4-pin



Bayonet connector,
4-pin



Legend:



Order-Code for Model NWU-10

Field No.		Code	Features
			Signal output
1		**A**	4 ... 20 mA, 2-wire
			Pressure range
		BCH	-1 bar ... 3 bar[1)]
		BCT	-1 bar ... 6 bar
		BCL	-1 bar ... 9 bar
		BCP	-1 bar ... 15 bar
		BCQ	-1 bar ... 25 bar
		BCX	-1 bar ... 40 bar
		BCY	-1 bar ... 60 bar
		BC1	-1 bar ... 100 bar
		BC2	-1 bar ... 160 bar
		BC3	-1 bar ... 250 bar
		BBG	0 bar ... 4 bar[1)]
		BEF	0 bar ... 7 bar
		BBI	0 bar ... 10 bar
		BBK	0 bar ... 16 bar
		BBL	0 bar ... 25 bar
		BBM	0 bar ... 40 bar
		BBN	0 bar ... 60 bar
		BBO	0 bar ... 100 bar
		BBP	0 bar ... 160 bar
		BBQ	0 bar ... 250 bar
		BBS	0 bar ... 400 bar
		PCE	-30 inHg ... 45 psi[1)]
		PCF	-30 inHg ... 60 psi[1)]
		PCH	-30 inHg ... 100 psi
		PCK	-30 inHg ... 160 psi
		PCI	-30 inHg ... 250 psi
		PCM	-30 inHg ... 300 psi
		PCX	-30 inHg ... 500 psi
		PBE	0 psi ... 60 psi[1)]
		PBF	0 psi ... 100 psi
		PBG	0 psi ... 160 psi
		PDG	0 psi ... 250 psi
		PBI	0 psi ... 300 psi
		PDI	0 psi ... 500 psi
		PBN	0 psi ... 1000 psi
		PBO	0 psi ... 1500 psi
		PBP	0 psi ... 2000 psi
		PBQ	0 psi ... 3000 psi
		PBS	0 psi ... 5000 psi
2		**???**	other
			Process connection
		VN	1/4" Weld Stub
		WH	1/4" Swivel Male Face Seal
		WI	1/4" Swivel Female Face Seal
		71	Original VCR Swivel Male
		72	Original VCR Swivel Female
		WT	T-connector
3		**??**	other
			Electrical connection
		M4	4-pin circular connector M12 x 1
		O4	4-pin bayonet connector
4		**??**	other

1) Accuracy 1.0 % of span

Order code:

	1		2		3				4		
NWU-10	-		-		-	-	7	B	G	Z	Z

Other UHP-Transducer Series NWU-1X

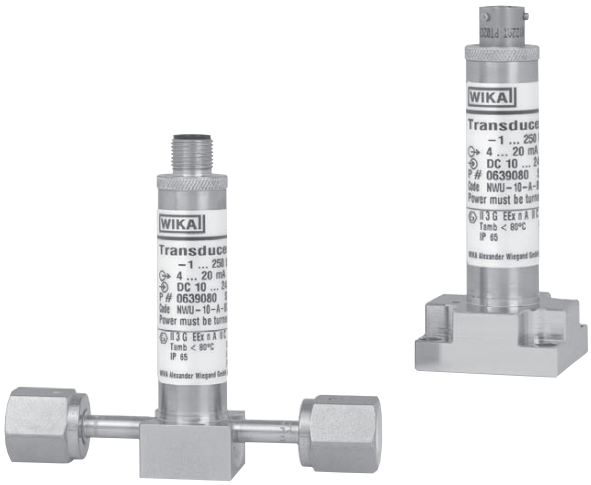
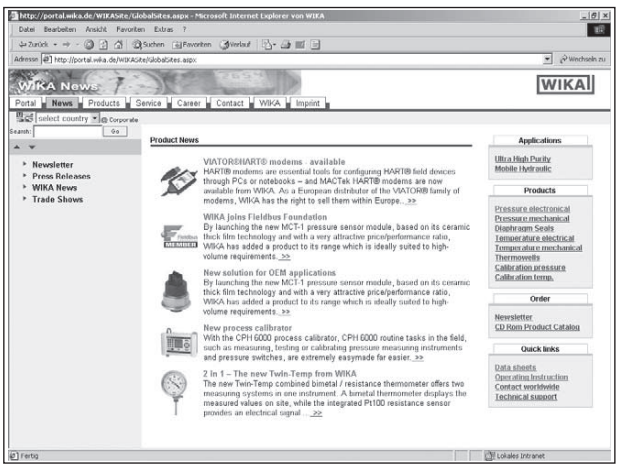


Fig. left: Transducer NWU-15
Fig. right: Transducer NWU-16

Further information

You can obtain further information (data sheets, instructions, etc.) via our internet address www.wika.de.



Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing.
Modifications may take place and materials specified may be replaced by others without prior notice.

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