

WIN1002 - Gauge Pressure Transmitter

WIN1003 - Absolute Pressure Transmitter

Features

The pressure transmitter WIN1002/3 is suitable to measure liquid, gas, or steam flow as well as liquid level, density and pressure. WIN1002/3 outputs a 4 to 20 mA DC signal corresponding to the measured pressure. The key features include quick response, remote set-up using communications, self-diagnostics and optional status output for pressure high/low alarm.



Specifications

1 PERFORMANCE SPECIFICATIONS

Reference Accuracy of Calibrated Span (includes terminal-based linearity, hysteresis, and repeatability) $\pm 0.075\%$;

If $TD > 10$ ($TD = URL/SPAN$):

$\pm(0.0075 \times TD)\%$;

Ambient Temperature Effects

Span Code	-20°C~65°C
B/L	$\pm(0.30 \times TD + 0.20)\% \times \text{Span}$
Others	$\pm(0.20 \times TD + 0.10)\% \times \text{Span}$
Span Code	-40°C~-20°C和 65°C~85°C
B/L	$\pm(0.30 \times TD + 0.20)\% \times \text{Span}$
Others	$\pm(0.20 \times TD + 0.10)\% \times \text{Span}$

Overpressure Effects

$\pm 0.075\% \times \text{Span}$

Stability

Span Code	Stability
B/L	$\pm 0.2\% \times \text{Span}/\text{year}$
Others	$\pm 0.1\% \times \text{Span}/\text{year}$

Power Supply Effects:

$\pm 0.001\% / 10V$ (12~42V DC)

2 FUNCTIONAL SPECIFICATIONS

Span and Range Limits (WIN1002)

Span/Range Limits		kPa	bar
B	Span	0.6~6	6~60mbar
	Range Limits	-6~6	-60~60mbar
C	Span	2~40	0.02~0.4
	Range Limits	-40~40	-0.4~0.4
D	Span	2.5~250	0.025~2.5
	Range Limits	-100~250	-1~2.5
F	Span	30~3000	0.3~30
	Range Limits	-100~3000	-1~30
G	Span	0.1~10MPa	1~100
	Range Limits	-0.1~10MPa	-1~100
H	Span	0.21~21 MPa	2.1~210
	Range Limits	-0.1~21 MPa	-1~210
I	Span	0.4~40 MPa	4~400
	Range Limits	-0.1~40 MPa	-1~400
J	Span	0.6~60 MPa	6~600
	Range Limits	-0.1~60 MPa	-1~600

Span and Range Limits (WIN1003)

Span/Range Limits		kPa	bar
L	Span	2~40	0.02~0.4
	Range Limits	0~40	0~0.4
M	Span	2.5~250	0.025~2.5
	Range Limits	0~250	0~2.5
O	Span	30~3000	0.3~30
	Range Limits	0~3000	0~30

External Zero Adjustment

External zero is continuously adjustable with 0.01% incremental resolution of span. Re-range can be done locally using the range setting switch.

Mounting Position Effects

Rotation in diaphragm plane has no effect. Tilting up to 90 degree will cause zero shift up to 0.25 kPa which can be corrected by the zero adjustment.

Output

Two wire 4 to 20 mA DC output with digital communications, linear or square root programmable. HART FSK Protocol is option superimposed on the 4 to 20 mA signal. Output range: 3.9 mA to 20.5 mA.

Failure Alarm (the mode can be selected)

Low Mode (min): 3.7 mA, High Mode (max): 21 mA
No Mode (hold): Keep the effective value before fault.
The standard setting of failure alarm is High Mode.

Response Time

The amplifier damping constant is 0.1 sec; The sensor damping constant is 0.1~1.6 sec, it depends on the range and range compression ratio. Amplifier damping time constant is adjustable from 0 to 60 sec by software and added to response time.

Up Time

< 15s

Ambient Temperature Limits: -40 to 85°C

-20 to 65°C with LCD display or fluorine rubber sealing

Storage and Transportation Temperature Limits

-50 to 85°C, -40 to 85°C with LCD display

Working Pressure Limits (Silicone oil)

From vacuum to upper range limits

Overload Pressure Limits

Span	6kPa (B)	40kPa (C)	250kPa (D/M)	3MPa (F/O)
OPL	0.2MPa	1MPa	4MPa	16MPa
Span	10MPa (G)	21MPa (H)	40MPa (I)	60MPa (J)
OPL	20MPa	50MPa	50MPa	70MPa

Electromagnetic Compatibility (EMC)

Look the EMC Performance Table

3 INSTALL**Supply & Load Requirements**

24 V DC supply, $R \leq (US-12V) / \max k\Omega$, $I_{max}=23 \text{ mA}$.
Maximum voltage limited: 42VDC, Minimum voltage limited: 12VDC, 15VDC (with LCD display) 230Ω to 600 Ω for digital communication

Electrical Connection

The electrical connection is made via cable entry M20x1.5. The screw terminals are suitable for wire cross-sections up to 2.5mm².

Process Connection

Default Process Connection: 1/2-NPT female thread, it can be changed to 1/2-NPT, G1/2, M20x1.5 male thread and KF16 vacuum Connection.

4 PHYSICAL SPECIFICATIONS

Isolating Diaphragm: 316L stainless steel/Hastelloy C

Process Connector: 316 stainless steel

Fill fluid Silicone oil

Amplifier Housing Aluminum with epoxy resin coat

Housing Gasket: Perbunan (NBR)

Name plate and tag: 304 stainless steel

Weight 1.6kg

Degrees of Protection: IP67

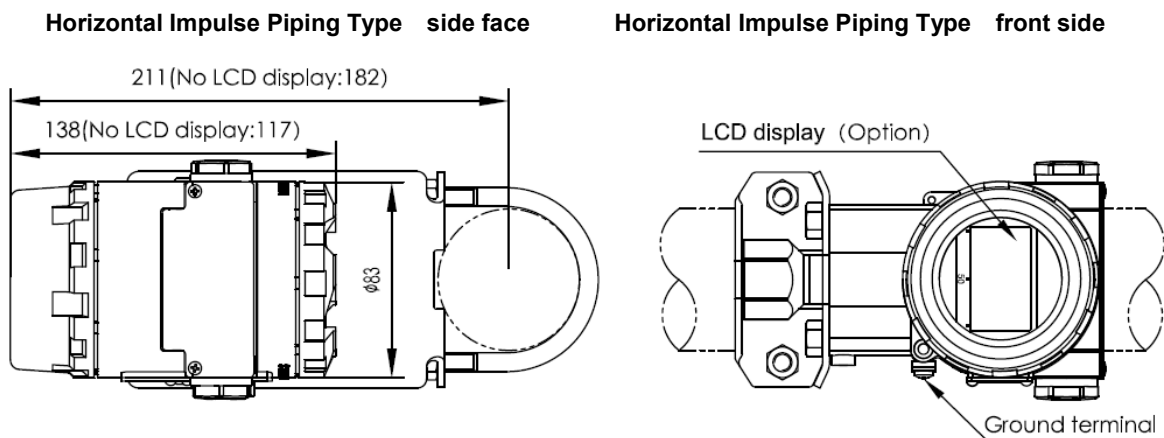
EMC Performance Table

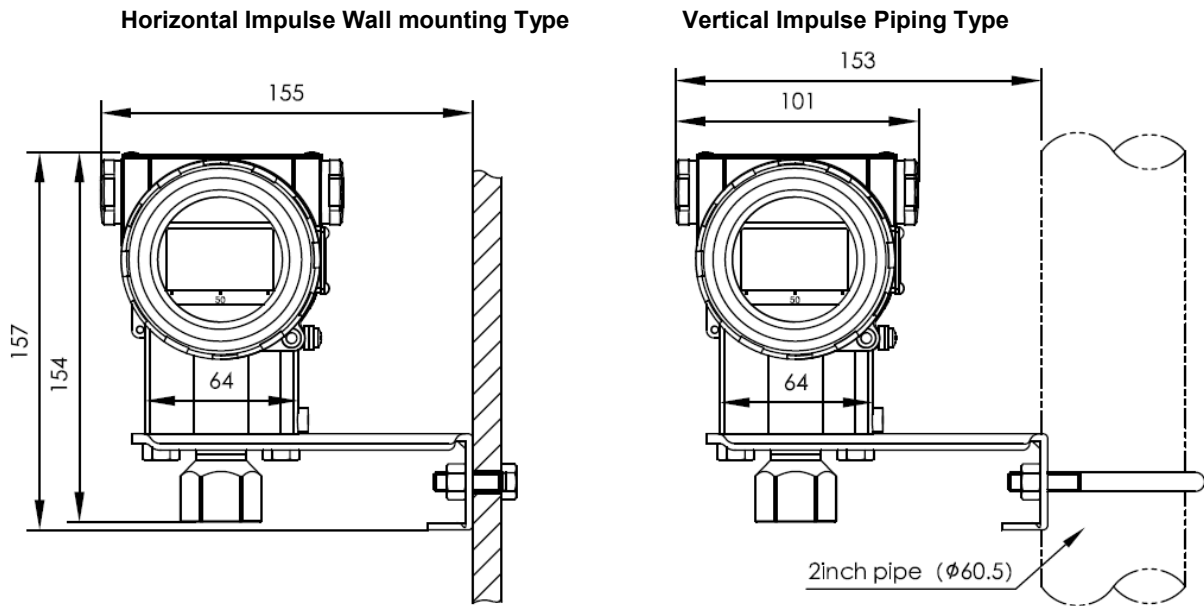
Items	Test items	Basic standards	Test conditions	Performance Level
1	Radiated interference (Housing)	GB/T 9254-2008	30MHz ~ 1000MHz	OK
2	Conducted interference (DC power port)	GB/T 9254-2008	0.15MHz ~ 30MHz	OK
3	Electrostatic Discharge (ESD) Immunity	GB/T 17626.2-2006	4kV(Line) 8kV(Air)	B
4	RF electromagnetic field immunity	GB/T 17626.3-2006	10V/m (80MHz ~ 1GHz)	A
5	Frequency magnetic field immunity	GB/T 17626.8-2006	30A/m	A
6	Electrical Fast Transient Burst Immunity	GB/T 17626.4-2008	2kV(5/50ns,5kHz)	B
7	Surge Immunity	GB/T 17626.5-2008	1kV (line to line) 2kV (line to ground) (1.2us/50us)	B
8	Conducted interference immunity induced by RF field	GB/T 17626.6-2008	3V (150KHz ~ 80MHz)	A

Note: (1) Performance level A description: The technical specifications within the limits of normal performance.

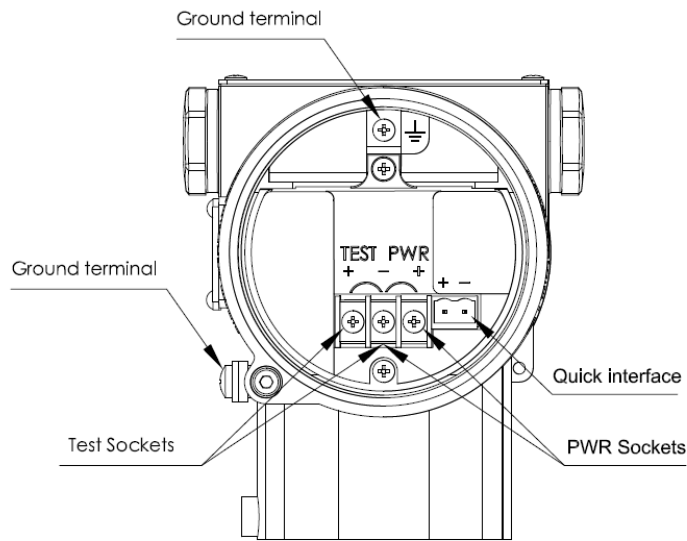
(2) Performance level B description: Temporary reduction or loss of functionality or performance, it can restore itself. The actual operating conditions, storage, and data will not be changed.

DIMENSIONS (Unit : mm)





5 Terminal Configuration



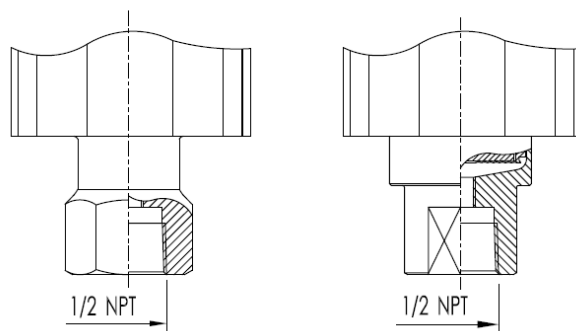
Note: Quick interface functionally equivalent to the signal terminal

6 Process connections Description

6.1 Default Process Connection Code 1

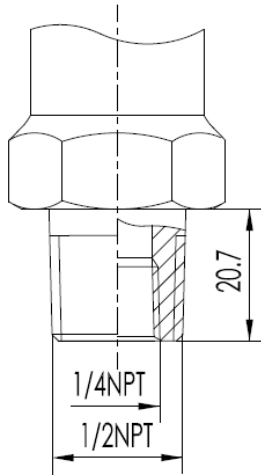
M/D/F/G/H/I/J/O Span

B/C/L Span

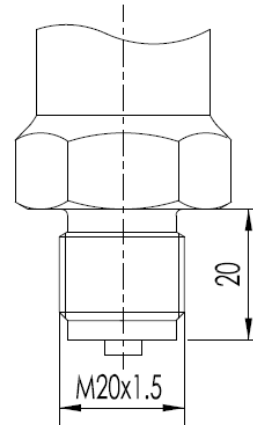


6.2 Other forms of Process connector

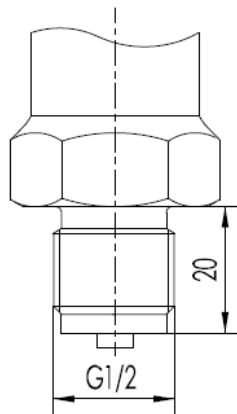
1/2-NPT male thread Code 2



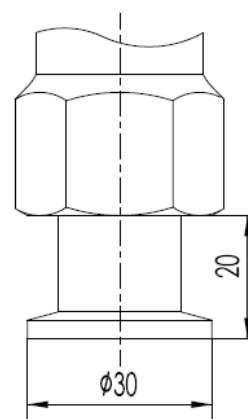
M20x1.5 male thread Code3



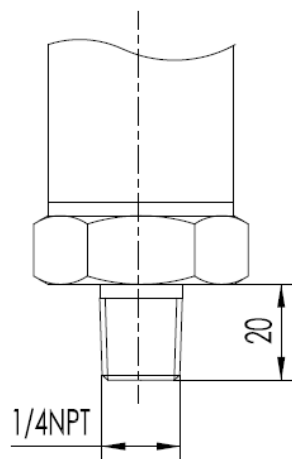
G 1/2 male thread Code 4



Vacuum Connection DIN 28403 KF16 / ISO 2861 Code 5



1/4-NPT male thread Code 6



WIN1002/03 Series Ordering Code

	Code	Technology specs
1.	WIN10	Series
		Pressure type
2.	02	Gauge Pressure Transmitter
	03	Absolute Pressure Transmitter
		Pressure range
3.	...	Specify the SPAN
		Accuracy
4.	2	0.1%URL
	5	0.075%URL
	7	0.05%URL
		Output signal
5.	1	4...20mA + HART
	2	Modbus
	3	Profibus
		Display
6.	0	Without
	E	With OLED display (Min, -40 C)
	C	With LCD display (Min, -20 C)
		Explosion proof
7.	S	Standard, non-explosion, IP66
	X	Exd IIC T6 Gb, IP67
	I	Exia IIC T4 Ga, IP66
		Filling oil
8.	B1	Standard (-40/120 C) option with seal -40/205 C
	B2	Inert oil (-40/120 C) with seal -40/160 C, Oxygen necessary
		Process connection
9.	2N	1/2"NPT Female(standard)
	3N	1/2"NPT Male
	2M	M20*1.5 Male
	4N	1/4"NPT Female
	2G	G1/2" Male
	1K	KF16 Vacuum connector
	CT	With high-temperature heat dissipation, tprocess interface1/2 "NPT female
	1G	G1" Threaded pulp joint
	M4	M44*1.25 Threaded pulp joint
	CP	Φ25.8 Threaded pulp joint
		Diaphragm material
10.	SS	316L SS (standard)
	HC	Hastelloy C
	GL	316L SS coating gold
		Mounting bracket
11.	0	None
	1	SS
	2	Galvanized carbon steel
		Relief valve
12.	0	None
	1	On rear side of flange
	2	On upper side of flange
	3	On lower side of flange

WIN1002/03 Series Ordering Code

Code Technology specs

		Option	
13.	<input type="text"/>	00	None
		PR	Square roots output
		OX	Oxygen clean (with inert oil)
		LG	Lightning protection
		VV	Low voltage
		NP	1/2"NPT electrical connection
		TG	SS tag plate