WISNER CONTROLS

"INDUSTRIAL INSTRUMENTS AND CONTROLS SPECIALIST"

ABB Kent-Taylor

2600T Series Pressure Transmitter

Model 264DS Differential Pressure Transmitter

Features Include

- ***Base accuracy : ±0.075%***
- ***Span limits***
  – 0.134 to 16000kPa; 0.54inH2O to 2320psi
  – 0.27 to 16000kPa abs; 2mmHg to 2320psia
- ***Reliable sensing system coupled with very latest digital technologies***
  – provides large turn down ratio up to 100:1
- ***Comprehensive sensor choice***
  – optimize in-use total performance and stability
- ***5–year stability***
- ***Flexible configuration facilities***
  – provided locally via local keys combined with LCD indicator or via hand held terminal or PC configuration platform
- ***Multiple protocol availability***
  – provides integration with HART®, PROFIBUS PA and FOUNDATION Fieldbus platforms offering interchangeability and transmitter upgrade capabilities
- ***Full compliance with PED***

The ***ABB 264DS Differential Pressure*** Transmitter measures a wide range of differential pressures. Ranges are available from .54 in H2O to 2320 psi. The diaphragm material along with process flanges are available in several different materials such as 316 stainless steel, Hastelloy C276, Tantalum and Monel 400. Several choices of fill fluids and process connections are offered and there are all the 2600T options to choose from such as HART / 4-20 mA, PROFIBUS PA, and FOUNDATION Fieldbus communications.
There are also optional output meters and a new integral digital LCD display which allows configuration ability at the transmitter. The 264DS is backed by a 5 year stability warranty which guarantees long term performance.

ABB 2600T Series
Engineered solutions for all applications

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Condensed Specifications

Range and span limits

Sensor Code	Upper Range Limit (URL)	Lower Range Limit (LRL)			Minimum span	
		264DS differential	264PS gauge	264VS absolute	264DS differential 264PS gauge	264VS absolute
B	4kPa 40mbar 16inH₂O	–4kPa –40mbar –16inH₂O	–4kPa –40mbar –16inH₂O		0.134kPa 1.34mbar 0.54inH₂O	
E	16kPa 160mbar 64inH₂O	–16kPa –160mbar –64inH₂O	–16kPa –160mbar –64inH₂O	0.07kPa abs 0.7mbar abs 0.5mmHg	0.27kPa 2.7mbar 1.08inH₂O	0.27kPa 2.7mbar 2mmHg
F	40kPa 400mbar 160inH₂O	–40kPa –400mbar –160inH₂O	–40kPa –400mbar –160inH₂O	0.07kPa abs 0.7mbar abs 0.5mmHg	0.4kPa 4mbar 1.6inH₂O	0.67kPa 6.7mbar 5mmHg
G	65kPa 650mbar 260inH₂O	–65kPa –650mbar –260inH₂O	–65kPa –650mbar –260inH₂O	0.07kPa abs 0.7mbar abs 0.5mmHg	0.65kPa 6.5mbar 2.6inH₂O	1.1kPa 11mbar 8mmHg
H	160kPa 1600mbar 642inH₂O	–160kPa –1600mbar –642inH₂O	1kPa abs 10mbar abs 0.15 psia	0.07kPa abs 0.7mbar abs 0.5mmHg	1.6kPa 16mbar 6.4inH₂O	2.67kPa 26.7mbar 20mmHg
M	600kPa 6bar 87psi	–600kPa –6bar –87psi	1kPa abs 10mbar abs 0.15 psia	0.07kPa abs 0.7mbar abs 0.5mmHg	6kPa 0.06bar 0.87psi	10kPa 0.1bar 1.45psi
P	2400kPa 24bar 348psi	–2400kPa –24bar –348psi	1kPa abs 10mbar abs 0.15 psia	0.07kPa abs 0.7mbar abs 0.5mmHg	24kPa 0.24bar 3.5psi	40kPa 0.4bar 5.8psi
Q	8000kPa 80bar 1160psi	–8000kPa –80bar –1160psi	1kPa abs 10mbar abs 0.15 psia	0.07kPa abs 0.7mbar abs 0.5mmHg	80kPa 0.8bar 11.6psi	134kPa 1.34bar 19.4psi
S	16000kPa 160bar 2320psi	–16000kPa –160bar –2320psi	1kPa abs 10mbar abs 0.15 psia	0.07kPa abs 0.7mbar abs 0.5mmHg	160kPa 1.6bar 23.2psi	267kPa 2.67bar 38.7psi

Span limits
Maximum span = URL
(can be further adjusted up to ± URL (TD = 0.5) for differential models, within the range limits)
IT IS RECOMMENDED TO SELECT THE TRANSMITTER SENSOR CODE PROVIDING THE TURNDOWN VALUE AS LOWEST AS POSSIBLE TO OPTIMIZE PERFORMANCE CHARACTERISTICS.

Zero suppression and elevation
Zero and span can be adjusted to any value within the range limits detailed in the table as long as:
– calibrated span ≥ minimum span

Damping
Selectable time constant : 0, 0.25, 0.5, 1, 2, 4, 8 or 16s. This is in addition to sensor response time

Turn on time
Operation within specification in less than 1s with minimum damping.

Insulation resistance
> 100MW at 1000VDC (terminals to earth)

Operative limits
Temperature limits °C (°F) :
Ambient (is the operating temperature)

Filling	Models 264DS - 264PS		Model 264VS	
	Sensors F to S	Sensors B to E	Sensors F to S	Sensor code E
Silicone oil	–40 and +85 (–40 and +185)	–25 and +85 (–13 and +185)	–40 and +85 (–40 and +185)	–15 and +70 (+5 and +158)
Inert	–20 and +85 (–4 and +185)	–10 and +85 (+14 and +185)	–10 and +65 (+14 and +150)	not applicable
ABB fill	–20 and +85 (–4 and +185)	–10 and +85 (+14 and +185)	–10 and +85 (+14 and +185)	not applicable

Lower ambient limit for LCD indicators: –20°C (–4°F)
Upper ambient limit for CoMeter and ProMeter : +70°C (+158°F)
Note : For Hazardous Atmosphere applications see the temperature
range specified on the certificate/approval relevant to the aimed type of protection

Process
Lower limit
– refer to lower ambient limits; –20°C (–4°F) for Viton gasket
Upper limit
– Silicone oil and ABB fill: 121°C (250°F) (1)
– Inert fluid: 100°C (212°F) (2)
(1) 100°C (212°F) for application below atmospheric pressure
(2) 65°C (150°F) for application below atmospheric pressure

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Storage
Lower limit: –50°C (–58°F); –40°C (–40°F) for LCD indicators
Upper limit: +85°C (+185°F)

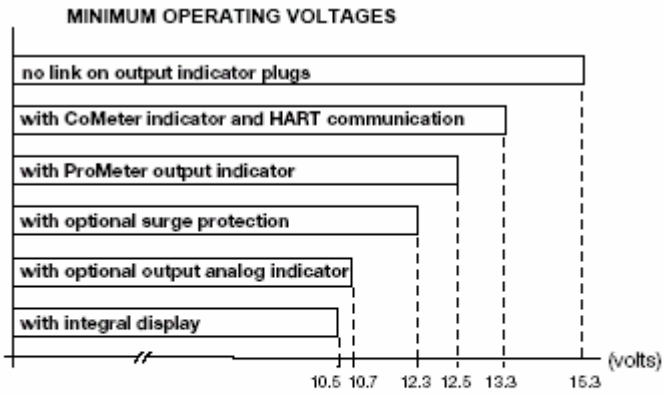
Pressure limits

Overpressure limits (without damage to the transmitter)
0.067kPa abs, 0.67mbar abs, 0.01psia (double with inert filling) to
– 7MPa, 70bar, 1015psi for sensor code B
– 16MPa, 160bar, 2320psi for sensor code E
– 21MPa, 210bar, 3045psi for sensor codes F to S
Static pressure
Transmitters for differential pressure model 264DS operates within
specifications between the following limits
– sensor code B:
1.3kPa abs,13mbar abs, 0.2psia and 7MPa, 70bar, 1015psi
– sensor code E:
1.3kPa abs,13mbar abs, 0.2psia and 16MPa, 160bar, 2320psi
– sensor codes F to S:
1.3kPa abs,13mbar abs, 0.2psia and 21MPa, 210bar, 3045psi
Proof pressure
The transmitter can be exposed without leaking to line pressure of up to 48MPa, 480bar, 6960psi. Meet ANSI/ISA–S 82.03 hydrostatic test requirements and SAMA PMC 27.1.

Optional indicators
Output meter
CoMeter and Prometer :
5-digit (±99999 counts) programmable with 7.6mm. high (3in), 7-segment numeric characters plus sign and digital point for digital indication of output value in percentage, current or engineer unit;
10-segment bargraph display (10% per segment) for analog indication of output in percentage;
7-digit LCD with 6mm. high (2.3in), 14-segment alphanumeric characters, for engineer units and configuration display
Analog : 36mm (1.4in) scale on 90°.
Integral display
LCD, 15 lines x 56 column dot matrix providing 2 lines indication as
– top: 5-digit (numeric) plus sign or 7-digit alphanumeric
– bottom: 7-digit alphanumeric
and additional 50-segment bargraph for indication of analog output in percentage.
User-definable matrix display mode with HART communication:
– process variable in pressure unit or
– output signal as percentage, current or engineering units
Display also indicates in/out transfer function, static pressure, sensor temperature and diagnostic messages and provides configuration facilities

Electrical Characteristics and Options

HART digital communication and 4 to 20mA output
Power Supply
The transmitter operates from 10.5 to 42VDC with no load and is protected against reverse polarity connection (additional load allows operations over 42VDC).
For EEx ia and other intrinsically safe approval power supply must not exceed 30VDC.
Ripple
20mV max on a 250W load as per HART specifications



Load limitations
4 to 20mA and HART total loop resistance :

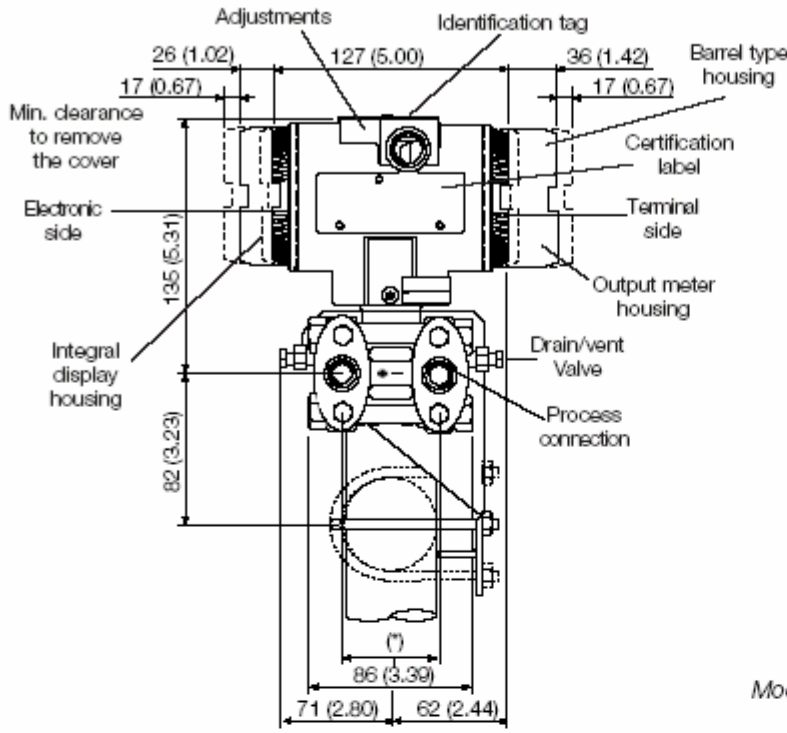
$$R(k\Omega) = \frac{\text{Supply voltage} - \text{min. operating voltage (VDC)}}{22.5}$$

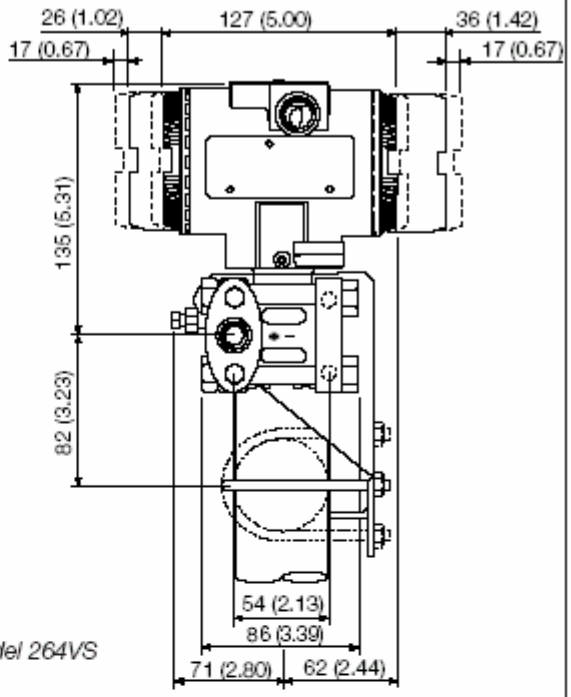
A minimum of 250Ω is required for HART communication.

Optional surge protection
Up to 4kV
– voltage 1.2 ms rise time / 50 ms delay time to half value
– current 8 ms rise time / 20 ms delay time to half value
Output signal
Two–wire 4 to 20mA, user-selectable for linear or square root output, power of 3/2 or 5/2, 5th order or two 2nd order switching point selectable programmable polynomial output.
HART® communication provides digital process variable (%, mA or engineering units) superimposed on 4 to 20mA signal, with protocol based on Bell 202 FSK standard.
Output current limits (to NAMUR standard)
Overload condition
- Lower limit: 3.8mA
- Upper limit: 20.5mA
Transmitter failure mode (to NAMUR standard)
The output signal can be user-selected to a value of 3.7 or 22mA on gross transmitter failure condition, detected by self-diagnostics.
In case of CPU failure the output is driven <3.7mA or >22mA.

MOUNTING DIMENSIONS (not for construction unless certified) – dimensions in mm (in)

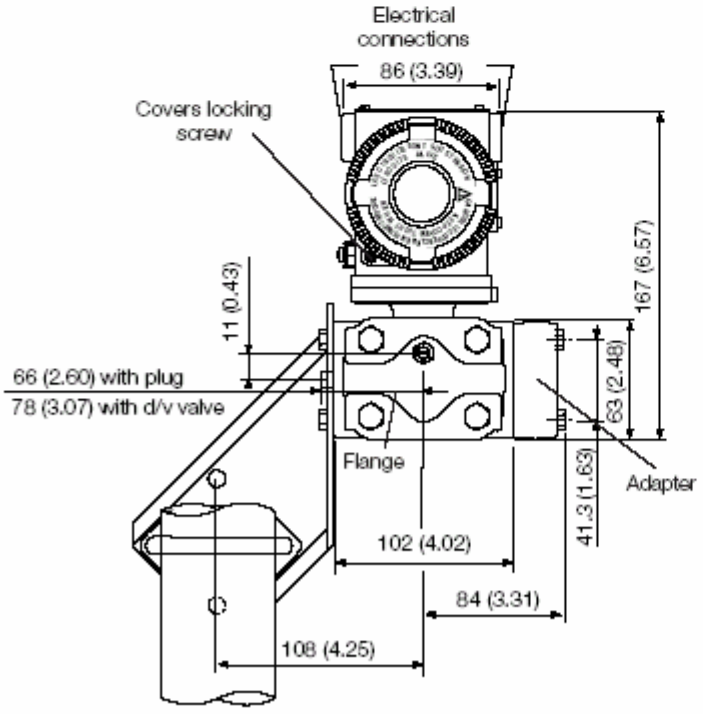
Transmitter with barrel aluminium housing on bracket for vertical or horizontal 60mm (2in) pipe mounting

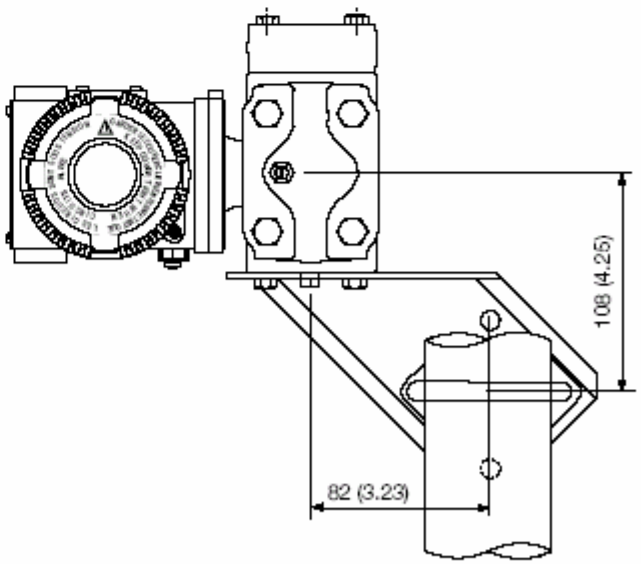




Model 264VS

(*) FOR MODEL 264DS
51 (2.01), 54 (2.13) or 57 (2.24) mm (in) according to ½in 14 NPT adapters fitting 54 (2.13) mm (in) on ¼in 18 NPT process flange
FOR MODEL 264PS
54 (2.13) mm (in) with low pressure side flange without process connection (a filter is fitted) and drain/vent valve





NOTE : Process connection, gasket groove and gaskets are in accordance with DIN 19213. Bolting threads for fixing adapter or other devices (i.e. manifold etc.) on process flange is $^{7}/_{16}$in – 20 UNF.

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BASIC ORDERING INFORMATION model 264DS Differential Pressure Transmitter

Select one character or set of characters from each category and specify complete catalog number.
Refer to additional ordering information code and specify one or more codes for each transmitter if additional options are required.

BASE MODEL – 1st to 5th characters			2	6	4	D	S	X	S	X	X	X	X	X
Differential Pressure Transmitter – BASE ACCURACY 0.075%														
SENSOR - Span limits – 6th character														
0.134 and 4kPa	1.34 and 40mbar	0.54 and 16inH2O						B						
0.27 and 16 kPa	2.7 and 160mbar	1.08 and 64inH2O						E						
0.4 and 40kPa	4 and 400mbar	1.6 and 160inH2O						F						
0.65 and 65kPa	6.5 and 650mbar	2.6 and 260inH2O						G						
1.6 and 160kPa	16 and 1600mbar	6.4 and 642inH2O						H						
6 and 600kPa	0.06 and 6bar	0.87 and 87psi						M						
24 and 2400kPa	0.24 and 24bar	3.5 and 348psi						P						
80 and 8000kPa	0.8 and 80bar	11.6 and 1160psi						Q						
160 and 16000kPa	1.6 and 160bar	23.2 and 2320psi						S						
Use code – 7th character														
Diaphragm material / Fill fluid (wetted parts) – 8th character														
AISI 316 L ss	Silicone oil	(Note 2)								S				
Hastelloy C276™ (on AISI seat)	Silicone oil								NACE	H				
Hastelloy C276™	Silicone oil								NACE	K				
Monel 400™	Silicone oil	(Note 2)							NACE	M				
Tantalum	Silicone oil	(Note 2)							NACE	T				
AISI 316 L ss	Inert fluid	(Notes 1, 2)								A				
Hastelloy C276™ (on AISI seat)	Inert fluid	(Notes 1, 2)							NACE	B				
Hastelloy C276™	Inert fluid	(Notes 1, 2)							NACE	F				
Monel 400™	Inert fluid	(Notes 1, 2)							NACE	C				
Tantalum	Inert fluid	(Notes 1, 2)							NACE	D				
AISI 316 L ss	ABB fil	(Note 2)								L				
Hastelloy C276™ (on AISI seat)	ABB fil								NACE	Q				
Hastelloy C276™	ABB fil								NACE	P				
Process flanges/adapters material and connection (wetted parts) – 9th character														
AISI 316 L ss (Horizontal connection)	1/4in NPT-f direct (7/16in UNF U.S. drilling)								NACE		A			
AISI 316 L ss (Horizontal connection)	1/4in NPT-f through adapter (7/16in UNF U.S. drilling)								NACE		B			
Hastelloy C276™ (Horizontal connection)	1/4in NPT-f direct (7/16in UNF U.S. drilling)								NACE		D			
Hastelloy C276™ (Horizontal connection)	1/4in NPT-f through adapter (7/16in UNF U.S. drilling)								NACE		E			
Monel 400™ (Horizontal connection)	1/4in NPT-f direct (7/16in UNF U.S. drilling)								NACE		G			
Monel 400™ (Horizontal connection)	1/4in NPT-f through adapter (7/16in UNF U.S. drilling)								NACE		H			
Bolts/Gasket (wetted parts) – 10th character														
AISI 316 ss	Viton™											1		
AISI 316 ss	PTFE	(Note 1)										2		
AISI 316 ss (NACE) – (MWP = 16MPa)	Viton™								NACE			3		
AISI 316 ss (NACE) – (MWP = 16MPa)	PTFE	(Note 1)							NACE			4		
Housing material and electrical connection – 11th character														
Aluminium alloy (Barrel version)	1/2in NPT												A	
Aluminium alloy (Barrel version)	M20 x 1.5 (CM 20)												B	
Aluminium alloy (Barrel version)	Pg 13.5												D	
Aluminium alloy (Barrel version)	1/2in GK												C	
Aluminium alloy (Barrel version)	Harting HAN connector	(Note 3) (general purpose only)											E	
Aluminium alloy (Barrel version)	Fieldbus connector	(Note 3) (general purpose only)											G	
Aluminium alloy copper-free (Barrel version)	1/2in NPT												H	
Aluminium alloy copper-free (Barrel version)	M20 x 1.5 (CM 20)												L	
Aluminium alloy copper-free (Barrel version)	Pg 13.5												N	
Aluminium alloy copper-free (Barrel version)	1/2in GK												M	
Aluminium alloy copper-free (Barrel version)	Harting HAN connector	(Note 3) (general purpose only)											P	
Aluminium alloy copper-free (Barrel version)	Fieldbus connector	(Note 3) (general purpose only)											R	
AISI 316 L ss (Barrel version)	1/2in NPT												S	
AISI 316 L ss (Barrel version)	M20 x 1.5 (CM20)												T	
AISI 316 L ss (Barrel version)	Pg 13.5												V	
AISI 316 L ss (Barrel version)	1/2in GK												U	
AISI 316 L ss (Barrel version)	Fieldbus connector	(Note 3) (general purpose only)											Z	
Aluminium alloy (DIN version)	M20 x 1.5 (CM 20)	(general purpose only)											J	
Aluminium alloy (DIN version)	Pg 13.5	(general purpose only)											Y	
Aluminium alloy (DIN version)	Harting HAN connector	(Note 3) (general purpose only)											K	
Aluminium alloy (DIN version)	Fieldbus connector	(Note 3) (general purpose only)											W	
Output/Additional options – 12th character														
HART digital communication and 4 to 20mA	No additional options	(Notes 4, 5)												H
HART digital communication and 4 to 20mA	Options requested (to be ordered by "Additional ordering code")	(Note 4)												1
PROFIBUS PA	No additional options	(Notes 4, 5)												P
PROFIBUS PA	Options requested (to be ordered by "Additional ordering code")	(Note 5)												2
FOUNDATION Fieldbus	No additional options	(Notes 4, 5)												F
FOUNDATION Fieldbus	Options requested (to be ordered by "Additional ordering code")	(Note 5)												3

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