

DP55 Differential Pressure Transmitters

FEATURES

- All stainless steel design
- 0,075% accuracy of adjusted span
- Strong flush mounted diaphragm
- Active temperature compensation
- Optional HART® protocol with 4-20 mA / 2 wire output or PROFIBUS® PA protocol
- Digital local graphic display with several options
- Easy local adjustments using 1 joystick
- HART DTM available for Microsoft Windows® OS
- Wide selection of electrical & process connections
- IP66/68 Ingress rating
- Approval for use in hazardous area

TYPICAL USES

- Food and beverage industry
- Pharma industry
- Pulp and paper
- Chemical and petrochemical plants

PERFORMANCE SPECIFICATIONS

Reference Temperature: 21 °C ±2 °C (70 °F ±2 °F)

Accuracy: ± 0.075 % of adjusted span

Stability: ≤ ±0.05 % of span / year

Adjustable Pressure Span: 10 mbar to 20 bar
see table on page 2

Pressure Type: Differential

ENVIRONMENTAL SPECIFICATIONS

Thermal Coefficients: 0.15% / 10 K

Temperature Limits: Check table "Temperature Limits" on page 2

Humidity: 0-100 % R.H. (non-condensing)

SOFTWARE SPECIFICATIONS

Driver and Software: Microsoft Windows® 7 or higher

Interfaces: PACTware™

Response Time (Output): 900 ms

On-field Adjustment: See table "On-field Adjustments" on page 2

PHYSICAL SPECIFICATION

Pressure: Max. Overpressure: 160 bar
Proof: 120 bar
Static Pressure: 160 bar (optional 250 bar)

Process Connection Size: 1/4 NPT female
1/2 NPT female (via oval flange adapter)

Weather Protection: Ingress Protection IP66 (optimal IP68)

Shock and Vibration Effects: 4.0 - 13.2 Hz constant displacement-amplitude 1.0 mm
13.2 - 100.0 Hz constant acceleration - 0.7 g
1 Sweep up with 1 oct/min.



Differential Platinum Series
DP55



KEY BENEFITS

- Intelligent transmitters with adjustable span and high accuracy
- Minimum temperature effect
- Several setting and adjustment options

ELECTRICAL SPECIFICATIONS

Output: 4-20 mA (2-wire configuration)
PROFIBUS® - PA Slave Profile v3.02 Floating point IEEE754

Electrical Connection: M20x1,5
for more see "Ordering Code" on page 5

Power Supply: Standard: 12 - 36 Vdc
12 - 30 Vdc (ATEX)
HART®: 17 - 36 Vdc min. 250 Ω
17 - 30 Vdc (ATEX) min. 250 Ω
PROFIBUS® PA: 12 - 30 Vdc

PROFIBUS® Specification: Transmission speed: 31,25 kB/s
Consumption: 13 mA ± 1 mA
Fault current: 13 mA ± 1 mA

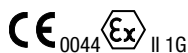
Intrinsically safe: U_{max} = 30 Vdc
(max. values) I_{max} = 110 mA
P_{max} = 0.9 W (Linear source)
L_{max} = 0.08 mH
C_{max} = 41 nF

WETTED COMPONENTS

Diaphragm: Stainless steel 316L (1.4404)
optional: St. st. 316L (1.4404) gold plated
optional: Hastelloy C-276 (2.4819)
optional: Tantalum

NON-WETTED COMPONENTS

Housing: Stainless steel 304 (1.4401)
optional: Stainless Steel 316 (1.4404)



Ex ia IIC T4 Ga
Ex ia IIC T5 Ga
Ex ia IIC T6 Ga

DP55 Differential Pressure Transmitters

ON-FIELD ADJUSTMENTS

- + Zero adjustment (4 mA)
- + Span adjustment (20 mA)
- + Cancel mounting position effect
- + Switch pressure units & conversion table (volume and weight)
- + Output current display
 - 4-20 mA
 - 20-4 mA (Reverse output)
 - 0-100 % / 100-0 % (PROFIBUS[®])
- + Adjustable damping (0 to 25 sec)
- + Language selection
- + Operational settings (protection, display, HART[®] versions, PROFIBUS[®] PA)
- + Read out on display:
 - Current (4 - 20 mA)
 - Pressure unit & conversions
 - Percentages
 - Temperature
- + Simulation of current (2 wire and HART[®])
- + Linearization:
 - Horizontal tank
 - Vertical tank (cone, spherical or truncated bottom)
 - Customer specific linearization
- + Burst mode settings (2 wire and HART[®])
- + Data and information overview
- + Square root function / Transfer funktion (Flow control)
- + PROFIBUS[®] PA address selection
- + Calibration
- + Factory settings

TEMPERATURE LIMITS

Ambient/Storage:	Standard	-20 °C to 70 °C (-4 °F to 158 °F)
	ATEX T5-T1	-20 °C to 70 °C (-4 °F to 158 °F)
	ATEX T6	-20 °C to 31 °C (-4 °F to 104 °F)
Process:	Standard	-20 °C to 80 °C (-4 °F to 176 °F) optional 100 °C (212 °F) available
	ATEX T5-T1	-20 °C to 100 °C (-4 °F to 158 °F)
	ATEX T6	-20 °C to 50 °C (-4 °F to 212 °F)

STANDARD PRESSURE

RANGE	CODE	ADJUSTABLE SPAN RANGES
0 ... 60 mbar	60MB	0 ... 10 mbar to 0 ... 60 mbar
0 ... 400 mbar	400MB	0 ... 10 mbar to 0 ... 400 mbar
0 ... 2 bar	2BR	0 ... 20 mbar to 0 ... 2 bar
0 ... 20 bar	20BR	0 ... 0,2 bar to 0 ... 20 bar



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ORDERING CODE		EXAMPLE:	DP55	007	F02	PA	10BR	XEX3
Model								
DP55	Differential pressure transmitter platinum series		DP55					
Accuracy								
007	0,075% of adjusted span			007				
Connection size								
F02	¼ NPT Female				F02			
F04	½ NPT Female (via bolted oval flanges with 7/16" UNF bolts)							
Output Signal								
42	4 - 20 mA							
HA	4 - 20 mA with HART [®] protocol							
PA	PROFIBUS [®] protocol (EMC electrical cable gland required, only available for non-ATEX execution)					PA		
Pressure Ranges - Coding example only, see standard ranges on page 5								
10BR	10 bar							
Options (If choosing an option(s) must include a "X")								
Static Pressure								
	Max. static pressure 160 bar (standard)							
PN250	Max. static pressure 250 bar							
Wetted Parts								
S	Diaphragm in Stainless steel 316L (1.4404) (standard)							
H	Diaphragm in Hastelloy [®] C-276 (2.4819)							
U	Wetted parts (diaphragm and flange) with Tantalum coating							
W	Diaphragm in Stainless steel 316L (1.4404) and with Gold coating							
Liquid filling								
	Silicone oil (standard)							
CF	Fluorinated oil							
Gaskets								
	Viton / FKM (standard)							
T	Teflon / PTFE							
B	BUNA-N / NBR							
Case								
YW	Enclosure stainless steel 316L (1.4404)							
IP68	Ingress protection IP68							
Ventilation cable length								
0,5 ... 100	Ventilation cable length in 0,5 m steps							
Digital Indicator								
	Blind cover (same material as enclosure; standard)							
DG	Transparent polycarbonate cover							
Electrical Connection								
JM	M20x1,5 Female (standard)							
EMC	EMC for PROFIBUS [®] (standard for option PA)							
EW	M12, 4-pin in stainless steel 316 (1.4401)							
HM	Hirschmann connector plug (only available for non-ATEX executions)							
JL	½ NPT Female conduit							
KV1	PG 9 cable gland							
KV2	PG 11 cable gland							
KV3	PG 13,5 cable gland							
PA8	PROFIBUS [®] connector with IP68							
Agency Approval								
EX4	ATEX: II 1 G Ex ia IIC T4 Ga and IECEx: Ex ia IIC T4 Ga							
EX2	ATEX: II 1 G Ex ia IIC T5 Ga and IECEx: Ex ia IIC T5 Ga							
EX3	ATEX: II 1 G Ex ia IIC T6 Ga and IECEx: Ex ia IIC T6 Ga							

continued at page 3



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ORDERING CODE
EXAMPLE:
DP55
007
F02
PA
10BR
XEX3

Options (If choosing an option(s) must include a "X")

Mounting

- FW Wall mounting bracket, Material 304 (1.4301)
- FW1 Wall mounting bracket, Material 316L (1.4404)
- TM 2" pipe mounting bracket, Material 304 (1.4301)
- TM1 2" pipe mounting bracket, Material 316L (1.4404)

Cleaning

- 6B Cleaned for gaseous Oxygen or other strong oxidizing agents
- YF Cleaned silicone free

Marking/Tagging

- NH Stainless steel tag, wired to case
- NH1 Extra large stainless steel tag, wired to case
- NN Paper tag, bonded to enclosure

Testing/Certificates

- CD2 Material test report according to EN 10204 / 2.2
- C3 Material report according to EN 10204 / 3.1
- C4 Individual calibration chart
- CL Calibration according customer requirements



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DIFFERENTIAL PLATINUM SERIES DIMENSIONS IN MM [INCH]

For reference only, consult Ashcroft for specific dimensional drawings

