

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 Check table "Standard pressure range" on page 2
Pressure Type:	Differential

ENVIRONMENTAL SPECIFICATIONS

Thermal Coefficients:	0.15% / 10 K $((T_{amb}-T_{ref})/10) * 0.15\%$ 0.3% / 10 K for $T_{amb} < 0 °C$
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:	Check 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 (optinal 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

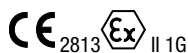
Output:	4-20 mA (2-wire configuration) PROFIBUS® - PA Slave Profile v3.02 Floating point IEEE754
Electrical Connection:	M20x1,5 for more see "Ordering Code" on page 5
Power Supply:	Standard: 12 - 36 Vdc 12 - 30 Vdc (ATEX) HART®: 17 - 36 Vdc min. 250 Ω 17 - 30 Vdc (ATEX) min. 250 Ω PROFIBUS® PA: 12 - 30 Vdc
PROFIBUS® Specification:	Transmission speed: 31,25 kB/s Consumption: 13 mA ± 1 mA Fault current: 13 mA ± 1 mA
Intrinsically safe: (max. values)	$U_{max} = 30$ Vdc $I_{max} = 110$ 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
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NON-WETTED COMPONENTS

Housing:	Stainless steel 304 (1.4401) optional: Stainless Steel 316 (1.4404)
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Ex ia IIC T4 Ga
Ex ia IIC T5 Ga
Ex ia IIC T6 Ga

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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:		-20 °C to 80 °C (-4 °F to 176 °F) optional up to 100 °C (210 °F)
	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)
Active Temp. compensation	DP55 Standard:	0 °C to 100 °C (30 °F to 210 °F)
on process side:	Low Temp option:	-20 °C to +70 °C (- 4 °F to 160 °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



DP55 Differential Pressure Transmitters

ORDERING CODE		EXAMPLE:	DP55	007	F02	PA	EMC	2BR	PN160	S	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					
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										
Pressure Ranges - Coding example only, see standard ranges on page 2											
2BR	2 bar										
Static Pressure											
PN160	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										
Options (If choosing an option(s) must include a "X")											
Temperatur Option											
LT	Low temperature execution (Temperature range: < 0 °C)										
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										

continued at page 3



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ORDERING CODE **EXAMPLE:** DP55 007 F02 PA EMC 2BR PN160 S XEX3

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

Electrical Cable

- without cable (standard)
- EC with electrical cable

Electrical Cable Length

0,5 ... 100 Cable length in 0,5 m steps

Digital Indicator

- Blind cover (same material as enclosure; standard)
- DG Transparent polycarbonate cover

Agency Approval

- EX4 ATEX: II 1 G Ex ia IIC T4 Ga and IECEx: Ex ia IIC T4 Ga
- EX5 ATEX: II 1 G Ex ia IIC T5 Ga and IECEx: Ex ia IIC T5 Ga
- EX6 ATEX: II 1 G Ex ia IIC T6 Ga and IECEx: Ex ia IIC T6 Ga

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

