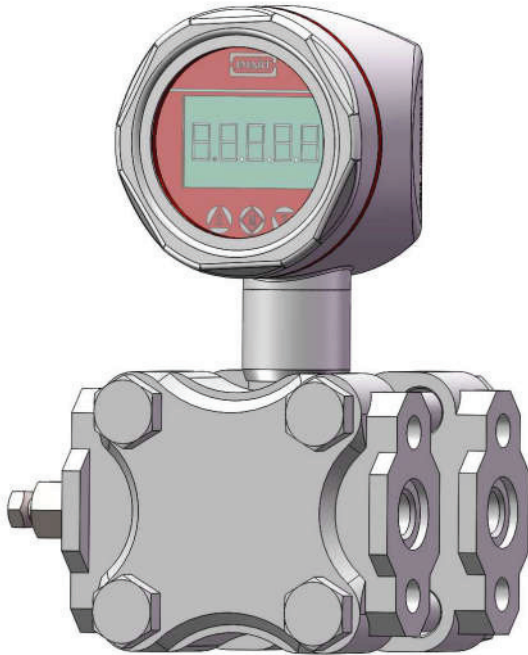


## Differential Tryckgivare DMP305x-DSF

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### Product introduction

### Description



### Monosilicon pressure transmitter

DMP305X monosilicon pressure transmitter is a high performance pressure transmitter with international leading technology meticulously designed by LEEG instrument, using the world's most advanced monosilicon pressure sensor technology and patent encapsulation technology.

Monosilicon pressure sensor locates on the top of the metal body and stay away from the medium interface to realizes mechanical isolation and thermal isolation. Glass sintering sensor wire realizes high strength electrical insulation of metal base and improves the capability of flexibility of electronic circuit and transient voltage resistance protection.

All these original encapsulation technologies enable DMP305X to easily cope with extreme chemical occasion and mechanical load, and own strong resistance to EMI, sufficient to respond to the most rigorous industrial environment applications, which are the genuine invisible instruments.

### Main parameters

Pressure types	Differential pressure
Measuring range	200Pa - 10MPa, Please refer to the ordering information chapter
Output signal	4-20mA, 4-20mA+HART, customer
Reference accuracy	±0.075% URL, optional ±0.05% URL

### Measuring medium

Liquid, gas, or steam flow as well as liquid level, density and pressure

### Field of application

Pressure, level, differential pressure, density, interface, flow

### Approvals





## Differential Tryckgivare DMP305x-DSF

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### Technical specifications

#### Measuring range and limit

Nominal value	Smallest calibratable span	Lower range limit (LRL)	Upper range limit (URL)	Static pressure limit	High pressure side overload limit	Low pressure side overload limit
6kPa	200Pa	-6kPa	6kPa	25MPa	25MPa	16MPa
40kPa	400Pa	-40kPa	40kPa	40MPa	25MPa	16MPa
250kPa	2.5kPa	-250kPa	250kPa	40MPa	25MPa	16MPa
1MPa	10kPa	-500kPa	1MPa	40MPa	25MPa	16MPa
3MPa	30kPa	-500kPa	3MPa	40MPa	25MPa	16MPa
10MPa	100kPa	-500kPa	10MPa	40MPa	25MPa	16MPa

Adjust requirements: lower range value (LRV) and upper range value (URV) can be adjusted within the scope of the upper and lower range limit, span | URV-LRV | ≥ smallest calibratable span

#### Standard specifications and reference conditions

Test standard: GB/T28474 / IEC60770; zero based-calibration span, linear output, silicon oil filling, 316L stainless steel isolated diaphragm.

#### Performance specifications

The overall performance including but not limited to **【Reference accuracy】**, **【Environment temperature effects】**, **【Static pressure effects】** and other comprehensive error

Typical accuracy: ±0.075% URL

Stability: ±0.2% URL/ 5 years

#### Reference accuracy

Including linearity, hysteresis and repeatability. calibration temperature: 20°C±5°C

Linear output accuracy	TD ≤10 (note 1)	±0.075% URL	Nominal value 6kPa, 40kPa 250kPa, 1MPa 3MPa, 10MPa
	10 < TD ≤ 100	±0.0075TD% URL	

Square root output accuracy is 1.5 times linear output accuracy

Note 1: TD is Turn down,  
when | URV | ≥ | LRV |, TD=URL/ | URV |  
when | URV | ≤ | LRV |, TD=URL/ | LRV |

#### Ambient temperature effects

Within the range -20-80°C total impact	±(0.1+0.1TD)% URL
--	-------------------

#### Static pressure effects

Effect on zero	±0.15TD % URL/10MPa
----------------	---------------------

Effect on full scale	±0.2% URL/10MPa
----------------------	-----------------

#### Power supply effects

When power supply voltage is within 10.5/16.5-55VDC, zero and span change should not more than ±0.005% URL/V

#### Mounting position effects

Install error less than 400Pa, which can be corrected by PV=0 reset.

#### Vibration effects

According to IEC61298-3, <0.1% URL

#### Output signal

Two wire 4-20 mA output with digital communications, linear or square root output programmable, HART protocol is superimposed on the 4-20mA signal.

## Differential Tryckgivare DMP305x-DSF

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### Technical specifications

#### Damping time

Total damping time constant: equal to the sum of damping time of amplifier and sensor capsule
Damping time of amplifier : 0-100S adjustable
Damping time of sensor capsule (isolated diaphragm and silicon filling oil)≤0.2S
Startup after power off: ≤6S
Normal services after data recovery : ≤31S

#### Weight

Net weight: about 3kg ( without mounting bracket and process connection adaptor )

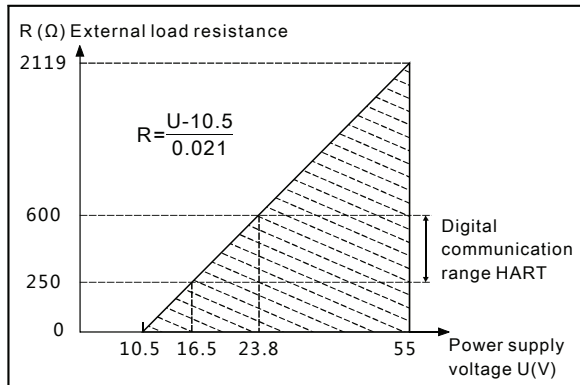
#### Environment condition

Items	Operational condition
Working temperature	-40-85°C, integrated LCD display: -20-70°C
Storage temperature	-40-110°C, integrated LCD display: -40-85°C
Media temperature	Silicon oil filling: -40-120°C
	Fluorocarbon oil filling: -45-160°C
Working humidity	5-100% RH@40°C
Protection class	IP67
Dangerous condition	ExialICT4(GYB16.1962X)*
*Please consult engineers for details	

#### Power supply

Item	Operating conditions
Standard/flame proof	10.5-55VDC
HART protocol	16.5-55VDC, communication load resistance 250Ω
Load resistance	0-2119Ω for operation, 250-600Ω for HART protocol
Transmission distance	<1000 meters
Power consumption	≤500mW@24VDC,20.8mA

#### Power supply and load requirements



#### EMC environment

NO.	Test items	Basic standards	Test conditions	Performance level
1	Radiated interference	GB/T 9254/CISPR22	30MHz-1000MHz	OK
2	Conducted interference (DC power port)	GB/T 9254/CISPR22	0.15MHz-30MHz	OK
3	Electrostatic discharge immunity test (ESD)	GB/T 17626.2/IEC61000-4-2	4kV(Contact ),8kV(Air)	B(Note2)
4	Immunity to radio frequency EM-fields	GB/T 17626.3/IEC61000-4-3	10V/m(80MHz-1GHz)	A(Note1)
5	Power frequency magnetic field Immunity test	GB/T 17626.8/IEC61000-4-8	30A/m	A(Note1)
6	Electrical fast transient / Burst Immunity Test	GB/T 17626.4/IEC61000-4-4	2kV(5/50ns,100kHz)	B(Note2)
7	Surge immunity requirements	GB/T 17626.5/IEC61000-4-5	1kV(Line to line) 2kV(Line to ground) (1.2us/50us)	B(Note2)
8	Immunity to conducted disturbances induced by radio frequency fields	GB/T 17626.6/IEC61000-4-6	3V(150kHz-80MHz)	A(Note1)

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

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

## Differential Tryckgivare DMP305x-DSF

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### Specific menu

#### Transmission module type

Output signal	Local control	Remote control
4-20mA+HART	3 buttons on LCD display	HART
4-20mA	3 buttons on LCD display	-

#### LCD display unit

Display mode	Details
PV	Process variable shows on main screen, percentage and progress bar shows on secondary screen
mA	Current shows on main screen, percentage and progress bar shows on secondary screen
%	Percentage shows on main screen, percentage and progress bar shows on secondary screen

#### Unit

Unit	Definition
kPa	Kilopascal
MPa	Megapascals
bar	Bar
psi	Pounds per square inch
mmHg	Millimetre(s) of mercury@0°C
mmH2O	Millimeter of water@4°C
mH2O	Meter of water@4°C
inH2O	Inches of water@4°C
ftH2O	Feet of water@4°C
inHg	Inches of mercury@0°C
mHg	Meter mercury column@0°C
TORR	Torr
mbar	Millibar
g/cm2	Gram per square centimeter
kg/cm2	Kilogram per square centimeter
Pa	PA
ATM	Standard atmospheric pressure
mm	Millimeter(Note 1)
m	Meter(Note 1)

Note 1: length unit need mark medium density

### Measuring menu set

Mark	State
URV	Upper range value, 20mA
LRV	Lower range value, 4mA

#### Damping time

Units	Setting range
S	0-100

#### Analog output type

Parameters	Output type
mA LINER	Linearity
mA $\sqrt{\quad}$	Square root

#### Alarm signal

Parameters	Alarm signal
ALARM NO	None
ALARM H	20.8mA
ALARM L	3.8mA

#### Fix output

Parameters	Fix output value
FIX/C NO	None
3.8000	3.8000mA
4.0000	4.0000mA
8.0000	8.0000mA
12.000	12.000mA
16.000	16.000mA
20.000	20.000mA
20.800	20.800mA

### Quick menu

Parameter	Instruction
PV=0	Set current output to zero value, used to correct the error caused by static pressure and installation.
Zero adjustment	4mA re-range with pressure
Span adjustment	20mA re-range with pressure
Restore factory setting	Restore backup data when error

## Differential Tryckgivare DMP305x-DSF

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### Product selection instruction

#### Sensor select instruction

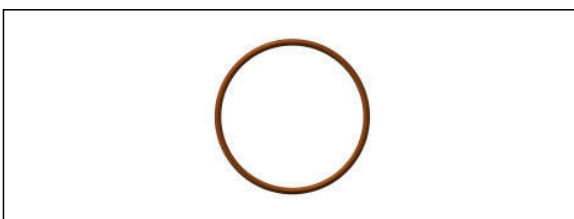
Code	Nominal value	Description
S602D	6kPa	Range -6-6kPa, smallest calibratable span 200Pa
S403D	40kPa	Range -40-40kPa, smallest calibratable span 400Pa
S254D	250kPa	Range -250-250kPa, smallest calibratable span 2.5kPa
S105D	1MPa	Range -500-1000kPa, smallest calibratable span 10kPa
S305D	3MPa	Range -0.5-3MPa, smallest calibratable span 30kPa
S106D	10MPa	Range -0.5-10MPa, smallest calibratable span 100kPa

Code	Position	Instruction
S	Diaphragm material	SUS316L
H		Hastelloy C
S	Fluid filling	Silicon oil, process temperature: -45-205°C
D		Fluorocarbon oil, process temperature: -45-160°C
S	Sensor seal	O-ring, FKM, process temperature: -20~200°C

#### Diaphragm(S/H)



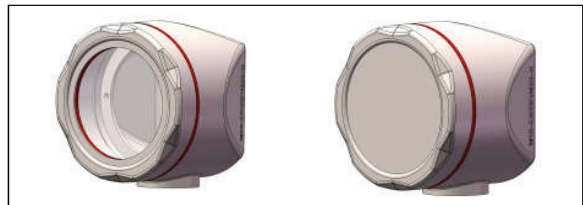
#### Seal(S)



#### Electrical connection select instruction

Code	Item	Description
F1	Electrical connection	Stainless steel terminal, aviation plug M12*1 (4 pin) (H2), IP67, vertical mounting
F2		Stainless steel terminal, aviation plug M12*1 (4 pin) (H2), IP67, horizontal mounting

#### Housing(F1)



#### Housing(F2)

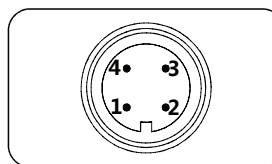


#### Aviation plug, M12\*1, 4 pin(H2)



#### Electrical connection

#### Aviation plug, M12\*1, 4 pin(H2)



Label	Two wires
1	Power+
2	
3	
4	Power -

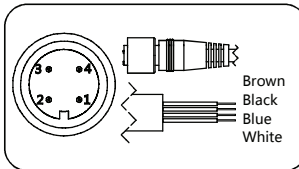
## Differential Tryckgivare DMP305x-DSF

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### Product selection instruction

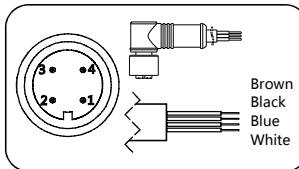
#### Electrical connection accessories

##### Aviation plug straighter(J1)



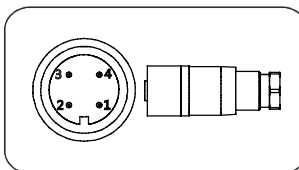
Label	Two wires
1/Brown	Power+
2/White	
3/Blue	
4/Black	Power -

##### Aviation plug elbow(J2)



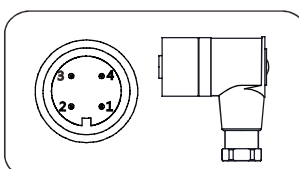
Label	Two wires
1/Brown	Power+
2/White	
3/Blue	
4/Black	Power -

##### Aviation plug straighter(J4)



Label	Two wires
1	Power+
2	
3	
4	Power -

##### Aviation plug elbow(J5)



Label	Two wires
1	Power+
2	
3	
4	Power -

Code	Items	Description
F	Output signal	4-20mA two wire, power supply: 10.5-55VDC
H		4-20mA+HART two wire, power supply: 16.5-55VDC
A	Display	Without display
C		With LCD display

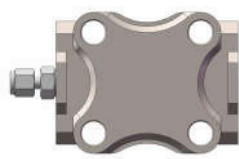


#### Display module(C)



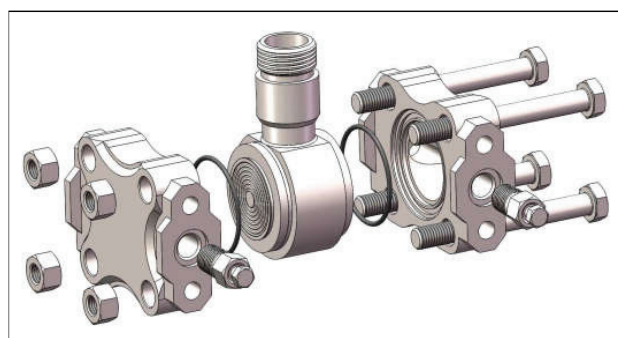
#### Process connection selection

Code	Item	Description
H1		H structure, double flanges, process connection 1/4-18NPT(F), drain valve on the rear end of flange, material SS 316
H2	Flange/ Drain Valve	H structure, double flanges, process connection 1/4-18NPT(F), drain valve on the up part of flange, material SS 316
H3		H structure, double flanges, process connection 1/4-18NPT(F), drain valve on the down part of flange, material SS 316

#### Flange

H1	
H2	
H3	

#### Wetted parts



## Differential Tryckgivare DMP305x-DSF

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### Product selection instruction

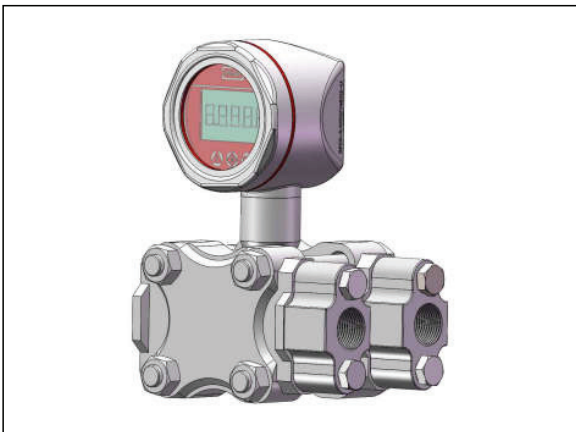
#### Process connection adaptor

Code	Item	Description
A1	Process connection adaptor	Adaptor, M20*1.5 (M) with pressure-guided pipe $\Phi 14*2*30$ , SS304, apply to H-structure
A2		Adaptor, 1/2-14NPT(F), SS 304, apply to H-structure

#### Adaptor, M20\*1.5 (M) with pressure-guided pipe(A1)



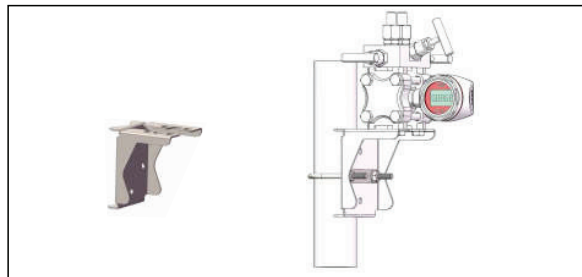
#### Adaptor, 1/2-14NPT(F) (A2)



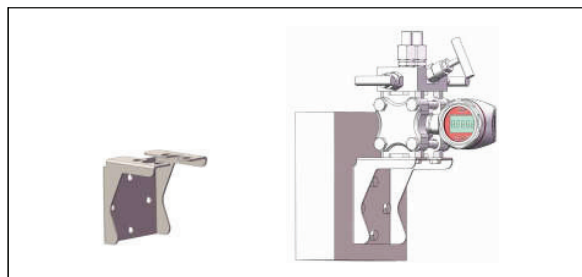
#### Brackets

Code	Items	Details
B1	Fixed mounting	Pipe mounting bent bracket, 2" pipe, carbon steel, apply to H-structure
B2		Plate mounting bent bracket, carbon steel, apply to H-structure
B3		Pipe mounting flat bracket, 2" pipe, carbon steel, apply to H-structure

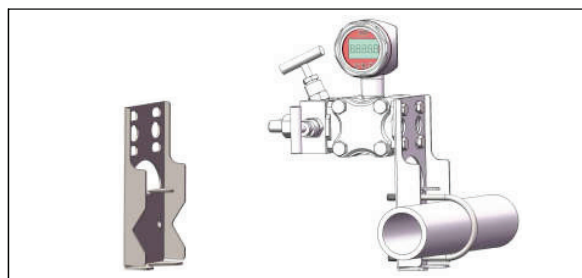
#### Pipe mounting bent bracket(B1)



#### Plate mounting bent bracket(B2)



#### Pipe mounting flat bracket(B3)

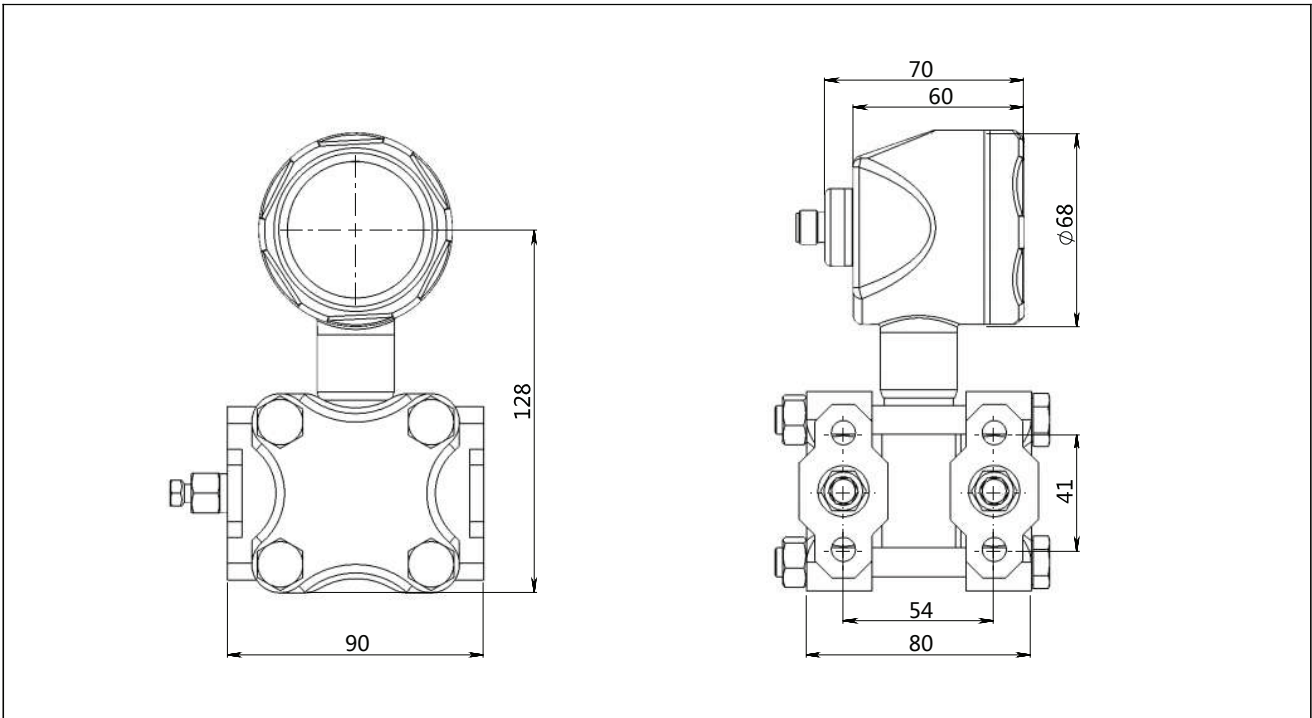


## Differential Tryckgivare DMP305x-DSF

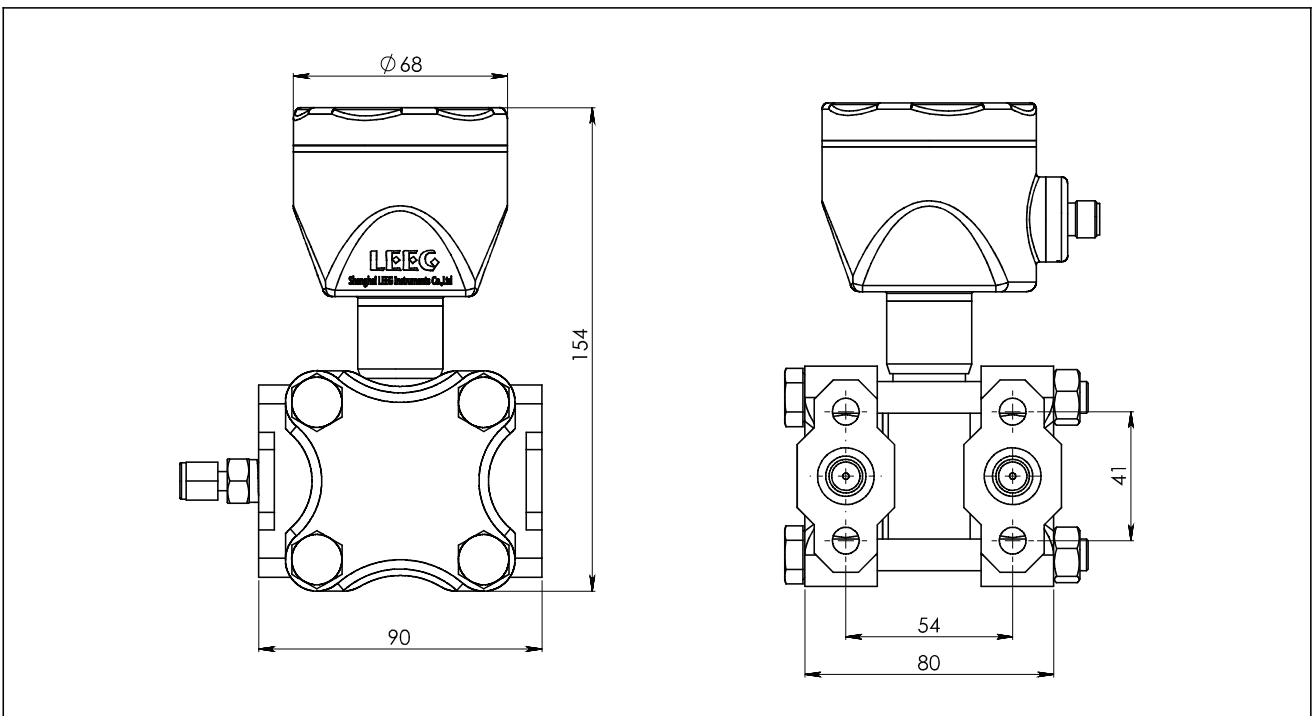
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### Product drawing and dimension

Drawing and dimension with display(C)/without display(A) vertical installation (unit:mm)



Drawing and dimension without display(A) horizontal installation (unit: mm)



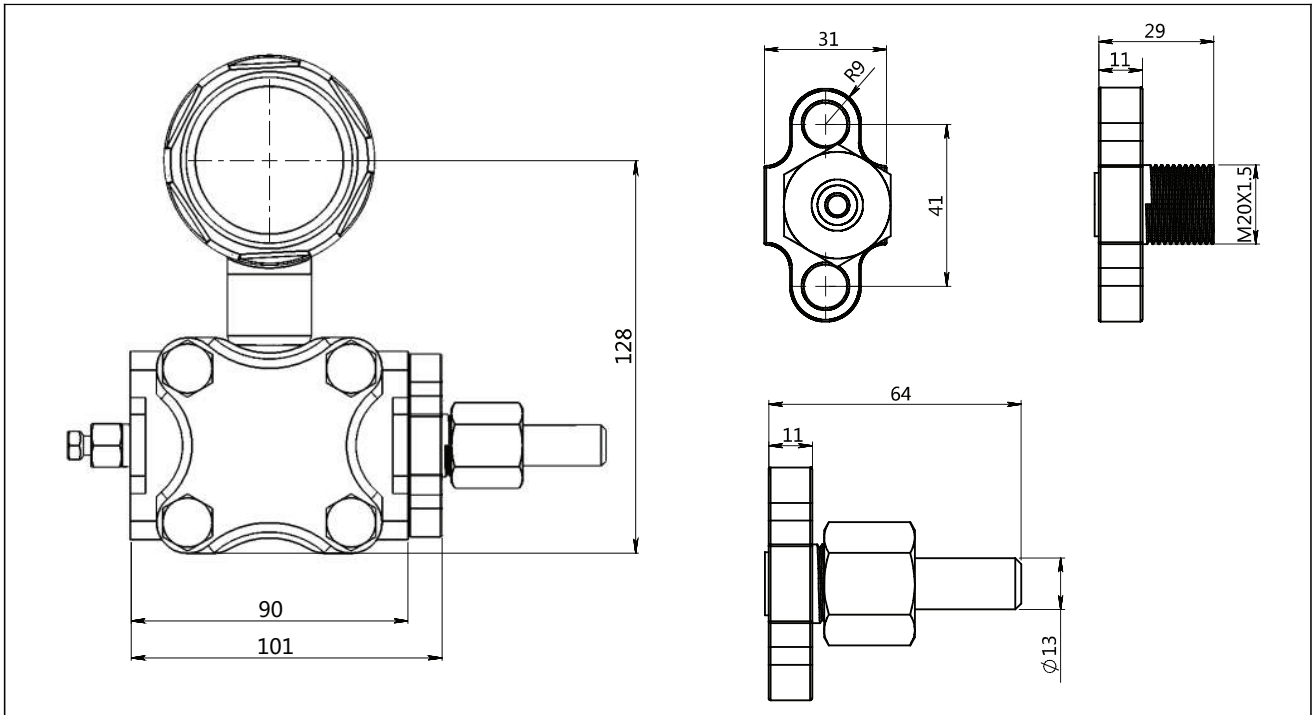


## Differential Tryckgivare DMP305x-DSF

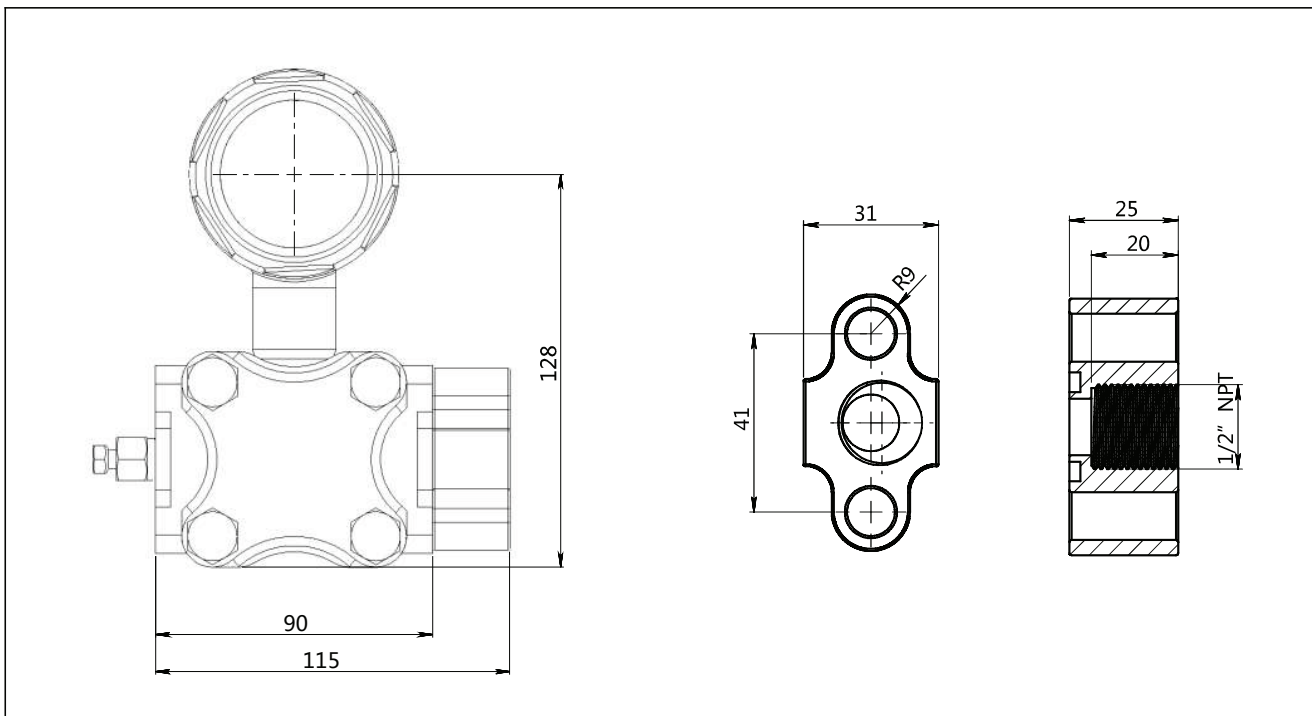
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### Product drawing and dimension

#### Adaptor(A1) drawing and dimension(unit:mm)



#### Adaptor(A2) drawing and dimension(unit:mm)

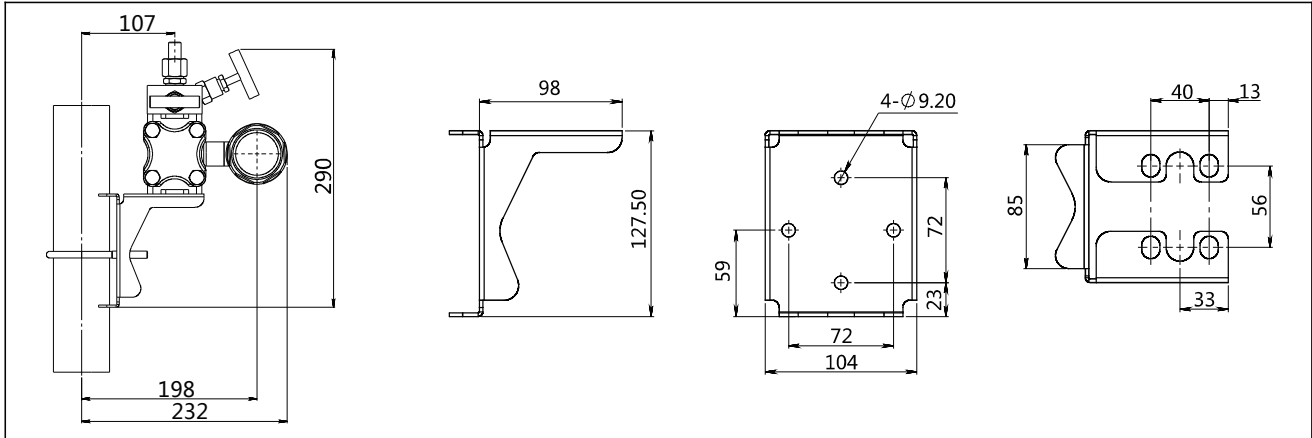


## Differential Tryckgivare DMP305x-DSF

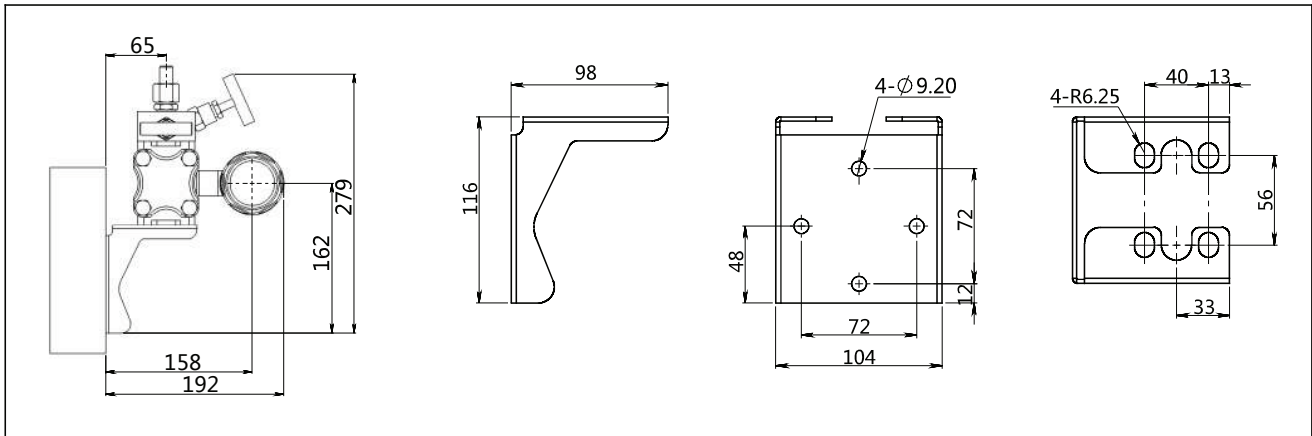
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### Installation drawing and dimension

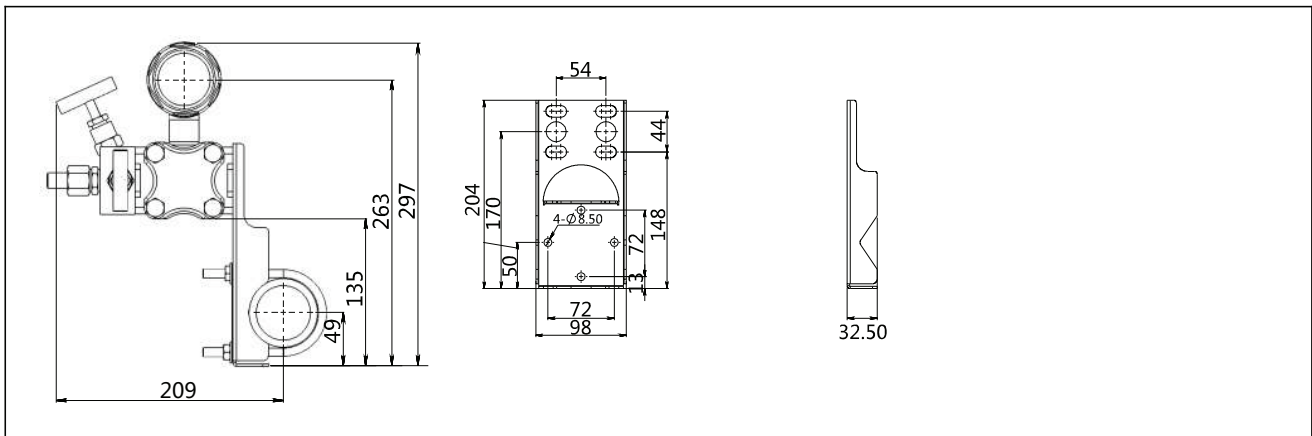
#### Pipe mounting bent bracket (B1) drawing and dimension (unit:mm)



#### Plate mounting bent bracket(B2) drawing and dimension (unit:mm)



#### Pipe mounting flat bracket (B3) drawing and dimension (unit:mm)

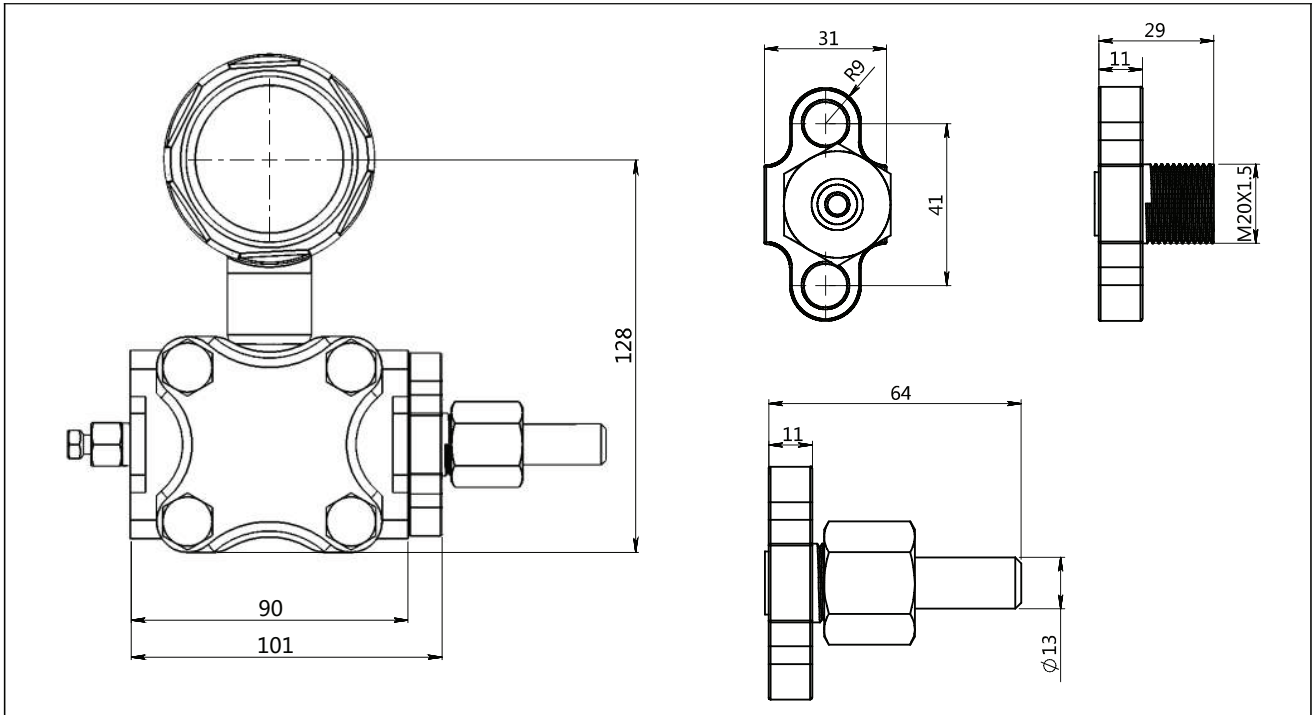


## Differential Tryckgivare DMP305x-DSF

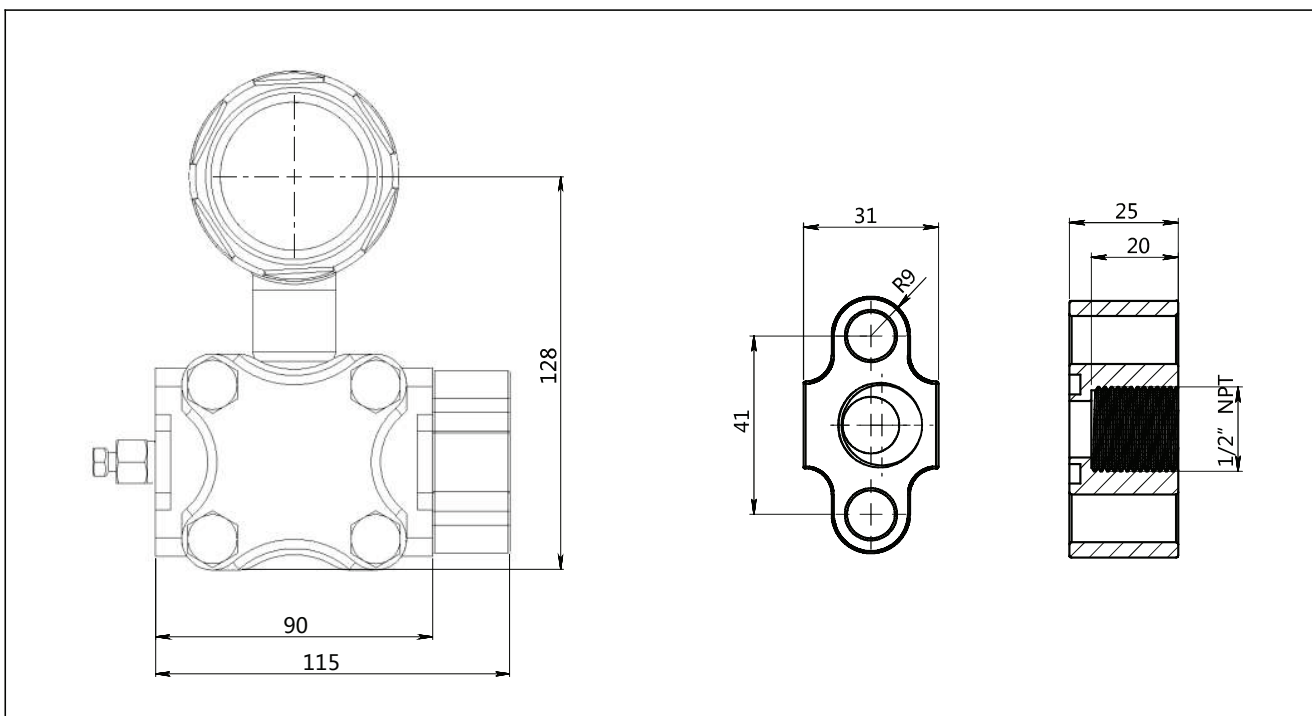
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### Product drawing and dimension

#### Adaptor(A1) drawing and dimension(unit:mm)



#### Adaptor(A2) drawing and dimension(unit:mm)



## Differential Tryckgivare DMP305x-DSF

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### Ordering information chapter

Item	Parameters	Code	Instruction	(*)fast delivery available
	Model	DMP305X-DSF	Monosilicon differential pressure transmitter	
Sensor	Separator	-	Detailed specifications as following	
	Pressure range code	S602D	Nominal value(URL): 6kPa	*
		S403D	Nominal value(URL): 40kPa	*
		S254D	Nominal value(URL): 250kPa	*
		S105D	Nominal value(URL): 1000kPa	*
		S305D	Nominal value(URL): 3MPa	
		S106D	Nominal value(URL): 10MPa	
	Diaphragm material	S	SUS316L	*
		H	Hastelloy C	
	Filling fluid	S	Silicon oil filling, process temperature: -45-205°C	
		D	Fluorocarbon oil filling, process temperature: -10-160°C	*
	Sensor seal	S	O-ring, FKM, process temperature: -20~200°C	*
Electrical connection	Separator	-	Detailed specifications as following	
	Electrical connection	F1	Stainless steel terminal, aviation plug M12*1 (4 pin) (H2), IP67, vertical mounting	*
		F2	Stainless steel terminal, aviation plug M12*1 (4 pin) (H2), IP67, horizontal mounting	*
	Cable entry protector	R0	None	
Output	Separator	-	Detailed specifications as following	
	Output signal	H	4-20mA+HART two wire, power supply:16.5-55VDC	*
		F	4-20mA two wire, power supply: 10.5-55VDC	
	Display	C	LCD display	*
		A	Without LCD display	
Process connection	Separator	-	Detailed specifications as following	
	Process connection	H1	H structure, double flanges, process connection 1/4-18NPT(F) ,drain valve on the rear end of flange, material SS 316	*
		H2	H structure, double flanges, process connection 1/4-18NPT(F), drain valve on the up part of flange, material SS 316	
		H3	H structure, double flanges, process connection 1/4-18NPT(F),drain valve on the down part of flange, material SS 316	



## Differential Tryckgivare DMP305x-DSF

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### Selection

Additional options	Separator	-	Detailed specifications as following	(*)fast delivery available
Process connection accessory		/A1	Adaptor, M20*1.5 (M) with pressure-guided pipe $\Phi$ 14*2*30,SS304, apply to H-structure	*
		/A2	Adaptor, 1/2-14NPT(F), SS 304, apply to H-structure	
Fix mounting accessory		/B1	Pipe mounting bent bracket, 2" pipe, carbon steel, apply to H-structure	
		/B2	Plate mounting bent bracket, carbon steel, apply to H-structure	
		/B3	Pipe mounting flat bracket, 2" pipe, carbon steel, apply to H-structure	*
Electrical connection accessory		/J1	Aviation female plug (straighter) with 2m cable, 4 pin, M12*1, IP67	
		/J2	Aviation female plug (elbow) with 2m cable, 4 pin, M12*1, IP67	
		/J4	Aviation female plug (straighter) without cable, 4 pin, M12*1, IP67	*
		/J5	Aviation female plug (elbow) without cable, 4 pin, M12*1, IP67	
Display mode		/D1	According to your requirement	
Calibration report		/Q1	Calibration report provide by our company	*
		/Q2	Calibration report provide by chinese authorised third party	
		/Q3	Static pressure report ( Differential pressure only)	
Approvals (Multiple)		/I1	Intrinsic safety certificate, ExialICT4, NEPSI	
		/F3	CE certificate	
Wetted parts treatment		/G1	Ungrease treatment	
		/G2	Electropolishing treatment	

## Differential Tryckgivare DMP305x-DSF

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### Factory settings and parameters

Item	Menu mark	Factory setting value
Tag position	None	0(No specific settings)
Analog output type	mA	Liner(No specific settings)
Display mode	DISP	PV(No specific settings)
Alarm signal	ALARM	No(No specific settings)

Item	Menu mark	Factory setting value
Damping value	DAMP	0(No specific settings)
4mA Lower range value	LRV	According to the order
20mA Upper range value	URV	According to the order
Process unit	U	According to the order

### Approvals

#### Factory certificate

Certification organization	Intertek
Quality management system	ISO9001-2008
Scope of certification	Design and production of pressure transmitter
Registration number	110804039

#### Intrinsic safety certificate

#### CE

Certificate organization	SET
License scope	DMP305X series pressure/differential pressure transmitter
Mark	EU
EMC instruction	2014/30/EU
Standard	AC/0100708
Registration number	IT041353LG161207