bar MDM7000-GP-T/AP-T

MICROSENSO

AUTHORIZED DISTRIBUTOR

RANGE

Model	Nominal range	Minimum range	Lower (LRL)	Upper (URL)	Overload
GP-T	0.4bar	0.1bar	-0.4bar	0.4bar	10bar
	2.5bar	0.25bar	-1bar	2.5bar	40bar
	10bar	1bar	-1bar	10bar	60bar
	30bar	3bar	-1bar	30bar	150bar
	100bar	10bar	-1bar	100bar	200bar
AP-T	0.4bar	0.2bar	0bar	0.4bar	10bar
	2.5bar	0.5bar	0bar	2.5bar	40bar
	10bar	2bar	0bar	10bar	60bar
LRV/URV setting: the lower limit value (LRV) and upper limit value (URV) are achieved between the upper and lower limits. LRV≤IURV- LRVI≤URV. Overload: This is the sensor overload pressure, and the actual overload pressure depends on the connection specifications during the connection process.					

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ACCURACY

1. Stated reference accuracy include best fit straight line(BFSL), hysteresis, and repeatability as per the standard and reference test conditions.
2. Total performance include indoor temperature accuracy and ambient temperature effects , based on DN50 flange and 316L material.

Linear output accuracy	GP-T	TD≤5	±0.1%SPAN	0.4bar, 2.5bar, 10bar,30bar,100bar
		5<TD<10	±0.2%SPAN	
	AP-T	TD≤5	±0.1%SPAN	0.4bar, 2.5bar,10bar
		5<TD<10	±0.2%SAPN	
Note:TD(Turn down) represents the range ratio, TD= Maximum range / Current range. [Maximum range = URL (same as factory calibration range); Current range = SPAN (equivalent to |URV-LRV|)].				

SPECIFICATIONS

GP-T Accuracy	±0.1% , ±0.2%URL
AP-T Accuracy	±0.1% , ±0.2%URL
GP-T Range	0.4bar~100bar, see the Order Guide for details
AP-T Range	0.4bar~10bar, see the Order Guide for details
Ambient temperature effects	The total effect per 10°C in the range of -20°C ~80°C : (0.5+0.15TD)%SPAN
Voltage effects	When the power supply voltage changes within 10.5V/16.5V~55V DC, its zero point and range change should not exceed ±0.005% URL/V
Mounting position effects	The installation of the transmitter may produce a zero point error, which can be corrected by PV (primary value) =0 reset without any effect on the range.
Vibration effects	< 0.1% SPAN as per GB/T18271.3/IEC61298-3
Output signal	4mA~20mA DC, HART
IP rating	IP67
Weight	Net: about 1.61kg (body)

EMC EFFECTS

SN	Test items	Basic Standards	Test Conditions	Performance Level
1	Radiated interference (Case)	GB/T 9254.1/CISPR 32	30MHz~1000MHz	Qualified
2	Conducted interference (DC power port)	GB/T 9254.1/CISPR 32	0.15MHz~30MHz	Qualified
3	Electrostatic discharge (ESD) immunity test	GB/T 17626.2/IEC61000-4-2	8kV (Contact), 8kV (Air)	B
4	Radiated, radio-frequency, electromagnetic field immunity test	GB/T 17626.3/IEC61000-4-3	10V/m (80MHz~1GHz)	A
5	Power frequency magnetic field immunity test	GB/T 17626.8/IEC61000-4-8	30A/m	A
6	Electrical fast transient / burst Immunity test	GB/T 17626.4/IEC61000-4-4	4kV (5/50ns,100kHz)	B
7	Surge immunity test	GB/T 17626.5/IEC61000-4-5	1kV (line to line) 2kV (line to ground) (1.2us/50us)	B
8	Immunity to conducted disturbances induced by radio-frequency fields	GB/T 17626.6/IEC61000-4-6	3V (150kHz~80MHz)	A
Note : At performance level A, the performance is normal within the limits of the technical specifications. At performance level B, functions or performance are temporarily reduced or lost, but can be restored by themselves, and the actual operating conditions, storage and data remain unchanged.				

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ENVIRONMENTAL CONDITIONS

Items	Conditions
Operating temperature	Without LCD display: -40°C ~85°C ; with LCD display: -20°C ~70°C
Storage temperature	Without LCD display: -40°C ~100°C ; with LCD display: -40°C ~85°C
Operating humidity	5%RH~100%RH@40°C

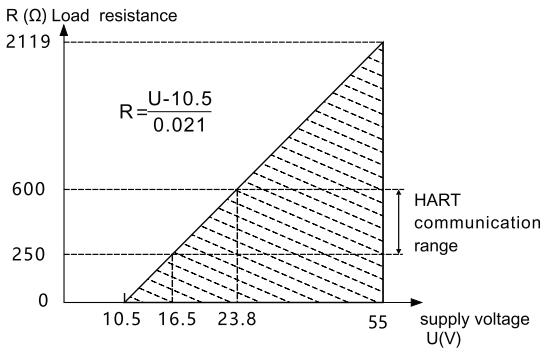
DIAPHRAGM OPERATING TEMPERATURE

Filling oil type ①	Code	Medium temperature	Diaphragm ambient temperature
Normal temperature silicone oil	S	-40°C ~ 205°C	-40°C ~ 85°C
Inert filling oil	D	-45°C ~ 160°C	-40°C ~ 85°C
High temperature silicone oil	H	0°C ~ 315°C	0°C ~ 85°C

Note: ① This item is related to the type of silicone oil filled and the o- ring; the temperature range of non-silicone oil is limited to the lowest material temperature range in the system. For short-pipe explosion-proof products, users need to ensure that the surface temperature of the shell is not higher than 80°C. If uncertain, the medium temperature must be ensured not to be higher than the T6/T80°C temperature group.

POWER SUPPLY AND LOAD REQUIREMENTS

Items	Conditions
Power supply voltage	HART communication protocol: 16.5V~55V DC ①
	Intrinsically safe HART communication protocol: 18.5V~28V DC
Load resistance	0Ω~2119Ω ② for operation mode; 250Ω~600Ω for HART communication
Transmission distance	<1000m
Power consumption	
4mA~20mA	≤500mW@24V DC, 20.8mA



Note: ① Non intrinsically safe power supply voltage can be selected as 10.5V. Please consult engineers for details.
② 2119Ω=(55V-10.5V)/21mA

TIME INDEX

Damping time constant: equals to the combined damping time of electronic components and sensor module
Electronic components damping time: 0s~100s configurable
Sensor module damping time(sensor isolated diaphragm and filled silicone oil):≤ 0.2s (Note: This item is related to the sensor type and whether there is a diaphragm component.)
Turn-on time: ≤6s
Factory reset time: ≤31s

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HAZARDOUS AREA

Hazardous area ①	PCEC	Ex db IIC T6 Gb Ex ia IIC T4 Ga
	NEPSI	Ex tb III C T85°C Db
	ATEX	Ex ia IIC T4 Ga II 2G Ex db IIC T6 Gb II 2D Ex tb IIIC T80°C Db
	IECEX	Ex ia IIC T4 Ga Ex db IIC T6 Gb Ex tb IIIC T80°C Db
	CSA	Class I, Division 1, Group A, B, C and D T6 Class II, Division 1 Group E, F and G T80°C Class III Ex db IIC T6 Gb Class I, Zone 1, AEx db IIC T6 Gb Ex tb IIIC T80°C Db Zone 21, AEx tb IIIC T80°C Db
Note: ① Please consult engineers for details.		

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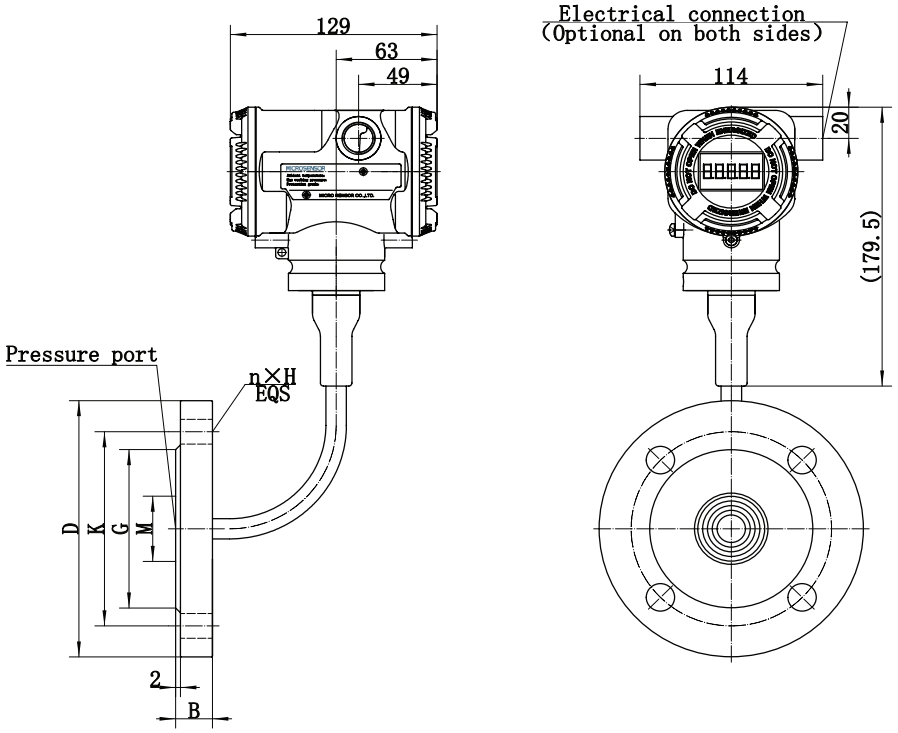
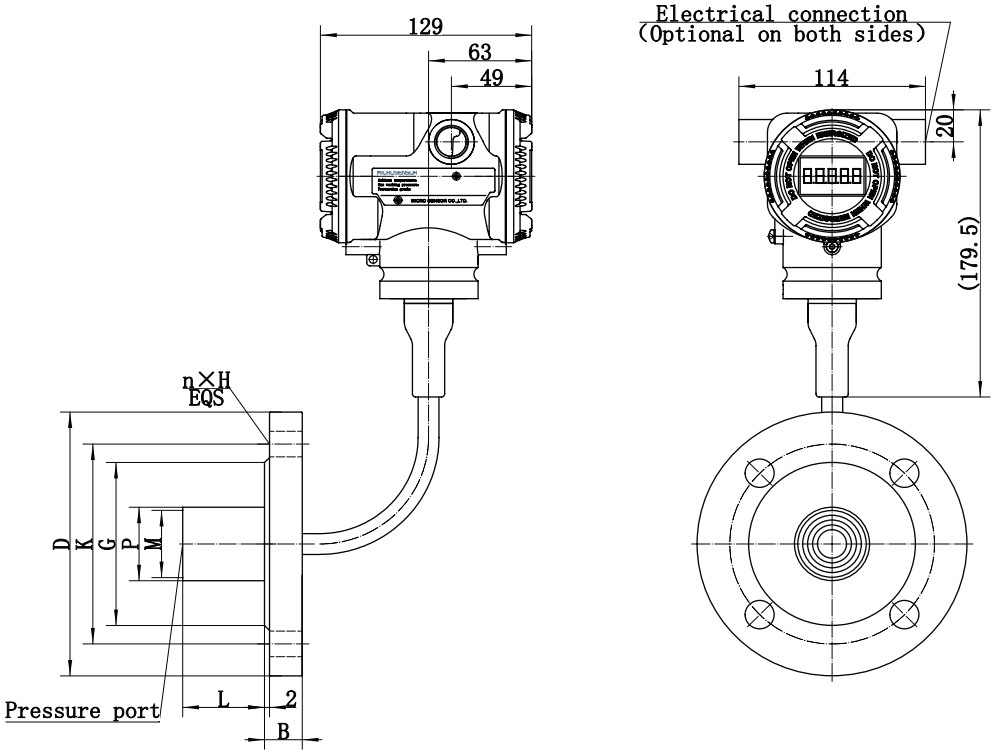
OUTLINE DIMENSIONS (UNIT:mm)

Note: The gland head is sent as an accessory with the product when it leaves the factory, and it is to be installed by the user.

Remote Flange With Display (Same as Without Display)



Remote Flange Insertion Sleeve With Display (Same as Without Display)



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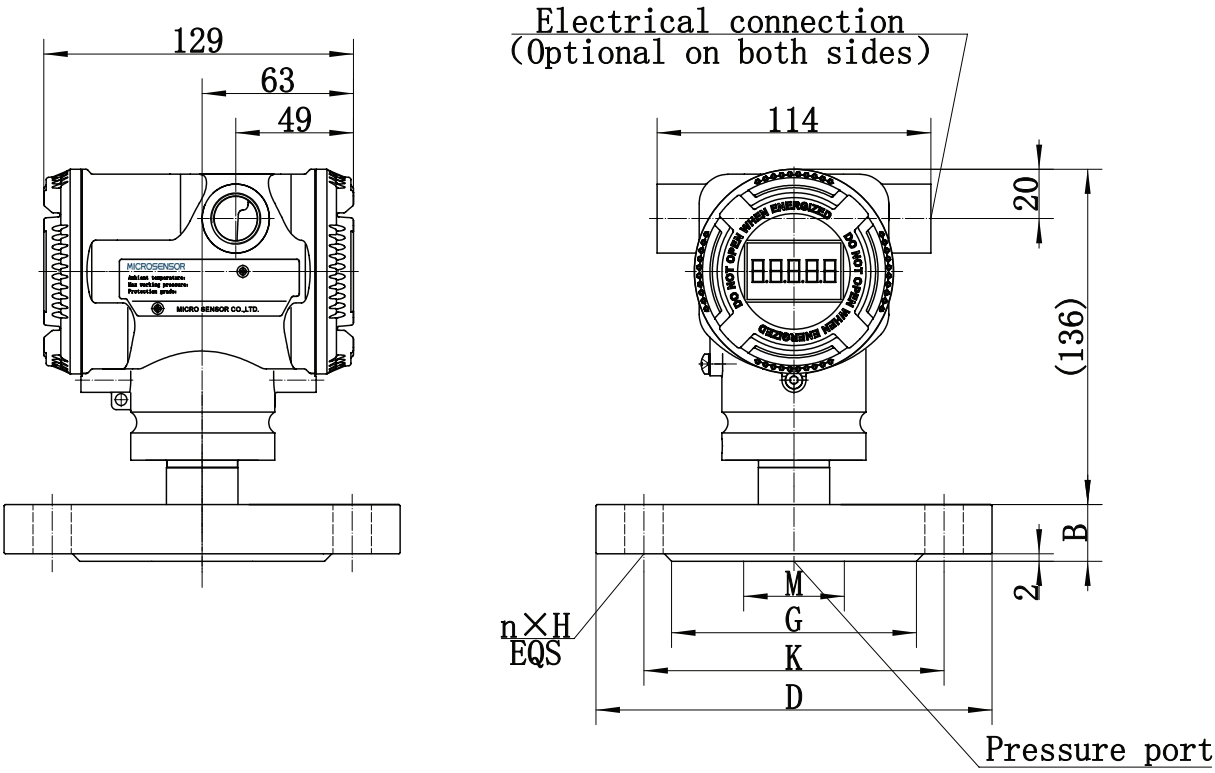
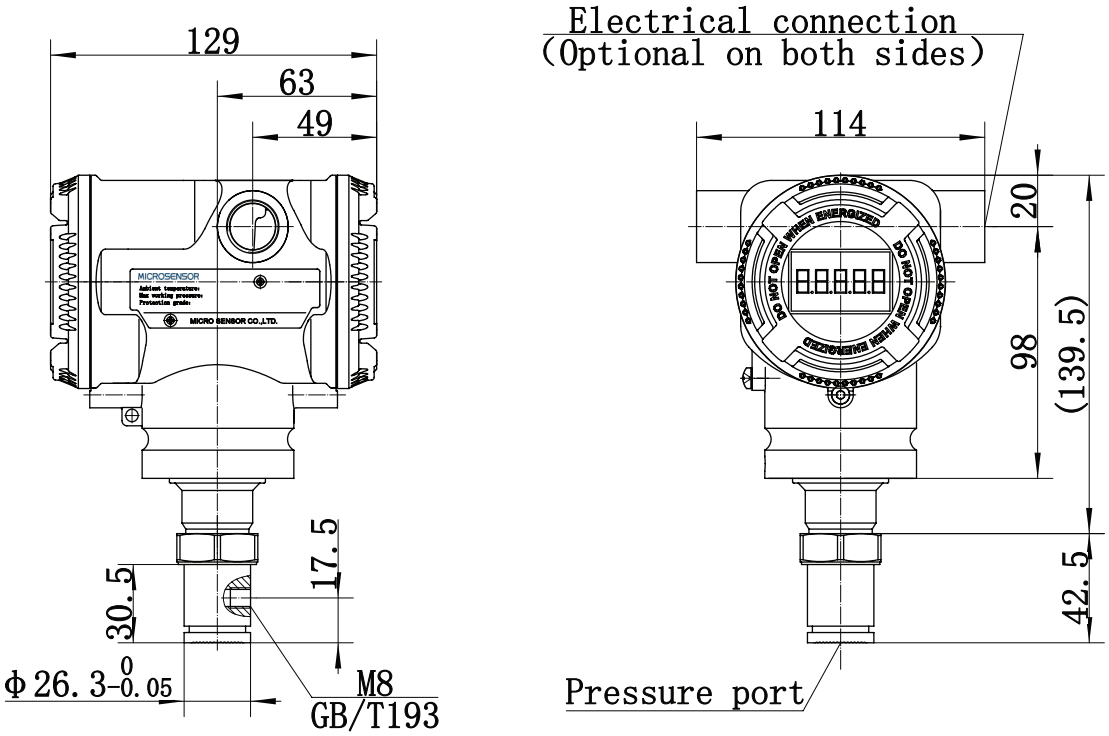
Direct Mounted Single Flange With Display (Same as Without Display)



Direct Mounted Single Thread With Display (Same as Without Display)



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ORDER GUIDE

MDM7000-GP-T/AP-T —□□□□□— □— SF — □□□□□□□

Body | Remote Fixed Flange Diaphragm

Items	Code	Description
MDM7000-GP-T	—	Monocrystalline Silicon Pressure Transmitter With Remote Diaphragm Seal (Remote Fixed Flange)
MDM7000-AP-T	—	Monocrystalline Silicon Pressure Transmitter With Remote Diaphragm Seal (Remote Fixed Flange)
	—	
Application of hazardous area		
	1	China, Flameproof certificate, No.CE23.6650 Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021
	2	China, Intrinsically safe certificate, No.CE23.7688X Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021
	3	China, Dust explosion-proof certificate, GYB24.1215X Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021
	4	China, Flameproof certificate, Intrinsically safe certificate
	A	CSA, Flameproof certificate
	B	CSA, Intrinsically safe certificate
	C	CSA, Flameproof certificate, Intrinsically safe certificate
	E	ATEX, Flameproof certificate
	F	ATEX, Intrinsically safe certificate
	G	ATEX, Flameproof certificate, Intrinsically safe certificate
	J	IECEx, Flameproof certificate
	K	IECEx, Intrinsically safe certificate
	L	IECEx, Flameproof certificate, Intrinsically safe certificate
	0	Non-hazardous area
	T	Other certificate
Output signal	H	4mA~20mA DC, HART
Case	S	Stainless steel case with two outlet ports (F) M20×1.5
	U	Stainless steel case with two outlet ports (F) 1/2NPT
	P	Aluminum alloy case with two outlet ports (F) M20×1.5
	N	Aluminum alloy case with two outlet ports (F) 1/2NPT
Note: Please pay attention to the item of lithium battery (Code: LD)		
Waterproof/explosion-proof connector		

	Specification	Material	Applicable wire diameter	IP rating
1	M20×1.5 waterproof connector, with plug	PVC	6mm~8mm	IP67
2	Non-flameproof adapter (F) M20×1.5, with plug	316 SS	6mm~8mm	IP67
3	Flameproof adapter (F) 1/2NPT, with plug	316 SS	6mm~8mm	IP67
4	Flameproof adapter (F) M20×1.5, with plug	316 SS	6mm~8mm	IP67
5	Flameproof adapter (F) G1/2, with plug	316 SS	6mm~8mm	IP67

Note: Flameproof configuration is applicable to PCEC/ATEX/IECEx standards. Flameproof adapter with CCC certificate. Please contact the engineer if double sealing is required.		
Display	N	Without LCD display
	L	Display module, -20°C ~70°C
	—	

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Range						
GP-T		**Nominal range**	**Minimum range**	**Lower (LRL)**	**Upper (URL)**	**Overload**
	2	0.4bar	20mbar	-0.4bar	0.4bar	10bar
	3	2.5bar	125mbar	-1bar	2.5bar	40bar
	4	10bar	0.5bar	-1bar	10bar	60bar
	5	30bar	1.5bar	-1bar	30bar	150bar
	6	100bar	5bar	-1bar	100bar	200bar
AP-T	2	0.4bar	0.2bar	0bar	0.4bar	10bar
	3	2.5bar	0.5bar	0bar	2.5bar	40bar
	4	10bar	2bar	0bar	10bar	60bar
Sensor structure	T	Direct mounted				
	H	Double flange diaphragm seals				
	—					
Diaphragm connection position	S	Pressure transmitter				
Diaphragm seal system code	F	Remote fixed flange				
	—					
Flange standard	2	HG/T-20592				
	1	EN1092-1				
	5	HG/T-20615				
	6	ANSI/ASME B16.5				
Flange diameter			**Applicable standard**			
	B	DN50	HG/T-20592, EN1092-1			
	C	DN80	HG/T-20592, EN1092-1			
	D	DN100	HG/T-20592, EN1092-1			
	2	2inch	HG/T-20615, ANSI/ASME B16.5			
	3	3inch	HG/T-20615, ANSI/ASME B16.5			
	4	4inch	HG/T-20615, ANSI/ASME B16.5			
Pressure class			**Applicable standard**	**Applicable flange diameter**		
	1	PN10/PN16	HG/T-20592, EN1092-1	DN50, DN80, DN100		
	2	PN25/PN40	HG/T-20592, EN1092-1	DN50, DN80, DN100		
	3	PN63	HG/T-20592, EN1092-1	DN50, DN80		
	4	PN100	HG/T-20592, EN1092-1	DN50, DN80		
	A	Class 150	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch		
	B	Class 300	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch		
	C	Class 600	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch		
Note: The maximum static pressure or overload depends on the flange pressure class						
Flange material	6	316 SS				
Flange sealing surface	1	RF Raised surface				
	A	FM Concave surface				
	B	M Convex surface				
	C	RJ Annular connection surface				
Note: For details about FM concave, M convex, RJ annular connection surface, please consult the engineer						

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Wetted parts material		Please see the material list of wetted parts for details		
		Blind	**Measuring diaphragm**	
	6A	316 SS	316L	
	6B	316 SS	Hastelloy C-276	
	6C	316 SS	Tantalum (Only available for range > 2.5bar)	
	6D	316 SS	Titanium	
	6E	316 SS	Monel(Only available for range > 2.5bar)	
Capillary connection location	K	Rear connection		
Capillary type	U	3.5mm OD (or 1/8 inch), armored 316L SS, PVC gray sheath		
	L	3.5mm OD (or 1/8 inch), armored 316L SS, stainless steel bellows sheath		
Capillary length		Applicable flange diameter		
			DN50/2inch	DN80/3inch	DN100/4inch
	1	1m		
	2	2m		
	3	3m		
	4	4m		
	5	5m		
	6	6m	×	
	7	7m	×	
	8	8m	×	
	9	9m	×	
	A	10m	×	
Note: "×" means unavailable; the part beyond the length will be selected according to the next level of meters.				
Low pressure side fill oil	S	Normal temperature silicone oil(Medium temperature : -40°C ~205°C , diaphragm ambient environment: -40°C ~85°C)		
	D	Inert oil (Medium temperature: -45°C ~160°C ,diaphragm ambient environment:-40°C ~85°C)		
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C , diaphragm ambient environment: 0°C ~85°C)		
Factory calibration range	CAL	Provide Micro Sensor standard verification report based on the range, default linear output **Contract specifies:** LRL - URL, display unit*		
Options		**Description (Detailed specifications as following, multiple options or null)**		
High vacuum high temperature	/V	High vacuum and high temperature process diaphragm (if this option is selected, the accuracy will be affected and can only up to 0.2%)		
Mounting bracket accessories	/G1	Bending Bracket, 316 SS 		
Calibration report	/Q1	Provide the Micro Sensor verification data according to user requirements **Contract specifies:** LRL - URL, display unit and other requirements*		
Note: Standard format follows the Micro Sensor's specifications. Select this option and provide the template if the customer specifies a format.				
Damping time setting	/ST	Adjustable range 0s~100s, default 0s **Contract specifies:** Damping time*		
Fault alarm setting	/WH	High alarm current value, 20.8mA		
	/WL	Low alarm current value, 3.8mA, default		
	/WS	Other saturation current values, specified within the range of 3.6mA~3.8mA or 20mA~22mA **Contract specifies:** Fixed current value*		
Product certificate	/QE	Standard format follows the Micro Sensor's specifications. Select this option and provide the template if the customer specifies a format.		
Identification plate	/PT	Product is shipped with a identification plate **Contract specifies:** Identification number, not exceeding 16 characters*		

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Leakage test report	/QS1	Nitrogen (N2) or air, 60mbar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report	
	/QS2	Nitrogen (N2) or air, 0.4bar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report	
	/QS3	Nitrogen (N2) or air, 2.5bar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report	
	/QS4	Nitrogen (N2) or air, 10bar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report	
	/QS5	Nitrogen (N2) or air, 30bar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report	
	/QS6	Nitrogen (N2) or air, 100bar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report	
Note: Test pressure is equal to the sensor range			
HART configuration	/H5	HART5 configuration	
Diaphragm with gold plated	/J1	Single diaphragm with gold plated (5μ)	
Diaphragm spraying	/T1	High pressure side single flange	
Diaphragm sticking	/PFA	The diaphragm is stuck with PFA film, applicable to non-vacuum situations (pressure ≥ 0)	
Note: Only available for diaphragm selection with flange size ≥ 50mm			
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts	
Note: Please check the fill oil. Determine whether the inert filling oil is required (code: D).			
Certificates	/CS1	CCS, China Classification Society, TJ23PTB00014	
	/CS2	DNV, Det Norske Veritas	
	/CS3	BV, Bureau Veritas	
	/CS4	ABS, American Bureau of Shipping	
	/CS5	LR, Lloyd's Register of Shipping	
	/CS6	KR, Korean Register of Shipping	
	/CS7	NK, Nippon Kaiji Kyokai	
	/CS8	RS, Russian Maritime Register of Shipping	
Note: Except for the CCS certificate, please consult the engineer for others.			
Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry	
High-accuracy	/HAC	High-accuracy calibration according to the user's specified range **Contract specifies:** Range of use (within sensor's limit), LRL - URL, display unit, accuracy*	
Language	/LE	English nameplate, operation manual, product certificate, etc.	
Delivery service	/XM	Provide customer requested content according to project delivery standards	
Extended warranty period	/Y3	3-year warranty	
	/Y5	5-year warranty	
***Note: The specifications required for these options should be specified in the contract.**			
Example: MDM7000—GP—T—0HP1L—2T—SF—2B1616AKU3S/CS1— **[CAL: 0-0.4bar]**			

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ORDER GUIDE

MDM7000-GP-T/AP-T —□□□□□— □— SE — □□□□□□□

Body | **Remote Fixed Flange Insertion Sleeve Diaphragm**

Items	Code	Description
MDM7000-GP-T	—	Monocrystalline Silicon Pressure Transmitter With Remote Diaphragm Seal (Remote Fixed Flange Insertion Sleeve)
MDM7000-AP-T	—	Monocrystalline Silicon Pressure Transmitter With Remote Diaphragm Seal (Remote Fixed Flange Insertion Sleeve)
	—	
Application of hazardous area		
	1	China, Flameproof certificate, No.CE23.6650 Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021
	2	China, Intrinsically safe certificate, No.CE23.7688X Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021
	3	China, Dust explosion-proof certificate, GYB24.1215X Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021
	4	China, Flameproof certificate, Intrinsically safe certificate
	A	CSA, Flameproof certificate
	B	CSA, Intrinsically safe certificate
	C	CSA, Flameproof certificate, Intrinsically safe certificate
	E	ATEX, Flameproof certificate
	F	ATEX, Intrinsically safe certificate
	G	ATEX, Flameproof certificate, Intrinsically safe certificate
	J	IECEx, Flameproof certificate
	K	IECEx, Intrinsically safe certificate
	L	IECEx, Flameproof certificate, Intrinsically safe certificate
	0	Non-hazardous area
	T	Other certificate
Output signal	H	4mA~20mA DC, HART
Case	S	Stainless steel case with two outlet ports (F) M20×1.5
	U	Stainless steel case with two outlet ports (F) 1/2NPT
	P	Aluminum alloy case with two outlet ports (F) M20×1.5
	N	Aluminum alloy case with two outlet ports (F) 1/2NPT
Note: Please pay attention to the item of lithium battery (Code: LD)		
Waterproof/explosion-proof connector		

	Specification	Material	Applicable wire diameter	IP rating
1	M20×1.5 waterproof connector, with plug	PVC	6mm~8mm	IP67
2	Non-flameproof adapter (F) M20×1.5, with plug	316 SS	6mm~8mm	IP67
3	Flameproof adapter (F) 1/2NPT, with plug	316 SS	6mm~8mm	IP67
4	Flameproof adapter (F) M20×1.5, with plug	316 SS	6mm~8mm	IP67
5	Flameproof adapter (F) G1/2, with plug	316 SS	6mm~8mm	IP67

Note: Flameproof configuration is applicable to PCEC/ATEX/IECEx standards. Flameproof adapter with CCC certificate. Please contact the engineer if double sealing is required.

Display	N	Without LCD display
	L	Display module, -20°C ~70°C
	—	

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Range						
GP-T		**Nominal range**	**Minimum range**	**Lower (LRL)**	**Upper (URL)**	**Overload**
	2	0.4bar	20mbar	-0.4bar	0.4bar	10bar
	3	2.5bar	125mbar	-1bar	2.5bar	40bar
	4	10bar	0.5bar	-1bar	10bar	60bar
	5	30bar	1.5bar	-1bar	30bar	150bar
	6	100bar	5bar	-1bar	100bar	200bar
AP-T	2	0.4bar	0.2bar	0bar	0.4bar	10bar
	3	2.5bar	0.5bar	0bar	2.5bar	40bar
	4	10bar	2bar	0bar	10bar	60bar
Sensor structure	T	Direct mounted				
	H	Double flange diaphragm seals				
	—					
Diaphragm connection position	S	Pressure transmitter				
Diaphragm seal system code	E	Remote fixed flange insertion sleeve				
	—					
Flange standard	2	HG/T-20592				
	1	EN1092-1				
	5	HG/T-20615				
	6	ANSI/ASME B16.5				
Flange diameter			**Applicable standard**			
	B	DN50	HG/T-20592, EN1092-1			
	C	DN80	HG/T-20592, EN1092-1			
	D	DN100	HG/T-20592, EN1092-1			
	2	2inch	HG/T-20615, ANSI/ASME B16.5			
	3	3inch	HG/T-20615, ANSI/ASME B16.5			
	4	4inch	HG/T-20615, ANSI/ASME B16.5			
Pressure class			**Applicable standard**	**Applicable flange diameter**		
	1	PN10/PN16	HG/T-20592, EN1092-1	DN50, DN80, DN100		
	2	PN25/PN40	HG/T-20592, EN1092-1	DN50, DN80, DN100		
	3	PN63	HG/T-20592, EN1092-1	DN50, DN80		
	4	PN100	HG/T-20592, EN1092-1	DN50, DN80		
	A	Class 150	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch		
	B	Class 300	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch		
	C	Class 600	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch		
Note: The maximum static pressure or overload depends on the flange pressure class						
Flange material	6	316 SS				
Flange sealing surface	1	RF Raised surface				
	A	FM Concave surface				
	B	M Convex surface				
	C	RJ Annular connection surface				
Note: For details about FM concave, M convex, RJ annular connection surface, please consult the engineer						

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Insertion sleeve diameter			Applicable flange diameter
	4	46mm	DN50, 2inch
	6	66mm	DN80, 3inch
	7	77mm	DN100, 4inch
Insertion sleeve diameter	A	50mm	
	B	100mm	
	C	150mm	
	D	200mm	
Insertion sleeve material	6	316 SS	

		Blind	**Measuring diaphragm**
	6A	316 SS	316L
	6B	316 SS	Hastelloy C-276
	6C	316 SS	Tantalum
	6D	316 SS	Titanium
	6E	316 SS	Monel

Capillary connection location	K	Rear connection
Capillary type	U	3.5mm OD (or 1/8 inch), armored 316L SS, PVC gray sheath
	L	3.5mm OD (or 1/8 inch), armored 316L SS, stainless steel bellows sheath

Capillary length		Insertion sleeve diameter		Adaptable measuring diaphragm				
				6A-316L	6B-HastelloyC-276	6C-Tantalum	6D-Titanium	6E-Monel
	1	1m	S-46mm M-66mm L-77mm					
	2	2m	S-46mm M-66mm L-77mm					
	3	3m	S-46mm M-66mm L-77mm					
	4	4m	S-46mm			×	×	×
			M-66mm L-77mm					
	5	5m	S-47mm			×	×	×
			M-66mm L-77mm					
	6	6m	M-66mm L-77mm					
	7	7m	M-66mm L-77mm					
	8	8m	M-66mm L-77mm					
	9	9m	M-66mm L-77mm					
	A	10m	M-66mm L-77mm					

Note: "×" means unavailable; the part beyond the length will be selected according to the next level of meters.

High pressure side fill oi	S	Normal temperature silicone oil(Medium temperature : -40°C ~205°C , diaphragm ambient environment: -40°C ~85°C)
	D	Inert oil (Medium temperature: -45°C ~160°C ,diaphragm ambient environment:-40°C ~85°C)
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C , diaphragm ambient environment: 0°C ~85°C)
Factory calibration range	CAL	Provide Micro Sensor standard verification report based on the range, default linear output **Contract specifies:** LRL - URL, display unit*

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Options		Description (Detailed specifications as following, multiple options or null)	
High vacuum high temperature	/V	High vacuum and high temperature process diaphragm (if this option is selected, the accuracy will be affected and can only up to 0.2%)	
Verification report	/Q1	Provide the Micro Sensor verification data according to user requirements **Contract specifies:** LRL - URL, display unit and other requirements*	
Note: Standard format follows the Micro Sensor's specifications. Select this option and provide the template if the customer specifies a format.			
Damping time setting	/ST	Adjustable range 0s~100s, default 0s **Contract specifies:** Damping time*	
Fault alarm setting	/WH	High alarm current value, 20.8mA	
	/WL	Low alarm current value, 3.8mA, default	
	/WS	Other saturation current values, specified within the range of 3.6mA~3.8mA or 20mA~22mA **Contract specifies:** Fixed current value*	
Product certificate	/QE	Standard format follows the Micro Sensor's specifications. Select this option and provide the template if the customer specifies a format.	
Identification plate	/PT	Product is shipped with a identification plate **Contract specifies:** Identification number, not exceeding 16 characters*	
Leakage test report	/QS1	Nitrogen (N2) or air, 60mbar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report	
	/QS2	Nitrogen (N2) or air, 0.4bar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report	
	/QS3	Nitrogen (N2) or air, 2.5bar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report	
	/QS4	Nitrogen (N2) or air, 10bar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report	
	/QS5	Nitrogen (N2) or air, 30bar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report	
	/QS6	Nitrogen (N2) or air, 100bar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report	
Note: Test pressure is equal to the sensor range			
HART configuration	/H5	HART5 configuration	
Diaphragm with gold plated	/J1	Single diaphragm with gold plated (5μ)	
Diaphragm spraying	/T3	High pressure side single insertion sleeve	
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts	
Note: Please check the fill oil. Determine whether the inert filling oil is required (code: D).			
Certificates	/CS1	CCS, China Classification Society, TJ23PTB00014	
	/CS2	DNV, Det Norske Veritas	
	/CS3	BV, Bureau Veritas	
	/CS4	ABS, American Bureau of Shipping	
	/CS5	LR, Lloyd's Register of Shipping	
	/CS6	KR, Korean Register of Shipping	
	/CS7	NK, Nippon Kaiji Kyokai	
	/CS8	RS, Russian Maritime Register of Shipping	
Note: Except for the CCS certificate, please consult the engineer for others.			
Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry	
High-accuracy	/HAC	High-accuracy calibration according to the user's specified range **Contract specifies:** Range of use (within sensor's limit), LRL - URL, display unit, accuracy*	
Language	/LE	English nameplate, operation manual, product certificate, etc.	
Delivery service	/XM	Provide customer requested content according to project delivery standards	
Extended warranty period	/Y3	3-year warranty	
	/Y5	5-year warranty	
***Note: The specifications required for these options should be specified in the contract.**			
Example: MDM7000—GP—T—0HP1L—2T—SE—2B1614A66AKU3S/G1—		**[CAL: 0-0.4bar]**	

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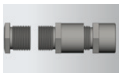
ORDER GUIDE

MDM7000-GP-T/AP-T —□□□□□— □— ST — □□□□□□□

Body **Direct Mounted Flange**

Items	Code	Description	
MDM7000-GP-T	—	Monocrystalline Silicon Pressure Transmitter Direct Mounted Seal	
MDM7000-AP-T	—	Monocrystalline Silicon Pressure Transmitter Direct Mounted Seal	
	—		
Application of hazardous area			
	1	China, Flameproof certificate, No.CE23.6650 Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021	PCEC
	2	China, Intrinsically safe certificate, No.CE23.7688X Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021	
	3	China, Dust explosion-proof certificate, GYB24.1215X Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021	Ex NEPSI
	4	China, Flameproof certificate, Intrinsically safe certificate	
	A	CSA, Flameproof certificate	C SA US
	B	CSA, Intrinsically safe certificate	
	C	CSA, Flameproof certificate, Intrinsically safe certificate	
	E	ATEX, Flameproof certificate	Ex
	F	ATEX, Intrinsically safe certificate	
	G	ATEX, Flameproof certificate, Intrinsically safe certificate	
	J	IECEx, Flameproof certificate	IEC IECEx
	K	IECEx, Intrinsically safe certificate	
	L	IECEx, Flameproof certificate, Intrinsically safe certificate	
	0	Non-hazardous area	
	T	Other certificate	
Output signal	H	4mA~20mA DC, HART	HART COMMUNICATION PROTOCOL
Case	S	Stainless steel case with two outlet ports (F) M20×1.5	
	U	Stainless steel case with two outlet ports (F) 1/2NPT	
	P	Aluminum alloy case with two outlet ports (F) M20×1.5	
	N	Aluminum alloy case with two outlet ports (F) 1/2NPT	
Note: Please pay attention to the item of lithium battery (Code: LD)			
Waterproof/explosion-proof connector			
		Specification / **Material** / **Applicable wire diameter** / **IP rating**	
	1	M20×1.5 waterproof connector, with plug / PVC / 6mm~8mm / IP67	
	2	Non-flameproof adapter (F) M20×1.5, with plug / 316 SS / 6mm~8mm / IP67	
	3	Flameproof adapter (F) 1/2NPT, with plug / 316 SS / 6mm~8mm / IP67	
	4	Flameproof adapter (F) M20×1.5, with plug / 316 SS / 6mm~8mm / IP67	
	5	Flameproof adapter (F) G1/2, with plug / 316 SS / 6mm~8mm / IP67	
Note: Flameproof configuration is applicable to PCEC/ATEX/IECEx standards. Flameproof adapter with CCC certificate. Please contact the engineer if double sealing is required.			
Display	N	Without LCD display	
	L	Display module, -20°C ~70°C	
	—		

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Range						
GP-T		**Nominal range**	**Minimum range**	**Lower (LRL)**	**Upper (URL)**	**Overload**
	2	0.4bar	20mbar	-0.4bar	0.4bar	10bar
	3	2.5bar	125mbar	-1bar	2.5bar	40bar
	4	10bar	0.5bar	-1bar	10bar	60bar
	5	30bar	1.5bar	-1bar	30bar	150bar
	6	100bar	5bar	-1bar	100bar	200bar
AP-T	2	0.4bar	0.2bar	0bar	0.4bar	10bar
	3	2.5bar	0.5bar	0bar	2.5bar	40bar
	4	10bar	2bar	0bar	10bar	60bar
Sensor structure	T	Direct mounted				
	H	Double flange diaphragm seals				
	—					
Diaphragm connection position	S	Pressure transmitter				
Diaphragm seal system code	T	Direct mounted flange				
	—					
Flange standard	2	HG/T-20592				
	1	EN1092-1				
	5	HG/T-20615				
	6	ANSI/ASME B16.5				
Flange diameter			**Applicable standard**			
	B	DN50	HG/T-20592, EN1092-1			
	C	DN80	HG/T-20592, EN1092-1			
	D	DN100	HG/T-20592, EN1092-1			
	2	2inch	HG/T-20615, ANSI/ASME B16.5			
	3	3inch	HG/T-20615, ANSI/ASME B16.5			
	4	4inch	HG/T-20615, ANSI/ASME B16.5			
Pressure class			**Applicable standard**	**Applicable flange diameter**		
	1	PN10/PN16	HG/T-20592, EN1092-1	DN50, DN80, DN100		
	2	PN25/PN40	HG/T-20592, EN1092-1	DN50, DN80, DN100		
	3	PN63	HG/T-20592, EN1092-1	DN50, DN80		
	4	PN100	HG/T-20592, EN1092-1	DN50, DN80		
	A	Class 150	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch		
	B	Class 300	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch, 4inch		
	C	Class 600	HG/T-20615, ANSI/ASME B16.5	2inch, 3inch		
Note: The maximum static pressure or overload depends on the flange pressure class						
Flange material	6	316 SS				
Flange sealing surface	1	RF Raised surface				
	A	FM Concave surface				
	B	M Convex surface				
	C	RJ Annular connection surface				
Note: For details about FM concave, M convex, RJ annular connection surface, please consult the engineer						

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Wetted parts material		Please see the material list of wetted parts for details	
		Blind	**Measuring diaphragm**
	6A	316 SS	316L
	6B	316 SS	Hastelloy C-276
	6C	316 SS	Tantalum
	6D	316 SS	Titanium
	6E	316 SS	Monel
Capillary type	0	Normal temperature	
	1	High-temperature heat exchange parts, ≤ 150°C (only high-temperature silicone oil (code: H) option is available)	
	2	Ultra-high temperature heat exchange parts, ≤ 300°C (only high-temperature silicone oil (code: H) option is available)	
High pressure side fill oil	S	Normal temperature silicone oil(Medium temperature : -40°C ~205°C , diaphragm ambient environment: -40°C ~85°C)	
	D	Inert oil (Medium temperature: -45°C ~160°C ,diaphragm ambient environment:-40°C ~85°C)	
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C , diaphragm ambient environment: 0°C ~85°C)	
Factory calibration range	CAL	Provide Micro Sensor standard verification report based on the range, default linear output **Contract specifies:** LRL - URL, display unit*	
Options		**Description (Detailed specifications as following, multiple options or null)**	
High vacuum high temperature	/V	High vacuum and high temperature process diaphragm (if this option is selected, the accuracy will be affected and can only up to 0.2%)	
Calibration report	/Q1	Provide the Micro Sensor verification data according to user requirements **Contract specifies:** LRL - URL, display unit and other requirements*	
Note: Standard format follows the Micro Sensor's specifications. Select this option and provide the template if the customer specifies a format.			
Damping time setting	/ST	Adjustable range 0s~100s, default 0s **Contract specifies:** Damping time*	
Fault alarm setting	/WH	High alarm current value, 20.8mA	
	/WL	Low alarm current value, 3.8mA, default	
	/WS	Other saturation current values, specified within the range of 3.6mA~3.8mA or 20mA~22mA **Contract specifies:** Fixed current value*	
Product certificate	/QE	Standard format follows the Micro Sensor's specifications. Select this option and provide the template if the customer specifies a format.	
Identification plate	/PT	Product is shipped with a identification plate **Contract specifies:** Identification number, not exceeding 16 characters*	
Leakage test report	/QS1	Nitrogen (N2) or air, 60mbar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report	
	/QS2	Nitrogen (N2) or air, 0.4bar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report	
	/QS3	Nitrogen (N2) or air, 2.5bar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report	
	/QS4	Nitrogen (N2) or air, 10bar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report	
	/QS5	Nitrogen (N2) or air, 30bar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report	
	/QS6	Nitrogen (N2) or air, 100bar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report	
Note: Test pressure is equal to the sensor range			
HART configuration	/H5	HART5 configuration	
Diaphragm with gold plated	/J1	Single diaphragm with gold plated (5μ)	
Diaphragm spraying	/T1	High pressure side single flange	
Diaphragm sticking	/PFA	The diaphragm is stuck with PFA film, applicable to non-vacuum situations (pressure ≥ 0)	
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts	
Note: Please check the fill oil. Determine whether the inert filling oil is required (code: D).			

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Certificates	/CS1	CCS, China Classification Society, TJ23PTB00014	
	/CS2	DNV, Det Norske Veritas	
	/CS3	BV, Bureau Veritas	
	/CS4	ABS, American Bureau of Shipping	
	/CS5	LR, Lloyd's Register of Shipping	
	/CS6	KR, Korean Register of Shipping	
	/CS7	NK, Nippon Kaiji Kyokai	
	/CS8	RS, Russian Maritime Register of Shipping	
Note: Except for the CCS certificate, please consult the engineer for others.			
Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry	
High-accuracy	/HAC	High-accuracy calibration according to the user's specified range **Contract specifies:** Range of use (within sensor's limit), LRL - URL, display unit, accuracy*	
Language	/LE	English nameplate, operation manual, product certificate, etc.	
Delivery service	/XM	Provide customer requested content according to project delivery standards	
Extended warranty period	/Y3	3-year warranty	
	/Y5	5-year warranty	
***Note: The specifications required for these options should be specified in the contract.**			
Example: MDM7000—GP—T—0HP1L—2T—ST—2B1616AS/CS1— **[CAL: 0-0.4bar]**			

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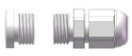
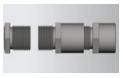
ORDER GUIDE

MDM7000-GP-T/AP-T —□□□□□— □— SR— □□□□□□□

Body | Direct Mounted Thread

Items	Code	Description	
MDM7000-GP-T	—	Monocrystalline Silicon Pressure Transmitter Direct Mounted Single Thread Diaphragm Seal	
MDM7000-AP-T	—	Monocrystalline Silicon Pressure Transmitter Direct Mounted Single Thread Diaphragm Seal	
	—		
Application of hazardous area			
	1	China, Flameproof certificate, No.CE23.6650 Ex db IIC T6 Gb, GB/T3836.1-2021, GB/T3836.2-2021	
	2	China, Intrinsically safe certificate, No.CE23.7688X Ex ia IIC T4 Ga, GB/T3836.1-2021, GB/T3836.4-2021	
	3	China, Dust explosion-proof certificate, GYB24.1215X Ex tb III C T85°C Db, GB/T3836.1-2021, GB/T 3836.31-2021	
	4	China, Flameproof certificate, Intrinsically safe certificate	
	A	CSA, Flameproof certificate	
	B	CSA, Intrinsically safe certificate	
	C	CSA, Flameproof certificate, Intrinsically safe certificate	
	E	ATEX, Flameproof certificate	
	F	ATEX, Intrinsically safe certificate	
	G	ATEX, Flameproof certificate, Intrinsically safe certificate	
	J	IECEx, Flameproof certificate	
	K	IECEx, Intrinsically safe certificate	
	L	IECEx, Flameproof certificate, Intrinsically safe certificate	
	0	Non-hazardous area	
	T	Other certificate	
Output signal	H	4mA~20mA DC, HART	
Case	S	Stainless steel case with two outlet ports (F) M20×1.5	
	U	Stainless steel case with two outlet ports (F) 1/2NPT	
	P	Aluminum alloy case with two outlet ports (F) M20×1.5	
	N	Aluminum alloy case with two outlet ports (F) 1/2NPT	
Note: Please pay attention to the item of lithium battery (Code: LD)			
Waterproof/explosion-proof connector			
		Specification / **Material** / **Applicable wire diameter** / **IP rating**	
	1	M20×1.5 waterproof connector, with plug / PVC / 6mm~8mm / IP67	
	2	Non-flameproof adapter (F) M20×1.5, with plug / 316 SS / 6mm~8mm / IP67	
	3	Flameproof adapter (F) 1/2NPT, with plug / 316 SS / 6mm~8mm / IP67	
	4	Flameproof adapter (F) M20×1.5, with plug / 316 SS / 6mm~8mm / IP67	
	5	Flameproof adapter (F) G1/2, with plug / 316 SS / 6mm~8mm / IP67	
Note: Flameproof configuration is applicable to PCEC/ATEX/IECEx standards. Flameproof adapter with CCC certificate. Please contact the engineer if double sealing is required.			
Display	N	Without LCD display	
	L	Display module, -20°C ~70°C	
	—		

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Range						
GP-T		**Nominal range**	**Minimum range**	**Lower (LRL)**	**Upper (URL)**	**Overload**
	2	0.4bar	20mbar	-0.4bar	0.4bar	10bar
	3	2.5bar	125mbar	-1bar	2.5bar	40bar
	4	10bar	0.5bar	-1bar	10bar	60bar
	5	30bar	1.5bar	-1bar	30bar	150bar
	6	100bar	5bar	-1bar	100bar	200bar
AP-T	2	0.4bar	0.2bar	0bar	0.4bar	10bar
	3	2.5bar	0.5bar	0bar	2.5bar	40bar
	4	10bar	2bar	0bar	10bar	60bar
Sensor structure	T	Direct mounted				
	H	Double flange diaphragm seals				
	—					
Diaphragm connection position	S	Pressure transmitter				
Diaphragm seal system code	R	Direct mounted thread				
	—					
Process connection	1M	Male M44×1.25, GB/T193-2003, ISO261				
	1G	Male G1, GB/T7307, ISO228, DIN16288, BS2779				
	2G	Male G2, GB/T7307, ISO228, DIN16288, BS2779				
	3G	Male G1-1/2, GB/T7307, ISO228, DIN16288, BS2779				
	1N	Female 1/2 inch NPT				
	2N	Male 1/2 inch NPT(Contains 1/4" NPT)				
	2M	Male M20×1.5(Integrated)				
	4G	Male G1/2(Integrated)				
Sealing type	R	Root				
	A	Axial				
	U	Root and axial				
Wetted parts material						
		Measuring diaphragm	**Thread**	**Sealings**		
	6A	316L	316	FKM		
	6B	HC-276	316	FKM		
Capillary / vent tube	0	Normal temperature				
	1	High-temperature heat exchange parts, ≤ 150°C (only high-temperature silicone oil (code: H) option is available)				
	2	Ultra-high temperature heat exchange parts, ≤ 300°C (only high-temperature silicone oil (code: H) option is available)				
High pressure side fill oil	S	Normal temperature silicone oil(Medium temperature : -40°C ~205°C , diaphragm ambient environment: -40°C ~85°C)				
	D	Inert oil (Medium temperature: -45°C ~160°C ,diaphragm ambient environment:-40°C ~85°C)				
	H	High temperature silicone oil (Medium temperature: 0°C ~315°C , diaphragm ambient environment: 0°C ~85°C)				
Factory calibration range	CAL	Provide Micro Sensor standard verification report based on the range, default linear output **Contract specifies:** LRL - URL, display unit*				
Options		**Description (Detailed specifications as following, multiple options or null)**				
High vacuum high temperature	/V	High vacuum and high temperature process diaphragm (if this option is selected, the accuracy will be affected and can only up to 0.2%)				

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Welding mounting parts	/WP1	1MR matching welding mounting parts, sealings
	/WP2	1MA matching welding mounting parts, sealings
	/WP3	1GR matching welding mounting parts, sealings
	/WP4	1GA matching welding mounting parts, sealings
	/WP5	2GR matching welding mounting parts, sealings
	/WP6	2GA matching welding mounting parts, sealings
	/WP7	3GR matching welding mounting parts, sealings
	/WP8	3GA matching welding mounting parts, sealings
Note: 1MR\1MA\1GR\1GA\2GR\2GA\3GR\3GA in the options is a combination of process connection and sealing type codes; welding protection parts need to be purchased separately.		
Verification report	/Q1	Provide the Micro Sensor verification data according to user requirements **Contract specifies:** LRL - URL, display unit and other requirements*
Note: Standard format follows the Micro Sensor's specifications. Select this option and provide the template if the customer specifies a format.		
Damping time setting	/ST	Adjustable range 0s~100s, default 0s **Contract specifies:** Damping time*
Fault alarm setting	/WH	High alarm current value, 20.8mA
	/WL	Low alarm current value, 3.8mA, default
	/WS	Other saturation current values, specified within the range of 3.6mA~3.8mA or 20mA~22mA **Contract specifies:** Fixed current value*
Product certificate	/QE	Standard format follows the Micro Sensor's specifications. Select this option and provide the template if the customer specifies a format.
Identification plate	/PT	Product is shipped with a identification plate **Contract specifies:** Identification number, not exceeding 16 characters*
Leakage test report	/QS1	Nitrogen (N2) or air, 60mbar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report
	/QS2	Nitrogen (N2) or air, 0.4bar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report
	/QS3	Nitrogen (N2) or air, 2.5bar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report
	/QS4	Nitrogen (N2) or air, 10bar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report
	/QS5	Nitrogen (N2) or air, 30bar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report
	/QS6	Nitrogen (N2) or air, 100bar, pressure holding for 1 minute, provide Micro Sensor standard leakage test report
Note: Test pressure is equal to the sensor range		
HART configuration	/H5	HART5 configuration
Diaphragm with gold plated	/J1	Single diaphragm with gold plated (5μ)
Diaphragm spraying	/T6	Thread diaphragm spraying
Oil-free treatment	/CL1	Degreasing and cleaning treatment of the wetted parts
Note: Please check the fill oil. Determine whether the inert filling oil is required (code: D).		
Certificates	/CS1	CCS, China Classification Society, TJ23PTB00014
	/CS2	DNV, Det Norske Veritas
	/CS3	BV, Bureau Veritas
	/CS4	ABS, American Bureau of Shipping
	/CS5	LR, Lloyd's Register of Shipping
	/CS6	KR, Korean Register of Shipping
	/CS7	NK, Nippon Kaiji Kyokai
	/CS8	RS, Russian Maritime Register of Shipping
Note: Except for the CCS certificate, please consult the engineer for others.		

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Lithium battery	/LD	General requirements for low copper and zinc in the lithium battery industry
High-accuracy	/HAC	High-accuracy calibration according to the user's specified range **Contract specifies:** Range of use (within sensor's limit), LRL - URL, display unit, accuracy*
Language	/LE	English nameplate, operation manual, product certificate, etc.
Delivery service	/XM	Provide customer requested content according to project delivery standards
Extended warranty period	/Y3	3-year warranty
	/Y5	5-year warranty
***Note: The specifications required for these options should be specified in the contract.**		
Example: MDM7000—GP—T—0HP1L—2T—SR—1MR6A0S/WP1—		**[CAL: 0-0.4bar]**