

# Field Pressure Transmitter HART® MSP80



- Ceramic sensor with diaphragm Al<sub>2</sub>O<sub>3</sub> 99.9%
- Stainless steel membrane
- Easily accessible operation elements on the outside of the instrument
- LCD display with backlight
- Housing can be rotated through 360°

## Application

- MSP80 시리즈는 화학, 공정 공학의 모든 분야에 사용되는 가스, 수증기, 액체의 압력을 정확하게 측정할 수 있습니다. 특히 식품 가공이나 약품 산업 같은 위생 분야에 적합합니다.
- 적용 분야 : 점성이 높은 매개체
  - 화학산업
  - 식품산업
  - Stainless Steel과 관련 있는 매개체

## Characteristics

- 피에조 저항 실리콘 스테인리스 스틸 센서나 Al<sub>2</sub>O<sub>3</sub> 99.9% diaphragm이 포함된 세라믹 센서는 액체, 기체, 수증기와 같은 다양한 방면에 적합합니다.
- 표기압력 범위 From -500 ~ 500pa  
Up to -1 bar ~ 70 bar
- M20 X 1.5 process connection (Standard, others on request) Optional: flush mounted

## Technical data

Measuring Range						
Pressure gauge (kPa)	-2.5 ~ 2.5	0 ~ 5	0 ~ 10	-10 ~ 10	0 ~ 20	0 ~ 40
Overpressure Pmas (kPa)	250	-30 ~ 400	-30 ~ 400	600	600	600
Pressure gauge (MPa)	0 ~ 100	-40 ~ 100	-100 ~ 100	0 ~ 200	-100 ~ 400	
Overpressure Pmax	1	1	1	1.8	2.5	
Pressure gauge (MPa)	-0.1 ~ 1	-0.1 ~ 2	-0.1 ~ 4	-0.1 ~ 7		
Overpressure Pmaz (MPa)	4	4	6	10.5		
Pressure abs. (kPa)	0 ~ 20	0 ~ 100	0 ~ 200	0 ~ 400	0 ~ 500	
Overpressure Pmax (MPa)	0.6	1	1	2.5	2.5	
Pressure abs. (MPa)	-0.1 ~ 1	-0.1 ~ 2	-0.1 ~ 4	-0.1 ~ 7		
Overpressure Pmax (Mpa)	4	4	6	10.5		
Power supply (polarity protected)						
Supply voltage	10.5 ~ 45 V DC					
Output signal						
2-wire-system	4~20mA with superimposed signal for HART protocol digital communication					
3-Leither-Sensor (optional)	1 ~ 5 V					
Signal range (4~20mA)	3.8mA ~ 20.8mA					
Signal on alarm	3.8mA / Option: 22.8mA / Others on request					

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Pressure Transmitter
MSP80
MSP80D
MSP80L
MSP101P
Temperature Transmitter
MST 8 series
Head Transmitter
MST 1 series
MST 3 series
MST 5 series
MST 6 series
LED Display
LEDD-01
LEDD-02
Accessories
proHART-100
proUSB-100

Electrical protection		
Insulation resistance	>250M $\Omega$	
Short-Circuit protection	Permanent	
Reverse polarity protection	No damage, and no function	
Over voltage protection	500V	
Performance		
Accuracy	Nominal range	<0.05% of span
	Turndown 4:1	<0.05% of span
	Turndown 10:1	<0.05% of span
Power supply effect	Negligible	
Vibration effect	<0.01% of URL/g when tested 200Hz in any axis relative	
Thermal effect	$\pm 0.05\%$ / 10K	
Compensated temperature range of sensor	-40 to +85 $^{\circ}$ C	
Permissible load	$\leq 50(V-12)\Omega$	
Stability	<0.05% FS per year	
Switch on delay	5s	
Damping	0 to 100s, in 0.1s – step	
Response time	$\leq 200$ ms (without consideration of electronic damping)	
Self stability configuration	0 to 2%	
Filter configured	0 to 160 $\mu$ A	
Adjustability	Three push buttons	
Communication resistance	Typ. 200 $\Omega$	
Application conditions		
Humidity	5 ~ 98 %	
Ambient and operation	-40 to +85 $^{\circ}$ C (without Display)	
	-20 to +70 $^{\circ}$ C (with Display)	
Storage	-40 to +85 $^{\circ}$ C	
Ingress protection	IP65	
Electromagnetic compatibility (EMC)	Interference immunity and interference emission according to IEC 61326-1 : 2006	
Materials		
Housing	Aluminum die cast	
Sensor	Ceramic Al <sub>2</sub> O <sub>3</sub> 99.9%	
Seals	FPM/Others: on request	
Process connection		
Process connection	Stainless steel 1.4435(316L) / Others on request	
Sight glass	Laminated safety glass	
Display type	Visible range 32,5 x 22,5 mm;	
	5-digit 7-segment main display, digit height 8mm,	
	8-digit 14 segment additional display, digit height 5mm;	
	52 bars meter with 2% resolution	
Display range	-19999 ~ 99999	
Installation position	Any	
Weight	Standard model approx. 1.8kg	

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Temperature Transmitter

MST 8 series

Head Transmitter

MST 1 series

MST 3 series

MST 5 series

MST 6 series

LED Display

LEDD-01

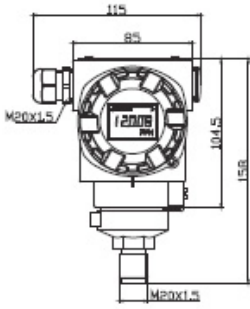
LEDD-02

Accessories

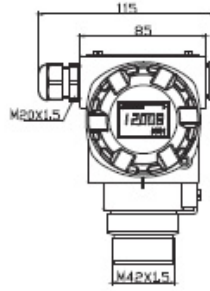
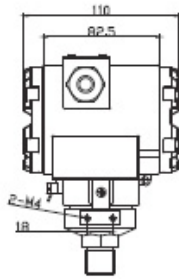
proHART-100

proUSB-100

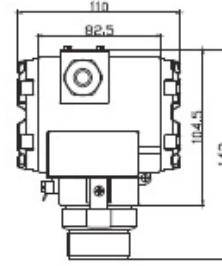
## Dimensions



MSP80

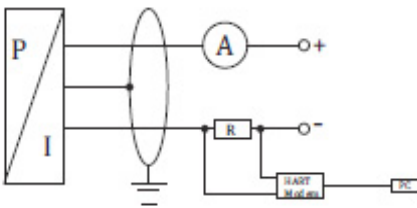


MSP80F

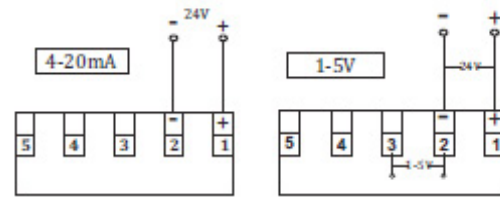


Dimensions in mm

## Wiring diagram

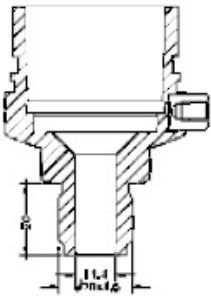


## Electrical connection



## Process connection

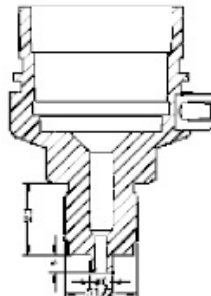
Standard



M20X1.5 DIN

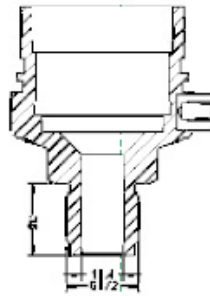
Ordering code: 02

Optional



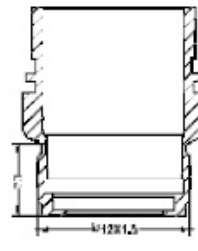
G1/2" EN

Ordering code:03



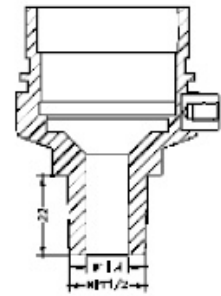
G1/2" DIN

Ordering code:04



M42X1.5 DIN

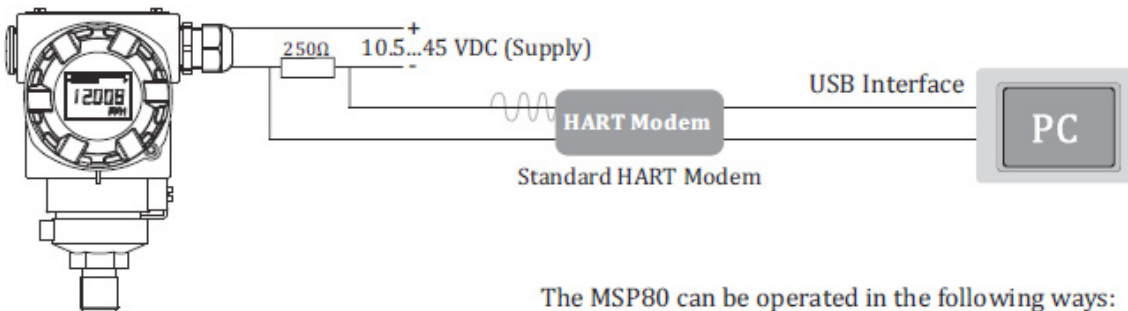
Ordering code: 08



1/2" NPT DIN

Ordering code:05

## Operation



The MSP80 can be operated in the following ways:

- Using the three buttons on device for setting of parameters.
- Operating remotely using the HART®-protocol.  
e.g. via HART Modem and PC-Software or via a HART Handheld.

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## Ordering code

Type	MSP80																			
<b>pressure</b>																				
	Gauge	G																		
	Absolute	A																		
<b>Communication type</b>																				
	HART	H																		
<b>Mears. Ranges [bar]</b>																				
<b>Gauge</b>																				
	0...0.05		0	5	0	0														
	0...0.1		1	0	0	0														
	0...0.2		2	0	0	0														
	0...0.4		4	0	0	0														
	0...1		1	0	0	1														
	0...2		2	0	0	1														
	-1...10		V	1	0	3														
	-1...20		V	2	0	3														
	-1...40		V	4	0	3														
	-1...70		V	7	0	3														
	-0.025...0.025		S	0	2	5														
	-0.1...0.1		S	1	0	0														
	-0.4...1		H	1	0	2														
	-1...1		S	1	0	2														
	-1...4		V	4	0	2														
<b>Absolute</b>																				
	0...0.5		2	0	0	0														
	0...1		1	0	0	1														
	0...2		2	0	0	1														
	0...4		4	0	0	1														
	0...5		5	0	0	1														
	-1...10		V	1	0	2														
	-1...20		V	2	0	2														
	-1...40		V	4	0	2														
	-1...70		V	7	0	2														
	Others on request		9	9	9	9														
<b>Mechanical connection</b>																				
	M20X1,5 DIN					0	2													
	G1/2 EN					0	3													
	G1/2 DIN					0	4													
	1/2NPT DIN					0	5													
	Others on request					9	9													
<b>Seals</b>																				
	FPM							0	1											
	Others on request							9	9											
<b>Wetted Parts Material</b>																				
	SUS304									0	1									
	Others on request									9	9									
<b>Electrical Connection</b>																				
	M20 X 1,5										0	1								
	Others on request										9	9								
<b>Mounting bracket</b>																				
	Horizontale Halterung																		H	
	Vertikale Halterung																		V	
	Ohne Halterung																		O	
<b>LCD Display</b>																				
	No display																		N	
	Mit Display																		D	
<b>Other Options</b>																				
																			9	9

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Typical model number: MSP80-H-G-1002-02-01-01-01-OD