

## Datasheet for

SITRANS P320 Pressure transmitter

## Ordering data:

**7MF03101GL015AM2**

### General

Manufacturer	Siemens
Supplier	Siemens
Product designation	gauge pressure transmitter
Brand name	SITRANS P320
Type designation	SITRANS P320 Pressure transmitter
Article number	7MF03101GL015AM2
Net weight	4 kg
Reference code acc. IEC 81346-2:2009	BP
Reference code acc. IEC 81346-2:2019	BPA
Slogan	Digital pressure transmitter with extended diagnostic capabilities and remote safety handling

### Mode of operation and application

Measuring principle	piezo-resistive
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### Input

Measurand	Temperature
Measurand	Pressure, relative
<b>Measuring span</b>	
Measuring span	
Measuring span (minimum)	0,0025 bar
Measuring span (maximum)	0,25 bar

### Output

#### Current output

Number of outputs	1
Signal range	4 ... 20 mA
Failure signal (minimum)	3,55 mA
Failure signal (maximum)	22,8 mA
Output voltage	
Output voltage (minimum)	10,5 V
Output voltage (maximum)	45 V
Output current	
Output current (minimum)	3,55 mA
Output current (maximum)	22,8 mA
Time constant for smoothing	
Time constant for smoothing (minimum)	0 s
Time constant for smoothing (maximum)	100 s
Load (maximum)	1.500 Ohm
Load with HART-Communicator	
Load with HART-Communicator (minimum)	230 Ohm
Load with HART-Communicator (maximum)	850 Ohm
Load with HART-Modem	

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Load with HART-Modem (minimum)	230 Ohm
Load with HART-Modem (maximum)	850 Ohm
Load with HART SIMATIC PDM	
Load with HART SIMATIC PDM (minimum)	230 Ohm
Load with HART SIMATIC PDM (maximum)	600 Ohm
Interface	NAMUR NE43

### Accuracy

Measuring accuracy, relative	0,065 %
Reference temperature	25 °C
Standard for measuring accuracy	IEC 62828-1
Base factor	Full-scale value

### Operating conditions

Medium temperature at low-pressure side	
Medium temperature at low-pressure side (minimum)	-40 °C
Medium temperature at low-pressure side (maximum)	100 °C
Standard for vibration resistance	IEC 60068-2-6
Amplitude of deflection during vibration test during operation	0,3 mm
Vibration frequency at constant deflection during operation	
Vibration frequency at constant deflection during operation (minimum)	2 Hz
Vibration frequency at constant deflection during operation (maximum)	9 Hz
Vibration resistance during operation (maximum)	5 m/s <sup>2</sup>
Vibration frequency at constant acceleration during operation	
Vibration frequency at constant acceleration during operation (minimum)	9 Hz
Vibration frequency at constant acceleration during operation (maximum)	200 Hz
Standard for shock tests	IEC 60068-2-27
Number of shock test attempts	1
Shock duration	6 ms
Shock acceleration during operation	250 m/s <sup>2</sup>
Degree of pollution	Pollution degree 2
Standard for the degree of pollution	IEC 60664-1
Overvoltage class	Installation category III
Standard for the overvoltage class	IEC 61010-1

### Pressure

Operating pressure, relative (maximum)	160 bar
Operating pressure, absolute (minimum)	30 mbar
Test pressure, relative (maximum)	240 bar

### Environmental conditions

Ambient temperature during operation	
Ambient temperature during operation (minimum)	-40 °C

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Ambient temperature during operation (maximum)	85 °C
Ambient temperature during storage	
Ambient temperature during storage (minimum)	-50 °C
Ambient temperature during storage (maximum)	85 °C
Ambient temperature during transport	
Ambient temperature during transport (minimum)	-40 °C
Ambient temperature during transport (maximum)	85 °C
Environmental category during operating according to IEC 60721	4K26
Standard for environmental conditions Standard for environmental conditions	IEC 60721-3-4
Relative humidity during operation	
Relative humidity during operation (minimum)	4 %
Relative humidity during operation (maximum)	95 %
<b>Degree of protection</b>	
NEMA Enclosure Type	NEMA Type 4X
<b>Electromagnetic compatibility EMC</b>	
Standard for EMC	NAMUR NE21
Standard for EMC	EN 61326-1

## Structural Design

### Mechanical design

Design of the device compact version, sensor integrated

### Process connection

Number of process connections	1
Design	oval flange
Standard	IEC 61518

### Process connection at the low-pressure side

Design	oval flange
Standard	IEC 61518
Nominal size	1/4"-18 NPT
Pressure rating	PN 160
Design of the thread for fastening at low-pressure side	7/16" UNF
Alignment of the process connection at low-pressure side	horizontal

### Process connection at the high-pressure side

Design	oval flange
Standard	IEC 61518
Nominal size	1/4"-18 NPT
Pressure rating	PN 160
Design of the thread for fastening at high-pressure side	7/16" UNF
Alignment of the process connection at high-pressure side	horizontal

### Material

#### Process connection

Material at low-pressure side stainless steel

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Material number at low-pressure side according to DIN EN 10027-2	1.4408
Material number at low-pressure side according to AISI	316
Material at high-pressure side	stainless steel
Material number at high-pressure side according to DIN EN 10027-2	1.4408
Material number at high-pressure side according to AISI	316

### Enclosure

Material	aluminum
Material number according to DIN EN 10027-2	3.2581
Grade according to DIN EN 10027-1	GD-AISI12
Coating	Polyurethane (PUR):
Material of the process flange sealing at low-pressure side	fluorocarbon-rubber (FKM/FPM)
Material of the process flange sealing at high-pressure side	stainless steel
Material of the process flange at high-pressure side	fluorocarbon-rubber (FKM/FPM)
Material of the sealing screw at high-pressure side	Stainless steel
Material number of the sealing screw at high-pressure side according to DIN EN 10027-2	1.4404
Material number of the sealing screw at high-pressure side according to AISI	316

### Separation & Measuring Membrane

Material of the separation membrane	stainless steel
Material number of the separation membrane according to DIN EN 10027-2	1.4404
Material number of the separation membrane according to AISI	316L

### Miscellaneous

Material of the gasket between sensor and housing	acrylonitril-butadiene-styrol-rubber (NBR)
Filling liquid in the measuring cell	silicone oil
Material of the nameplate	Stainless steel
Material number of the nameplate according to DIN EN 10027-2	1.4404
Material number of the nameplate according to AISI	316L
Material of the tag plate	stainless steel
Material number of the tag plate according to DIN EN 10027-2	1.4404
Material number of the tag plate according to AISI	316L
Material of the processing flange screws at low-pressure side	Stainless steel
Material of the sealing screw at low-pressure side	Stainless steel
Material number of the sealing screw at low-pressure side according to	1.4404
Material number of the sealing screw at low-pressure side according to	316

### Electrical connections

Connection technology	2-wire connection
Potential insulation	galvanic isolation
Number of cable entries	2

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Design of the cable entry	1/2"-14 NPT
Design of the electrical connection	screw-type terminals

### Display and operating controls

Design of the display	multisegment display
Operating controls	Pushbutton
Number of controls	4
Ambient temperature for display readability	
Ambient temperature for display clarity (minimum)	-20 °C
Ambient temperature for display clarity (maximum)	80 °C

### Power supply

Type of the auxiliary power supply	electrical
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### Electrical

Type of power supply	External
Voltage type	DC
Nominal voltage, DC	24 V
Supply voltage, DC	
Supply voltage, DC (minimum)	10,5 V
Supply voltage, DC (maximum)	45 V

### Communication

Protocol	HART
Protocol version	Version 7
Number of cyclic transmitted values (maximum)	4
Transmittable value	pressure, relative
Transmittable value	elektronic device temperature
Transmittable value	measuring cell temperature

### Certificates and approvals

Fluid group according to PED 2014/68/EU	gas group 1
Fluid group according to PED 2014/68/EU	liquid group 1
Pressure device category according to PED 2014/68/EU	Article 4.3
Pressure device category according to PED 2014/68/EU	category III

### Reliability (MTBF)

MTBF	382 a
Standard for MTBF	SN 29500
Determination procedure	Number of registered failures
Applicability	Measuring device

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