SIEMENS

Datasheet for

SITRANS P320 Pressure transmitter

Ordering data: **7MF03001VE215AM2**
A00+C11+C14+E00+Y01+Y15

General

Manufacturer	Siemens
Supplier	Siemens
Product designation	gauge pressure transmitter
Brand name	SITRANS P320
Type designation	SITRANS P320 Pressure transmitter
Article number	7MF03001VE215AM2-Z A00+C11+C14+E00+Y15+Y01
Net weight	1,8 kg
Slogan	Digital pressure transmitter with extended diagnostic capabilities and remote safety handling

Mode of operation and application

Measuring principle	piezo-resistive

Input

Measurand	Temperature
Measurand	Pressure, relative

Measuring range

Measuring range, relative	
Measuring range, relative (minimum)	-0,97 bar
Measuring range, relative (maximum)	160 bar

Measuring span

Measuring span	
Measuring span (minimum)	1,6 bar
Measuring span (maximum)	160 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

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Load with HART-Communicator (maximum)	850 Ohm
Load with HART-Modem	
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 %
Base factor	Full-scale value

Operating conditions

Medium temperature	
Medium temperature (minimum)	-40 °C
Medium temperature (maximum)	100 °C
Standard for vibration resistance	IEC 60068-2-6
Vibration resistance during operation (maximum)	5 m/s2
Standard for shock tests	IEC 60068-2-27
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	
Operating pressure, relative (minimum)	-970 mbar
Operating pressure, relative (maximum)	240 bar
Operating pressure, absolute (minimum)	30 mbar
Test pressure, relative (maximum)	380 bar

Environmental conditions

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

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Relative humidity during operation (maximum)	95 %
Degree of protection	
IP rating	IP66
NEMA Enclosure Type	NEMA Type 4X
Electromagnetic compatibility EMC	
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	female thread
Standard	ANSI B1.20.1
Nominal size	1/2"-14 NPT
Material	
Process connection	
Material	nickel alloy
Material brand name	alloy C22
Material number according to DIN EN 10027-2	2.4602
Enclosure	
Material	aluminum
Material number according to DIN EN 10027-2	3.2581
Grade according to DIN EN 10027-1	GD-AlSi12
Coating	Polyurethane (PUR):
Separation & Measuring Membrane	
Material of the separation membrane	nickel alloy
Brand name of the separation membrane	alloy C276
Material number of the separation membrane according to DIN EN 10027-2	2.4819
Cable entry & cable gland	
Material of the cable entry	polyamide (PA)
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
Electrical connections	
Connection technology	2-wire connection

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Potential insulation	galvanic isolation
Number of cable entries	2
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

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

Verification of suitability	CE
Verification of suitability	RCM
Fluid group according to PED 2014/68/EU	gas group 1
Fluid group according to PED 2014/68/EU	liquid group 1
Type of calibration	5-point calibration
Standard for calibration	IEC 60770-2
Manufacturer declaration	2.2 (Test report)
Standard for factory certificate	EN 10204

Reliability (MTBF)

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

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