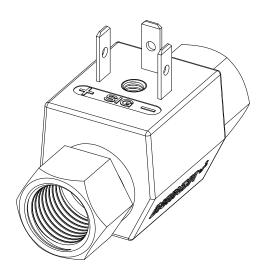
# DATA SHEET



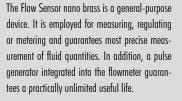


# nano brass Part number: 9NB-01xx/01x

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Version 05 Nano Brass FHI #9NB-01xx/01x GB Page 1-7

# **General Description**



Specific applications: Straight flow path, compact design.

### Approvals / Standards

EN55014-1:00+A1:01+A2:02, EN61000-6-3:01+A11:04, IEC61000-6-3:06(ed.2.0), EN61000-3-2:06, IEC61000-3-2:05(ed.3.0), EN61000-3-3:95+A1:01+A2:05, IEC61000-3-3:94+A1:01+A2:05(Cons.ed 1.2), EN55014-2:97+A1:01, EN61000-6-1:01, IEC61000-6-1:05(ed.2), LFGB (EU 1935 /2004, EU10/2011) CE (NSE)

Materials (wetted)				
Housing:	Lead free brass (CW510L)			
Bearing :	PEEK			
Nozzle:	PEEK			
Turbine:	PVDF			

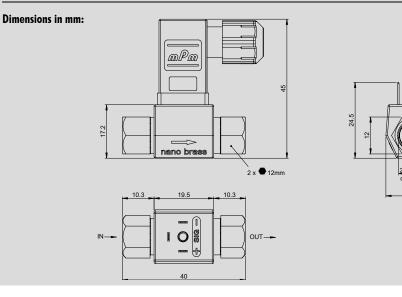
Ceramic Sr Fe O (in contact with medium)

Magnete:

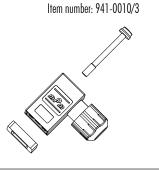
lechnical data:	
Linear range:	from 0.035 - 0.70 l/min de- pending on the nozzle size
Durability:	min. 100′000 liters at max. flow (page 5-7)
Measuring accuracy:	+/- 2.0% *
Temperature range:	+0°C to +100°C 32°F to 212°F
Pressure range:	20 bar at 20°C 290 psi /68°F
Mounting position:	freely selectable
Nozzle size:	Ø 1.0mm, 1.2mm, 1.4mm
* Accuracy in the linear equipment	range for individually calibrated

To shair and share

Electrical connect	ion ratings:
Power supply:	+2.8 to $+24$ VDC
Consumption:	<8 mA
Signal connection:	Open collector, NPN
Signal voltage:	$0~\rm VDC~GND$ (saturation $<\!0.7~\rm V$ )
Signal load:	max. 20 mA
Leakage current:	max. 10 <i>µ</i> A
Connections:	3-pin 2.8 x 0.5 mm
Signal:	Square-wave output
Duty Cycle:	~50%



**Options:** 3-pin valve connector



### RESISTANCE

Special regulations which must be complied with by the flow sensor manufacturer apply to each country, e.g. CE, NSF, FDA and SK. The various media flowing through the flow sensor differ from application to application. You are advised to enquire with the medium manufacturer as to whether the entire installation and the flow sensor are resistant to the medium itself (see Material)!

### ELECTRONIC

x G1/8

DIGMESA electronic circuitry is always designed for operation with DIGMESA flow sensors. Please note the following if connecting to other electronic circuitry:

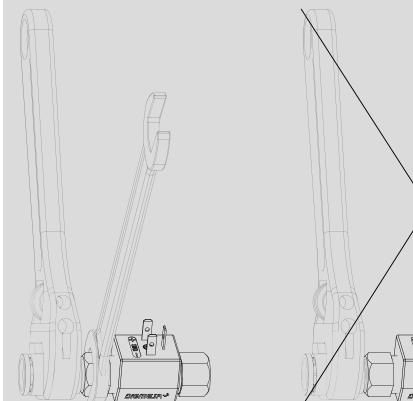
• The flow sensor does not supply an output voltage but switches the signal terminal to 0 V ground (actuated) or leaves it open (nonactuated)

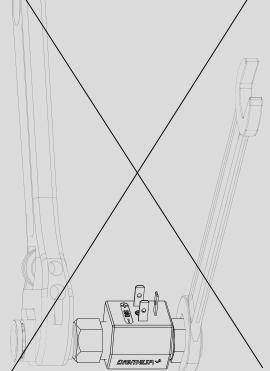
•There must be a pull-up resistor between power supply + and signal depending on electronic circuitry!

We reserve the right to make modifications in the interests of technical progress

Version O5 Nano Brass FHI #9NB-01xx/01x GB Page 2-7

# Installation instruction





Important: Fittings should be mounted torsion-free, max. 10 Nm torque!



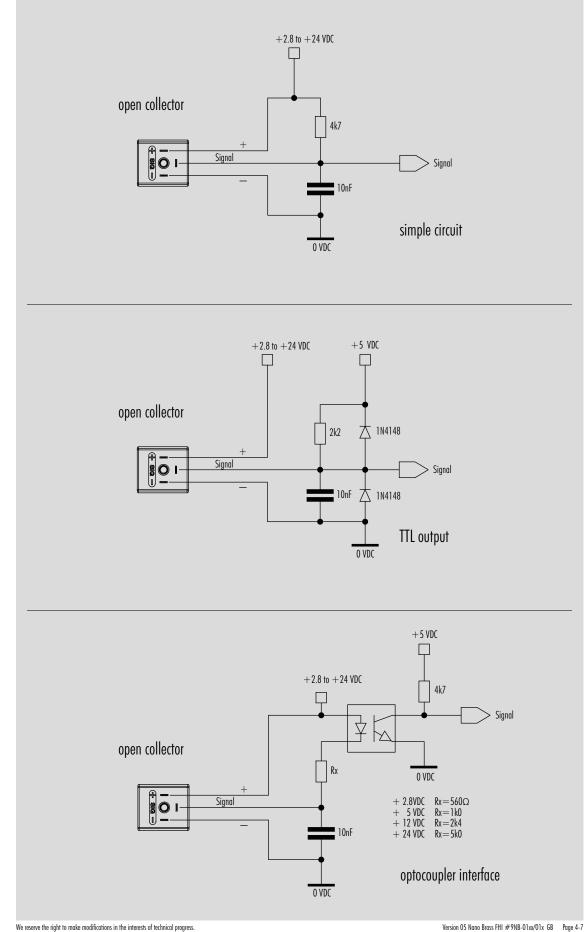
Drying and/or operating with compressed air destroys the flow sensor!

We reserve the right to make modifications in the interests of technical progress.

Version O5 Nano Brass FHI #9NB-01xx/01x GB Page 3-7

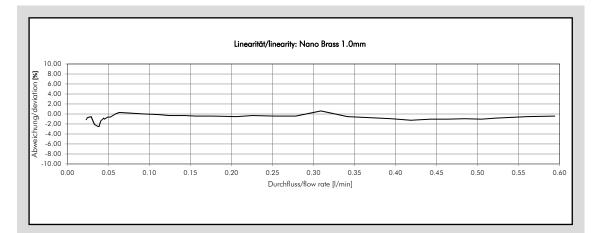
Digmesa AG, Keltenstrasse 31, CH–2563 Ipsach / Switzerland, Phone +41 (32) 332 77 77, Fax +41 (32) 332 77 88, www.digmesa.com

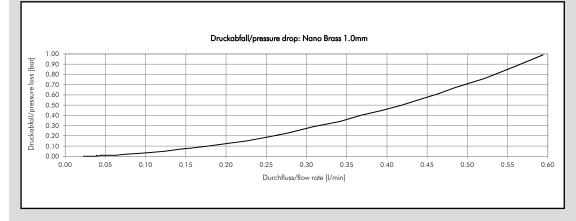
# Interface Connection: Examples Open collector



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# Measurement Curve nano brass Ø1.0mm





### Medium: Water / Pressure: 3.5 bar

### #9NB-0100/01 with pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.0 mm	2'494	0.40	0.035	0.40	~1.4/17

### #9NB-0100/01A without pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.0 mm	39'900	0.025	0.035	0.40	~23/270

The values specified must be considered as approximate values.

The number of pulses per litre may differ depending on medium and installation. We recommend to calibrate the number of pulses per litre in line with the complete installation.

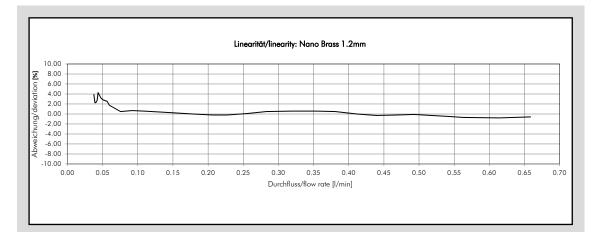
# MEASUREMENT TIPS

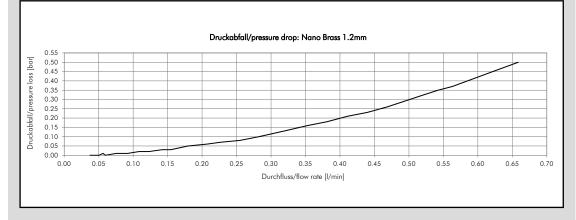
- Ensure that there is no fast-pulsatory movement of the media
- Ensure that there are no reverse pressure surges
- Ensure that there is no air in the system
- Keep the pressure loss as small as possible
- Pay attention to the mounting position of the flow sensor
- Min/max flow should be in the linear range of the selected flow sensor
- Clean the system at appropriate intervals
- Avoid electrical voltage spikes
- Incorrect wiring of power supply +, signal and ground will destroy the flow sensor
- Do not load electrical contacts mechanically
- Avoid moisture on the electrical contacts
- Avoid stray pick-up via the cable (Do not lay cables in parallel with high current loads)

We reserve the right to make modifications in the interests of technical progress.

Version O5 Nano Brass FHI #9NB-01xx/01x GB Page 5-7

# Measurement Curve nano brass Ø1.2mm





### Medium: Water / Pressure: 3.5 bar

### #9NB-0120/01 with pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.2 mm	1'944	0.51	0.05	0.50	~1.6/17

### #9NB-0120/01A without pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.2 mm	31'100	0.032	0.05	0.50	~26/270

The values specified must be considered as approximate values.

The number of pulses per litre may differ depending on medium and installation. We recommend to calibrate the number of pulses per litre in line with the complete installation.

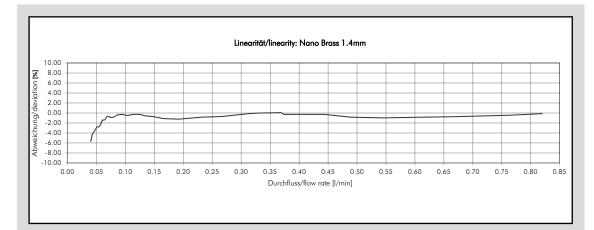
# MEASUREMENT TIPS

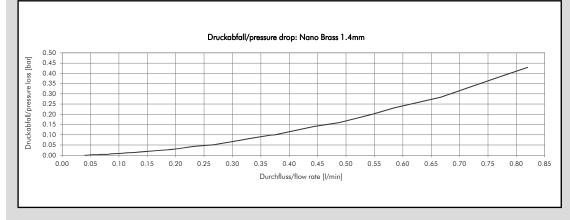
- Ensure that there is no fast-pulsatory movement of the media
- Ensure that there are no reverse pressure surges
- Ensure that there is no air in the system
- Keep the pressure loss as small as possible
- Pay attention to the mounting position of the flow sensor
- Min/max flow should be in the linear range of the selected flow sensor
- Clean the system at appropriate intervals
- Avoid electrical voltage spikes
- Incorrect wiring of power supply +, signal and ground will destroy the flow sensor
- Do not load electrical contacts mechanically
- Avoid moisture on the electrical contacts
- Avoid stray pick-up via the cable (Do not lay cables in parallel with high current loads)

We reserve the right to make modifications in the interests of technical progress.

Version 05 Nano Brass FHI #9NB-01xx/01x GB Page 6-7

# Measurement Curve nano brass Ø1.4mm





### Medium: Water / Pressure: 3.5 bar

### #9NB-0140/01 with pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.4 mm	1′440	0.69	0.06	0.70	~1.6/17

### #9NB-0140/01A without pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.4 mm	23'040	0.043	0.06	0.70	~26/270

The values specified must be considered as approximate values.

The number of pulses per litre may differ depending on medium and installation. We recommend to calibrate the number of pulses per litre in line with the complete installation.

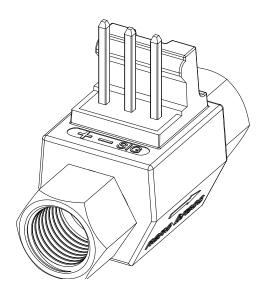
# MEASUREMENT TIPS

- Ensure that there is no fast-pulsatory movement of the media
- Ensure that there are no reverse pressure surges
- Ensure that there is no air in the system
- Keep the pressure loss as small as possible
- Pay attention to the mounting position of the flow sensor
- Min/max flow should be in the linear range of the selected flow sensor
- Clean the system at appropriate intervals
- Avoid electrical voltage spikes
- Incorrect wiring of power supply +, signal and ground will destroy the flow sensor
- Do not load electrical contacts mechanically
- Avoid moisture on the electrical contacts
- Avoid stray pick-up via the cable (Do not lay cables in parallel with high current loads)

We reserve the right to make modifications in the interests of technical progress.

Version O5 Nano Brass FHI #9NB-01xx/01x GB Page 7-7

# DATA SHEET





# nano brass Part number: 9NB-01xx/03x

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Version O6 Nano Brass FHC #9NB-01xx/O3x GB Page 1-7

# **General Description**

The Flow Sensor nano brass is a general-purpose device. It is employed for measuring, regulating or metering and guarantees most precise measurement of fluid quantities. In addition, a pulse generator integrated into the flowmeter guarantees a practically unlimited useful life.

Specific applications: Straight flow path, compact design.

### Approvals / Standards

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EN55014-1:00+A1:01+A2:02, EN61000-6-3:01+A11:04, IEC61000-6-3:06(ed.2.0), EN61000-3-2:06, IEC61000-3-2:05(ed.3.0), EN61000-3-3:95+A1:01+A2:05, IEC61000-3-3:94+A1:01+A2:05(Cons.ed 1.2), EN55014-2:97+A1:01, EN61000-6-1:01, IEC61000-6-1:05(ed.2), LFGB (EU 1935 /2004, EU10/2011) (NSE) CE

Materials (wetted) Housing: Lead free brass (CW510L) Bearing : PEEK PEEK Nozzle: Turbine: PVDF

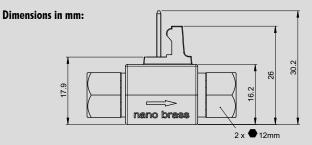
Magnete:

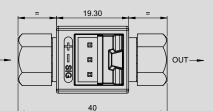
Ceramic Sr Fe O

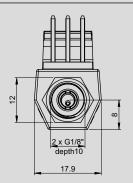
(in contact with medium)

Technical data:	
Linear range:	from 0.035 - 0.70 l/min de- pending on the nozzle size
Durability:	min. 100′000 liters at max. flow (page 5-7)
Measuring accuracy:	+/- 2.0% *
Temperature range:	+0°C to +100°C 32°F to 212°F
Pressure range:	20 bar at 20°C 290 psi /68°F
Mounting position:	freely selectable
Nozzle size:	Ø 1.0mm, 1.2mm, 1.4mm
* Accuracy in the linear equipment	range for individually calibrated

lectrical connect	ion ratings:
ower supply:	$+2.8\ \mathrm{to}\ +24\ \mathrm{VDC}$
onsumption:	<8 mA
ignal connection:	Open collector, NPN
ignal voltage:	$0~\rm VDC~GND$ (saturation $<\!0.7~\rm V$ )
ignal load:	max. 20 mA
eakage current:	max. 10 <i>µ</i> A
onnections:	PANCON MAS-CON 156 MLSS
ignal:	Square-wave output
uty Cycle:	$\sim$ 50%







### RESISTANCE

Special regulations which must be complied with by the flow sensor manufacturer apply to each country, e.g. CE, NSF, FDA and SK. The various media flowing through the flow sensor differ from application to application. You are advised to enquire with the medium manufacturer as to whether the entire installation and the flow sensor are resistant to the medium itself (see Material)!

### ELECTRONIC

DIGMESA electronic circuitry is always designed for operation with DIGMESA flow sensors. Please note the following if connecting to other electronic circuitry:

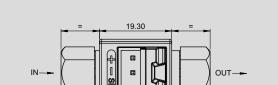
• The flow sensor does not supply an output voltage but switches the signal terminal to 0 V ground (actuated) or leaves it open (nonactuated)

•There must be a pull-up resistor between power supply + and signal depending on electronic circuitry!

Version 06 Nono Bross FHC #9NB-01xx/03x GB

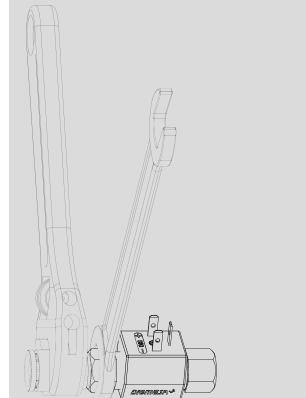
Page 2-7

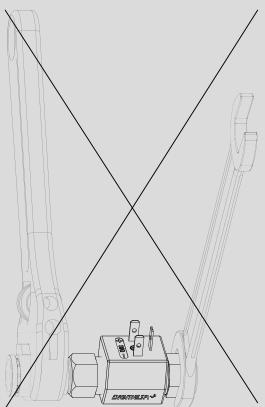
We reserve the right to make modifications in the interests of technical progress



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# Installation instruction





Important: Fittings should be mounted torsion-free, max. 10 Nm torque!



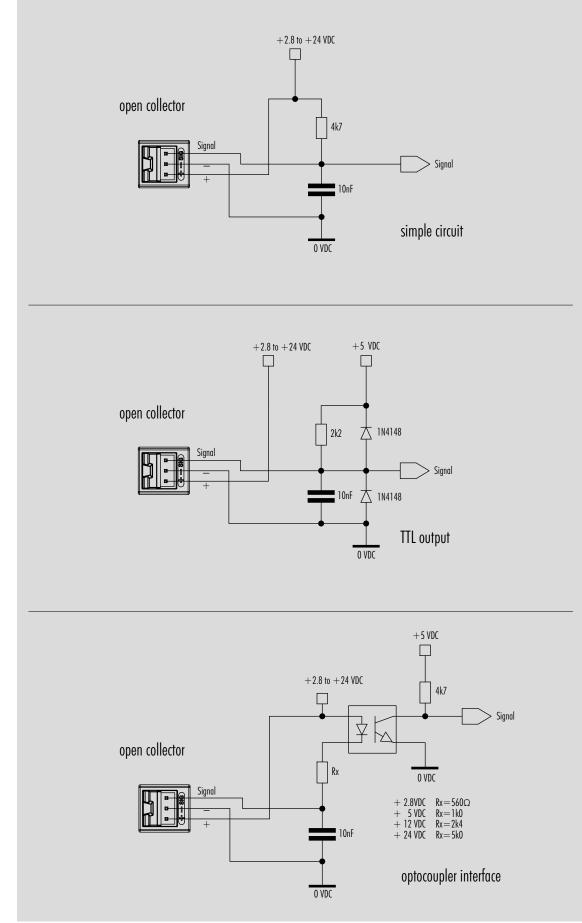
Drying and/or operating with compressed air destroys the flow sensor!

We reserve the right to make modifications in the interests of technical progress

Version O6 Nano Brass FHC #9NB-01xx/03x GB Page 3-7

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# Interface Connection: Examples Open collector

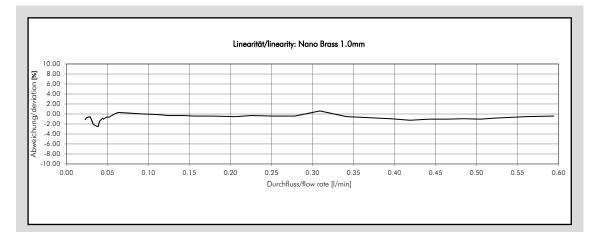


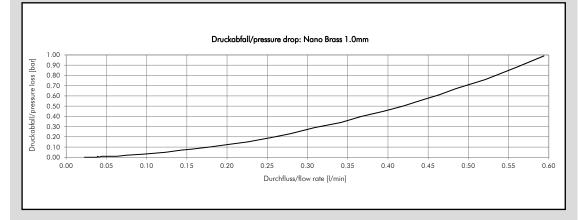
We reserve the right to make modifications in the interests of technical progress.

Version O6 Nano Brass FHC #9NB-01xx/03x GB Page 4-7

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# Measurement Curve nano brass Ø1.0mm





### Medium: Water / Pressure: 3.5 bar

### #9NB-0100/03 with pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.0 mm	2'494	0.40	0.035	0.40	~1.4/17

### #9NB-0100/03A without pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.0 mm	39'900	0.025	0.035	0.40	~23/270

The values specified must be considered as approximate values.

The number of pulses per litre may differ depending on medium and installation. We recommend to calibrate the number of pulses per litre in line with the complete installation.

### • Ensure that there is no air in the system • Keep the pressure loss as small as possible • Pay attention to the mounting position of the flow sensor

surges

• Min/max flow should be in the linear range of the selected flow sensor

**MEASUREMENT** 

TIPS

• Ensure that there are no reverse pressure

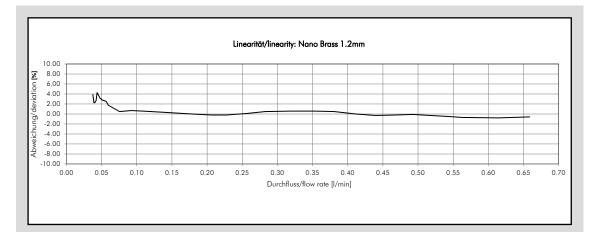
• Ensure that there is no fast-pulsatory movement of the media

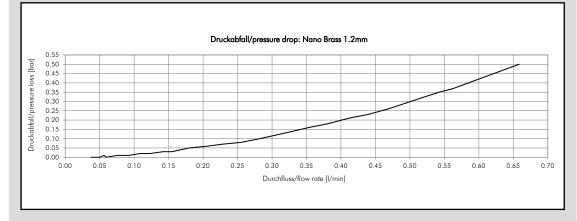
- Clean the system at appropriate intervals
- Avoid electrical voltage spikes
- Incorrect wiring of power supply +, signal and ground will destroy the flow sensor
- Do not load electrical contacts mechanically
- Avoid moisture on the electrical contacts
- Avoid stray pick-up via the cable (Do not lay cables in parallel with high current loads)

We reserve the right to make modifications in the interests of technical progress.

Version O6 Nano Brass FHC #9NB-01xx/03x GB Page 5-7

# Measurement Curve nano brass Ø1.2mm





### Medium: Water / Pressure: 3.5 bar

### #9NB-0120/03 with pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.2 mm	1'944	0.51	0.05	0.50	~1.6/17

### #9NB-0120/03A without pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.2 mm	31'100	0.032	0.05	0.50	~26/270

The values specified must be considered as approximate values.

The number of pulses per litre may differ depending on medium and installation. We recommend to calibrate the number of pulses per litre in line with the complete installation.

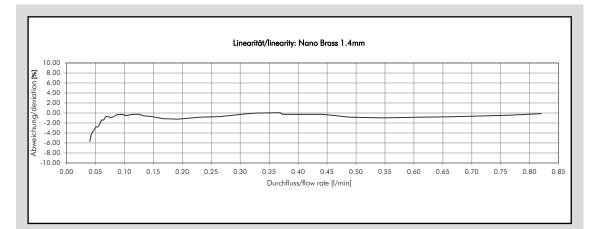
# MEASUREMENT TIPS

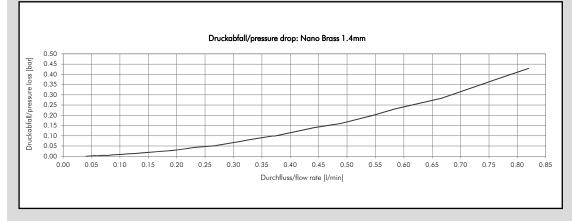
- Ensure that there is no fast-pulsatory movement of the media
- Ensure that there are no reverse pressure surges
- Ensure that there is no air in the system
- Keep the pressure loss as small as possible
- Pay attention to the mounting position of the flow sensor
- Min/max flow should be in the linear range of the selected flow sensor
- Clean the system at appropriate intervals
- Avoid electrical voltage spikes
- Incorrect wiring of power supply +, signal and ground will destroy the flow sensor
- Do not load electrical contacts mechanically
- Avoid moisture on the electrical contacts
- Avoid stray pick-up via the cable (Do not lay cables in parallel with high current loads)

We reserve the right to make modifications in the interests of technical progress.

Version O6 Nano Brass FHC #9NB-01xx/O3x GB Page 6-7

# Measurement Curve nano brass Ø1.4mm





### Medium: Water / Pressure: 3.5 bar

### #9NB-0140/03 with pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.4 mm	1′440	0.69	0.06	0.70	~1.6/17

### #9NB-0140/03A without pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.4 mm	23'040	0.043	0.06	0.70	~26/270

The values specified must be considered as approximate values.

The number of pulses per litre may differ depending on medium and installation. We recommend to calibrate the number of pulses per litre in line with the complete installation.

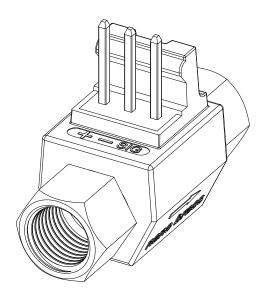
### We reserve the right to make modifications in the interests of technical progress.

# MEASUREMENT TIPS

- Ensure that there is no fast-pulsatory movement of the media
- Ensure that there are no reverse pressure surges
- Ensure that there is no air in the system
- Keep the pressure loss as small as possible
- Pay attention to the mounting position of the flow sensor
- Min/max flow should be in the linear range of the selected flow sensor
- Clean the system at appropriate intervals
- Avoid electrical voltage spikes
- Incorrect wiring of power supply +, signal and ground will destroy the flow sensor
- Do not load electrical contacts mechanically
- Avoid moisture on the electrical contacts
- Avoid stray pick-up via the cable (Do not lay cables in parallel with high current loads)

Version O6 Nano Brass FHC #9NB-01xx/O3x GB Page 7-7

# DATA SHEET





# nano brass Part number: 9NB-11xx/03x

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Version 03 Nano Brass FHC #9NB-11xx/03x GB Page 1-7

# **General Description**

The Flow Sensor nano brass is a general-purpose device. It is employed for measuring, regulating or metering and guarantees most precise measurement of fluid quantities. In addition, a pulse generator integrated into the flowmeter guarantees a practically unlimited useful life.

Specific applications: Straight flow path, compact design.

### Approvals / Standards

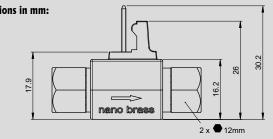
EN55014-1:00+A1:01+A2:02, EN61000-6-3:01+A11:04, IEC61000-6-3:06(ed.2.0), EN61000-3-2:06, IEC61000-3-2:05(ed.3.0), EN61000-3-3:95+A1:01+A2:05, IEC61000-3-3:94+A1:01+A2:05(Cons.ed 1.2), EN55014-2:97+A1:01, EN61000-6-1:01, IEC61000-6-1:05(ed.2), LFGB (EU 1935 /2004, EU10/2011) (NSE) E

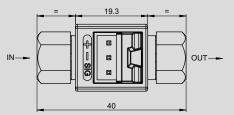
Materials (wetted) Housing: Lead free brass (CW510L) Bearing : PEEK PEEK Nozzle: Turbine: PVDF Ceramic Sr Fe O Magnete:

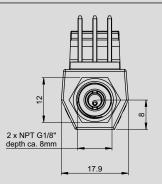
(in contact with medium)

Technical data:				
Linear range:	from 0.035 - 0.70 l/min de- pending on the nozzle size			
Durability:	min. 100'000 liters at max. flow (page 5-7)			
Measuring accuracy:	+/- 2.0% *			
Temperature range:	+0°C to +100°C 32°F to 212°F			
Pressure range:	20 bar at 20°C 290 psi /68°F			
Mounting position:	freely selectable			
Nozzle size:	Ø 1.0mm, 1.2mm, 1.4mm			
* Accuracy in the linear range for individually calibrated				

	COMPONENT
Electrical connect	ion ratings:
Power supply:	+2.8 to $+24$ VDC
Consumption:	<8 mA
Signal connection:	Open collector, NPN
Signal voltage:	$0~\rm VDC~GND$ (saturation $<\!0.7~\rm V$ )
Signal load:	max. 20 mA
Leakage current:	max. 10 µA
Connections:	PANCON MAS-CON 156 MLSS
Signal:	Square-wave output
Duty Cycle:	~50%







### RESISTANCE

Special regulations which must be complied with by the flow sensor manufacturer apply to each country, e.g. CE, NSF, FDA and SK. The various media flowing through the flow sensor differ from application to application. You are advised to enquire with the medium manufacturer as to whether the entire installation and the flow sensor are resistant to the medium itself (see Material)!

### ELECTRONIC

DIGMESA electronic circuitry is always designed for operation with DIGMESA flow sensors. Please note the following if connecting to other electronic circuitry:

• The flow sensor does not supply an output voltage but switches the signal terminal to 0 V ground (actuated) or leaves it open (nonactuated)

•There must be a pull-up resistor between power supply + and signal depending on electronic circuitry!

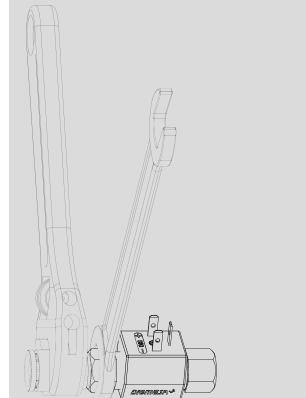
Version 03 Nono Bross FHC #9NR-11xx/03x\_GB

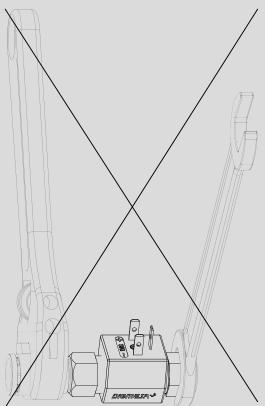
Page 2-7

We reserve the right to make modifications in the interests of technical progress

# equipment **Dimensions in mm:**

# Installation instruction





Important: Fittings should be mounted torsion-free, max. 10 Nm torque!



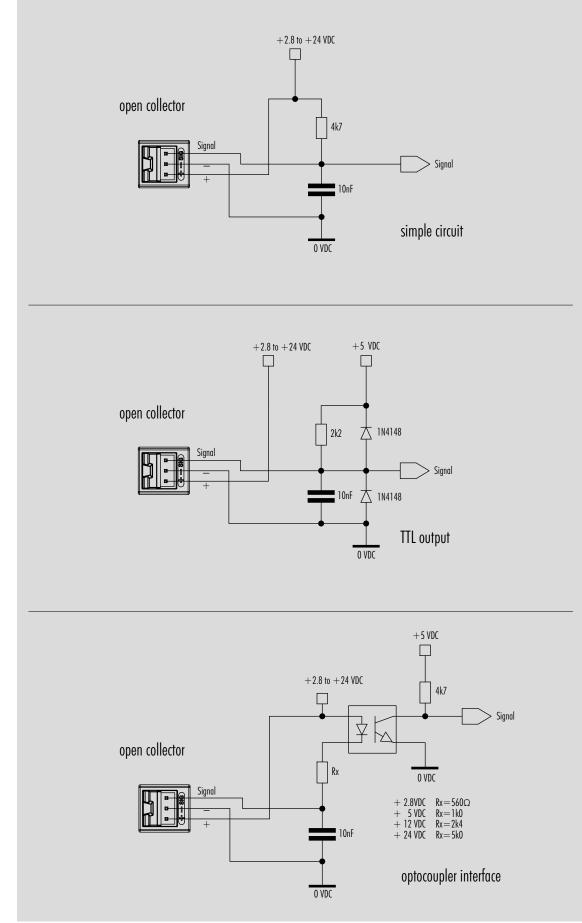
Drying and/or operating with compressed air destroys the flow sensor!

We reserve the right to make modifications in the interests of technical progress

Version 03 Nano Brass FHC #9NB-11xx/03x GB Page 3-7

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# Interface Connection: Examples Open collector

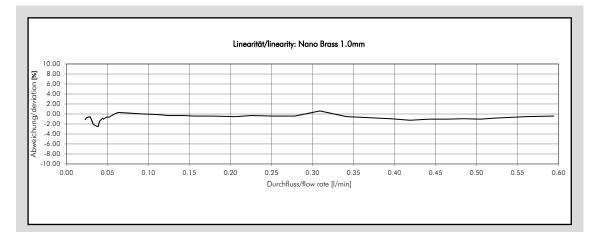


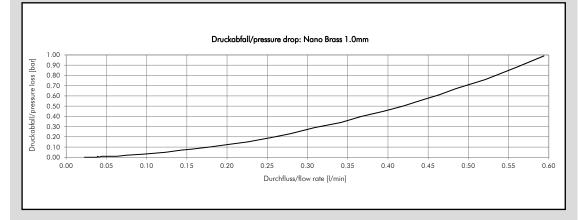
We reserve the right to make modifications in the interests of technical progress.

Version 03 Nano Brass FHC #9NB-11xx/03x GB Page 4-7

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# Measurement Curve nano brass Ø1.0mm





### Medium: Water / Pressure: 3.5 bar

### #9NB-1100/03 with pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.0 mm	2'494	0.40	0.035	0.40	~1.4/17

### #9NB-1100/03A without pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.0 mm	39'900	0.025	0.035	0.40	$\sim$ 23 / 270

The values specified must be considered as approximate values.

The number of pulses per litre may differ depending on medium and installation. We recommend to calibrate the number of pulses per litre in line with the complete installation.

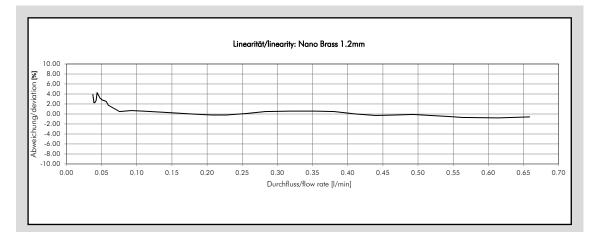
### We reserve the right to make modifications in the interests of technical progress.

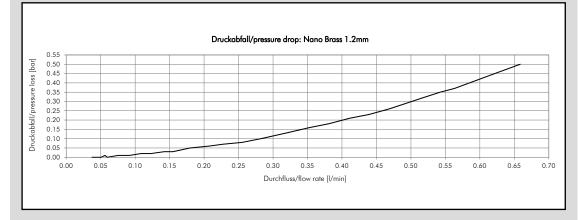
# MEASUREMENT TIPS

- Ensure that there is no fast-pulsatory movement of the media
- Ensure that there are no reverse pressure surges
- Ensure that there is no air in the system
- Keep the pressure loss as small as possible
- Pay attention to the mounting position of the flow sensor
- Min/max flow should be in the linear range of the selected flow sensor
- Clean the system at appropriate intervals
- Avoid electrical voltage spikes
- Incorrect wiring of power supply +, signal and ground will destroy the flow sensor
- Do not load electrical contacts mechanically
- Avoid moisture on the electrical contacts
- Avoid stray pick-up via the cable (Do not lay cables in parallel with high current loads)

Version 03 Nano Brass FHC #9NB-11xx/03x GB Page 5-7

# Measurement Curve nano brass Ø1.2mm





### Medium: Water / Pressure: 3.5 bar

### #9NB-1120/03 with pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.2 mm	1′944	0.51	0.05	0.50	~1.6/17

### #9NB-1120/03A without pulse divider

I	Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
	Ø 1.2 mm	31'100	0.032	0.05	0.50	~26/270

The values specified must be considered as approximate values.

The number of pulses per litre may differ depending on medium and installation. We recommend to calibrate the number of pulses per litre in line with the complete installation.

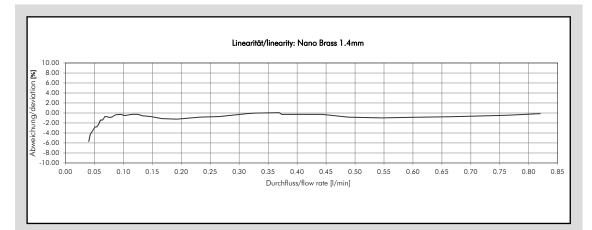
# MEASUREMENT TIPS

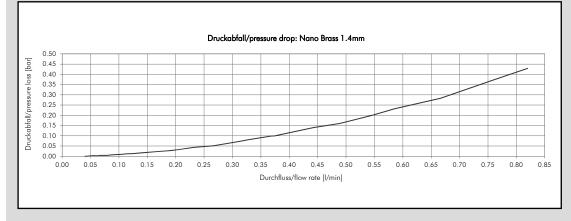
- Ensure that there is no fast-pulsatory movement of the media
- Ensure that there are no reverse pressure surges
- Ensure that there is no air in the system
- Keep the pressure loss as small as possible
- Pay attention to the mounting position of the flow sensor
- Min/max flow should be in the linear range of the selected flow sensor
- Clean the system at appropriate intervals
- Avoid electrical voltage spikes
- Incorrect wiring of power supply +, signal and ground will destroy the flow sensor
- Do not load electrical contacts mechanically
- Avoid moisture on the electrical contacts
- Avoid stray pick-up via the cable (Do not lay cables in parallel with high current loads)

We reserve the right to make modifications in the interests of technical progress.

Version O3 Nano Brass FHC #9NB-11xx/O3x GB Page 6-7

# Measurement Curve nano brass Ø1.4mm





### Medium: Water / Pressure: 3.5 bar

### #9NB-1140/03 with pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.4 mm	1′440	0.69	0.06	0.70	~1.6/17

### #9NB-1140/03A without pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.4 mm	23'040	0.043	0.06	0.70	~26/270

The values specified must be considered as approximate values.

The number of pulses per litre may differ depending on medium and installation. We recommend to calibrate the number of pulses per litre in line with the complete installation.

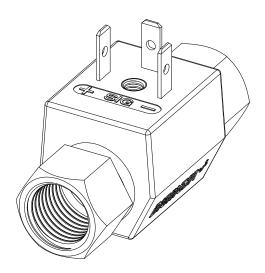
### We reserve the right to make modifications in the interests of technical progress.

# MEASUREMENT TIPS

- Ensure that there is no fast-pulsatory movement of the media
- Ensure that there are no reverse pressure surges
- Ensure that there is no air in the system
- Keep the pressure loss as small as possible
- Pay attention to the mounting position of the flow sensor
- Min/max flow should be in the linear range of the selected flow sensor
- Clean the system at appropriate intervals
- Avoid electrical voltage spikes
- Incorrect wiring of power supply +, signal and ground will destroy the flow sensor
- Do not load electrical contacts mechanically
- Avoid moisture on the electrical contacts
- Avoid stray pick-up via the cable (Do not lay cables in parallel with high current loads)

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# DATA SHEET





# Nano Inox Part number: 9NI-01xx/01x

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Version O6 Nano Inox FHI #9NI-01xx/01x GB Page 1-7

# General Description

The Flow Sensor nano is a general-purpose device. It is employed for measuring, regulating or metering and guarantees most precise measurement of fluid quantities. In addition, a pulse generator integrated into the flowmeter guarantees a practically unlimited useful life.

Steel 1.4401 / AISI 316

Materials (wetted)

PEEK PEEK

PVDF

Ceramic Sr Fe O (in contact with medium)

Housing:

Bearing :

Nozzle: Turbine:

Magnete:

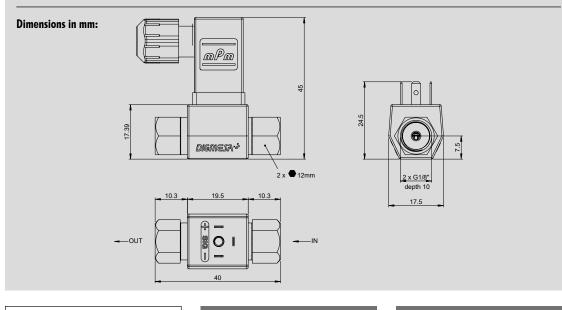
**Specific applications:** Straight flow path, compact design.

### Approvals / Standards

EN55014-1:00+A1:01+A2:02, EN61000-6-3:01+A11:04, IEC61000-6-3:06(ed.2.0), EN61000-3-2:06, IEC61000-3-2:05(ed.3.0), EN61000-3-3:95+A1:01+A2:05, IEC61000-3-3:94+A1:01+A2:05(cons.ed 1.2), EN55014-2:97+A1:01, EN61000-6-1:01, IEC61000-6-1:05(ed.2)



Technical data:		Electrical connec	tion ratings:	
Linear range:	from 0.035 - 0.70 l/min de-	Power supply:	+2.8 to $+24$ VDC	
Durability:	pending on the nozzle size min. 100'000 liters	Consumption:	<8 mA	
Dulubility:	at max. flow (page 5-7)	Signal connection:	Open collector, NPN	
Measuring accuracy:	+/- 2.0% *	Signal voltage:	0 VDC GND (saturation <0.7 V)	
Temperature range:	$+0^{\circ}$ C to $+100^{\circ}$ C		```	
	32°F to 212°F	Signal load:	max. 20 mA	
Pressure range:	20 bar at 20°C	Leakage current:	max. 10 µA	
	290 psi /68°F	Connections:	3-pin 2.8 x 0.5 mm	
Mounting position:	freely selectable	Signal:	Square-wave output	
Nozzle size:	Ø 1.0mm, 1.2mm, 1.4mm	Duty Cycle:	~50%	
* Accuracy in the linear equipment	range for individually calibrated			



**Options:** 3-pin valve connector



### RESISTANCE

Special regulations which must be complied with by the flow sensor manufacturer apply to each country, e.g. CE, NSF, FDA and SK. The various media flowing through the flow sensor differ from application to application. You are advised to enquire with the medium manufacturer as to whether the entire installation and the flow sensor are resistant to the medium itself (see Material)!

### ELECTRONIC

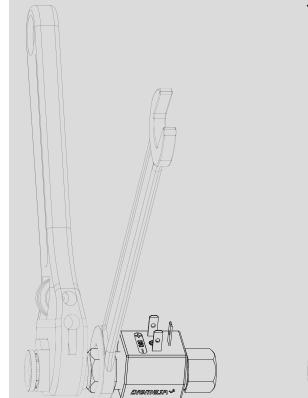
DIGMESA electronic circuitry is always designed for operation with DIGMESA flow sensors. Please note the following if connecting to other electronic circuitry:

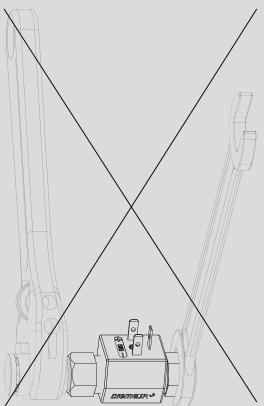
• The flow sensor does not supply an output voltage but switches the signal terminal to 0 V ground (actuated) or leaves it open (nonactuated)

• There must be a pull-up resistor between power supply + and signal depending on electronic circuitry!

Version 06 Nano Inox FHI #9NI-01xx/01x GB Page 2-7

# Installation instruction





Important: Fittings should be mounted torsion-free, max. 10 Nm torque!



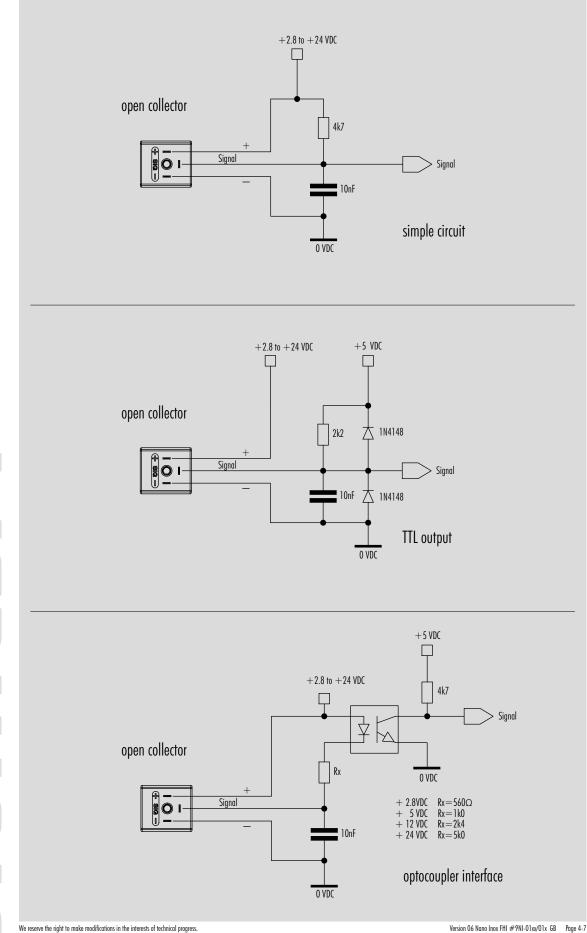
Drying and/or operating with compressed air destroys the flow sensor!

We reserve the right to make modifications in the interests of technical progress

Version O6 Nano Inox FHI #9NI-01xx/01x GB Page 3-7

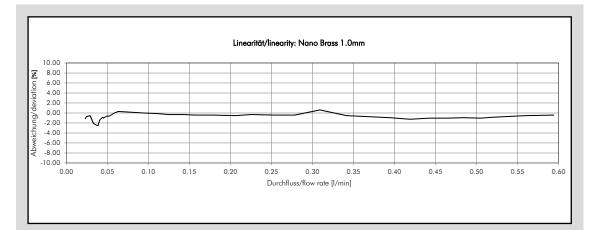
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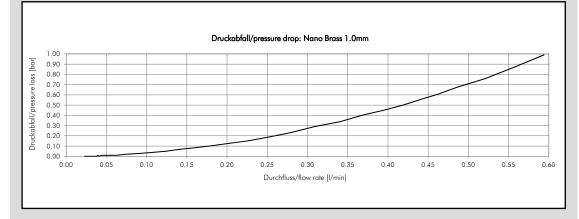
# Interface Connection: Examples Open collector



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# Measurement Curve nano Inox Ø1.0mm





### Medium: Water / Pressure: 3.5 bar

### #9NI-0100/01 with pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.0 mm	2'494	0.40	0.035	0.40	~1.4/17

### #9NI-0100/01A without pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.0 mm	39'900	0.025	0.035	0.40	~23/270

The values specified must be considered as approximate values.

The number of pulses per litre may differ depending on medium and installation. We recommend to calibrate the number of pulses per litre in line with the complete installation.

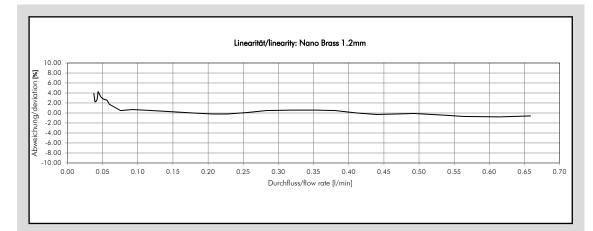
### We reserve the right to make modifications in the interests of technical progress.

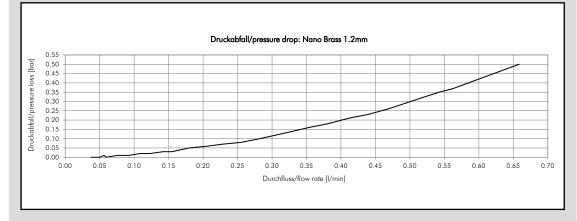
# MEASUREMENT TIPS

- Ensure that there is no fast-pulsatory movement of the media
- Ensure that there are no reverse pressure surges
- Ensure that there is no air in the system
- Keep the pressure loss as small as possible
- Pay attention to the mounting position of the flow sensor
- Min/max flow should be in the linear range of the selected flow sensor
- Clean the system at appropriate intervals
- Avoid electrical voltage spikes
- Incorrect wiring of power supply +, signal and ground will destroy the flow sensor
- Do not load electrical contacts mechanically
- Avoid moisture on the electrical contacts
- Avoid stray pick-up via the cable (Do not lay cables in parallel with high current loads)

Version 06 Nano Inox FHI #9NI-01xx/01x GB Page 5-7

# Measurement Curve nano Inox Ø1.2mm





### Medium: Water / Pressure: 3.5 bar

### #9NI-0120/01 with pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.2 mm	1'944	0.51	0.05	0.50	~1.6/17

### #9NI-0120/01A without pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.2 mm	31'100	0.032	0.05	0.50	~26/270

The values specified must be considered as approximate values.

The number of pulses per litre may differ depending on medium and installation. We recommend to calibrate the number of pulses per litre in line with the complete installation.

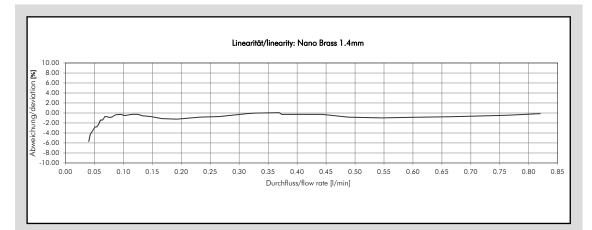
### We reserve the right to make modifications in the interests of technical progress.

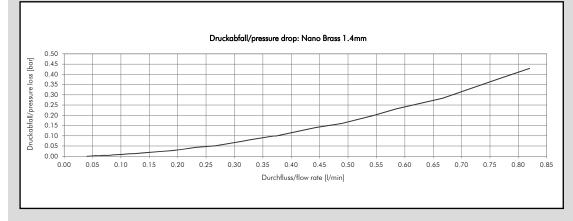
# MEASUREMENT TIPS

- Ensure that there is no fast-pulsatory movement of the media
- Ensure that there are no reverse pressure surges
- Ensure that there is no air in the system
- Keep the pressure loss as small as possible
- Pay attention to the mounting position of the flow sensor
- Min/max flow should be in the linear range of the selected flow sensor
- Clean the system at appropriate intervals
- Avoid electrical voltage spikes
- Incorrect wiring of power supply +, signal and ground will destroy the flow sensor
- Do not load electrical contacts mechanically
- Avoid moisture on the electrical contacts
- Avoid stray pick-up via the cable (Do not lay cables in parallel with high current loads)

Version 06 Nano Inox FHI #9NI-01xx/01x GB Page 6-7

# Measurement Curve nano Inox Ø1.4mm





### Medium: Water / Pressure: 3.5 bar

### #9NI-0140/01 with pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.4 mm	1'440	0.69	0.06	0.70	~1.6/17

### #9NI-0140/01A without pulse divider

Nozzle size	Pulses/ Litre	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø 1.4 mm	23′040	0.043	0.06	0.70	~26/270

The values specified must be considered as approximate values.

The number of pulses per litre may differ depending on medium and installation. We recommend to calibrate the number of pulses per litre in line with the complete installation.

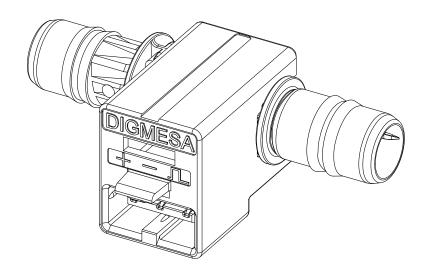
# MEASUREMENT TIPS

- Ensure that there is no fast-pulsatory movement of the media
- Ensure that there are no reverse pressure surges
- Ensure that there is no air in the system
- Keep the pressure loss as small as possible
- Pay attention to the mounting position of the flow sensor
- Min/max flow should be in the linear range of the selected flow sensor
- Clean the system at appropriate intervals
- Avoid electrical voltage spikes
- Incorrect wiring of power supply +, signal and ground will destroy the flow sensor
- Do not load electrical contacts mechanically
- Avoid moisture on the electrical contacts
- Avoid stray pick-up via the cable (Do not lay cables in parallel with high current loads)

We reserve the right to make modifications in the interests of technical progress.

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DATA SHEET





# **nano**<sup>DM60</sup> Part number: 93N-6211/1100x

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Version 03 Nano #93N-6211/1100x GB Page 1-5

# General Description

The nanome Flow Sensor is a general-purpose device that has been specially designed for coffee machines that use vibratory pumps. The device is installed between the water tank and the vibration pump (on the suction side). This way measuring errors that arise during pulsating water flow caused by vibration pumps are minimized. Specific applications: Doubled isolation (liquid/electronics) according to the standard IEC/EN 60335-1: 2001/2002 + A1: 04+A2: 06+A11: 04+A12: 06.

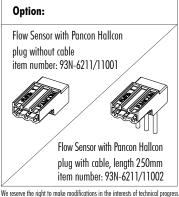
### Approvals / Standards

EN55014-1:00+A1:01+A2:02, EN61000-6-3:01+A11:04, IEC61000-6-3:06(ed.2.0), EN61000-3-2:06, IEC61000-3-2:05(ed.3.0), EN61000-3-3:95+A1:01+A2:05, IEC61000-3-3:94+A1:01+A2:05(Cons.ed 1.2), EN55014-2:97+A1:01, EN61000-6-1:01, IEC61000-6-1:05(ed.2), LFGB (EU 1935 /2004, EU10/2011)

Materials (v	vetted)	Technical data:		Electrical connec	tion ratings:
Housing:	PP (filled)	Linear range:	from 0.08 - 0.40 l/min	Power supply:	+3.0 to $+20$ VDC
Bearing pin:	РР	Durability:	min. 3000 liters at 0.4 l/min	Consumption:	<8 mA
Nozzle:	PP Ø 1.1 mm	Resolution:	48'000 pulses/liter	Signal connection:	Open collector NPN
Turbine:	PVDF	Pressure loss:	0.31 bar (4.49 psi) sucking at 0.40 l/min	Signal voltage:	0 VDC GND (saturation <0.7 V)
Magnete:	Ceramic Sr Fe O	Measuring accuracy:	+/- 2.0% *	Signal load:	max. 20 mA
		Temperature range:	+0°C to +65°C 32°F to 149°F	Leakage current:	max. 10 μA
		Pressure range:	-1 bar to 0.30 bar at 20°C -14.5 psi to 4.35 psi /68°F	Connections:	Pancon Hallcon plug (contact cycles max. 5x)
		Mounting position:	freely selectable	Signal:	Square-wave output
		Nozzle size:	Ø 1.1 mm	Duty Cycle:	~50%

\* Accuracy in the linear range for individually calibrated equipment

# Dimensions in mm:



RESISTANCE

Special regulations which must be complied with by the flow sensor manufacturer apply to each country, e.g. CE, NSF, FDA and SK. The various media flowing through the flow sensor differ from application to application. You are advised to enquire with the medium manufacturer as to whether the entire installation and the flow sensor are resistant to the medium itself (see material)!

### **ELECTRONIC**

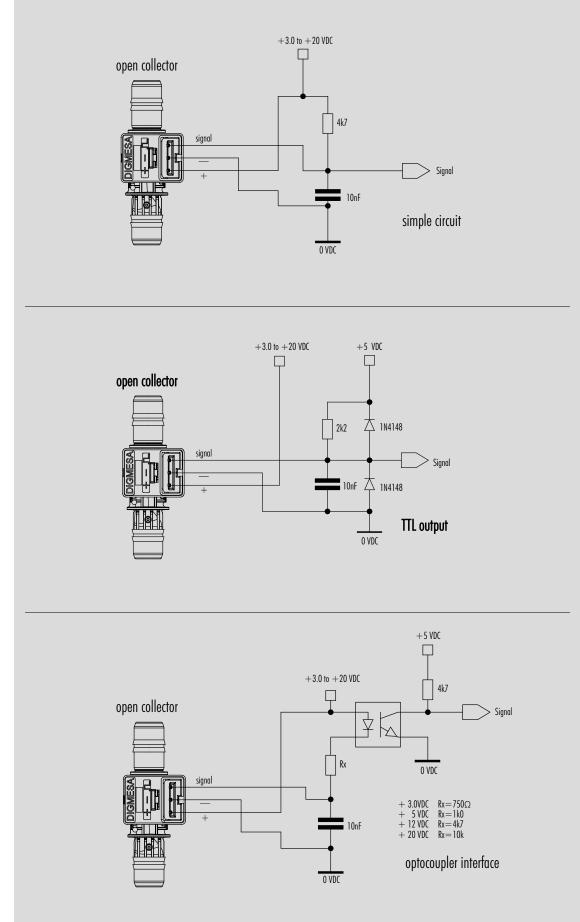
DIGMESA electronic circuitry is always designed for operation with DIGMESA flow sensors. Please note the following if connecting to other electronic circuitry:

• The flow sensor does not supply an output voltage but switches the signal terminal to 0 V ground (actuated) or leaves it open (nonactuated)

 $\bullet$  There must be a pull-up resistor between power supply + and signal depending on electronic circuitry!

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# Interface Connection: Examples Open Collector

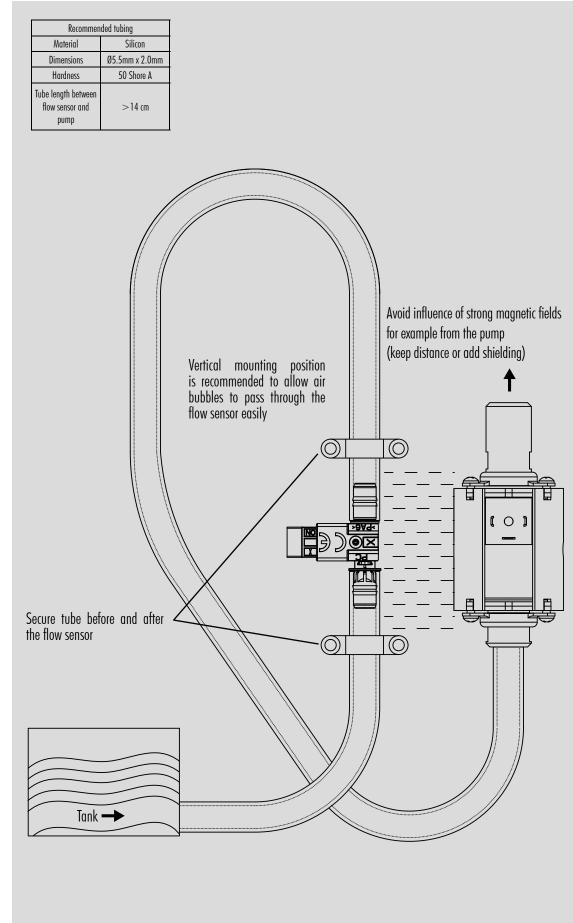


We reserve the right to make modifications in the interests of technical progress.

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# Application example for household coffee machines

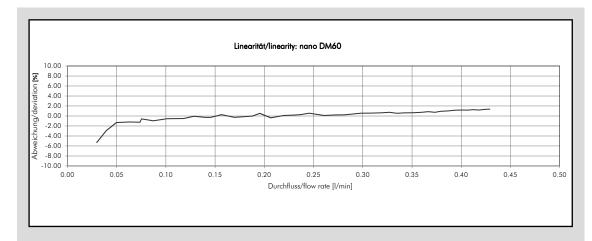


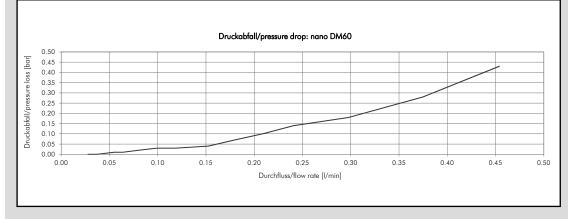
We reserve the right to make modifications in the interests of technical progress

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# Measurement Curve nano<sup>DM60</sup>





### Medium: Water / Pressure: 1.0 bar

Nozzle size	Pulses/ Litres	ml/pulse	min. flow rate [l/min]	max. flow rate [l/min]	Pulse frequency [Hz] min/max
Ø1.1 mm	48'000	0.020	0.08	0.40	64 / 320

The values specified must be considered as approximate values.

The number of pulses per litre may differ depending on medium and installation. We recommend to calibrate the number of pulses per litre in line with the complete installation.

# MEASUREMENT TIPS

- Ensure that there is no fast-pulsatory movement of the media
- Ensure that there are no reverse pressure surges
- Ensure that there is no air in the system
- Keep the pressure loss as small as possible
- Pay attention to the mounting position of the flow sensor
- Min/max flow should be in the linear range of the selected flow sensor
- Clean the system at appropriate intervals
- Avoid electrical voltage spikes
- Incorrect wiring of power supply +, signal and ground will destroy the flow sensor
- Do not load electrical contacts mechanically
- Avoid moisture on the electrical contacts
- Avoid stray pick-up via the cable (Do not lay cables in parallel with high current loads)

We reserve the right to make modifications in the interests of technical progress.

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