



MSS

Non-Contact Magnetostrictive Position Sensor

- Measuring length 50 - 5000 mm
- 16 bit resolution
- 0-10V, 0-20 mA, 4-20 mA output
- 24 VDC power supply



Sensopulse®
MAGNETOSTRICTIVE

ANALOG 0-10 V
4-20 mA

Technical Specifications

Measurement stroke	50 - 5000 mm
Resolution	16 bit DAC output
Linearity	±0,05% full scale (min. 100 µm)
Repeatability	±0,01% (full scale)
Output	0-10V, 10-0V, 0-20 mA, 20-0 mA, 4-20 mA, 20-4 mA
Power supply	24 VDC ±10%
Displacement speed	< 5 m/s
Update time	(0-600mm, 0,5ms), (600-1500mm, 1ms), (1500-3000mm, 2ms), (1501-5000mm, 3ms)
Load resistance	500 Ohm
Max. consumption	50 mA - 90 mA (depending on stroke length)
Max. output noise	< 5 mVpp
Reverse polarity protection	Up to -30 VDC
Overvoltage protection	Up to +30 VDC
Vibration	EN 60068-2-6 , 5-200 Hz 200 m/s ² (20g) , 2h 30 min. each axis (x,y,z)
Shock	EN 60068-2-2:2007 500 m/s ² (50g) , 11ms. (x,y,z axis)
Case dimensions	33 mm x 33 mm
Case material	Anodized aluminium
Mechanical fixing	Variable brackets
Protection level	IP 67
Operating temperature	-10°C ... +70°C
Storage temperature	-30°C ... +90°C

MSW

Non-Contact Magnetostrictive Position Sensor

- Measuring length 50 - 5000 mm
- 16 bit resolution
- 0-10V, 0-20 mA, 4-20 mA output
- 24 VDC power supply



Sensopulse®
MAGNETOSTRICTIVE

ANALOG 0-10 V
4-20 mA

Technical Specifications

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Linearity	±0,05% full scale (min. 100 µm)
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Output	0-10V, 10-0V, 0-20 mA, 20-0 mA, 4-20 mA, 20-4 mA
Power supply	24 VDC ±10%
Displacement speed	< 5 m/s
Update time	(0-600mm, 0,5ms), (600-1500mm, 1ms), (1500-3000mm, 2ms), (1501-5000mm, 3ms)
Load resistance	500 Ohm
Max. consumption	50 mA - 90 mA (depending on stroke length)
Max. output noise	< 5 mVpp
Reverse polarity protection	Up to -30 VDC
Overvoltage protection	Up to +30 VDC
Vibration	EN 60068-2-6 , 5-200 Hz 200 m/s ² (20g) , 2h 30 min. each axis (x,y,z)
Shock	EN 60068-2-2:2007 500 m/s ² (50g) , 11ms. (x,y,z axis)
Case dimensions	33 mm x 33 mm
Case material	Anodized aluminium
Mechanical fixing	Variable brackets
Protection level	IP 67
Operating temperature	-10°C ... +70°C
Storage temperature	-30°C ... +90°C

MSR

Non-Contact Magnetostrictive Position Sensor

- Measuring length 50 - 1000 mm
- 16 bit resolution
- Excellent movement with rod design
- Single - double output options



Sensopulse®
MAGNETOSTRICTIVE

ANALOG 0-10 V
4-20 mA

Technical Specifications	
Measurement stroke	50 - 1000 mm
Resolution	16 bit DAC output
Linearity	±0,05% full scale (min. 100 µm)
Repeatability	±0,01% (full scale)
Output	0-10V, 10-0V, 0-20 mA, 20-0 mA, 4-20 mA, 20-4 mA
Power supply	24 VDC ±10%
Displacement speed	< 5 m/s
Update time	(0-600mm, 0,5ms), (600-1500mm, 1ms), (1500-3000mm, 2ms), (1501-5000mm, 3ms)
Load resistance	500 Ohm
Max. consumption	50 mA - 90 mA (depending on stroke length)
Max. output noise	< 5 mVpp
Reverse polarity protection	Up to -30 VDC
Overvoltage protection	Up to +30 VDC
Vibration	EN 60068-2-6 , 5-200 Hz 200 m/s ² (20g) , 2h 30 min. each axis (x,y,z)
Shock	EN 60068-2-2:2007 500 m/s ² (50g) , 11ms. (x,y,z axis)
Case dimensions	33 mm x 33 mm
Case material	Anodized aluminium
Rod dimensions	Ø6 mm
Rod material	Stainless steel
Mechanical fixing	Variable brackets
Protection level	IP 65
Operating temperature	-10°C ... +70°C
Storage temperature	-30°C ... +90°C

MST - MSTL

Non-Contact Magnetostrictive Position Sensor

- Measuring length 50 - 5000 mm
- 12-16 bit resolution
- 0-10V, 0-20 mA, 4-20 mA output
- 24 VDC power supply



Sensopulse®
MAGNETOSTRICTIVE

ANALOG 0-10 V
4-20 mA

Technical Specifications

Measurement stroke	50 - 5000 mm
Resolution	12-16 bit DAC output
Linearity	±0,05% full scale (min. 100 µm)
Repeatability	±0,01% (full scale)
Output	0-10V, 10-0V, 0-20 mA, 20-0 mA, 4-20 mA, 20-4 mA
Power supply	24 VDC (22 -26V)
Displacement speed	< 5 m/s
Update time	(0-600mm, 0,5ms), (600-1500mm, 1ms), (1500-3000mm, 2ms), (1501-5000mm, 3ms)
Load resistance	500 Ohm
Max. consumption	50 mA - 90 mA (depending on stroke length)
Max. output noise	< 5 mVpp
Reverse polarity protection	Up to -30 VDC
Overvoltage protection	Up to +30 VDC
Vibration	EN 60068-2-6 , 5-200 Hz 200 m/s ² (20g) , 2h 30 min. each axis (x,y,z)
Shock	EN 60068-2-2:2007 500 m/s ² (50g) , 11ms. (x,y,z axis)
Case dimensions	33 mm x 33 mm
Case material	Anodized aluminium
Rod dimensions	Ø6 mm
Rod material	Stainless steel
Mechanical fixing	Variable brackets
Protection level	IP 65
Operating temperature	-10°C ... +70°C
Storage temperature	-30°C ... +90°C

MSP

In-Hydraulic Cylinders Magnetostrictive Position Sensor

- Measuring length 50 - 3000 mm
- 15 bit resolution
- Single - double output options



Sensopulse®
MAGNETOSTRICTIVE

ANALOG 4-20 mA

Technical Specifications

Measurement stroke	50 - 3000 mm
Resolution	15 bit DAC
Repeatability	±0,005% (full scale)
Output	0-20mA, 4-20mA
Power supply	24 VDC ±10%
Displacement speed	<5 m/s
Linearity	±0,05% full scale (min. 100 µm)
Sampling rate	Up to 2 kHz (depending on stroke length)
Vibration	EN 60068-2-6 , 5-200 Hz 200 m/s ² (20g) , 2h 30 min. each axis (x,y,z)
Shock	EN 60068-2-2:2007 500 m/s ² (50g), 11ms. (x,y,z axis)
Update time	(0-600mm, 0,5ms), (600-1500mm, 1ms), (1500-3000mm, 2ms)
Max. consumption	< 50 mA - 90 mA (depending on stroke length)
Max. output noise	< 5 mVpp
Load resistance	max. 500 Ohm
Reverse polarity protection	Up to -30 VDC
Overvoltage protection	Up to +30 VDC
Pressure rating	< 500 bar
Sealing	O-ring: NBR Backup Ring: PTFE
Mechanical fixing	M24 x 1.5 Flat
Case material	Case: Stainless steel, Tube: Stainless steel, Caps: Anodized aluminium
Protection level	IP 67
Operating temperature	-10°C ... +70°C
Storage temperature	-30°C ... +90°C

MSP-F

Internal / External Mounting Hydraulic Cylinders Magnetostrictive Position Sensor

- Measuring length 50 - 3000 mm
- 15 bit resolution
- Single - double output options



Sensopulse®
MAGNETOSTRICTIVE

ANALOG 4-20 mA

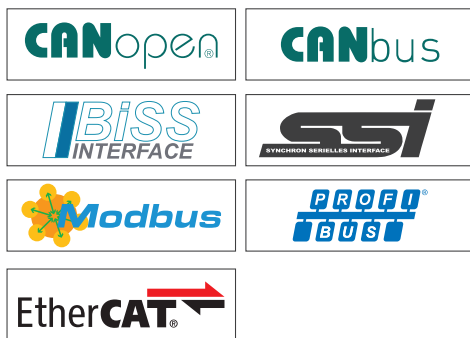
Technical Specifications

Measurement stroke	50 - 3000 mm
Resolution	15 bit DAC
Repeatability	±0,005% (full scale)
Output	0-20mA, 4-20mA
Power supply	24 VDC ±10%
Displacement speed	<5 m/s
Linearity	±0,05% full scale (min. 100 µm)
Sampling rate	Up to 2 kHz (depending on stroke length)
Vibration	EN 60068-2-6, 5-200 Hz 200 m/s ² (20g), 2h 30 min. each axis (x,y,z)
Shock	EN 60068-2-2:2007 500 m/s ² (50g), 11ms. (x,y,z axis)
Update time	(0-600mm, 0,5ms), (600-1500mm, 1ms), (1500-3000mm, 2ms)
Max. consumption	< 50 mA - 90 mA (depending on stroke length)
Load resistance	max. 500 Ohm
Reverse polarity protection	Up to -30 VDC
Overvoltage protection	Up to +30 VDC
Pressure rating	< 500 bar
Sealing	O-ring: NBR
Mechanical fixing	M18 x 1.5 or 3/4" -16 UNF O-ring
Case material	Case: Stainless steel, Tube: Stainless steel, Caps: Anodized aluminium
Protection level	IP 67
Operating temperature	-10°C ... +70°C
Storage temperature	-30°C ... +90°C

DMSS

Digital Non-Contact Magnetostrictive Position Sensor

- Measuring length 100 - 5000 mm
- 15 bit resolution
- Digital output



Technical Specifications - CANopen / CANbus	
Interface	CAN
Protocol	CANopen, CANbus
Communication profile	CiA301, CiA406 V3.2
Node ID	1-127(Default Node ID:20)
Green LED	Power on, CAN communication active
Red LED	Error, stop mode

Technical Specifications - ProfiBUS	
Interface	ProfiBUS-DP
Protocol	ProfiBUS-DP V0/V1/V2
Line driver	Galvanic isolation
Node ID	1-127(Default Node ID:20)
Green LED	Power on, ProfiBUS communication active
Red LED	Error, stop mode

Technical Specifications - ModBUS	
Interface	RS422 / RS485
Protocol	ModBUS
Node ID	1-247
Baud rate	9600 - 115200 Bit/sec.

Technical Specifications - EtherCAT	
Interface	EtherCAT
Protocol	EtherCAT 100 Base-Tx, Fast ethernet
Baud rate	Max. 100 Mbit/s
Green LED	Power on, EtherCAT communication active
Red LED	Error, stop mode

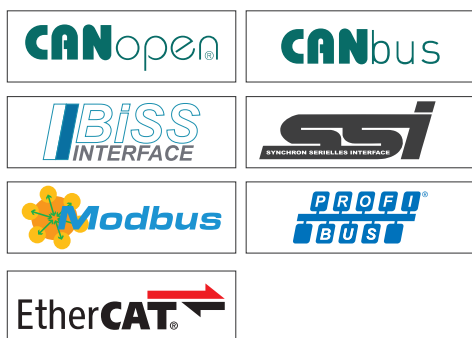
Technical Specifications - BiSS	
Interface	RS422 / RS485
Protocol	BiSS binary
Status LED	Optional
Green LED	Power on, BiSS communication active
Red LED	Error, stop mode

Technical Specifications - SSI	
Interface	RS422 / RS485
Protocol	SSI binary, SSI gray
Status LED	Optional
Green LED	Power on, SSI communication active
Red LED	Error, stop mode

DMSW

Digital Non-Contact Magnetostrictive Position Sensor

- Measuring length 100 - 5000 mm
- 15 bit resolution
- Digital output



Technical Specifications - CANopen / CANbus	
Interface	CAN
Protocol	CANopen, CANbus
Communication profile	CiA301, CiA406 V3.2
Node ID	1-127(Default Node ID:20)
Green LED	Power on,CAN communication active
Red LED	Error, stop mode

Technical Specifications - ProfiBUS	
Interface	ProfiBUS-DP
Protocol	ProfiBUS-DP V0/V1/V2
Line driver	Galvanic isolation
Node ID	1-127(Default Node ID:20)
Green LED	Power on,ProfiBUS communication active
Red LED	Error, stop mode

Technical Specifications - ModBUS	
Interface	RS422 / RS485
Protocol	ModBUS
Node ID	1-247
Baud rate	9600 - 115200 Bit/sec.

Technical Specifications - EtherCAT	
Interface	EtherCAT
Protocol	EtherCAT 100 Base-Tx, Fast ethernet
Baud rate	Max. 100 Mbit/s
Green LED	Power on, EtherCAT communication active
Red LED	Error, stop mode

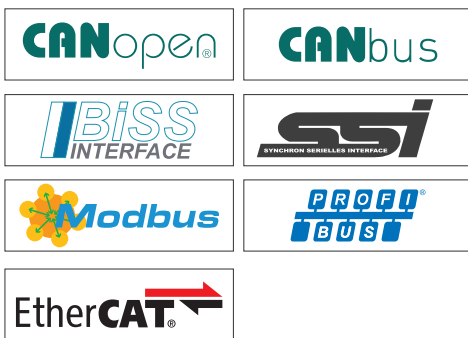
Technical Specifications - BiSS	
Interface	RS422 / RS485
Protocol	BiSS binary
Status LED	Optional
Green LED	Power on, BiSS communication active
Red LED	Error, stop mode

Technical Specifications - SSI	
Interface	RS422 / RS485
Protocol	SSI binary, SSI gray
Status LED	Optional
Green LED	Power on, SSI communication active
Red LED	Error, stop mode

DMST / DMSTL

Digital Non-Contact Magnetostrictive Position Sensor

- Measuring length 100 - 5000 mm
- 15 bit resolution
- Digital output



Technical Specifications - CANopen / CANbus	
Interface	CAN
Protocol	CANopen, CANbus
Communication profile	CiA301, CiA406 V3.2
Node ID	1-127(Default Node ID:20)
Green LED	Power on, CAN communication active
Red LED	Error, stop mode

Technical Specifications - ProfiBUS	
Interface	ProfiBUS-DP
Protocol	ProfiBUS-DP V0/V1/V2
Line driver	Galvanic isolation
Node ID	1-127(Default Node ID:20)
Green LED	Power on, ProfiBUS communication active
Red LED	Error, stop mode

Technical Specifications - ModBUS	
Interface	RS422 / RS485
Protocol	ModBUS
Node ID	1-247
Baud rate	9600 - 115200 Bit/sec.

Technical Specifications - EtherCAT	
Interface	EtherCAT
Protocol	EtherCAT 100 Base-Tx, Fast ethernet
Baud rate	Max. 100 Mbit/s
Green LED	Power on, EtherCAT communication active
Red LED	Error, stop mode

Technical Specifications - BiSS	
Interface	RS422 / RS485
Protocol	BiSS binary
Status LED	Optional
Green LED	Power on, BiSS communication active
Red LED	Error, stop mode

Technical Specifications - SSI	
Interface	RS422 / RS485
Protocol	SSI binary, SSI gray
Status LED	Optional
Green LED	Power on, SSI communication active
Red LED	Error, stop mode

PRODUCTION RANGE

RESISTIVE
POTENTIOMETRIC



Linear Potentiometers
Long Stroke Serie

RESISTIVE
POTENTIOMETRIC



Linear Potentiometers
Short Stroke - Compact Serie

ANALOG V/mA



Linear Potentiometers
Internal Voltage - Current Conditioner Serie

Sensopulse®
MAGNETOSTRICTIVE

ANALOG V/mA



Non-Contact Magnetostrictive
Position Sensors

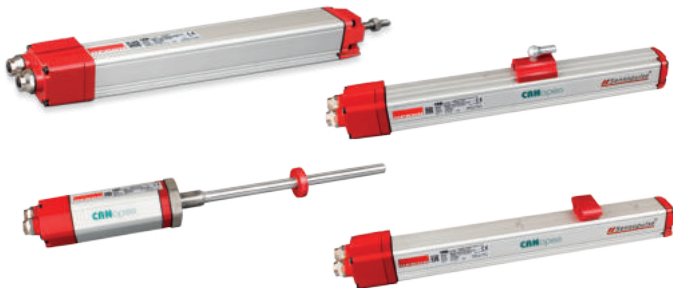
Sensopulse®
MAGNETOSTRICTIVE



CANopen



CANbus



Non-Contact Magnetostrictive
Position Sensors

Sensopulse®
MAGNETOSTRICTIVE

RESISTIVE
POTENTIOMETRIC

ANALOG V/mA



In-Cylinder
Position Sensors

PRODUCTION RANGE

INCREMENTAL 

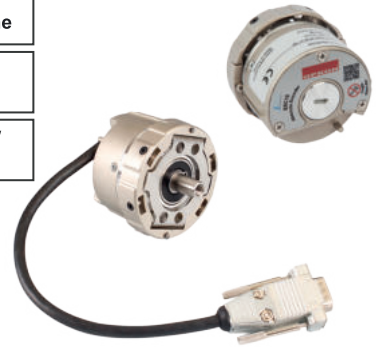


Optic / Magnetic
Rotary Encoders

 Sine
Cosine

 BISS
INTERFACE

 SSI



Optic Rotary Absolute Encoders
(for synchronous gearless motors)

RESISTIVE
POTENTIOMETRIC

INCREMENTAL 

ANALOG V/mA



Draw Wire Potentiometers
Draw Wire Encoders

RESISTIVE
POTENTIOMETRIC

ANALOG V/mA



Rotary Sensors Magnetic,
Contactless Analog Output

INCREMENTAL 



Magnetic Linear Encoders

 PROFIBUS

 CANopen

 Modbus

 EtherCAT



Analog-FieldBUS Converters

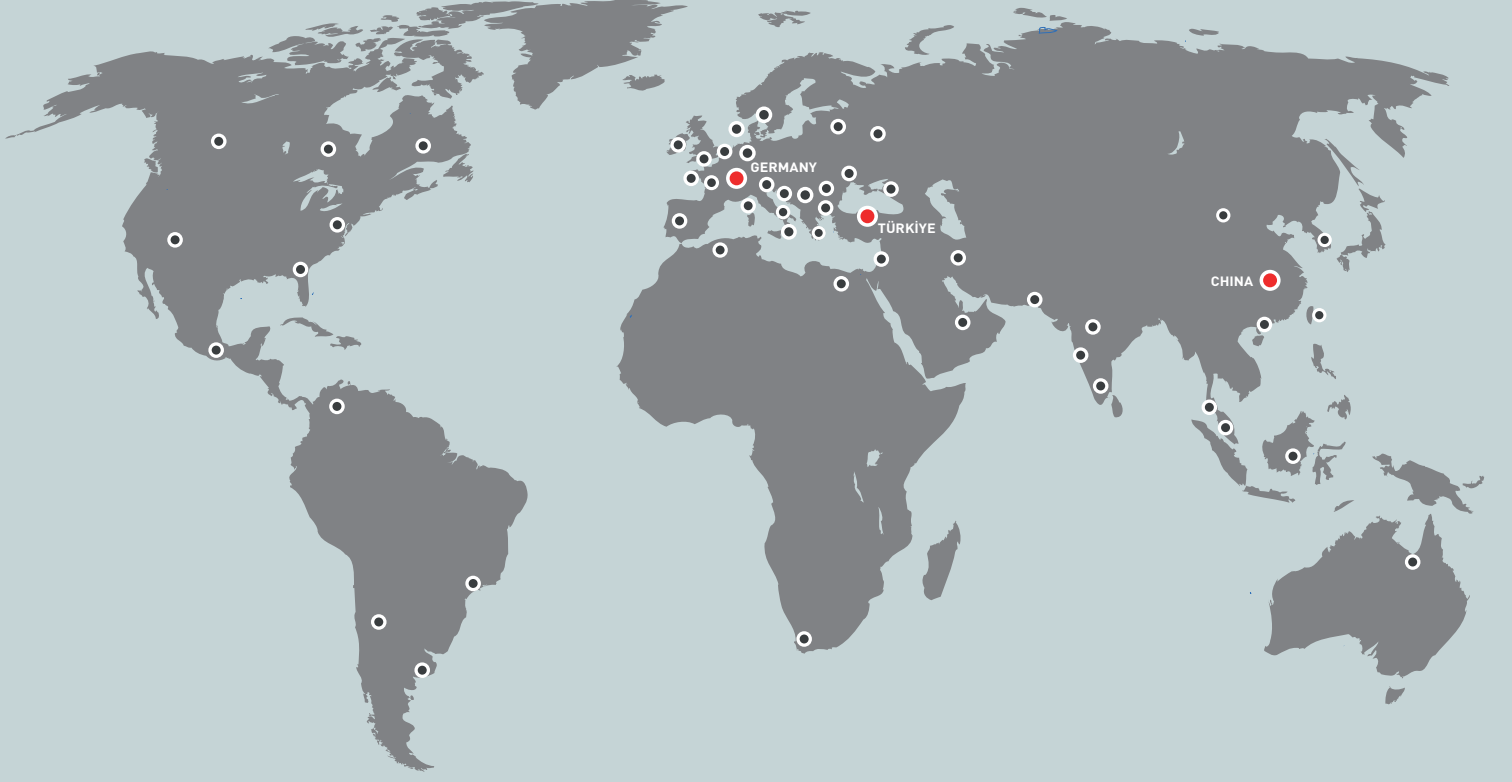


Panel-Type Measurement and Control Devices



Hot Runner Temperature Controls

WORLDWIDE SALES NETWORK



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