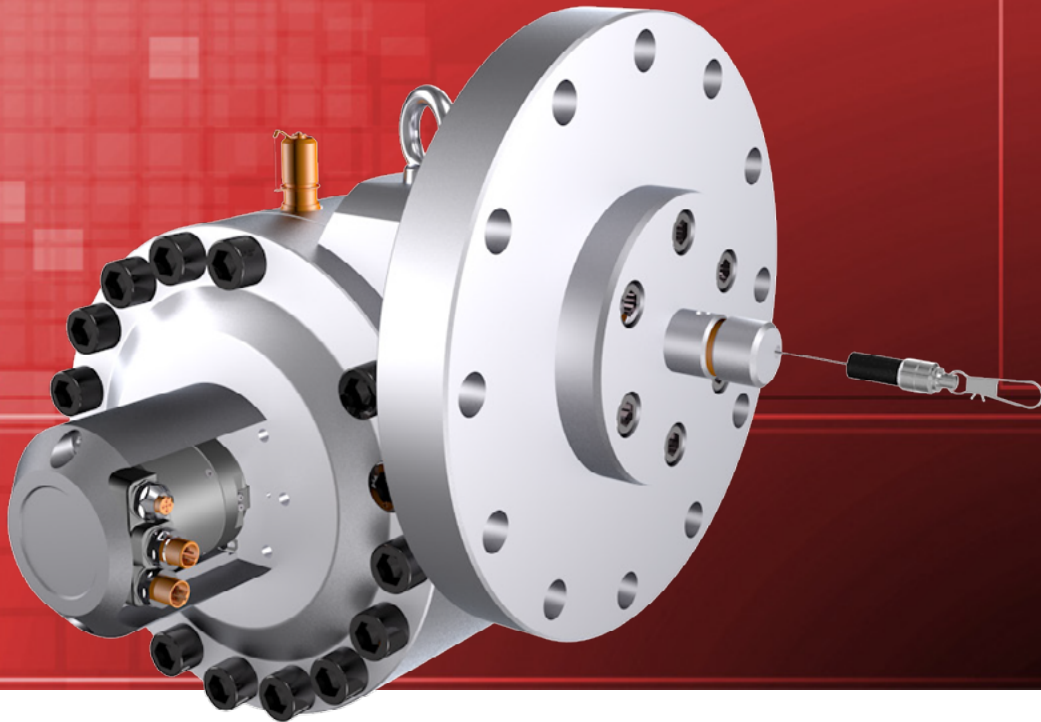


DRAW WIRE SENSOR



Series SX300

Key-Features:

- Measurement range up to 15 m
- Pressure-sealed up to 300 bar
- Output signals: 4...20 mA, SSI, CANopen, Profibus, EtherCAT, Profinet, further on request
- Alternative draw wire mechanics for encoder installation
- Unpressurised encoder

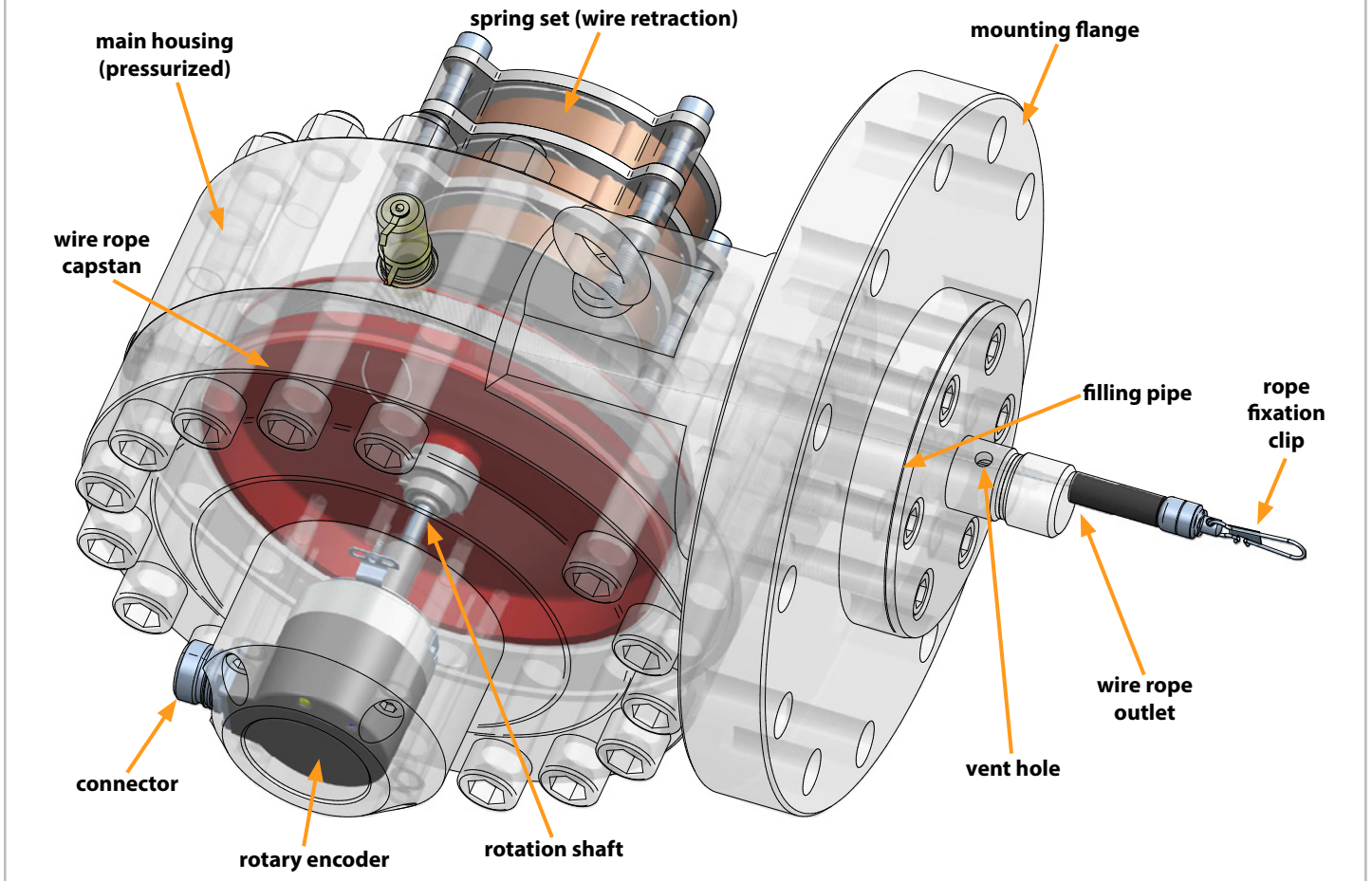
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INTRODUCTION

The Draw Wire Series SX300 by WayCon is designed for use in combination with hydraulic cylinders and measuring the cylinder position. Especially designed for long stroke cylinders with pressurized housings to be flanged directly to the cylinder head. By giving feedback signals to a machine control unit, it is possible to control the position of a cylinder, to program specific movements or to manage synchronous movements of several cylinders. Due to its small overall size, its short assembly time and its possible customisation, this sensor technology is a cost-effective and flexible solution for a wide range of industrial applications.

A constant spring force coils the measuring rope accurately single-layered on a wire rope capstan, so that its linear motion is converted into rotation. The sensor element (rotary encoder) provides the output signal required. Due to the dynamics of the draw wire transducer high motion speed and fast acceleration of the cylinder piston can be measured. Its high quality makes applications in harsh industrial environments possible.



TYPICAL APPLICATIONS

- hydraulic gates for dam control
- synchronous run of multiple cylinders
- sluice gate control
- cylinder acceleration and speed control
- stroke control of fairground ride applications

TECHNICAL DATA MECHANICS

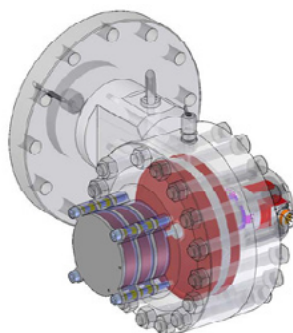
Measurement range	[m]	10 / 15
Linearity	[%]	±0.05 (depending on the used encoder)
Sheave circumference	[mm]	568.9
Operating temperature	[°C]	-20...+70
Hydraulic fluid		only non-hazardous fluids (non-flammable, non-toxic), no gaseous media
Operating pressure	[bar]	300 (30 MPa)
Testing pressure	[bar]	400 (40 MPa)
Pressure port		Minimes 1620
Piston travel speed	[m/s]	max. 2 (in air) ¹⁾
Rope tension	[N]	start of measurement range: 10...11.5 (13...16.5) end of measurement range: 29...31.5 (37...43)
Wire sag (calculated)	[mm]	<30
Connector orientation		adjustable in 90° steps
Weight	[kg]	61
Housing ²⁾		42CRMo4 (1.7228)
Draw wire		stainless steel 1.4301, Ø 0.69 mm
Encoder requirements	[mm]	flange with stator coupling Ø 58 pitch circle diameter for fixing screws 63 hollow shaft Ø 15

¹⁾ identified laboratory value without hydraulic fluid

²⁾ In case of outdoor use we recommend to varnish the housing additionally. Attention: Do not varnish moving parts (encoder shaft, coupling...!)

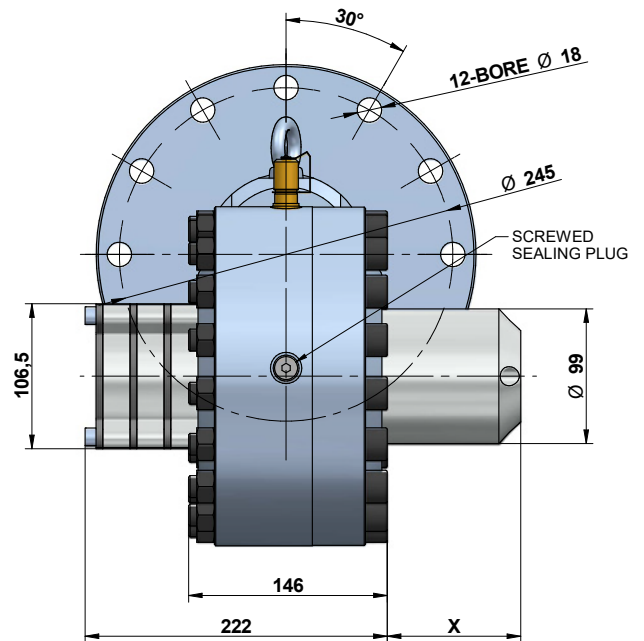
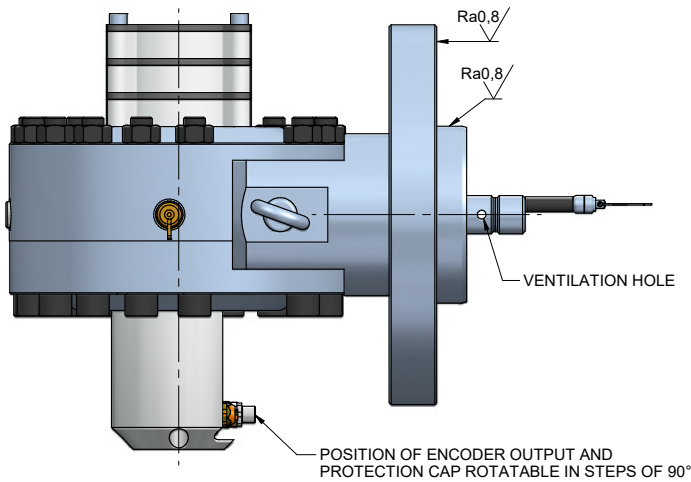
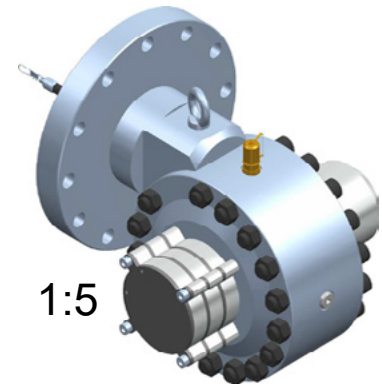
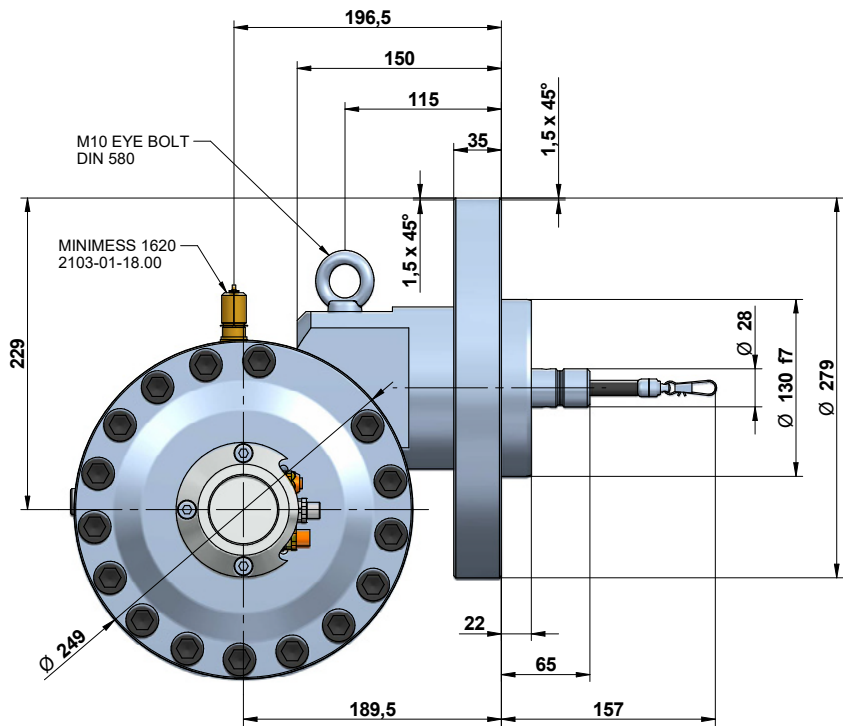
TECHNICAL DATA ENCODER

Output signal		4...20 mA	SSI	CANopen	Profibus-DP	EtherCAT	Profinet
Encoder type		M58-SC-W-10-420A-SR12	8.5883.6624.G322	8.5888.6622.2123	8.5888.6632.3113	8.5888.66B2.B212	8.5888.66C2.C212
Linearity	[%]	±0.05 (independent of the measurement range)					
Resolution scalable (via Software)		no	yes				
Resolution standard	[Pulses/mm] [Bit]	- 12	14.4 13				
Sensor element		Multiturn-magnetic	Multiturn-Absolute-Encoder with optical disc				
Connection		connector M12, radial, 5 pins	connector M23, radial, 12 pins	2 x connector M12, radial	3 x connector M12, radial	3 x connector M12, radial, 4 pins	
Power supply	[VDC]	10...30, reverse polarity protection of the power supply					
Current consumption (no load, 24VDC)	[mA]	max. 30	max. 50	max. 100	max. 120		max. 200
Protection class		IP65	IP67				
Humidity		-	max. 90 % relative, no condensation				
Temperature	[°C]	-40...+85	-40...+90	-40...+80		-40...+85	
Special cables needed		no	yes				
Links to encoder files		data sheet manual	data sheet	data sheet manual EDS file	data sheet manual GSD file	data sheet manual XML file	data sheet manual GSDML file



TECHNICAL DRAWING

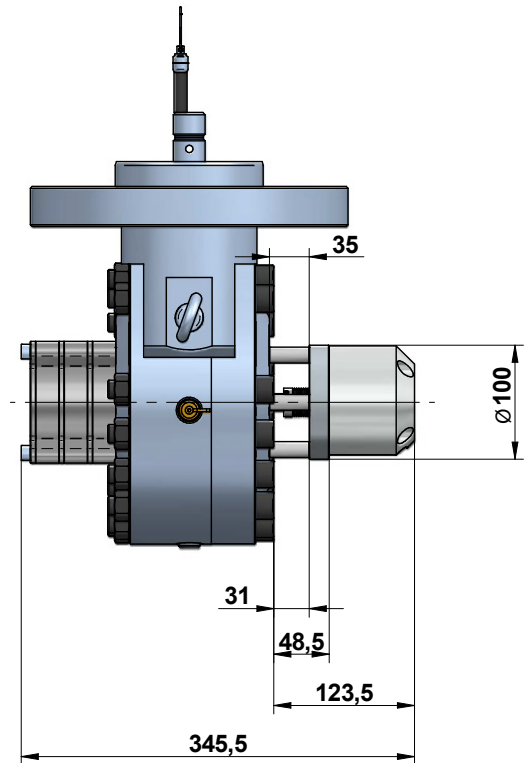
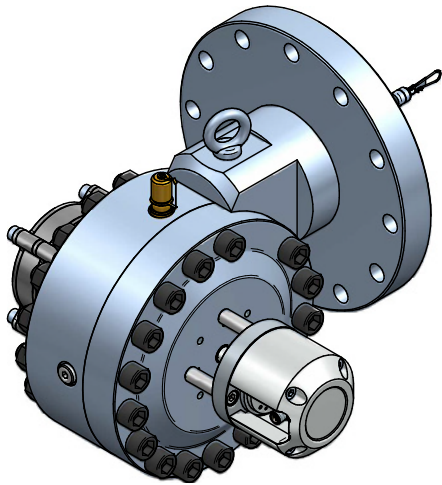
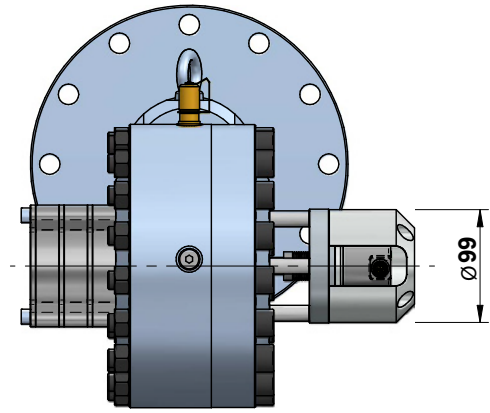
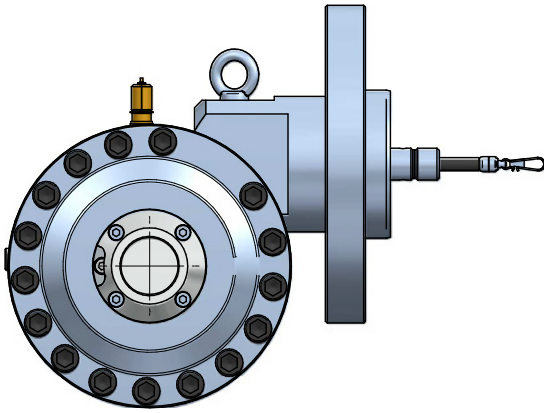
Flange type F1 (rod sealing)



encoder cap:
 for SSI encoder: X = 71 mm
 for Profibus encoder: X = 98 mm
 for EtherCAT encoder: X = 98 mm
 for CANopen encoder: X = 98 mm

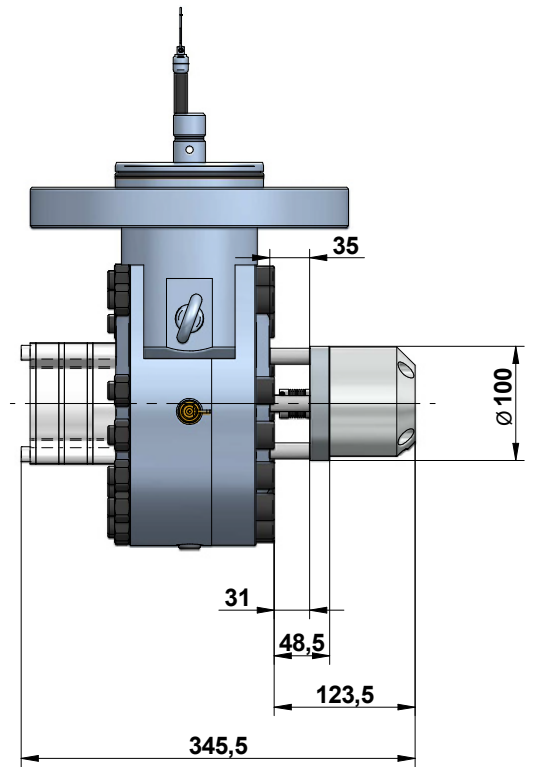
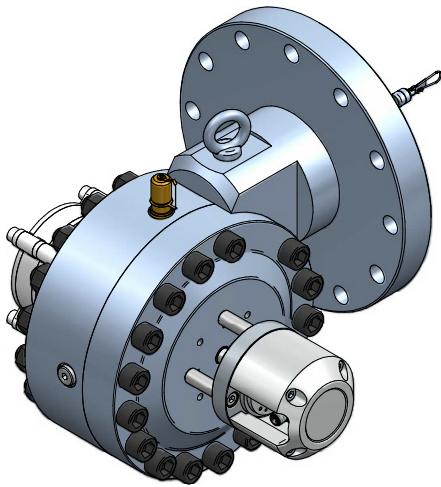
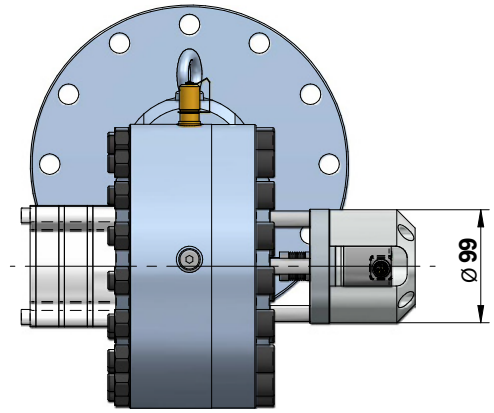
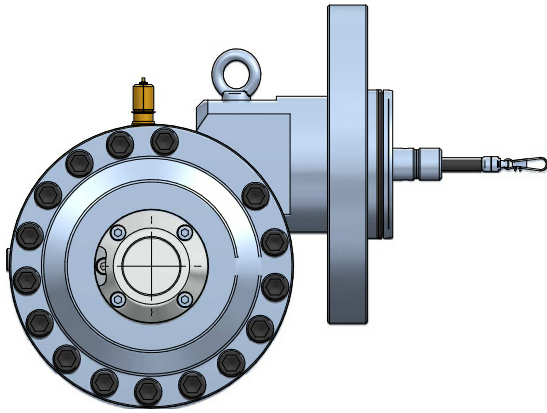
TECHNICAL DRAWING

Flange type F1 (rod sealing) for 4...20 mA



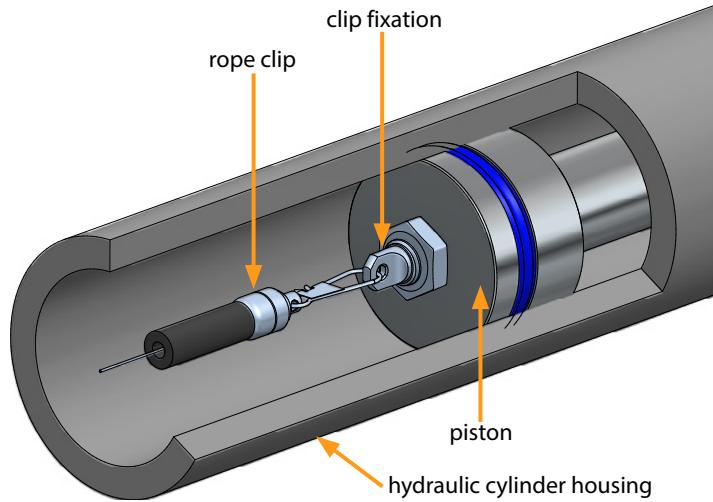
TECHNICAL DRAWING

Flange type F2 (piston sealing) for 4...20 mA

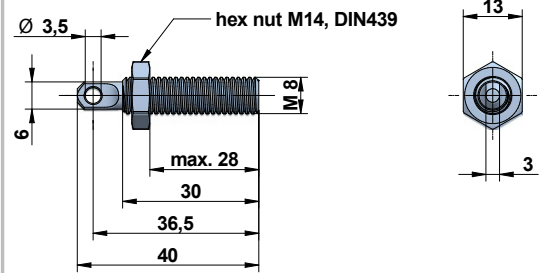


ACCESSORIES

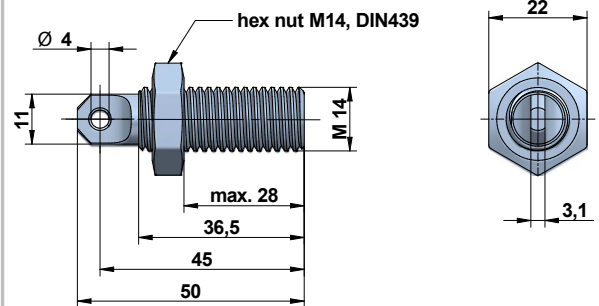
Piston wire fixation



Clipfixation M8



Clipfixation M14



ORDER CODE

SX300 - - -

Messbereich [m]	
10 / 15	

Sensor without encoder Draw wire mechanics ¹⁾	H15/63
Sensor with encoder 4...20 mA SSI CANopen Profibus DP EtherCAT Profinet	M420AT SSI CAN PRO CAT NET

F1	Flange type
F2	rod sealing type (only on request) piston sealing type (standard)

¹⁾ Encoder requirements:

- flange with stator coupling Ø 58 mm
- pitch circle diameter fixing screws Ø 63 mm
- hollow shaft Ø 15 mm