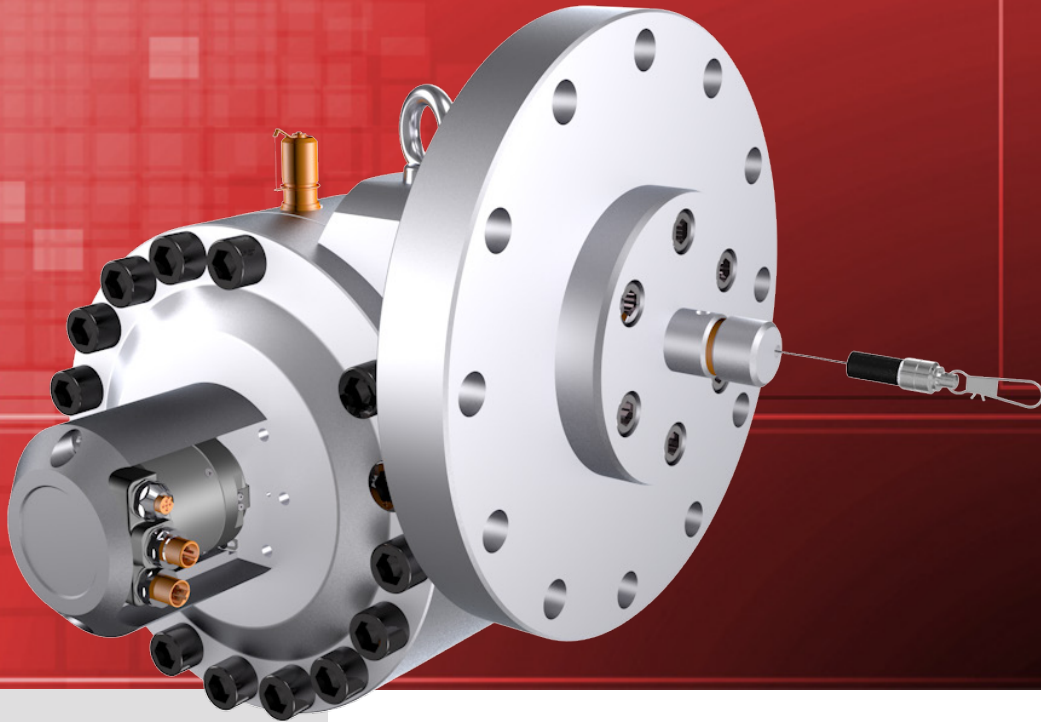


DRAW WIRE SENSOR



Series SX300

Key-Features:

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

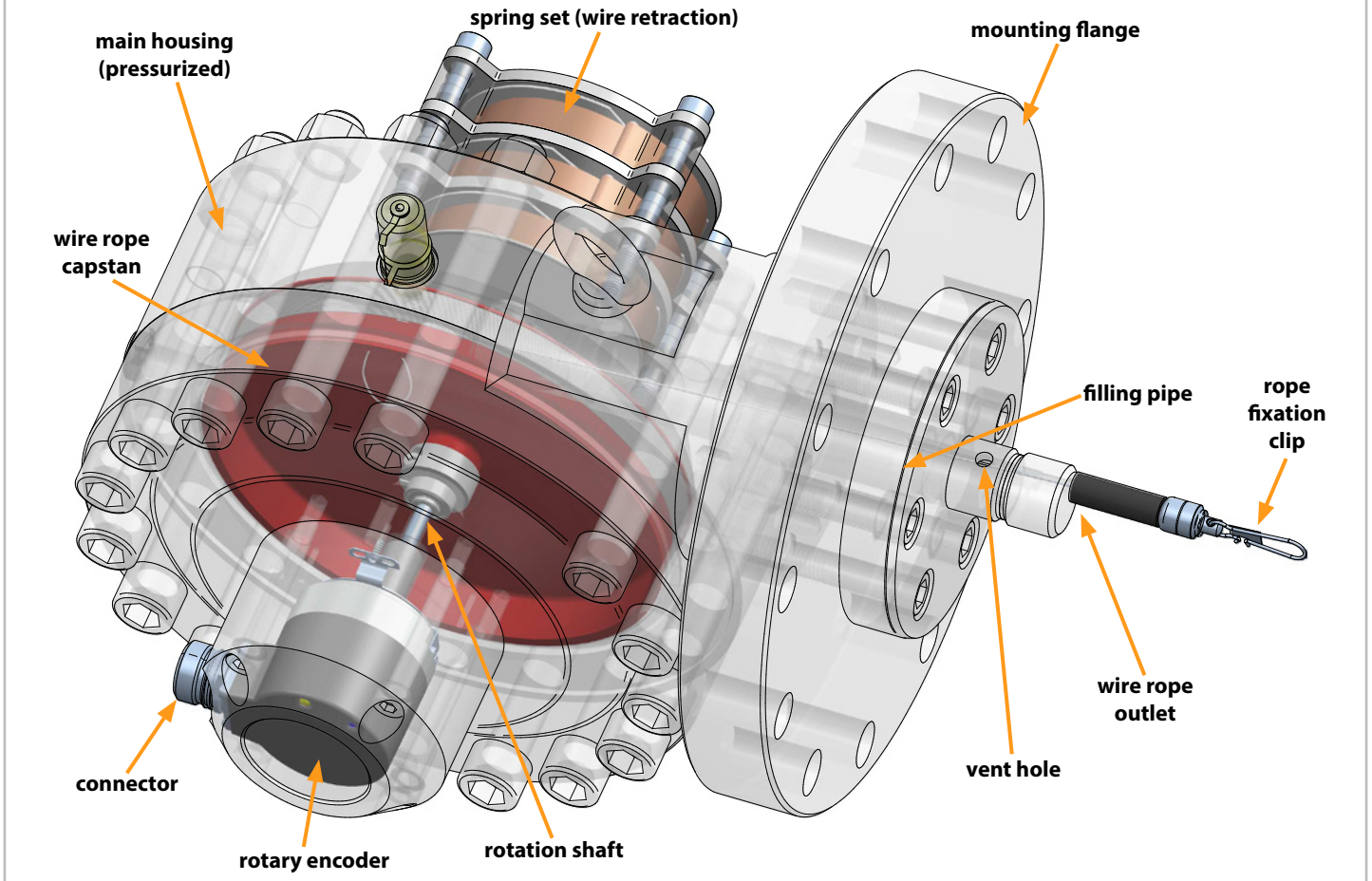
Content:

Introduction2
Technical Data3
Technical Drawing4
Accessories8
Order Code8

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 MECHANIC

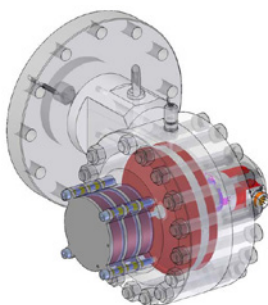
Measurement range	[m]	10 / 15
Linearity	[%]	±0.05 (depending on the used encoder)
Sheave circumference	[mm]	568.9
Operating temperature	[°C]	-20...+70
Hydraulic fluid		only non-hazardous fluids (non-flammable, non-toxic), no gaseous media
Operating pressure	[bar]	300 (30 MPa)
Testing pressure	[bar]	400 (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...!)

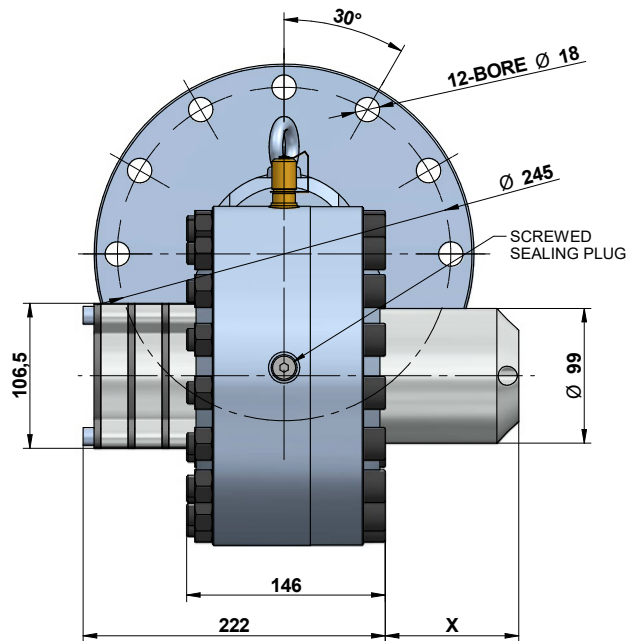
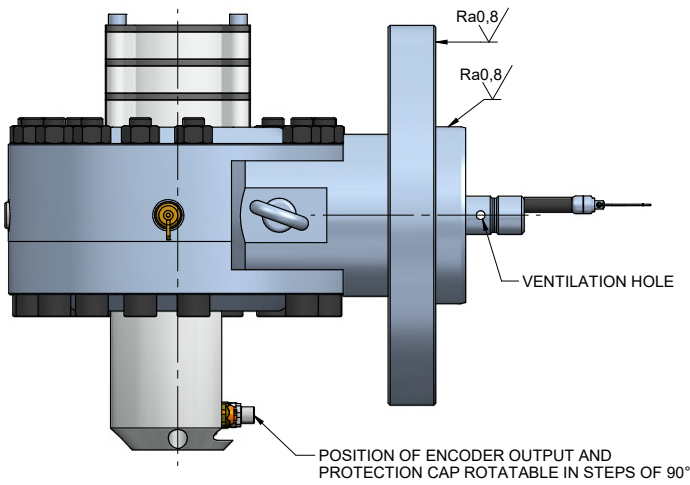
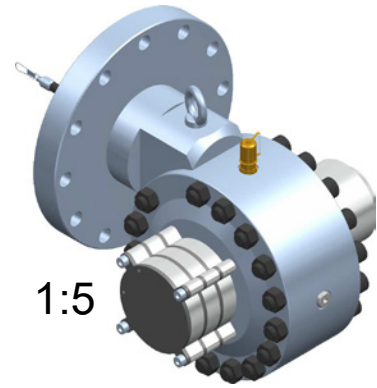
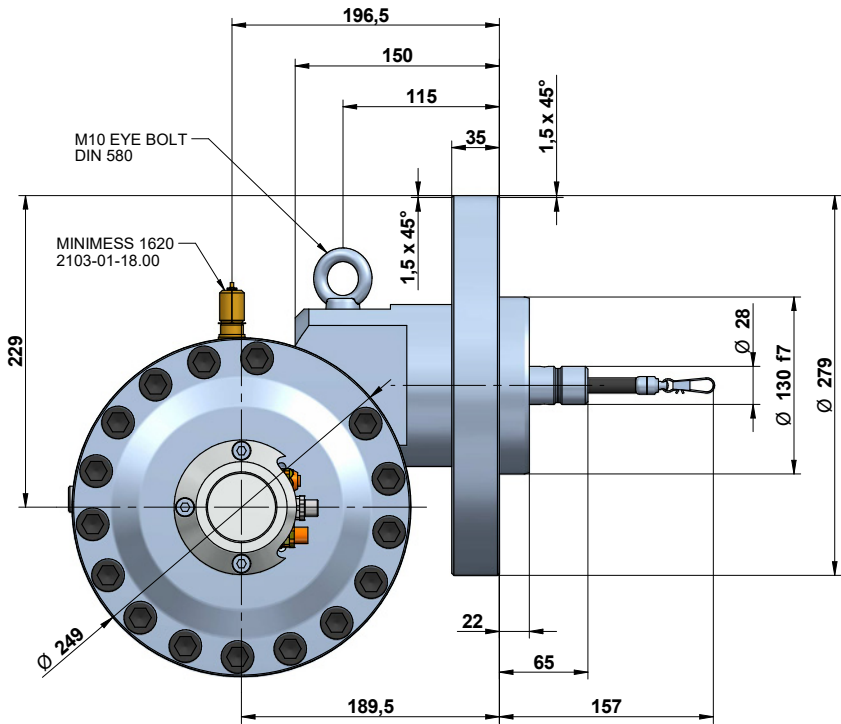
TECHNICAL DATA ENCODER

Output signal		SSI	CANopen	Profibus-DP	EtherCAT	Profinet	4...20 mA	
Link to the encoder		8.5883.6624.G322	8.5888.6622.2123	8.5888.6632.3113	8.5888.66B2.B212	8.5888.66C2.C212	M58-SC-W-10-420A-SR12	
Linearity	[%]	±0.05 (independent of the measurement range)						
Resolution scalable (via Software)		no	yes				no	
Resolution standard	[Pulses/mm] [Bit]	14,4 13	14.4 13				- 12	
Sensor element		Multiturn-Absolute-Encoder with optical disc						Multiturn-magnetic
Connection		connector M23, radial, 12 pins	2 x connector M12, radial	3 x connector M12, radial	3 x connector M12, radial, 4 pins		connector M12, radial, 5 pins	
Power supply	[VDC]	10...30, reverse polarity protection of the power supply						
Current consumption (no load, 24 VDC)	[mA]	max. 50	max. 100	max. 120		max. 200	max. 30	
Protection class		IP67						IP65
Humidity		max. 90 % relative, no condensation						-
Temperature	[°C]	-40...+90	-40...+80			-40...+85	-40...+85	
Special cables needed		yes						no
Link to manual		-	CANopen	Profibus-DP	EtherCAT	Profinet	4...20 mA	
Link to device file		-	EDS	GSD	XML	GSDML	-	



TECHNICAL DRAWING

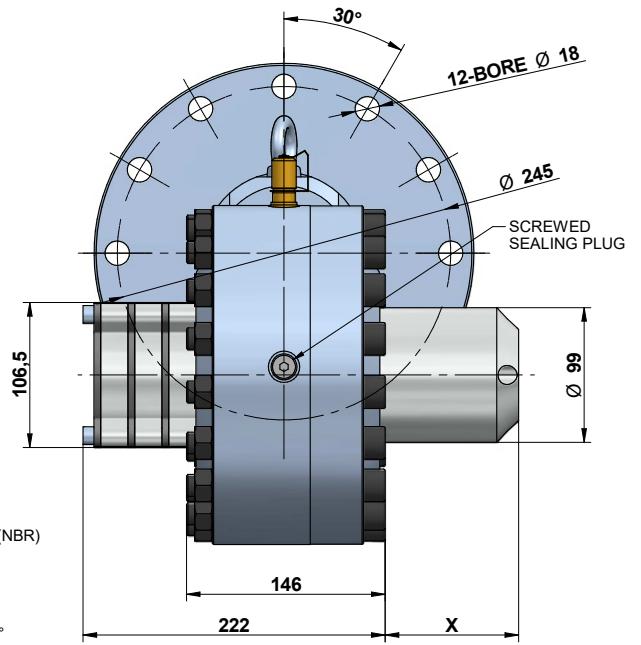
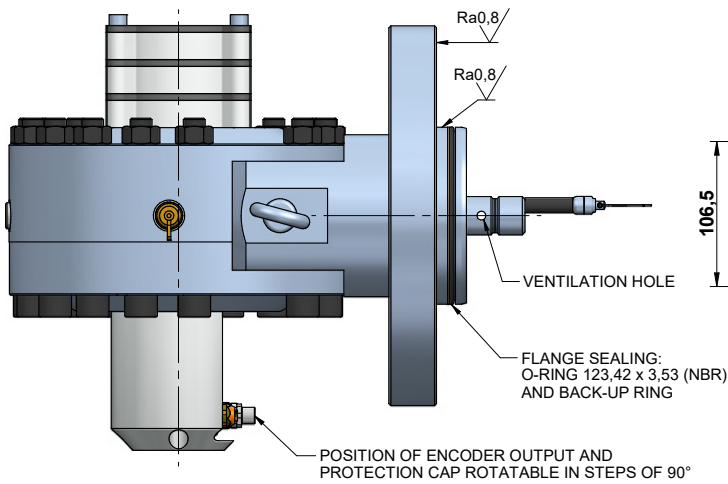
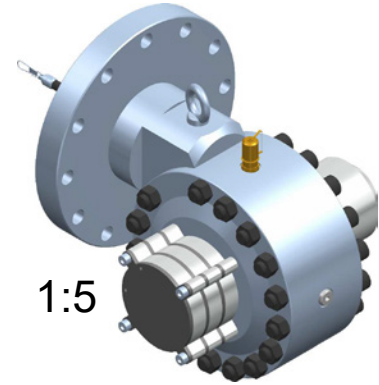
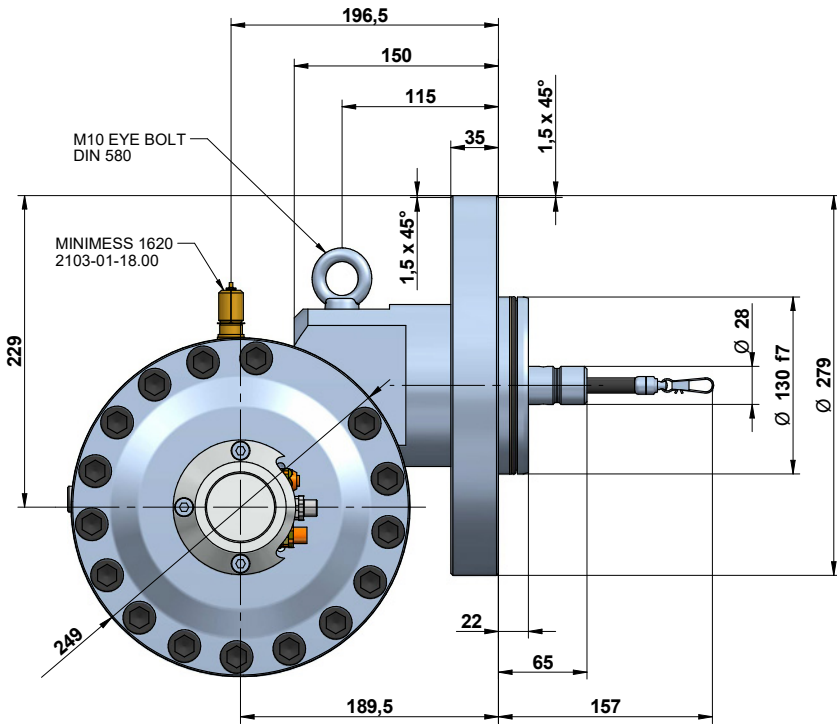
Flange type F1 (rod sealing)



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

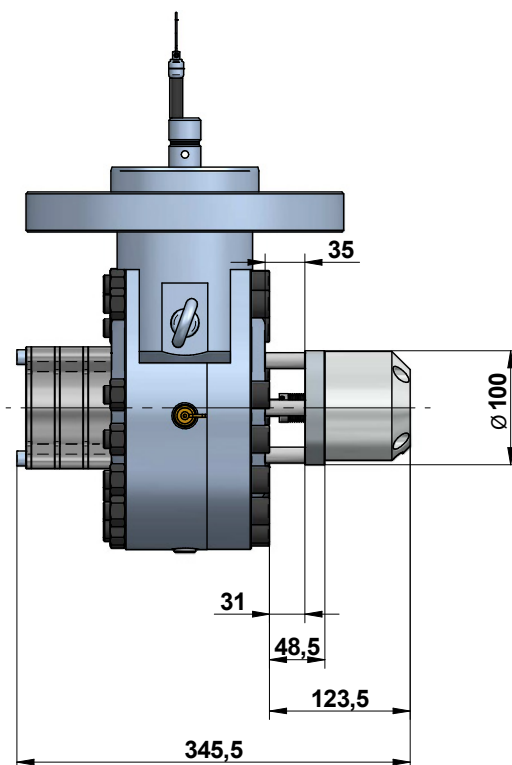
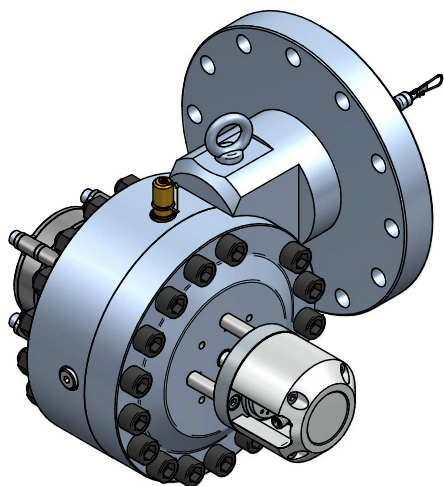
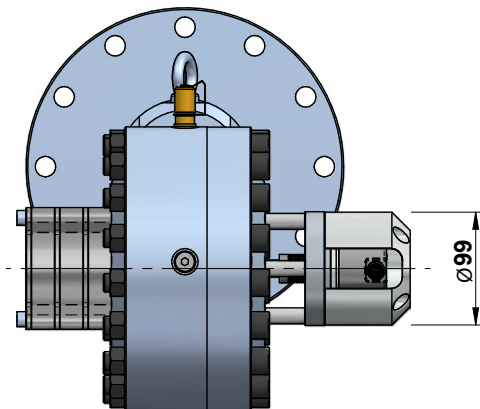
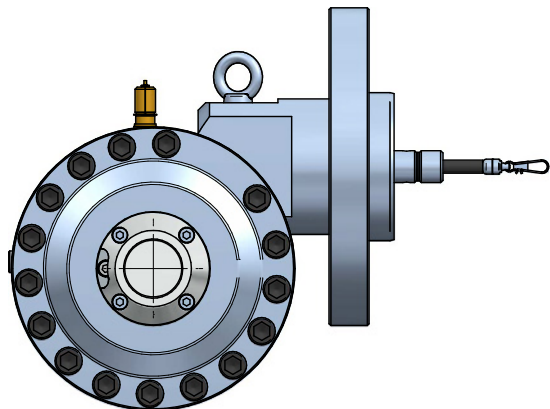
Flange type F2 (piston sealing)



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

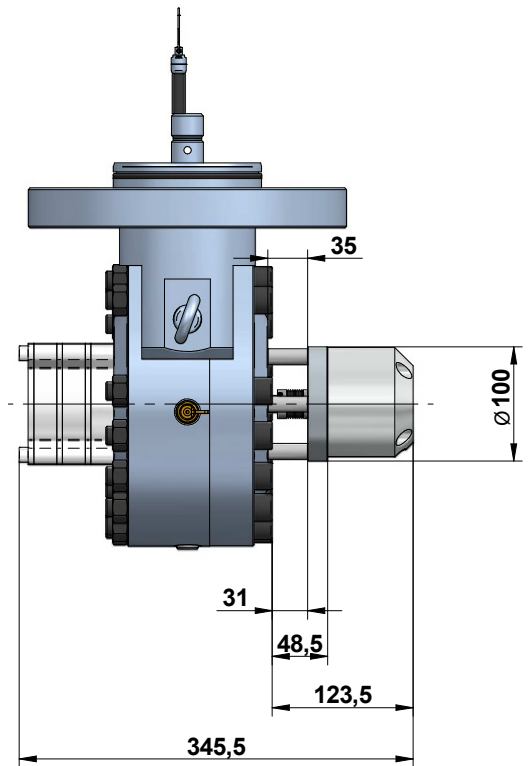
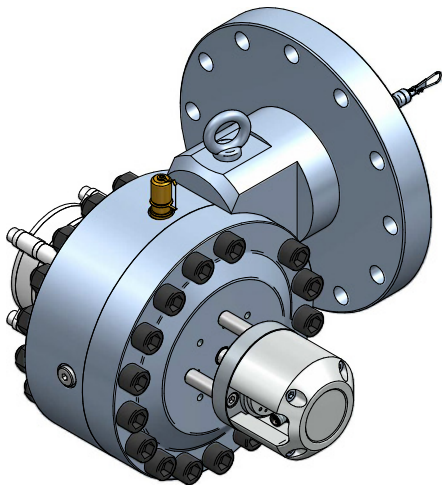
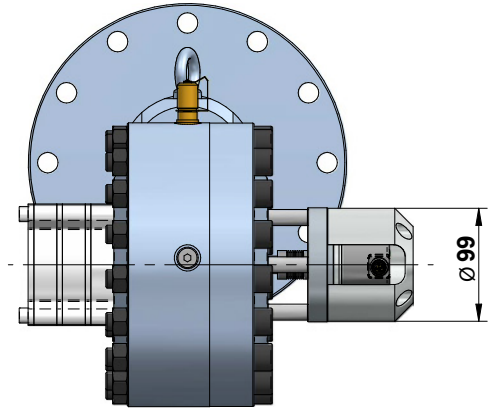
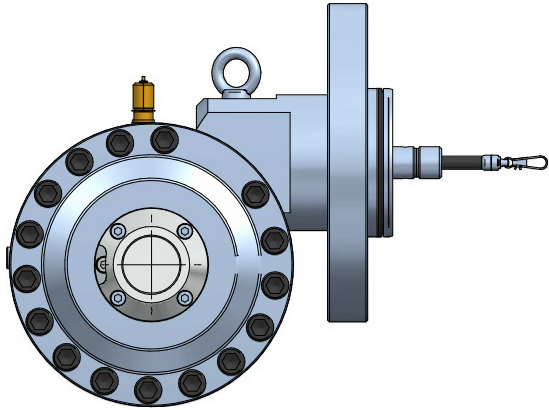
TECHNICAL DRAWING

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



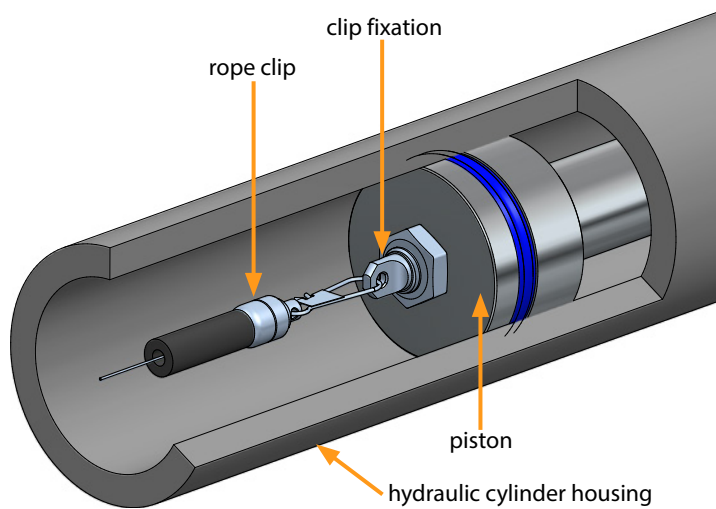
TECHNICAL DRAWING

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

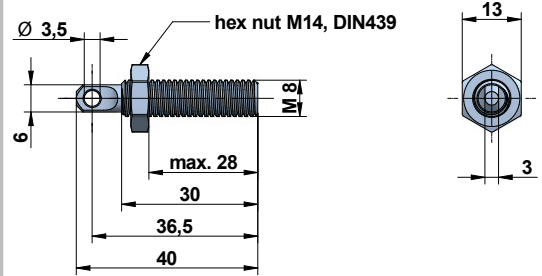


ACCESSORIES

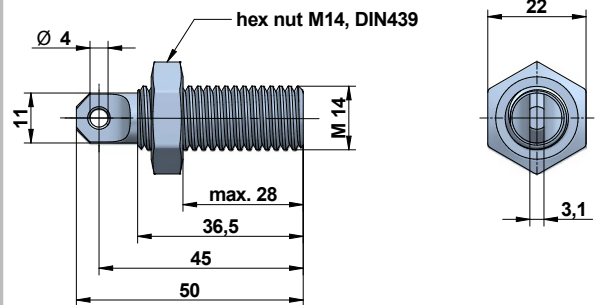
Piston wire fixation



Clipfixation M8



Clipfixation M14



ORDER CODE

SX300 — □ — □ — □

Messbereich [m]	
10 / 15	

Sensor without encoder Draw wire mechanics ¹⁾	H15/63
Sensor with encoder	
SSI	SSI
CANopen	CAN
Profibus DP	PRO
EtherCAT	CAT
Profinet	NET
4...20 mA	420A

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

- ¹⁾ Encoder requirements:
- flange with stator coupling Ø 58 mm
 - pitch circle diameter fixing screws Ø 63 mm
 - hollow shaft Ø 15 mm

Subject to change without prior notice.