

# CARLEN

## Magnetostrictive Linear Position Sensors Model series CF with flexible housing sensors



- Hydraulic cylinder with long stroke length
- Rugged sealed design
- Measuring strokes from 100 to 23000 mm
- Absolute position output and never rezeroing
- Resolution up to 1  $\mu\text{m}$
- Non-contact sensing technology with durability
- Transmission rate up to 100 Mbits/s
- Parameterisable via the bus
- Simply coiled for easy packing and shipping

### Structure and operation

The displacement transducers operate according to the principle of run time measurement between two points of a magnetostrictive waveguide. One point is determined by a moveable position magnet, whose distance from the null point corresponds to the section to be measured. The run time of an emitted impulse is directly proportionate to this section. Conversion to a digital measuring signal takes place in the downstream electronics.

The waveguide is housed in a pressure-resistant stainless steel tube or extruded profile. To the rear of this is a die-cast aluminium housing containing the electronics in SMD technology.

In the rod version, the position magnet is located in a ring, which is guided over the rod without contact. In the profile version, it is located either in a slider, which is linked to the moving part of the machine via a ball joint, or it moves as a liftable position magnet, without wear, over the profile.

### Structure and material

- Electronics housing with LEDs display
- Electronic head material Aluminum
- Flexible stainless steel pipe
  - Min bend radius : 250 mm
  - Shipping radius : 400 mm

### Interface

- Analog with Current & Voltage output
- SSI (RS422)
- CANopen
- Profinet IRT (optional)
- Profinet IO RT
- ProBUS-DP
- EtherCAT
- MODBUS

### Magnet speed

- Any

### Measured value

- Position
- Vlocity/option:
  - Simultaneous multi-position
  - Simultaneous multi-velocity
- Magnet ring up to 9
- Various data formats (Motorola, Intel)

### GSD-Datei:

The GSD file for integrating the sensor into the profibus master system and the profibus manual in PDF format are contained in the enclosed diskette.

### Interface list



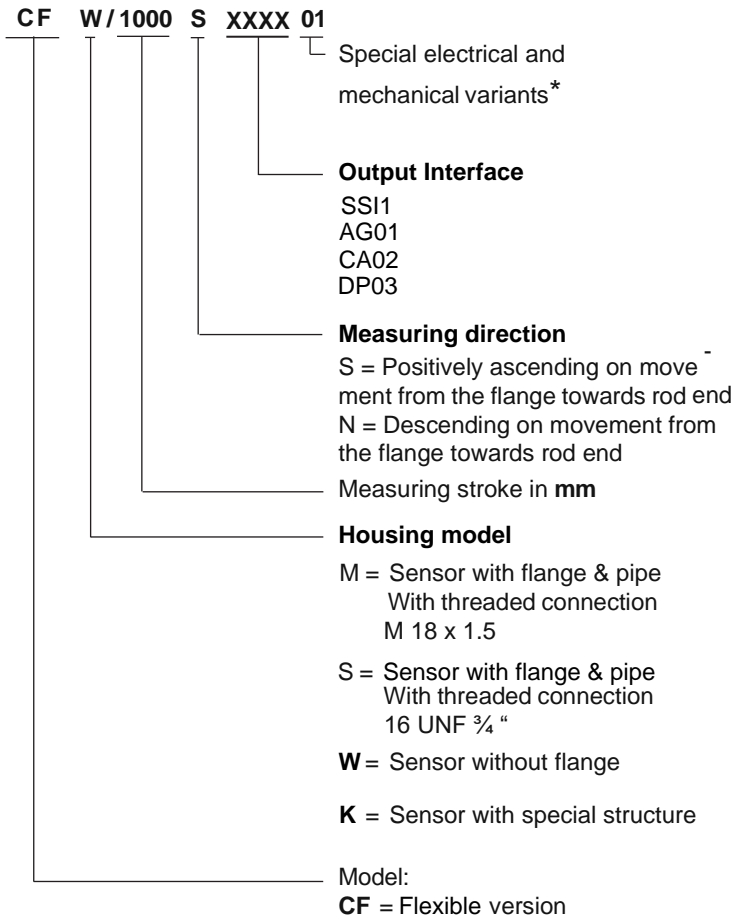
# Analog



# RS485

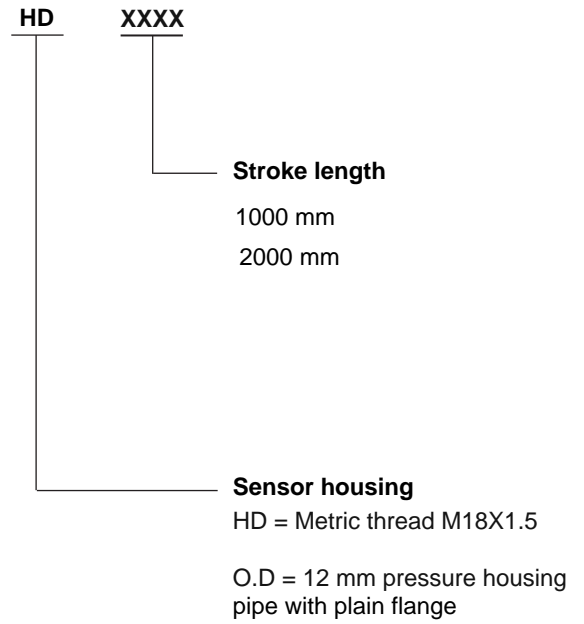
**Order code format**

■ Displacement transducer

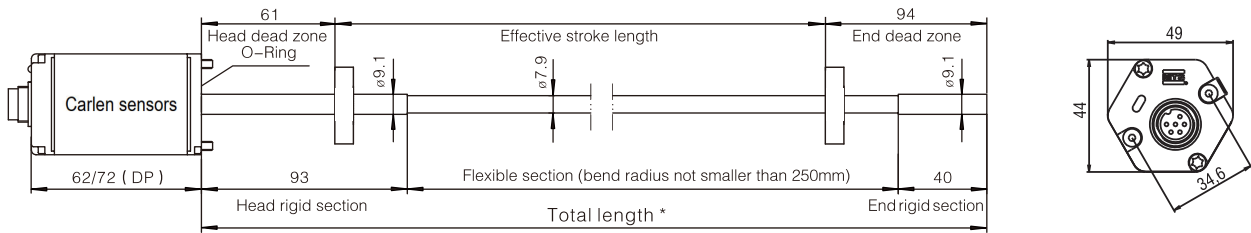


Cable outlet on request

**Pressure housing pipe order**



Dimensions in mm

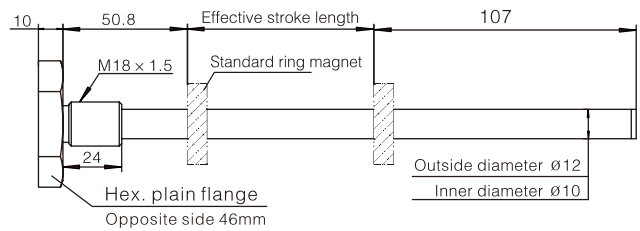


\* <7600mm, error 0~+8mm  
 >7600mm, error -5~+15mm  
 Tolerances of total length do not influence the measuring stroke length.

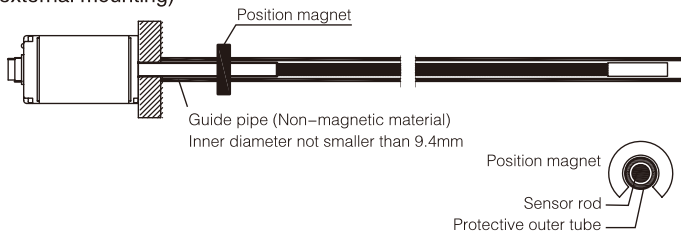
Optional:

O.D 12mm pressure housing pipe with flange.

Pressure housing pipe with flange is an option for model RF flexible sensor mounting in hydraulic systems where high pressure condition exist (35MPa) and provides protection for the sensor. For big oil cylinder, when using O.D 12mm pressure housing pipe, a  $\Phi 18$ mm deep hole is required on the piston rod in order to match the large inner diameter magnet ring.



Linear measurement (external mounting)



Arc measurement (external mounting)

