CD120 – DRAW WIRE SENSOR
INCREMENTAL OUTPUT – MEASUREMENT RANGE UP TO 3500 MM

SPECIFICATIONS

Maximum measuring range	3500 mm
Sensing device	Incremental optical encoder
Output signal	Push-Pull - RS422 compatible
Supply	5Vdc 8 … 30 Vdc
Resolution	1 up to 100 pulses/mm
Material	Body and cover - aluminium (RohS) Measuring cable – Stainless steel
Cable diameter	0,60 mm
Connection	Male connector M23 – 12-pin CW Male connector M16 – 8-pin DIN Male connector M12 – 8-pin (A-coding) PVC cable – shielded – LIYCY 8 x 0.14mm²
Linearity	up to +/-0,01% f.s
Protection class	IP65 (IP67 optional)
Max. Velocity	10 m/s
Max. Acceleration	7 m/s² (before cable deformation)
Weight	≈ 2000 g
Operating temperature	-20° to +100°C
Storage temperature	-40° to +100°C

CABLE FORCES

Measurement range in mm	Min. pull-out force	Max. pull-out force
3500	≈ 13.00 N	≈ 18.00 N

ORDERING REFERENCE

CD120 – 3500 – 020 – PPCAO – L05 – AR1 – OP – AC – …

Model
CD120

Measurement range
3500 = 0 to 3500 mm
Or other ranges between 0 and 3500mm

Resolution
001 = 1 pulse/mm
↓
100 = 100 pulses/mm
All resolution between 1 and 100 pulses/mm

Output stage
PP = Push-Pull output, RS422 compatible

Supply
A = 5Vdc
C = 8 … 30 Vdc

Output signals
A = A ; A/ ; B ; B/ ; 0 ; 0/ (0 calibrated on A and B)
(0 gated A & B – A before B when the measuring cable is pulled)
Other output signals available on demand

Technology
O = Optical

Linearity
L05 = +/- 0.05% f.s.
L01 = +/- 0.01% f.s. (optional)

Connections
A = Male connector M23 - 12 pins CW
D = Male connector M16 - 8 pins DIN
F = Male connector M12 - 8 pins
G = PVC cable 8 wires
Other output termination available on demand

Orientation
A = Axial
R = Radial

Electrical connection (refer to the connection table on page 2)
1 = Standard
Other connection available on demand

Cable length if output connection G
/xx = example **/03** for 3 meters of cable

OP options
AC = Complete anodizing
BR = Cleaning brush for the cable
CP = Fixing of the measuring cable with a clevis
IP67 = Protection class of encoder IP67
M4 = Fixing of the measuring cable with a M4 threaded rod
TEV = Water evacuation holes

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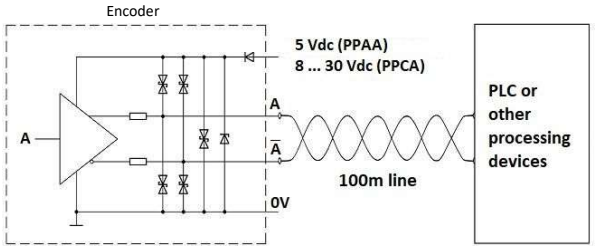
ELECTRICAL CHARACTERISTICS

PPAA electronics

Output stage: Push-Pull – compatible RS422
Power supply: 5Vdc
Consumption without load: at 5Vdc = 50 mA
Protected against over-voltage, polarity inversion and overcurrent

PPCA electronics

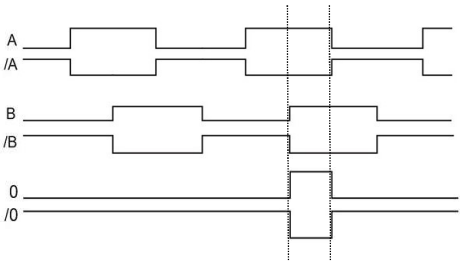
Output stage: Push-Pull – compatible RS422
Power supply: 8 … 30Vdc
Consumption without load:
at 8Vdc = 55 mA
at 12Vdc = 50 mA
at 24Vdc = 30 mA
at 30Vdc = 25 mA
Protected against over-voltage, polarity inversion and overcurrent

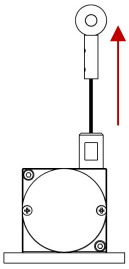


Idem for B, B/, 0, 0/

Output signals

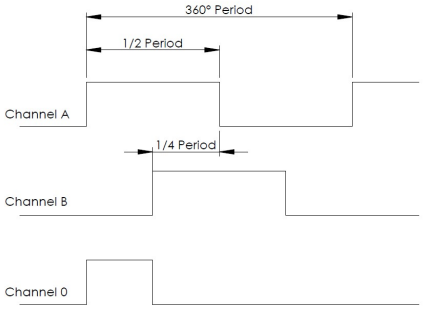
0 calibrated to A and B





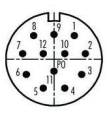
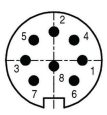
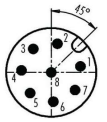
A channel (rising edge) before B channel when the measuring cable is pulled.

Signals tolerance

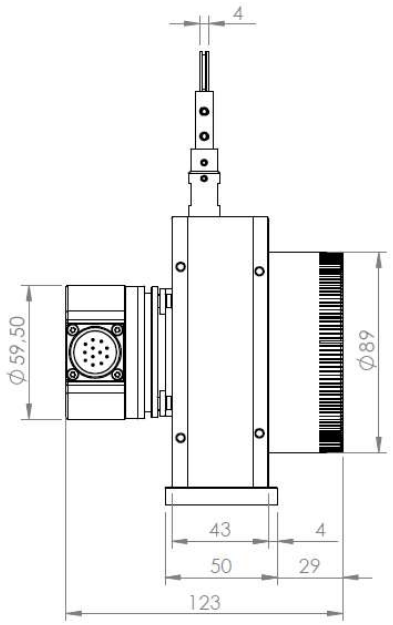


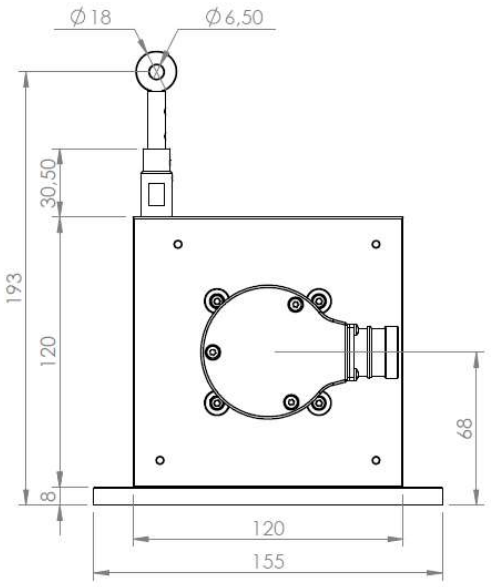
Period : 360° (electrical)
Duty cycle : 180° ± 10%
Phase shift : 90° ± 25%
Starting time : less than 100ms

STANDARD CONNECTIONS (TYPE 1)

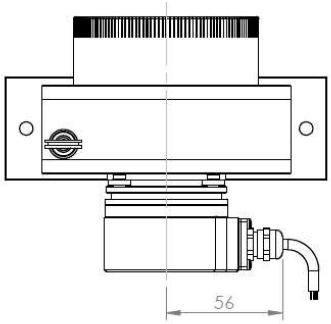
Standard connection	M23 - 12 pins CW	M16 - 8 pins (DIN)	M12 - 8 pins	Cable 8 wires
Power -	1	1	1	White
Power +	2	2	2	Brown
Channel A	3	3	3	Green
Channel B	4	4	4	Yellow
Channel 0	5	5	5	Grey
Channel A/	6	6	6	Pink
Channel B/	7	7	7	Blue
Channel 0/	8	8	8	Red
nc	9-10-11-12	/	/	/
	 Sensor-side view	 Sensor-side view	 Sensor-side view	

DIMENSIONAL DRAWING

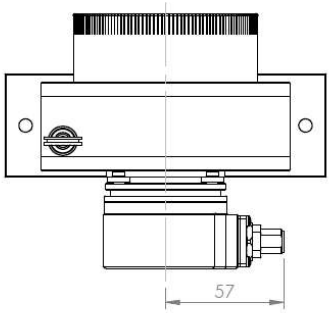




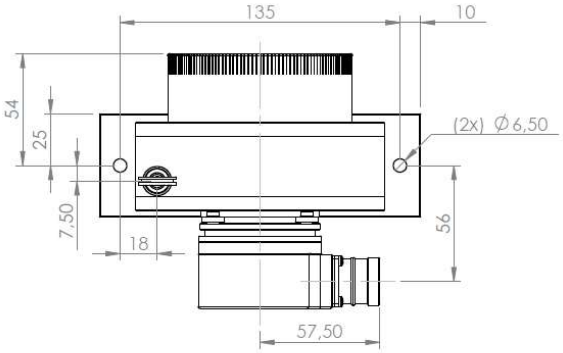
PVC cable – 8 wires
Radial output
(GR)



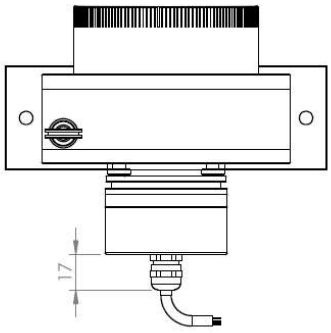
Male connector M12
8 pins – A coding
Radial output
(FR)



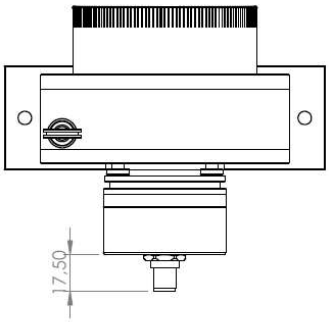
M23 male connector
12 pins CW
Radial output
(AR)



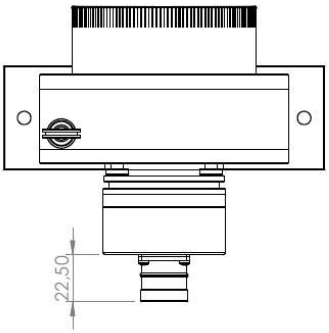
PVC cable – 8 wires
Axial output
(GA)



Male connector M12
8 pins – A coding
Axial output
(FA)



M23 male connector
12 pins CW
Axial output
(AA)

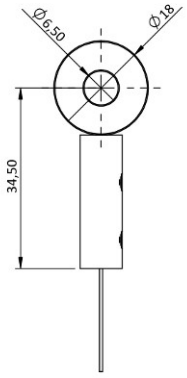


OPTIONS

Cable attachment with a lug :

Standard

The attachment lug is fixed with a M6 screw or a clevis.

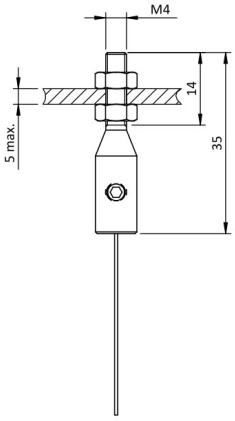


Cable attachment fitted with a M4 threaded rod:

OP-M4

The rod attachment uses a threaded rod with 2 nuts (provided).
The required thickness of the plate does not exceed 5 mm.

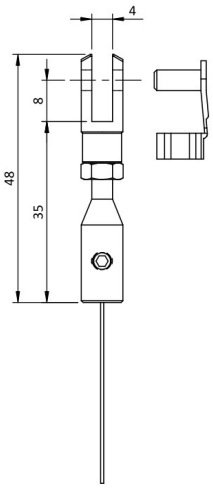
Caution
Never screw the threaded rod into a fixed nut, a twist of the measurement cable would damage it.



Cable attachment with a clevis :

OP-CP

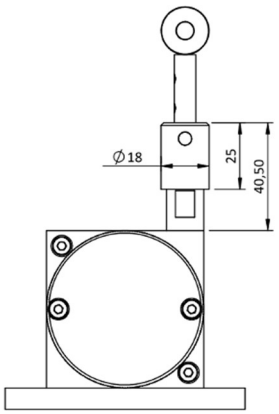
The attachment of the clevis is done using a pin (provided).



Cable cleaning brush:

OP-BR

The cleaning brush wipes the cable in dusty or humid environments.



Water evacuation holes:

OP-TEV

The holes allow the natural flow of fluids out of the sensor in order to avoid their accumulation in the system.