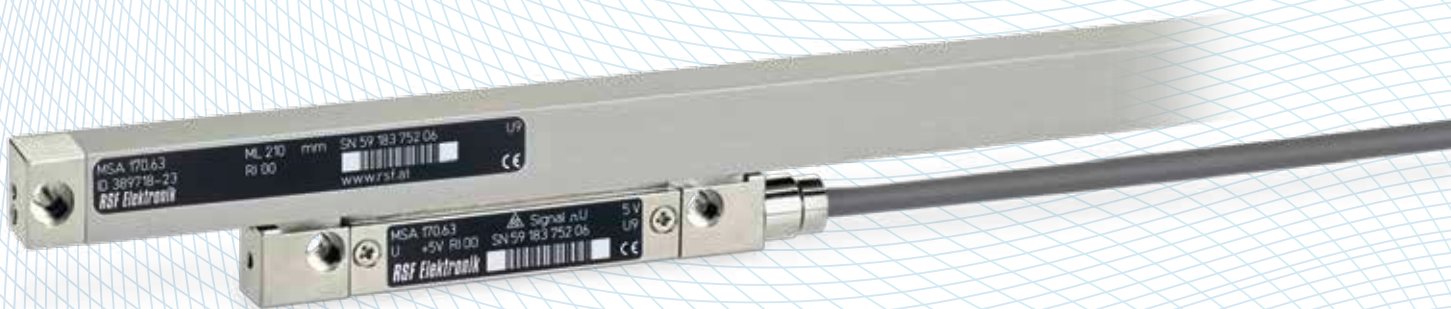




RSF Elektronik

www.rsf.at

MSA 170 SEALED LINEAR ENCODERS



MSA 170



Model	Output signals	Measuring step [μm]	Accuracy grades [μm/m]	Grating period [μm]	Integrated interpolation	Maximum velocity [m/s]	Max. output frequency [kHz]
MSA 170.03	~ 1 Vpp	Dep. on external interpolation	±3, ±5, ±10	20	--	1.0	50
							Edge separation a_{min}
MSA 170.23		5.0	±3, ±5, ±10	20	Times 1	1.0	3.3 μs
MSA 170.63		1.0	±3, ±5, ±10	20	Times 5	1.0	500 ns
MSA 170.73		0.5	±3, ±5	20	Times 10	1.0	300 ns
MSA 170.53		0.2	±3, ±5	20	Times 25	0.64	300 ns
MSA 170.83		0.1	±3, ±5	20	Times 50	0.32	300 ns

Standard measuring lengths (ML): [mm]
50, 70, 120, 170, 220, 270, 320, 370, 420, 470, 520

Scale unit:
Glass scale ($\alpha \approx 8,5 \times 10^{-6}/K$)

Location of reference mark:

- Distance-coded reference mark after travelling max. 20 mm the absolute position is available.
- One reference mark in the middle of measuring length, or 10 mm from either end measuring length (excluding ML 50 mm).
- Optional: one reference mark on any location, additional reference marks can be selected by distances of $n \times 25$ mm.

Required moving force:
< 1 N

Environmental sealing EN 60529:
IP 53, with DA 400: IP 64

Permissible vibration:
100 m/s² (40 to 2000 Hz)

Permissible shock:
150 m/s² (8 ms)

Permissible temperature:
-20 °C to +70 °C (storage), 0 °C to +50 °C (operation)

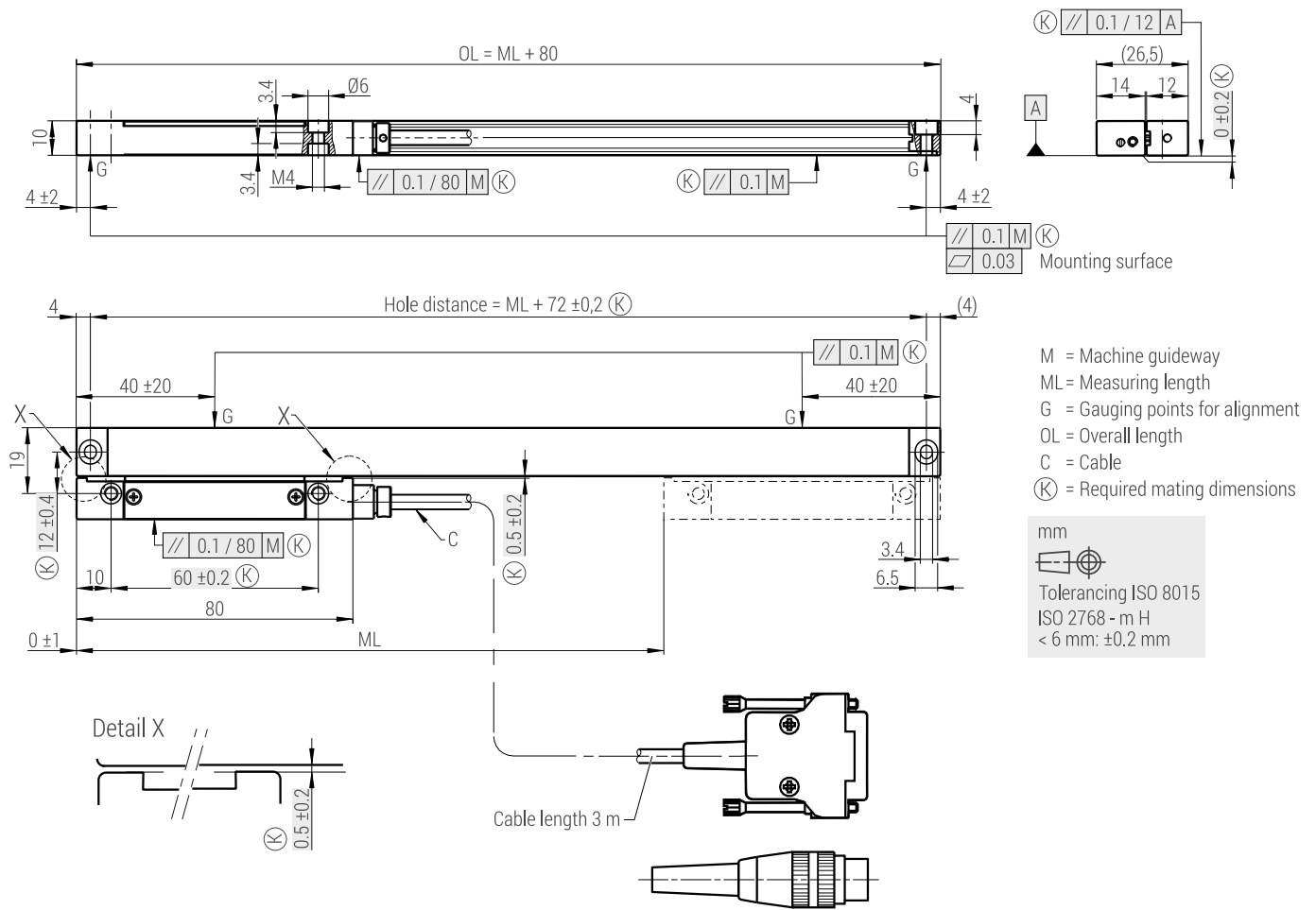
Weight (approx.):
20 g + 0.17 g/mm (ML) + 35 g (reading head without cable)

Power supply: +5 V ±5 %
max. 75 mA (unloaded) ~ 1 Vpp, max. 120 mA (unloaded)

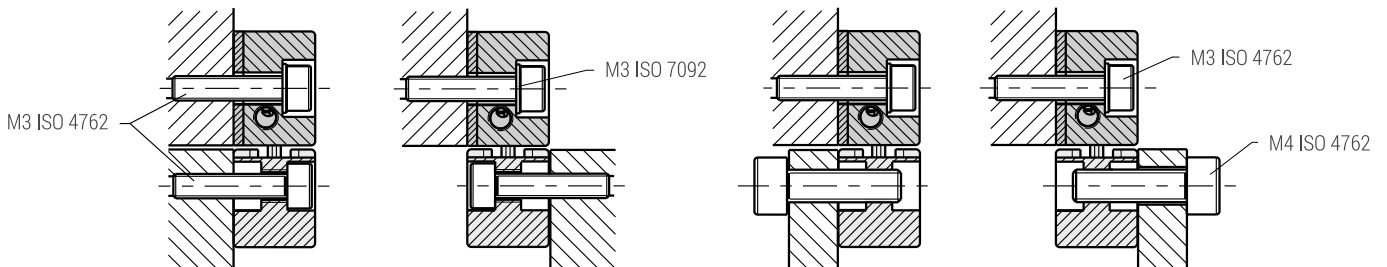
RoHS-conformity:
The MSA 170 linear encoders the linear encoders MSA 170 comply with the guideline of the RoHS-directive 2011/65/EU and also with the delegated directive 2015/863/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

MSA 170

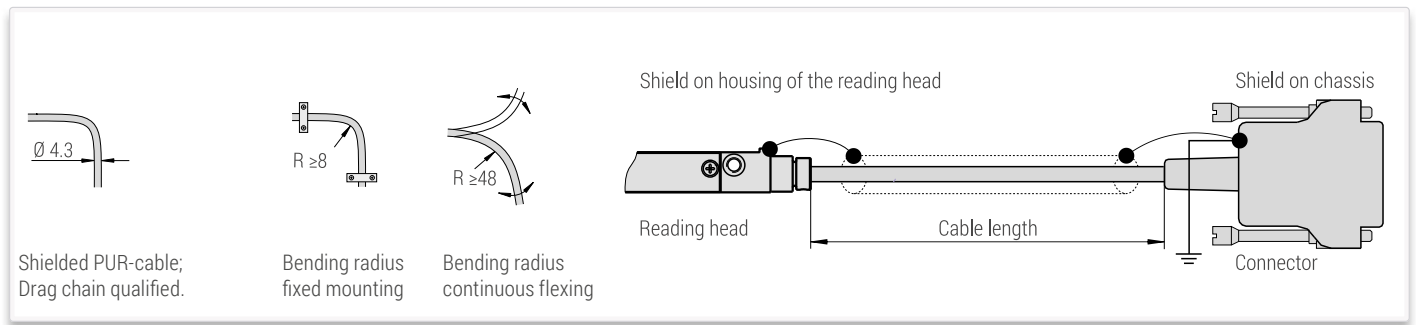
Dimensions, mounting tolerances:



Mounting possibilities:



SHIELDING



Shielded PUR-cable;
Drag chain qualified.

Bending radius
fixed mounting

Bending radius
continuous flexing

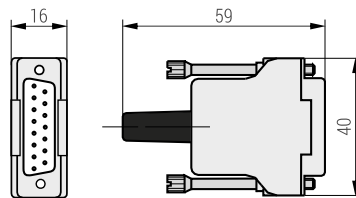
MALE CONNECTORS, PIN ASSIGNMENTS

Connector D-sub, 15 pin



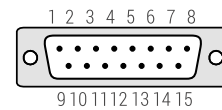
Dimensions

(Male, 15-pin, mass: 25 g)



Pin assignment

View on pins



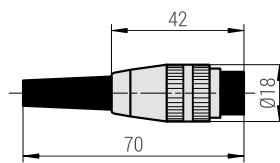
Pin	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Sinusoidal voltage signals 1 Vpp	Occupied	0 V Sensor	Occupied	RI-	A2-	A1-	V+ Sensor	V+	0 V	nc	nc	RI+	A2+	A1+	nc
TTL-signals	Occupied	0 V Sensor	US	RI	T2	T1	V+ Sensor	V+	0 V	nc	nc	RI	T2	T1	nc

12 pin M16 connector



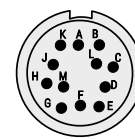
Dimensions

(M16, male, 12-pin, mass: approx. 20 g)



Pin assignment

View on pins



Pin	A	B	C	D	E	F	G	H	J	K	L	M
Sinusoidal voltage signals 1 Vpp	nc	0 V	A1+	A1-	A2	nc	RI+	RI-	nc	V+	A2-	nc
TTL-signals	nc	0 V	T1	T1	T2	nc	RI	RI	nc	V+	T2	US

- Sensor: the sensor pins are bridged in the chassis with the particular power supply.
- Shield is connected with the chassis.
- Pins or wires marked "occupied" or "nc" must not be used by the customer.

Date 04/2021 ■ Art.No.1340651-01 ■ Doc.No. D1340651-01-B-01 ■ Technical adjustments in reserve!

