

www.rsf.at

MS 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	\sim 1 Vpp	Dep. on external interpolation	±3, ±5	20		1.0	50
							Edge separation amin
MSA 170.23	л	5.0	±3, ±5	20	Times 1	1.0	3.3 µs
MSA 170.63	л	1.0	±3, ±5	20	Times 5	1.0	500 ns
MSA 170.73	<u> </u>	0.5	±3, ±5	20	Times 10	1.0	300 ns
MSA 170.53	л	0.2	±3, ±5	20	Times 25	0.64	300 ns
MSA 170.83	Л	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 x 25 mm.

Required moving force:

<1N

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 \pm 5 %

max. 75 mA (unloaded) \sim 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:



03

SHIELDING



MALE CONNECTORS, PIN ASSIGNMENTS



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	TI	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	В	С	D	E	F	G	н	J	к	L	М
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	RĪ	nc	V+	T2	ŪS

• 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 01/2021 • Art.No.1340651-01 • Doc.No. D1340651-00-A-01 • Technical adjustments in reserve!



Linear and Angle Encoders Precision Graduations



