

# TECHNICAL DATA MSA 7x0, MSA 8x0

## READING HEAD

Model	MSA 7x0 MSA 8x0	MSA 7x0 MSA 8x0	MSA 7x0 MSA 8x0	MSA 7x0 MSA 8x0	MSA 7x0 MSA 8x0
Interface	~ 1 Vpp	⌋ TTLx5	⌋ TTLx10	⌋ TTLx25	⌋ TTLx50
Measuring step	Depending on external interpolation	1.0 µm	0.5 µm	0.2 µm	0.1 µm
Signal period	20 µm	--	--	--	--
Integrated interpolation	--	Times 5	Times 10	Times 25	Times 50
Max. velocity	2.0 m/s	2.0 m/s	1.96 m/s	0.78 m/s	0.78 m/s
Max. output frequency	100 kHz	--	--	--	--
Edge separation a <sub>min</sub>	--	250 ns	250 ns	250 ns	125 ns
Electrical connection	Cable, 0.5 m, 1 m or 3 m mit D-sub connector 15-pin or M12 connector 12-pin				
Voltage supply	<ul style="list-style-type: none"> <li>Sinusoidal voltage signals ~ 1 Vpp: +5 V ±10 %</li> <li>Square-wave signals via line driver ⌋: +5 V ±10 %</li> </ul>				
Power consumption max.	<ul style="list-style-type: none"> <li>Sinusoidal voltage signals ~ 1 Vpp: 825 mW (without load)</li> <li>Square-wave signals via line driver ⌋: 990 mW (without load)</li> </ul>				
Current consumption typ.	<ul style="list-style-type: none"> <li>Sinusoidal voltage signals ~ 1 Vpp: 150 mA (without load)</li> <li>Square-wave signals via line driver ⌋: 180 mA (without load)</li> </ul>				
Vibration 55 Hz – 2000 Hz Shock 8 ms	100 m/s <sup>2</sup> 200 m/s <sup>2</sup>				
Operating temperature Storage temperature	0 °C to 50 °C -20 °C to 70 °C				
Mass reading head	<ul style="list-style-type: none"> <li>MSA 7x0: 50 g (without cable)</li> <li>MSA 8x0: 65 g (without cable)</li> <li>Cable: 30 g/m, connector: D-sub connector: 28 g, M12 connector: 15 g</li> </ul>				

## GRADUATION CARRIER

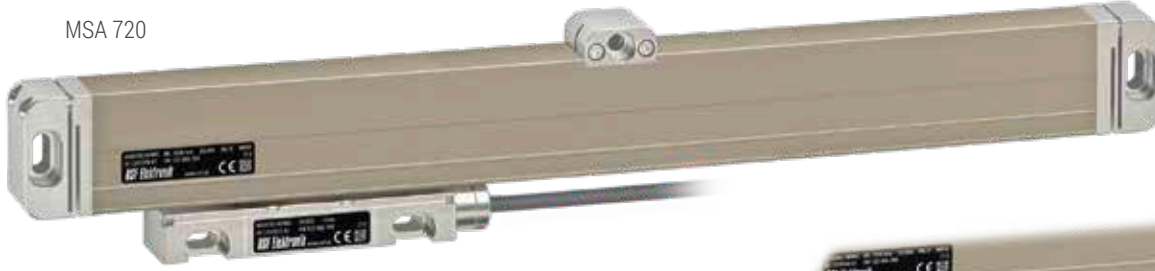
Standard measuring lengths (ML): [mm]	70, 120, 170, 220, 270, 320, 370, 420, 470, 520, 570, 620, 670, 720, 770, 820, 870, 920, 970, 1040, 1140, 1240 (other measuring lengths on request)
Graduation carrier	<ul style="list-style-type: none"> <li>Glass scale (<math>\alpha \approx 8.5 \times 10^{-6}/K</math>), grating period: 20 µm</li> <li>Glass ceramic scale (<math>\alpha \approx 0 \times 10^{-6}/K</math>), grating period: 20 µm</li> </ul>
Accuracy grades (at 20 °C)	<ul style="list-style-type: none"> <li>±5 µm/m</li> <li>±3 µm/m</li> </ul>
Location of the reference marks (RI):	<ul style="list-style-type: none"> <li>Distance-coded reference marks</li> <li>One reference mark in the middle of the ML</li> <li>Up to ML 970 mm: 35 mm from left and right; from ML 1040 mm: 45 mm from left and right</li> </ul>
Required moving force	<ul style="list-style-type: none"> <li>With standard sealing lips (NBR): &lt; 2.0 N</li> </ul>
Environmental protection EN 60529	<ul style="list-style-type: none"> <li>With standard sealing lips (NBR): IP 53</li> </ul>
Mass scale spar (approx.)	<ul style="list-style-type: none"> <li>MSA 7xx, MSA 8xx: 75 g + 0.57 g/mm (ML)</li> </ul>

## CONFORMITIES AND CERTIFICATIONS

RoHS	2011/65/EU, 2015/863/EU
EMV	2014/30/EU
Product-Certifications	UL, CSA, EN, IEC 61010-1

## MSA 720, MSA 820

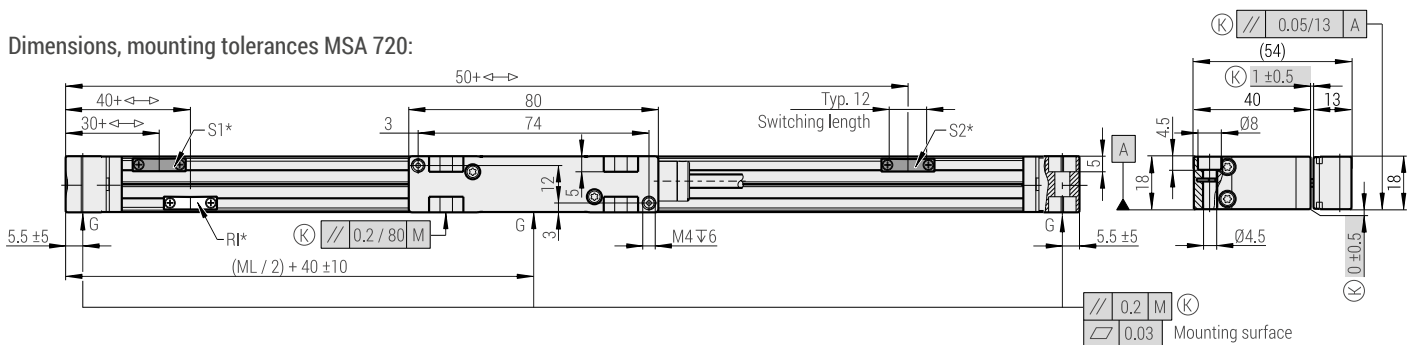
MSA 720



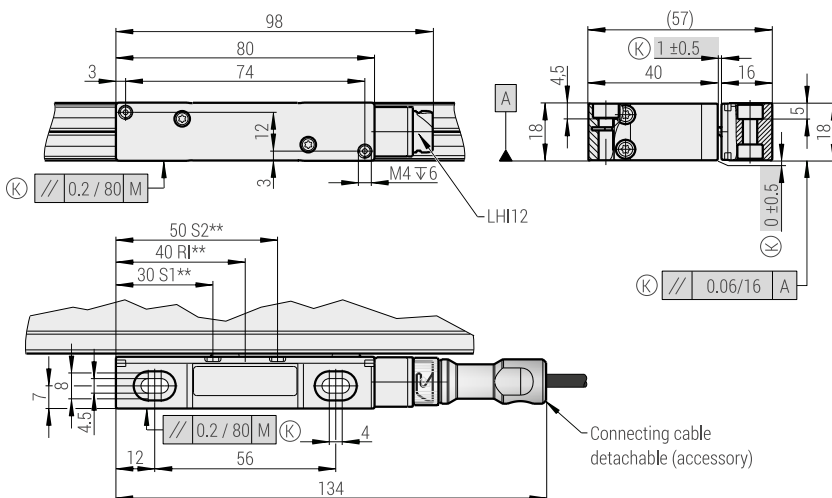
MSA 820



### Dimensions, mounting tolerances MSA 720:



### Dimensions, mounting tolerances MSA 820:



- M = Machine guideway
- ML = Measuring length
- G = Gauging points
- ↔ = 0 ... ML
- OL = Overall length
- C = Cable

LHI12 = Male connector

- $\text{K}$  = Required mating dimensions
- $\text{S}$  = Beginning of the measuring length

#### OPTIONAL:

- S1, S2 = Switch signals
- RI = Selectable reference mark
- \* = Actuator magnet
- \*\* = Position sensor

mm



Tolerancing ISO 8015  
ISO 2768 - m H  
< 6 mm: ±0.2 mm