

MSA 670 Technical data

Scale model	System resolution	Accuracy grades *	Grating pitch *	Max. velocity (Edge distance) continuous momentary	
• Sinusoidal voltage signals 1 V_{pp}					
MSA 670.03	depending on external Subdividing	±3, ±5, ±10 µm/m	20 µm	1 m/s	2 m/s
MSA 670.01	depending on external Subdividing	±2, ±3 µm/m	10 µm	1 m/s	1 m/s
• Sinusoidal micro-current signals					
MSA 670.13	depending on external Subdividing	±3, ±5, ±10 µm/m	20 µm	1 m/s	2 m/s
MSA 670.11	depending on external Subdividing	±2, ±3 µm/m	10 µm	1 m/s	1 m/s
• Square wave Line Driver signals with integrated Subdividing					
MSA 670.24	10 µm	±10 µm/m	40 µm	1 m/s (> 6,6 µs)	2 m/s (> 3,3 µs)
MSA 670.23	5 µm	±5, ±10 µm/m	20 µm	1 m/s (> 3,3 µs)	2 m/s (> 1,6 µs)
MSA 670.64	2 µm	±5 µm/m	40 µm	1 m/s (> 1,2 µs)	2 m/s (> 600 ns)
MSA 670.63	1 µm	±3, ±5 µm/m	20 µm	1 m/s (> 600 ns)	1 m/s (> 600 ns)
MSA 670.73	0,5 µm	±3, ±5 µm/m	20 µm	1 m/s (> 300 ns)	1 m/s (> 300 ns)
MSA 670.71	0,25 µm	±2, ±3, ±5 µm/m	10 µm	0,5 m/s (> 300 ns)	0,5 m/s (> 300 ns)
MSA 670.51	0,1 µm	±2, ±3, ±5 µm/m	10 µm	0,45 m/s (> 200 ns)	0,45 m/s (> 200 ns)

* Other accuracy grades or grating pitches (e.g. Inch) upon request

Standard measuring lengths: (mm)

70, 120, 170, 220, 270, 320, 370, 420, 470, 520, 620, 720, 820, 920, 1040, 1140, 1240, 1340, 1440, 1540, 1640, 1740, 1840, 2040, 2240

Measuring type: glass scale

Reference mark (RI): selectable

MSA 670.xx **K:**

Distance coded Reference marks (**K**): after travelling 20 mm the absolute position will shown on the display.

MSA 670.xx:

Up to measuring length 920 mm one Reference mark in the middle of the measuring length or 35 mm from both ends of measuring length, measuring length 1040 mm and longer, 45 mm from both ends of measuring length.

Option:

One Reference mark at any location, or two or more RI's separated by distances of n x 50 mm

Required moving force:

with standard sealing lips < 3 N
with low drag sealing lips < 0,2 N

Environmental sealing DIN 40050:

IP 53 (with standard sealing lips)
IP 64 with DA300 (DA300 see page 57)

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

Permissible shock: 200 m/s² (8 ms)

Permissible temperature:

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

Weight (approx.):

0,8 kg/m (scale spar) + 75 g (scanning head without cable)

Signal-outputs (optional):

- **sinusoidal voltage signals**
MSA 670.03
MSA 670.01

Power supply:

+5V ±5%, max. 120 mA (unloaded)

Output signals:

Encoder signals: 0,6 to 1,2 V_{pp}, typical 1 V_{pp}
with terminating resistor Z₀ = 120 Ω

Reference pulse:

0,2 to 0,85 V_{ss}, typical 0,4 V (useable component)
with terminating resistor Z₀ = 120 Ω

Max. output frequency:

100 kHz (with 3 m cable)

- **sinusoidal micro-current signals**
MSA 670.13
MSA 670.11

Power supply:

+5 V ±5%, max. 120 mA

Output signals:

Encoder signals: 7 to 16 µA_{pp},
typical 11,5 µA_{pp} at 1 KΩ

Reference pulse: 2 to 8 µA,

typical 5 µA (useable component) at 1 KΩ

Max. output frequency:

100 kHz (with 3 m cable)

- **square wave signals** (single ended)
with integrated Subdividing Electronics

- **square wave signals** (differential)
via Line Driver RS 422 standard
with integrated Subdividing Electronics

MSA 670.23 = times 1

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MSA 670.63 = times 5

MSA 670.64 = times 5

MSA 670.73 = times 10

MSA 670.74 = times 10

MSA 670.51 = times 25

Power supply:

+5 V ±5%, max. 150 mA (unloaded)