



RSF Elektronik

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MSA 671 SEALED LINEAR ENCODERS



MSA 671 - TECHNICAL DATA

READING HEAD AE MSA 671

Model	MSA 671 1V _{pp}	MSA 671 1V _{pp}	MSA 671 ~11µA _{pp}	MSA 671 TTLx1	MSA 671 TTLx1	MSA 671 TTLx5	MSA 671 TTLx5	MSA 671 TTLx10	MSA 671 TTLx10	MSA 671 TTLx25
Interface										
Measuring step	Depending on external interpolation	Depending on external interpolation	Depending on external interpolation	10 µm	5 µm	2 µm	1 µm	0.5 µm	0.25 µm	0.1 µm
Signal period	20 µm	10 µm	20 µm	40 µm	20 µm	40 µm	20 µm	20 µm	10 µm	10 µm
Integrated interpolation	--	--	--	Times 1	Times 1	Times 5	Times 5	Times 10	Times 10	Times 25
Max. traversing speed	1 m/s	1 m/s	1 m/s	1 m/s	1 m/s	1 m/s	1 m/s	1 m/s	1 m/s	0.96 m/s
Max. output frequency	100 kHz	100 kHz	100 kHz	--	--	--	--	--	--	--
Edge separation a _{min}	--	--	--	6.6 µs	3.3 µs	0.8 µs	0.8 µs	0.3 µs	0.3 µs	0.2 µs
Electrical connection	Cable: 3 m with D-sub connector 15-pin (TTL, 1 V _{pp}) or M23 connector 9-pin (11 µA _{pp})									
Voltage supply	1 V_{pp}: +5 V ±10 % ~11,5 µA_{pp}: +5 V ±5 % - TTL: +5 V ±5 %									
Power consumption max.	1 V_{pp}: 825 mW (without load) ~11,5 µA_{pp}: 660 mW (without load) - TTL: 825 mW (without load)									
Current consumption max.	1 V_{pp}: 150 mA (without load) ~11,5 µA_{pp}: 120 mA (without load) - TTL: 150 mA (without load)									
Vibration 40 Hz – 2000 Hz	150 m/s ²									
Shock 8 ms	3000 m/s ²									
Operating temperature	0 °C to 50 °C									
Storage temperature	-20 °C to 70 °C									
Mass	- Reading head: 75 g (without cable) - Cable: 30 g/m, D-sub connector: 28 g, M23 connector: 75 g									

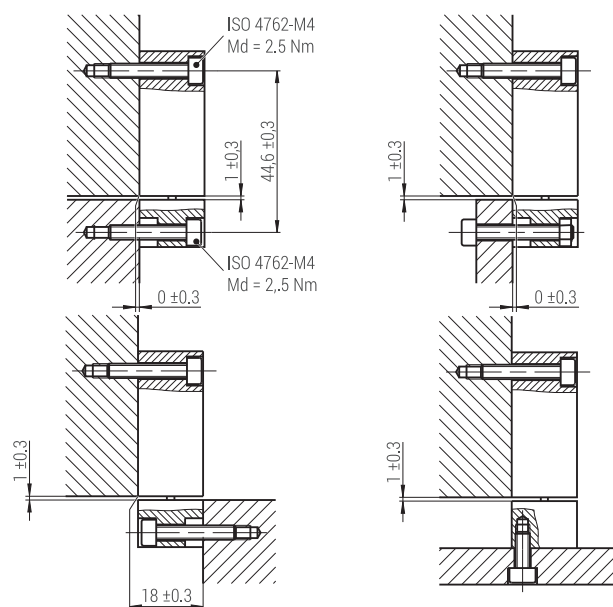
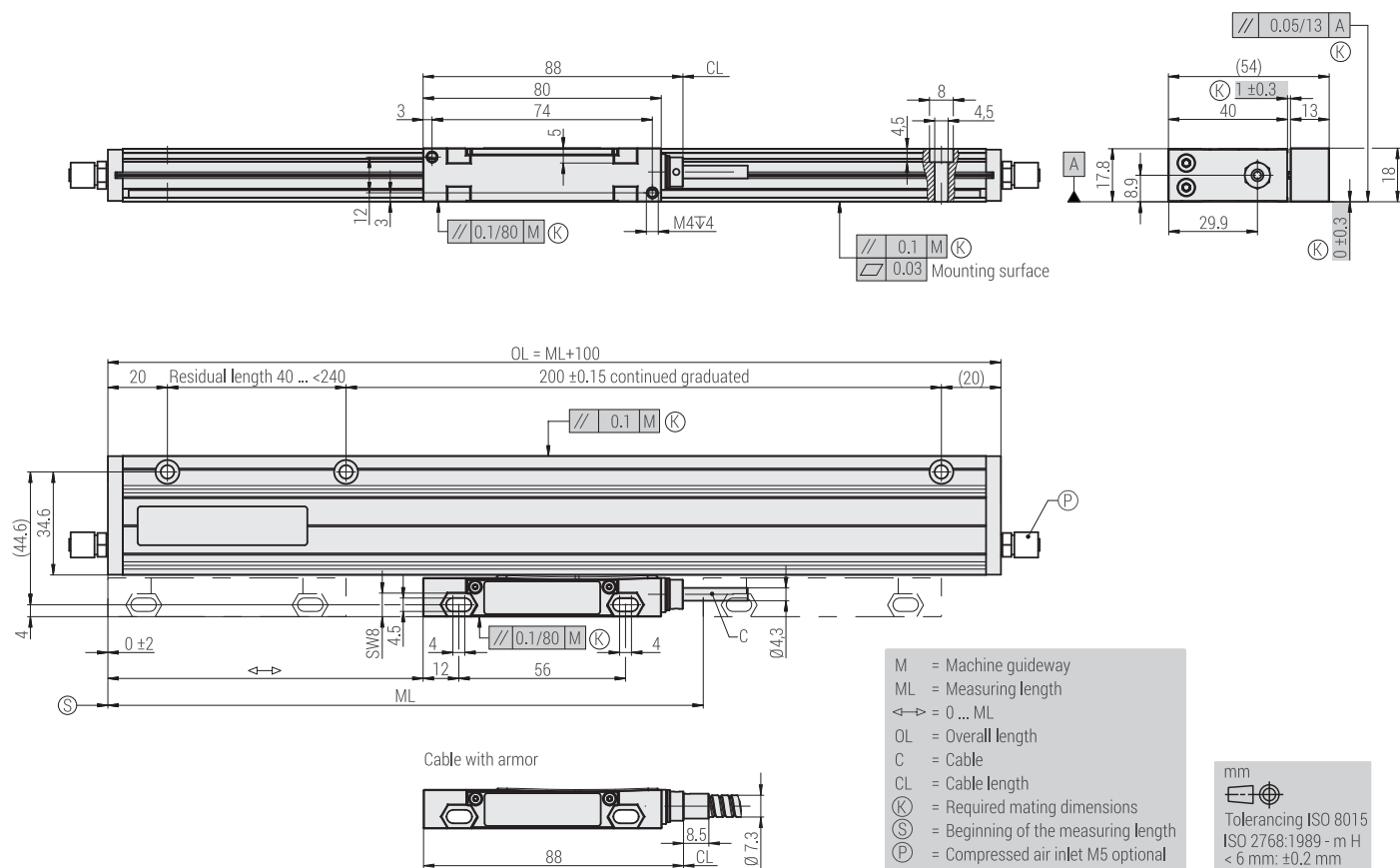
SCALE UNIT

Model	MSA 671
Mounting version	Mounting via holes in the scale housing
Standard measuring lengths (ML): [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
Graduation carrier	Glass scale (α _{therm} ≈ 8.5 x 10 ⁻⁶ K ⁻¹), grating period: 40, µm, 20 µm, 10 µm
Accuracy grades (at 20 °C)	Dependent on interface and grating period ±5 µm/m ±10 µm/m
Location of the reference mark (RI):	- Distance-coded reference marks (K): After travelling max. 20 mm the absolute position is available - One reference mark in the middle of measuring length - Up to measuring length 920 mm, 35 mm from both ends of measuring length - From measuring length 1040 mm, 45 mm from both ends of measuring length - Optional: - One reference mark at any location - Additional reference marks can be selected by distances of n x 50 mm
Required moving force	- With standard sealing lips: < 3.0 N - With low drag sealing lips: < 0.2 N
Protection EN 60529	IP 53 (with standard sealing lips)
Mass	Scale spar (approx.): 0.8 kg/m (ML)

CONFORMITIES AND CERTIFICATIONS

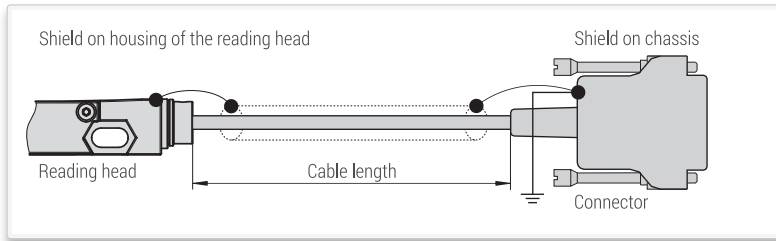
CE	- RoHS: 2011/65/EU, 2015/863/EU - EMV: 2014/30/EU
UKCA	- SI 2012/3032 RoHS Regulations - SI 2016/1091 EMC Regulations
Product-Certifications	UL, CSA, EN, IEC 61010-1

MSA 671 DIMENSIONS, MOUNTING POSSIBILITIES



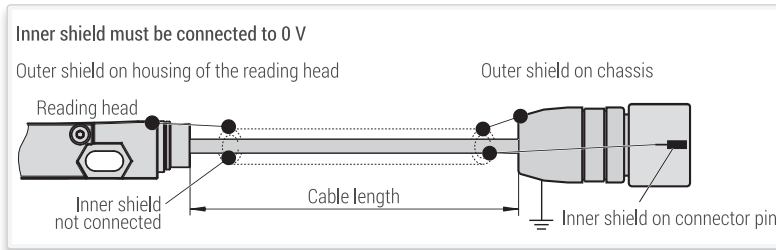
SHIELDING

SIGNALS: TTL, 1 V_{pp}



Cable	Material	Cycles	Bending radius
Ø 4.3 mm	Shielded PUR cable	Drag chain: > 5.000.000 Torsion: > 300.000	 R ≥ 20
Ø 7.3 mm	Shielded PUR cable with metal armor		 R ≥ 50

SIGNALS: 11 µA_{pp}



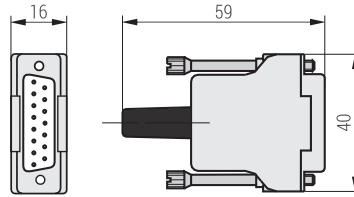
Cable	Material	Cycles	Bending radius
Ø 4.4 mm	Double-shielded high flexible cable		 R ≥ 70

MALE CONNECTORS, PIN ASSIGNMENTS

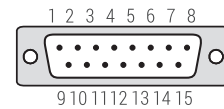
D-sub connector, 15-pin



Dimensions (male, 15-pin, mass: 28 g)



Pin assignment (View on pins)



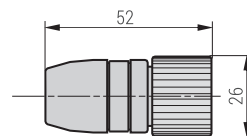
Pin	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Sinusoidal voltage signals 1 V _{pp}	Occupied	0 V Sensor	Occupied	RI-	A2-	A1-	V+ Sensor	V+	0 V	nc	nc	RI+	A2+	A1+	nc
TTL-signals	Occupied	0 V Sensor	US	RI	T2	T1	V+ Sensor	V+	0 V	nc	nc	RI	T2	T1	nc

- 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.

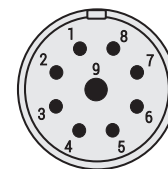
M23 connector, 9-pin



Dimensions (male, 9-pin, mass: 75 g)



Pin assignment (View on pins)



Pin	1	2	3	4	5	6	7	8	9
Sinusoidal micro-current signals 11 µA _{pp}	0°+	0°-	V+	0 V	90°+	90°-	RI+	RI-	Inner shield
									Outer shield on chassis

Date 01/2025 ■ Doc.No. D1400463-00-A-01 ■ Technical adjustments in reserve!

