RSF Elektronik

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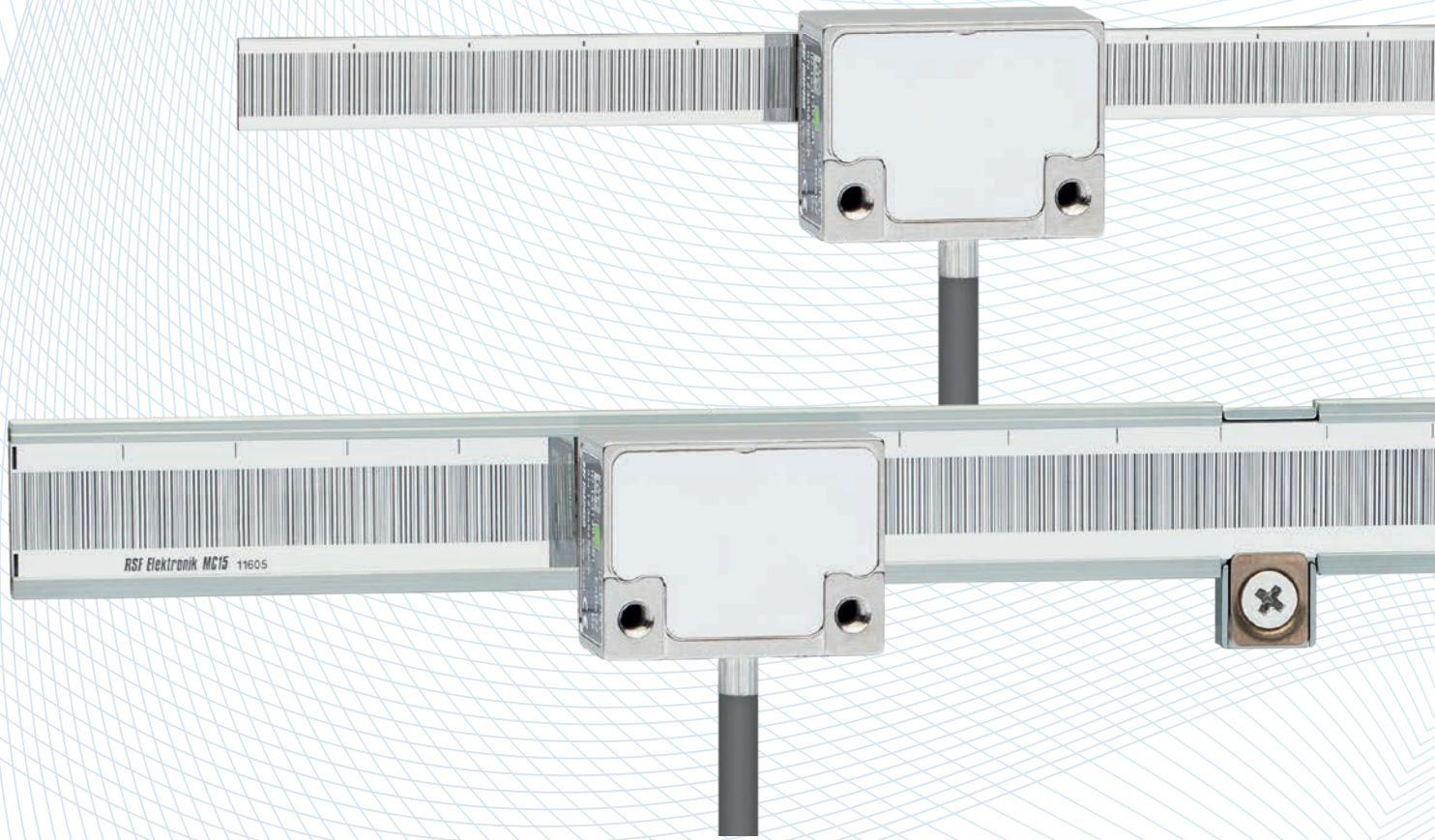
MC 15xL

ABSOLUTE EXPOSED LINEAR ENCODERS



MC 15 xL TECHNICAL DATA

SCANNING HEAD

Model	AK MC 15 L	AK MC 15BL	AK MC 15FL	AK MC 15ML		AK MC 15PL	AK MC 15YL
Interface	EnDat 2.2	BiSS C unidirectional	Fanuc serial interface αi Interface	Mitsubishi high speed interface		Panasonic serial interface	Yaskawa serial interface
Version	EnDat 2.2	BiSS/Cu	Fanuc05	Mit03-4	Mit03-2	Pana02	YEC07
Measuring step	0,1 µm (100 nm) 0,05 µm (50 nm)						
Calculation time t_{cal} Clock frequency	≤ 5 µs ≤ 16 MHz	-- --	-- --	-- --		-- --	-- --
Traversing speed	≤ 600 m/min						
Interpolation error	Approx. ±1 µm						
Electrical connection	Cable, 1 m or 3 m with M12-connector 8-pin or D-sub connector 15-pin						
Voltage supply	DC 3.6 V to 14 V (3.6 V at least required in the scanning head)						
Power consumption	At 3.6 V: ≤ 950 mW At 14 V: ≤ 1050 mW						
Current consumption typ.	At 5 V: 100 mA (without load)						
Vibration 55 Hz to 2000 Hz Shock 6 ms	≤ 500 m/s² (EN 60 068-2-6) ≤ 1000 m/s² (EN 60 068-2-27)						
Operating temperature Storage temperature	−10 °C to 70 °C −20 °C to 70 °C						
Mass	Scanning head: 11 g (without cable), connecting cable: 22 g/m, connector: M12-connector: 15 g; D-sub connector: 28 g						

GRADUATION CARRIER

Model	MB MC 15 MK	MC 15 MP
Graduation carrier	Steel tape scale with adhesive tape	Steel tape scale in aluminum carrier with clamping element
Coefficient of linear expansion	$\alpha_{therm} \approx 10 \times 10^{-6}\ K^{-1}$	$\alpha_{therm} \approx 10 \times 10^{-6}\ K^{-1}$
Accuracy grade (at 20 °C)	±15 µm/m	±15 µm/m
Measuring length ML	Up to 10 000 mm *	Up to 10 000 mm *
Mass	17 g/m	92 g/m + 2 g clamping

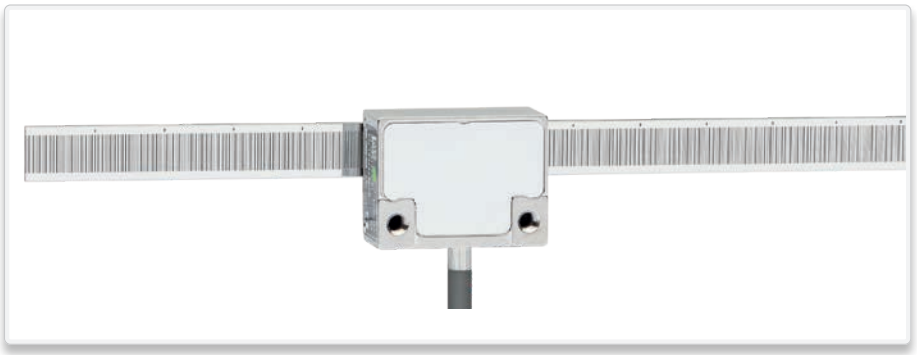
* longer lengths on request.

CONFORMITIES AND CERTIFICATIONS

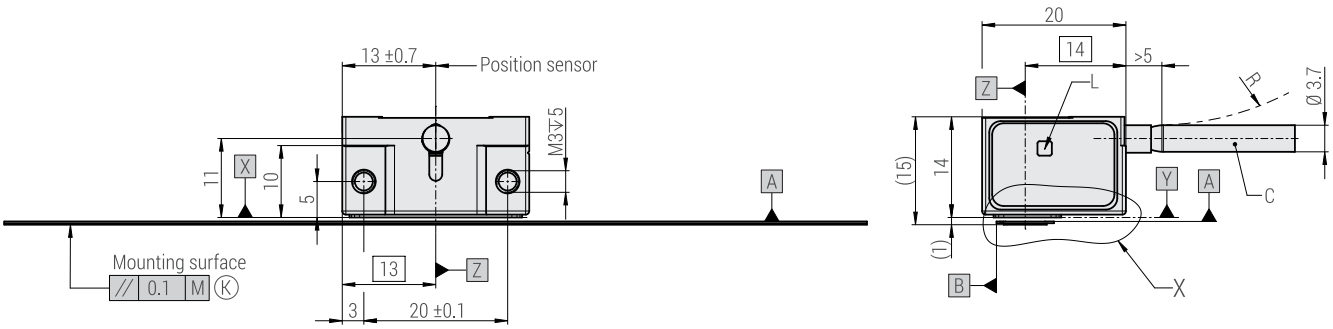
RoHS	2011/65/EU, 2015/863/EU
EMV	2014/30/EU
Product-Certifications	UL, CSA, EN, IEC 61010-1

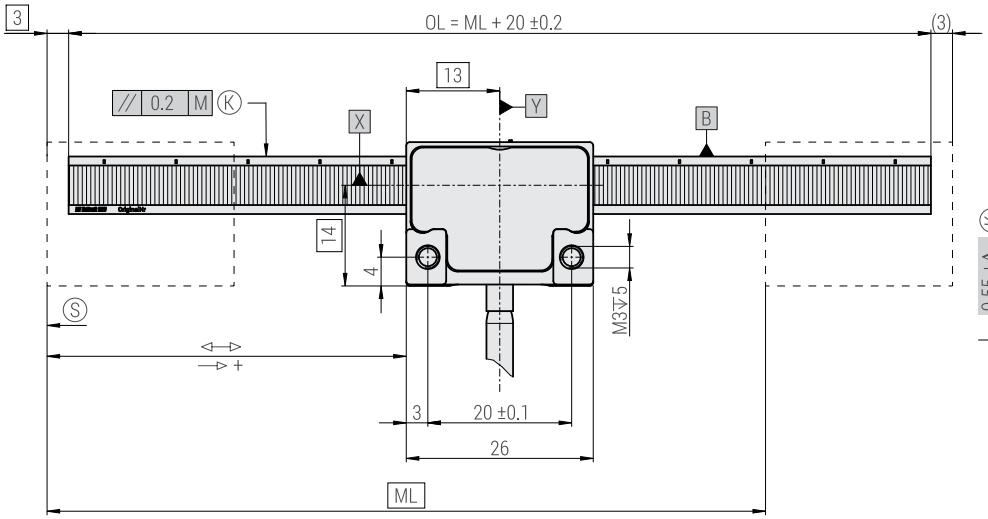
MC 15xL MK

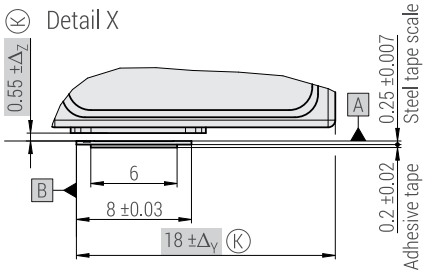
- Steel tape scale with absolute track and adhesive tape



Dimensions, mounting tolerances:





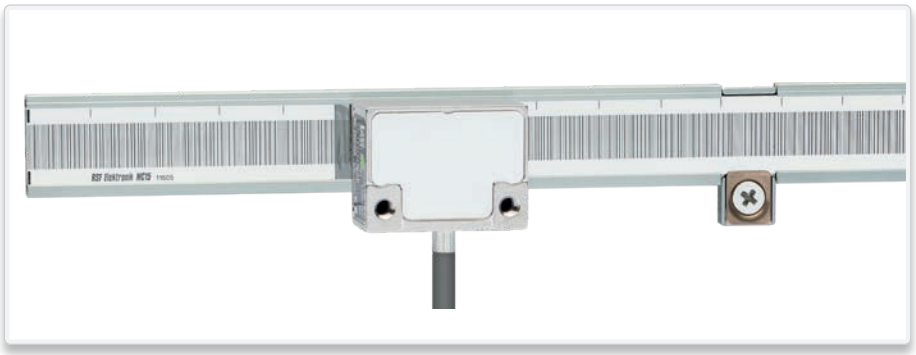


M = Machine guideway
ML = Measuring length
OL = Overall length
⟷ = S...S + ML
→+ = Direction of motion of the scanning head for ascending position values
C = Cable
K = Required mating dimensions
L = LED function display
R = Bending radius: stat. R ≥8 mm. dyn. R ≥40 mm
S = Code start value not defined (standard)
Code start value on customer request ≥16 mm (optional)

Permissible position deviation scanning head - scale tape A B
Δ_Z = Gaptolerance, ±0.25 mm
Δ_Y = Displacement, ±1.00 mm
φ_Z = ±20 mrad or ±1.15° (yaw angle)
φ_Y = ±20 mrad or ±1.15° (pitch angle)
φ_X = ±20 mrad or ±1.15° (roll angle)

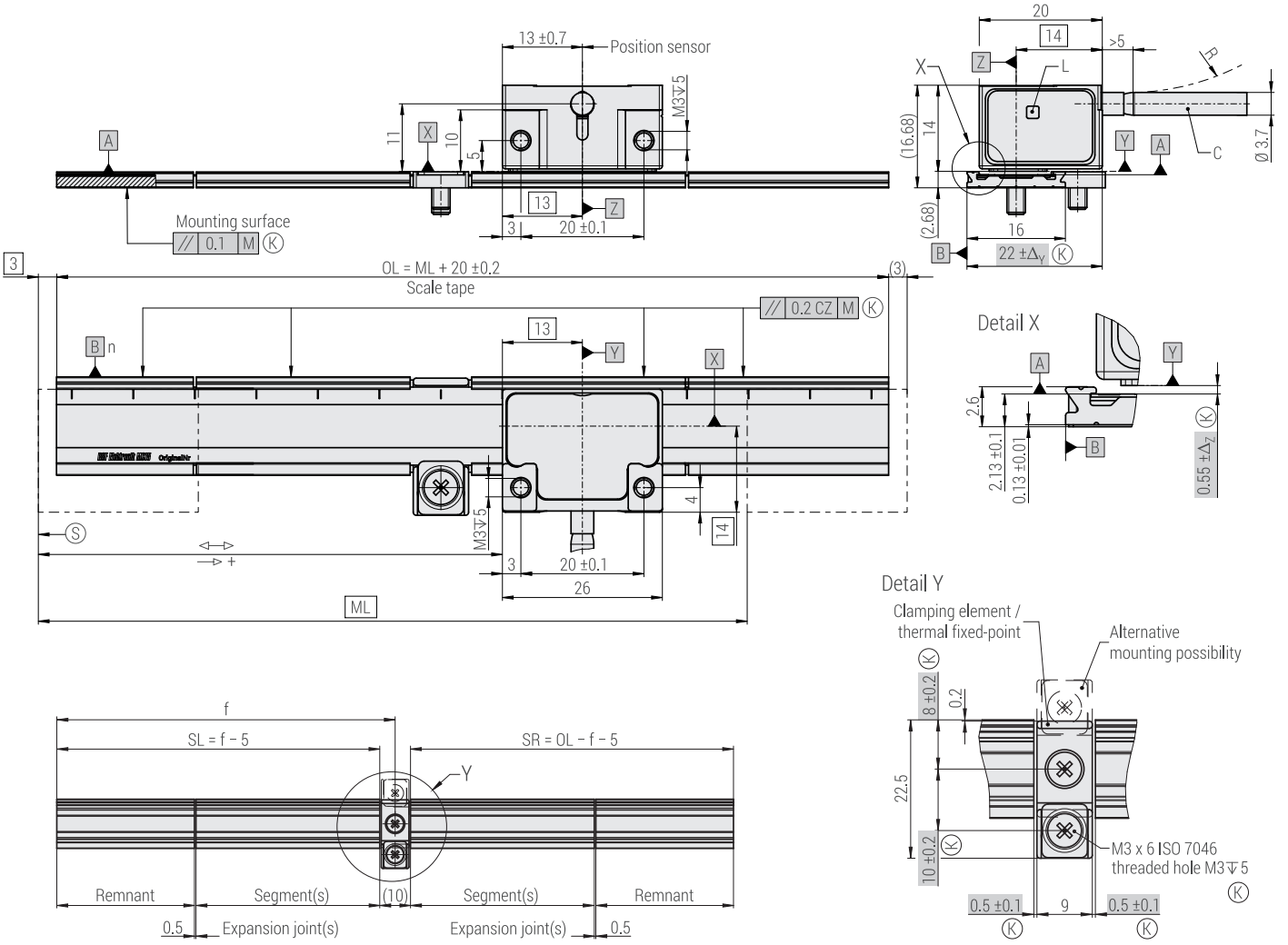
mm
Tolerancing ISO 8015
ISO 2768:1989 - m H
< 6 mm: ±0.2 mm

MC 15xL MP



- Steel tape scale with absolute track in aluminum carrier with clamping element
- Clamping element bolted
- Carrier with adhesive tape

Dimensions, mounting tolerances:



M = Machine guideway
ML = Measuring length
OL = Overall length
⟷ = S...S + ML
⟶+ = Direction of motion of the scanning head for ascending position values
f = Position of the clamping element
Standard: f = OL/2
Optional: f = 4.5 / ≥ 25 ... ≤ OL − 25 / OL − 4.5
n = 1, 2, 3, ... (number of segments)
C = Cable
(K) = Required mating dimensions
L = LED function display
R = Bendinh radius: stat. R ≥8 mm. dyn. R ≥40 mm
(S) = Code start value not defined (standard)
Code start value on customer request ≥16 mm (optional)

Permissible position deviation scanning head - scale tape A B
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