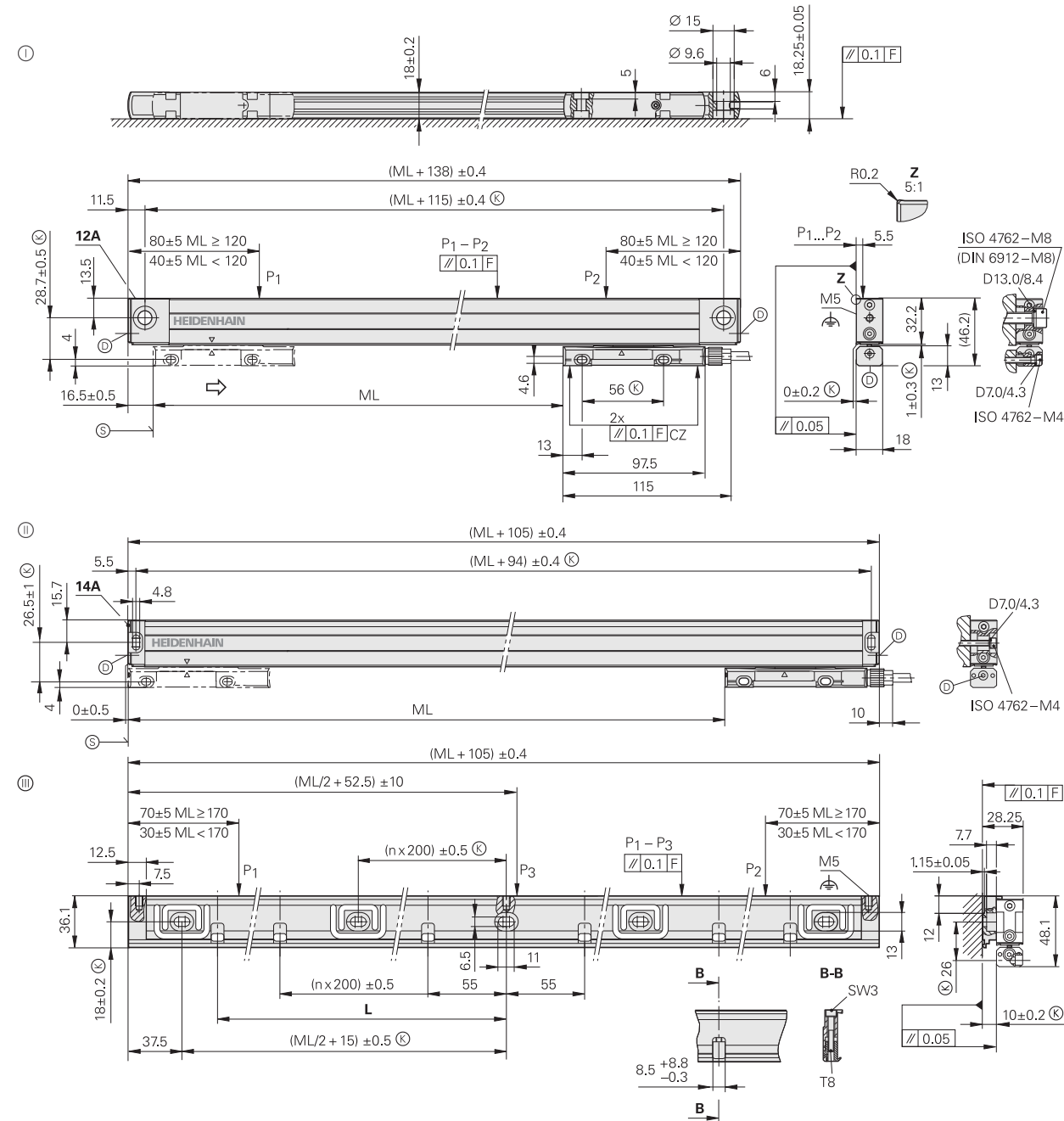


# LC 400 series

Absolute linear encoders with slimline scale housing

- For limited installation space



ML	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	1020	1140	1240	1340	1440	1540	1640	1740	1840	2040
L	37.5	55	75	100	115	140	175	200	225	250	275	300	325	350	375	400	450	500	555	610	655	710	760	810	855	910	1010	

- mm  
  
 Tolerancing ISO 8015  
 ISO 2768 - m H  
 < 6 mm: ±0.2 mm
- ⊖ = End block 12A; for mounting with and without mounting spar
  - ⊕ = End block 14A; for mounting with mounting spar (if attached directly with M4 screws, specifications are restricted)
  - ⊙ = Mounting spar MSL 41
  - F = Machine guideway
  - P = Gauging points for alignment
  - ⊕ = Required mating dimensions
  - ⊖ = Inlet for compressed air
  - ⊙ = Beginning of measuring length ML (= 20 mm absolute)
  - = Direction of scanning unit motion for output signals in accordance with interface description

Specifications	LC 415	LC 495F	LC 495M	LC 495S
<b>Measuring standard</b> Coefficient of linear expansion	DIADUR glass scale with absolute track and incremental track, grating period 20 μm $\alpha_{\text{therm}} \approx 8 \times 10^{-6} \text{ K}^{-1}$ (mounting type ⊖/⊕); with mounting spar: $\alpha_{\text{therm}} \approx 9 \times 10^{-6} \text{ K}^{-1}$ (mounting type ⊙)			
<b>Accuracy grade*</b>	± 3 μm; ± 5 μm			
<b>Measuring length ML*</b> in mm	Mounting spar* or clamping elements* up to ML 1240 optional, necessary as of ML 1340 70 120 170 220 270 320 370 420 470 520 570 620 670 720 770 820 920 1020 1140 1240 1340 1440 1540 1640 1740 1840 2040			
<b>Absolute position values</b>	EnDat 2.2	Fanuc serial interface αi interface	Mitsubishi high speed serial interface	DRIVE-CLiQ
Ordering designation	EnDat 22	Fanuc 05	Mit 03-04	DQ 01
Resolution At ± 3 μm At ± 5 μm	0.001 μm 0.010 μm	αi interface/α interface 0.00125 μm/0.010 μm 0.0125 μm/0.050 μm	0.001 μm 0.010 μm	
Clock frequency	≤ 16 MHz	–		
Calculation time $t_{\text{cal}}$	≤ 5 μs	–		
<b>Electrical connection</b>	Separate adapter cable (1 m/3 m/6 m/9 m) connectable to mounting block			
Cable length	≤ 100 m <sup>1)</sup>	≤ 30 m	≤ 30 m	≤ 30 m <sup>2)</sup>
Power supply	3.6 to 14 V DC			10 to 28.8 V DC
Power consumption (maximum)	3.6 V: ≤ 1.1 W 14 V: ≤ 1.3 W			10 V: ≤ 1.5 W 28.8 V: ≤ 1.7 W
Current consumption (typical)	5 V: 140 mA (without load)			24 V: 46 mA (without load)
<b>Traversing speed</b>	≤ 180 m/min			
<b>Required moving force</b>	≤ 5 N			
<b>Vibration</b> 55 Hz to 2000 Hz affecting the	Scanning unit: ≤ 200 m/s <sup>2</sup> (EN 60068-2-6) Housing without mounting spar: ≤ 100 m/s <sup>2</sup> (EN 60068-2-6) Housing with mounting spar and cable outlet at right: ≤ 150 m/s <sup>2</sup> , at left: ≤ 100 m/s <sup>2</sup> (EN 60068-2-6)			
<b>Shock</b> 11 ms <b>Acceleration</b>	≤ 300 m/s <sup>2</sup> (EN 60068-2-27) ≤ 100 m/s <sup>2</sup> in measuring direction			
<b>Operating temperature</b>	0 °C to 50 °C			
<b>Protection</b> EN 60529	IP 53 when installed according to instructions in the brochure, IP 64 with sealing air from DA 400			
<b>Weight</b>	Encoder: 0.2 kg + 0.55 kg/m measuring length; mounting spar: 0.9 kg/m			

\* Please select when ordering  
 1) With HEIDENHAIN cable, clock frequency ≤ 8 MHz  
 2) Larger cable lengths upon request  
**Functional safety**: LC 415 see special Product Information sheet; LC 495S in preparation

Specifications