



HEIDENHAIN



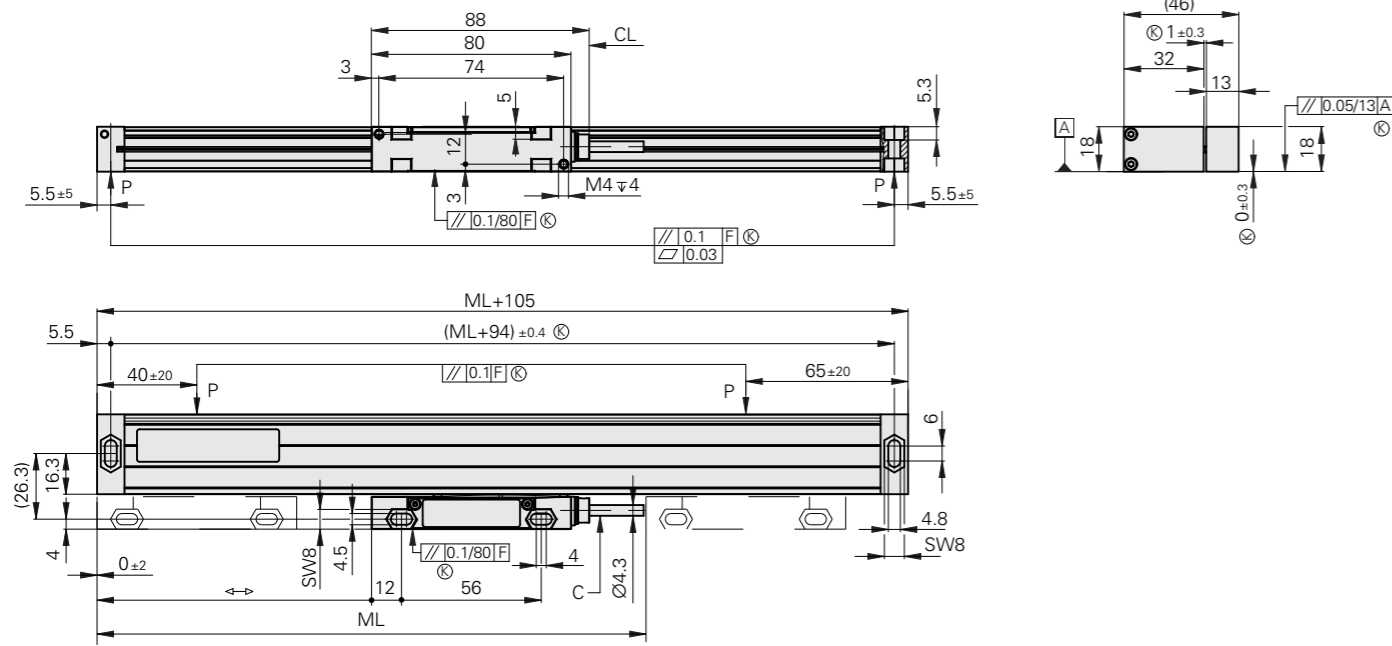
Product Information

LS 373

LS 383

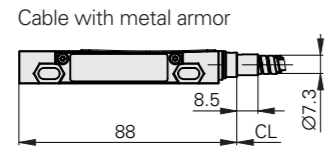
Incremental Linear Encoders

LS 300 series

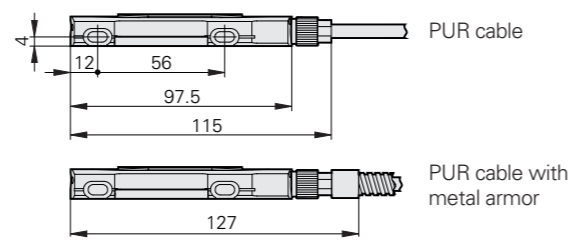


mm
 Tolerancing ISO 8015
 ISO 2768:1989-mH
 ≤ 6 mm: ±0.2 mm

F = Machine guideway
 ML = Measuring length
 P = Measuring points for alignment
 ↔ = 0 to ML
 C = Connecting cable
 CL = Cable length
 K = Required mating dimensions



LS 477(C), LS 487(C)
 Available on short notice as a replacement device
 Scanning-unit dimensions may vary



LS 3x3(C)
 Starting value for version with distance-coded
 reference marks between 0 mm and 3200 mm



Specifications	LS 383 ¹⁾	LS 373 ²⁾												
Measuring standard Coefficient of linear expansion	Glass scale $\alpha_{\text{therm}} \approx 8 \cdot 10^{-6} \text{ K}^{-1}$													
Accuracy grade	±5 µm													
Measuring length ML* in mm	70 770	120 820	170 870	220 920	270 970	320 1020	370 1140	420 1240	470	520	570	620	670	720
Reference marks	LS 3x3: One reference mark in the middle LS 3x3C: Distance-coded ³⁾													
Interface	~ 1 V _{PP}				TTL									
Signal period	20 µm													
Integrated interpolation	-				1-fold	5-fold	10-fold	20-fold						
Measuring step	-				5 µm	1 µm	0.5 µm	0.25 µm						
Supply voltage Without load	5 V ±0.25 V / < 150 mA													
Electrical connection	PUR connecting cable and PUR cable with metal armor; cable outlet to the right on the mounting block													
Cable length	3 m, 6 m													
Connecting element	15-pin D-sub connector (male) 15-pin D-sub connector (female) 12-pin M23 connector (male)				15-pin D-sub connector (male) 9-pin D-sub connector (male) 12-pin M23 connector (male)									
Traversing speed	≤ 60 m/min													
Required moving force	≤ 5 N													
Vibration 55 Hz to 2000 Hz Shock 6 ms	≤ 100 m/s ² ≤ 200 m/s ²													
Operating temperature	0 °C to 50 °C													
Protection IEC 60529	IP53													
Mass without cable	0.3 kg + 0.57 kg/m of measuring length													

* Please select when ordering

¹⁾ The LS 487 is available as a replacement device through the HEIDENHAIN Service department on short notice

²⁾ The LS 477 is available as a replacement device through the HEIDENHAIN Service department on short notice

³⁾ Starting value for version with distance-coded reference marks between 0 mm and 3200 mm

Pin layout

TTL

① 9-pin D-sub connector (male)					② 15-pin D-sub connector (male)					③ 12-pin M23 connector (male)			
Power supply					Incremental signals					Other signals			
①	7	7 ¹⁾	6	6 ¹⁾	2	3	4	5	9	8	/	/	/
②	4	12	2	10	1	9	3	11	14	7	13	5/6/8	15 ²⁾
③	12	2	10	11	5	6	8	1	3	4	7	/	9
	U_P	Sensor U _P	0V	Sensor 0V	U_{a1}	U_{a1}	U_{a2}	U_{a2}	U_{a0}	U_{a0}	U_{aS}	Vacant	Reserved, do not assign ³⁾
	Black		White		Green	Yellow	Pink	Red	Brown	Gray	Blue	/	Ecu

Cable shield connected to housing; **U_P** = Power supply voltage

Sensor: The sense line is connected in the encoder with the corresponding power supply line.

Vacant pins or wires must not be used!

¹⁾ Only ID 617513-xx, ID 626015-xx

²⁾ No connection: ID 309783-xx, ID 309784-xx, ID 310196-xx, ID 310199-xx

³⁾ Conversion from TTL to 11 μ A_{PP} for PWT; otherwise not assigned

1V_{PP}

① 15-pin D-sub connector (male)					② 15-pin D-sub connector (female)					③ 12-pin M23 connector (male)			
Power supply					Incremental signals					Other signals			
①	4	12	2	10	1	9	3	11	14	7	5/6/8	13	15 ¹⁾
②	1	9	2	11	3	4	6	7	10	12	13/14/ 15	8	5
③	12	2	10	11	5	6	8	1	3	4	/	7	9
	U_P	Sensor U _P	0V	Sensor 0V	A+	A-	B+	B-	R+	R-	Vacant	Reserved, do not assign ²⁾	Reserved, do not assign ³⁾
	Black		White		Green	Yellow	Pink	Red	Brown	Gray	/	Blue	Ecu

¹⁾ No connection: ID 310196-xx

²⁾ Serial interface (clock)

³⁾ Serial interface (data)

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This Product Information document supersedes all previous editions, which thereby become invalid. The basis for ordering from HEIDENHAIN is always the Product Information document edition valid when the order is placed.

More information:

To ensure proper and intended use, comply with the specifications in the following document:

• Brochure: *Digital Readouts / Linear Encoders:*

208864-xx