HEIDENHAIN

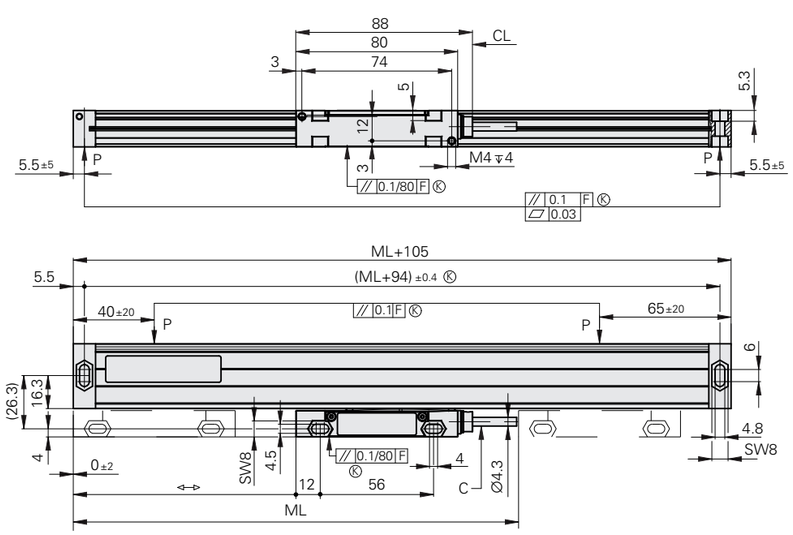
Product Information

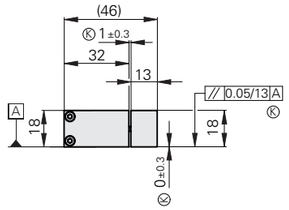
LS 373
LS 383

Incremental Linear Encoders

06/2022

LS 300 series





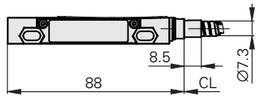
mm

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

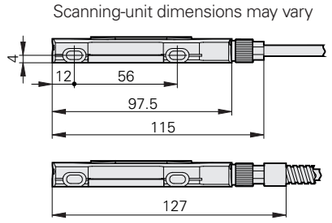
F = Machine guideway
ML = Measuring length
P = Measuring points for alignment
◂—▸ = 0 to ML
C = Connecting cable
CL = Cable length
K = Required mating dimensions

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

Cable with metal armor



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



PUR cable

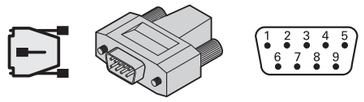
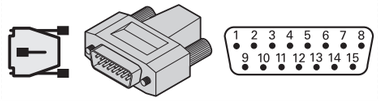
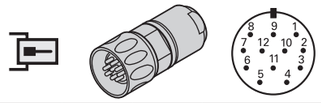
PUR cable with metal armor

Specifications	LS 383[1]	LS 373[2]
Measuring standard Coefficient of linear expansion	Glass scale $\alpha_{therm} \approx 8 \cdot 10^{-6}\ K^{-1}$	
Accuracy grade	±5 µm	
Measuring length ML* in mm	70 120 170 220 270 320 370 420 470 520 570 620 670 720 770 820 870 920 970 1020 1140 1240	
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

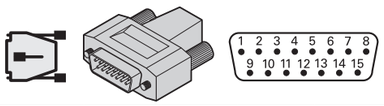
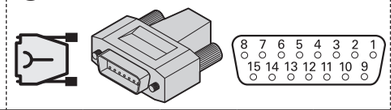
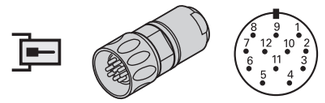
① 9-pin D-sub connector (male)	② 15-pin D-sub connector (male)	③ 12-pin M23 connector (male)
		

	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	**0 V**	**Sensor** 0 V	**U_{a1}**	**$\overline{U_{a1}}$**	**U_{a2}**	**$\overline{U_{a2}}$**	**U_{a0}**	**$\overline{U_{a0}}$**	**$\overline{U_{aS}}$**	Vacant	Reserved, do not assign[3]
	Black		White		Green	Yellow	Pink	Red	Brown	Gray	Blue	/	Ecru

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 μA_{PP} for PWT; otherwise not assigned

1 V_{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	**0 V**	**Sensor** 0 V	**A+**	**A–**	**B+**	**B–**	**R+**	**R–**	Vacant	Reserved, do not assign2)	Reserved, do not assign3)
	Black		White		Green	Yellow	Pink	Red	Brown	Gray	/	Blue	Ecru

[1] No connection: ID 310196-xx
[2] Serial interface (clock)
[3] Serial interface (data)

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