

HEIDENHAIN

SALES & SERVICE:

A Tech Authority, Inc.

13745 Stockton Ave.

Chino CA 91710

909-614-4522

sales@atechauthority.com



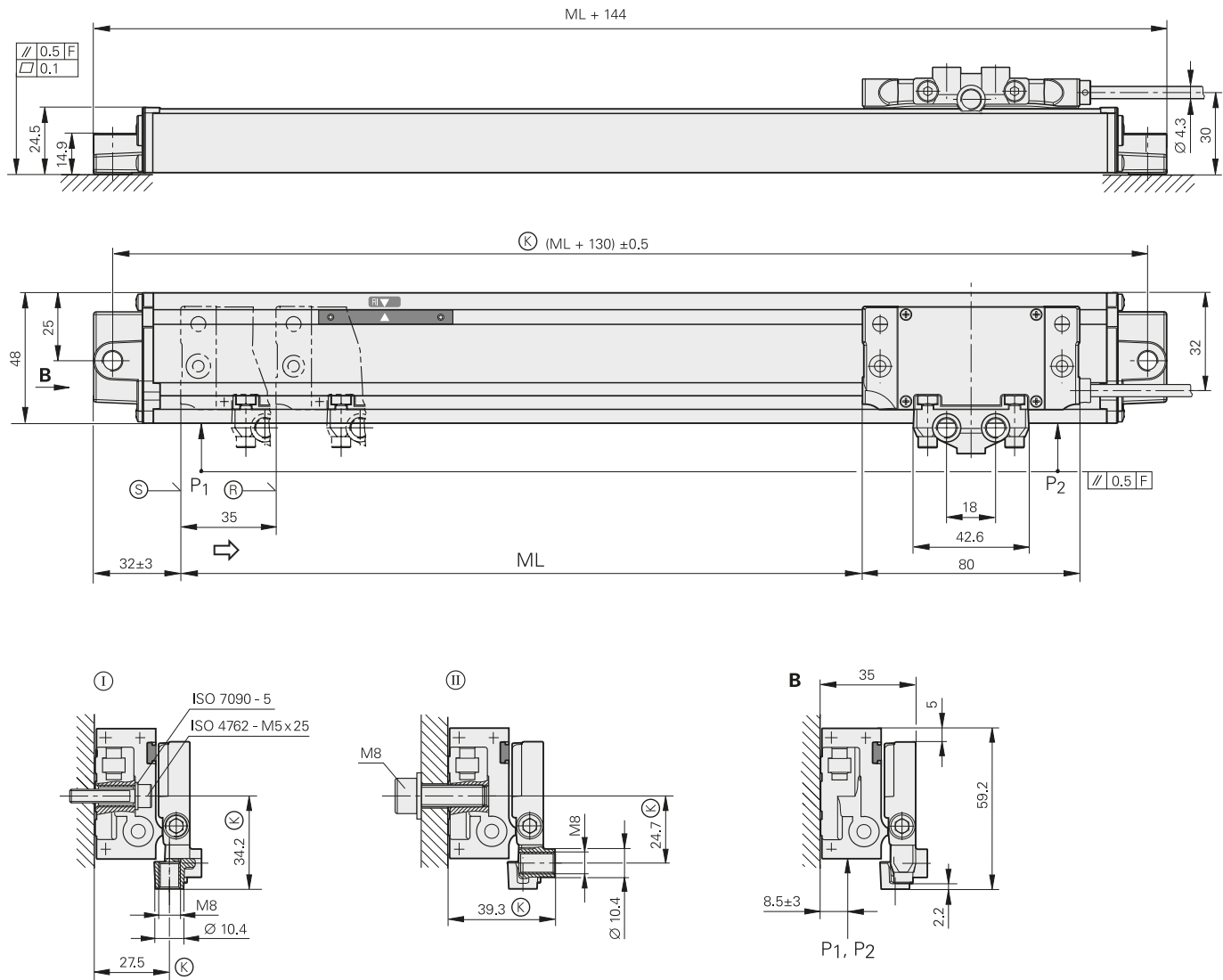
Product Information

LS 1679

Incremental Linear Encoder
with Integrated Roller Guide

LS 1679

- Incremental linear encoder for measuring steps to 5 µm or 1 µm
- Integrated wear-free roller guide with steel ball bearings on steel rods
- Large mounting tolerances when connected by coupling rod or spring rod
- Reference marks selectable every 50 mm



mm

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

- ⊙, ⊕ = Mounting options
 F = Machine guideway
 P = Gauging points for alignment
 ⊗ = Required mating dimensions
 ⊕ = Reference mark position
 ⊙ = Beginning of measuring length (ML)
 ⇨ = Direction of scanning unit motion for output signals in accordance with interface description



Specifications	LS 1679	
Measuring standard Coefficient of linear expansion	Glass scale with DIADUR graduation $\alpha_{\text{therm}} \approx (8 \pm 1) \times 10^{-6} \text{ K}^{-1}$	
Accuracy grade	$\pm 10 \text{ }\mu\text{m}$	
Measuring length ML* in mm	70, 120, 170, 220, 270, 320, 370, 420, 470 ¹⁾	
Reference marks*	One, located 35 mm from the beginning or end of the measuring length, or selectable via magnet every 50 mm	
Interface	□ □ TTL	
Measuring step (after 4-fold evaluation)	5 μm	1 μm
Edge separation a	$\geq 1.6 \text{ }\mu\text{s}$	$\geq 0.8 \text{ }\mu\text{s}$
Electrical connection	Connecting cable, cable outlet at mounting block, left or right	
Length*	3 m / 6 m ¹⁾	
Connecting element*	With connector, male, 12-pin; coupling, male, 12-pin or with D-sub connector, 9-pin	
Voltage supply (without load)	DC 5 V $\pm 0.25 \text{ V}$ / < 120 mA	
Traversing speed	$\leq 60 \text{ m/min}$	
Required moving force	$\leq 5 \text{ N}$	
Vibration 55 Hz to 2 000 Hz Shock 11 ms Acceleration	$\leq 150 \text{ m/s}^2$ (EN 60068-2-6) $\leq 300 \text{ m/s}^2$ (EN 60068-2-27) $\leq 30 \text{ m/s}^2$ in measuring direction	
Operating temperature	0 °C to +50 °C	
Protection EN 60 529	IP53 when mounted as per Mounting Instructions	
Mass	0.46 kg + 1.34 kg/m measuring length	
Coupling the scanning unit*	By coupling rod (accessory) or spring rod	

* Please select when ordering

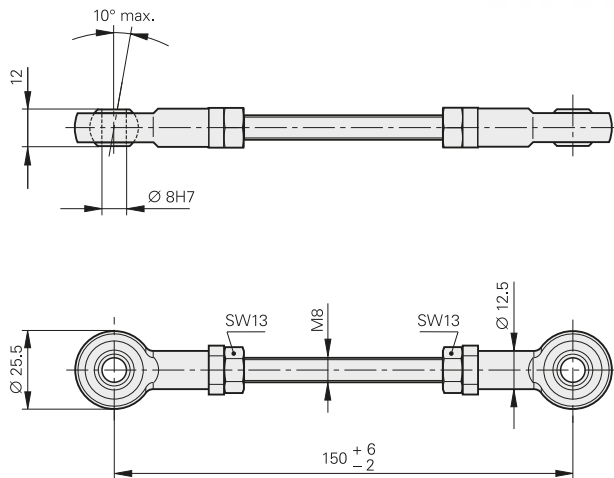
¹⁾ Further lengths up to 2270 mm upon request

Mounting accessories

Coupling rod

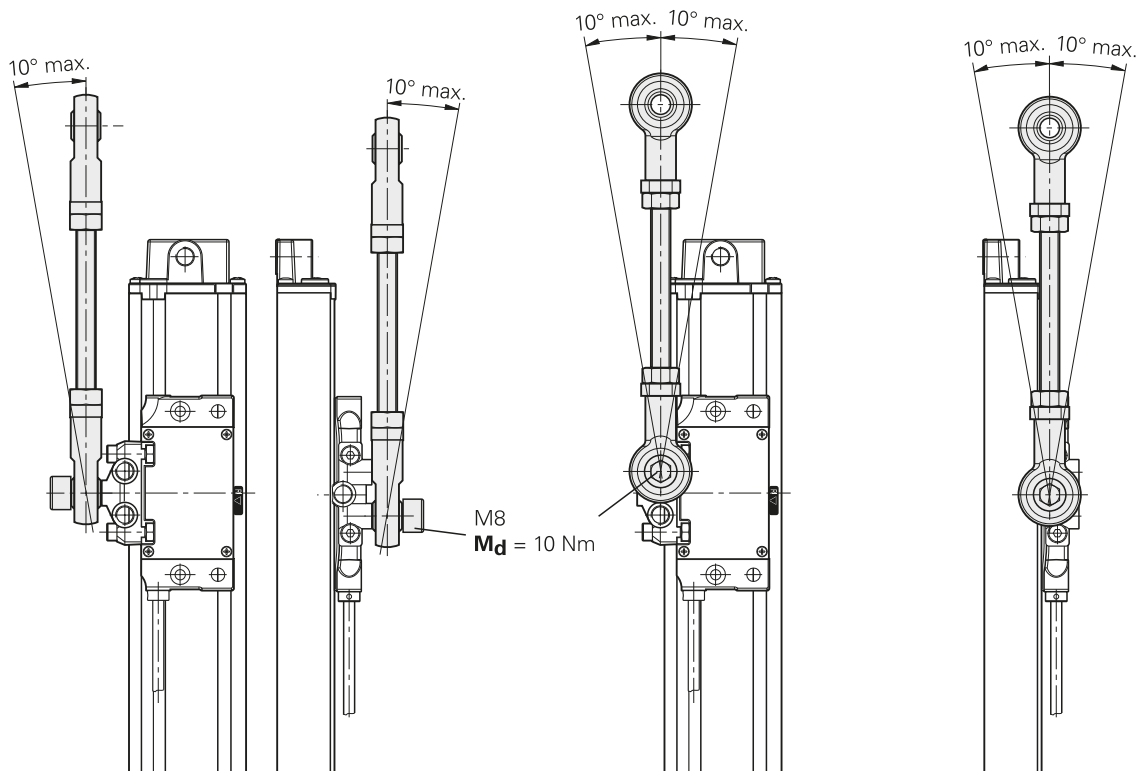
For coupling the LS 1679 to press brakes and bending machines, includes bolts

ID 538768-01



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

Coupling the scanning unit via coupling rod

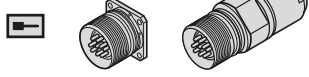


mm
Tolerancing ISO 8015
ISO 2768 - m H
< 6 mm: ± 0.2 mm

F = Machine guideway

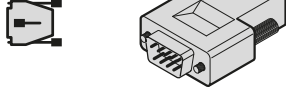
Electrical connection

Pin layout

12-pin M23 flange socket or M23 coupling					12-pin connector M23								
													
Voltage supply					Incremental signals						Other signals		
	12	2	10	11	5	6	8	1	3	4	7	/	9
	U_P	Sensor U_P	0V	Sensor 0V	U_{a1}	$\overline{U_{a1}}$	U_{a2}	$\overline{U_{a2}}$	U_{a0}	$\overline{U_{a0}}$	$\overline{U_{aS}}^{1)}$	Vacant	Vacant ²⁾
	Brown/ Green	Blue	White/ Green	White	Brown	Green	Gray	Pink	Red	Black	Violet	–	Yellow

Shield is on housing; U_P = Power supply

Sensor: The sensor line is connected internally to the respective power supply.

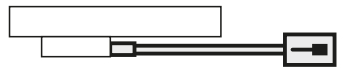
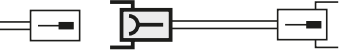
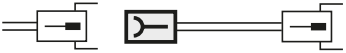
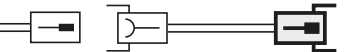
9-pin D-sub connector for DELEM control								
								
Voltage supply			Incremental signals					
	9	5	3	8	2	7	1	6
HEIDENHAIN	U_P	0V	U_{a1}	$\overline{U_{a1}}$	U_{a2}	$\overline{U_{a2}}$	U_{a0}	$\overline{U_{a0}}$
DELEM			T_1	T_1	T_2	T_2	T_0	T_0
	Brown/Green + Blue	White/Green + White	Brown	Green	Gray	Pink	Red	Black

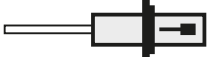
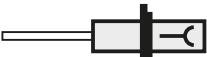
Shield is on housing; U_P = Power supply

Sensor: The sensor line is connected internally to the respective power supply.

Cables and connecting elements

PUR connecting cable Ø 8 mm for encoders with coupling or flange socket		PUR connecting cable Ø 8 mm for encoders with connector	
Complete with M23 connector (female), and M23 connector (male)	12-pin 298399-xx	Complete with M23 coupling (female), and M23 connector (male)	12-pin 298400-xx
			
With one M23 connector (female)	12-pin 309777-xx	With one M23 connector (female)	12-pin 298402-xx
			
Cable only	12-pin 816317-xx	$[4(2 \times 0.14 \text{ mm}^2) + (4 \times 0.5 \text{ mm}^2)]; A_P 0.5 \text{ mm}^2$	
			

M23 connectors and couplings			
Coupling on encoder cable	M23 coupling (male)	Connector on encoder cable	M23 connector (male)
			
For cable Ø 6 mm	12-pin 291698-03	For cable Ø 6 mm	12-pin 291697-07
Mating element for coupling to encoder cable or flange socket	M23 connector (female)	Mating element on connecting cable for encoder connector	M23 coupling (female)
			
For connecting cable Ø 8 mm	12-pin 291697-05	For connecting cable Ø 8 mm	12-pin 291698-02
Connector for connection an to subsequent electronics	M23 connector (male)		
			
For connecting cable Ø 8 mm	12-pin 291697-08		

Couplings and M23 flange socket for mounting			
	M23 flange socket (female)		M23 mounted coupling with flange (male)
	12-pin 315892-08	For cable Ø 8 mm	12-pin 291698-31
			M23 mounted coupling with flange (female)
		For cable Ø 8 mm	12-pin 291698-07

A_P: Cross section of power supply lines

HEIDENHAIN

DR. JOHANNES HEIDENHAIN GmbH
Dr.-Johannes-Heidenhain-Straße 5
83301 Traunreut, Germany
☎ +49 8669 31-0
☎ +49 8669 32-5061
E-mail: info@heidenhain.de

www.heidenhain.de

358588 · 04 · A · 02 · 4/2016 · PDF

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

Further Information

- Catalog: *Sealed Linear Encoders*
- Catalog: *Interfaces of HEIDENHAIN Encoders*