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HEIDENHAIN



Product Information

HEIDENHAIN-METRO

MT 12 Series
MT 25 Series

Incremental Length Gauges

July 2013

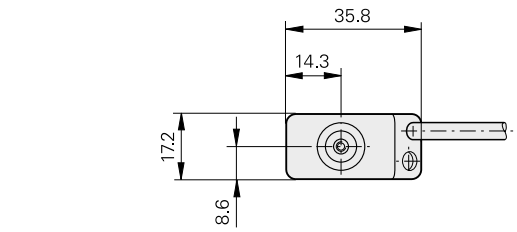
HEIDENHAIN-METRO

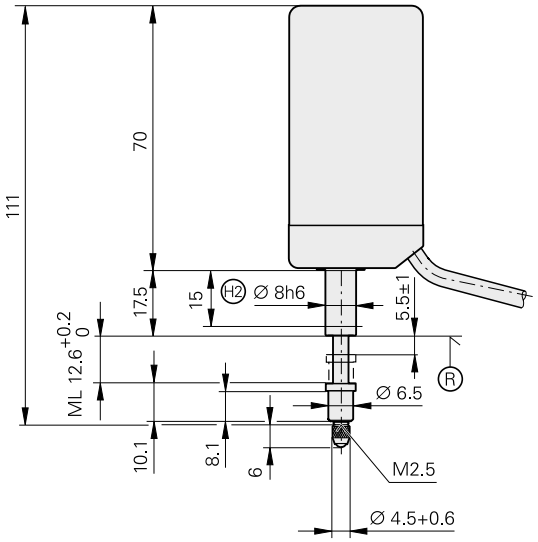
MT 12, MT 25 series

- **Sturdy design**
- **Plunger actuation by cable lifter, by the workpiece or pneumatically**

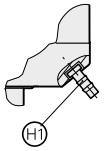
MT 12
MT 12 B
MT 12 P







MT 12 P



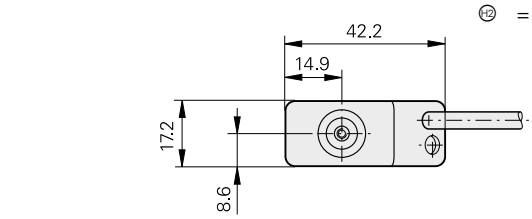
mm

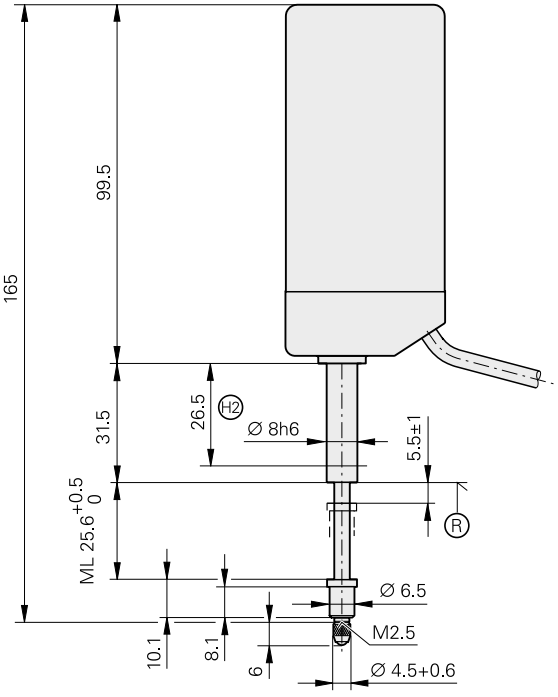
Tolerancing ISO 8015
ISO 2768 - m H
< 6 mm: ±0.2 mm

ML = Measuring length
® = Reference mark position
H1 = Air connection for 2 mm tube
H2 = Clamping area

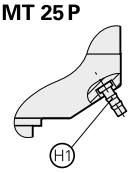
MT 25
MT 25 B
MT 25 P







MT 25 P



Specifications	MT 12 MT 25	MT 12B MT 25B	MT 12P MT 25P
Plunger actuation	By cable or measured object		Pneumatic
Position of plunger at rest	Extended		Retracted
Plunger guideway	Sliding guide	Ball-bush guide	Sliding guide
Measuring standard	DIADUR grating on glass; grating period 10 µm		
System accuracy	± 0.5 µm		
Reference mark	Approx. 5 mm below upper stop		
Measuring range *MT 12* *MT 25*	12 mm 25 mm		
Gauging force*	*From the integral spring*	*From the integral spring*	*From application of compressed air*
Vertically downward	0.6 N to 0.85 N	0.6 N to 0.85 N	0.2 N to 1.1 N
Vertically upward	0.28 N to 0.6 N	0.28 N to 0.6 N	0.2 N to 0.9 N
Horizontal	0.48 N to 0.73 N	0.48 N to 0.73 N	0.2 N to 1.0 N
		Inherent weight of the plunger in version without spring: *MT 12B:* 0.12 N downward *MT 25B:* 0.16 N downward	
Radial force[1)]	≤ 0.2 N	≤ 0.8 N	≤ 0.2 N
Operating attitude	Any	Any *Version without spring: vertically* downward	Any
Vibration 55 to 2000 Hz **Shock** 11 ms	≤ 100 m/s^2 (EN 60068-2-6) ≤ 1000 m/s^2 (EN 60068-2-27)		
Protection EN 60529	IP 50		IP 60
Operating temperature **Storage temperature**	10 °C to 50 °C; reference temperature 20 °C –30 °C to 70 °C		
Fastening	Clamping shank Ø 8h6		
Weight without cable *MT 12* *MT 25*	120 g 200 g		250 g 300 g
Interface	⁓ 11 µA$_{PP}$		
Measuring velocity	≤ 60 m/min (plunger coupled; depending on the subsequent electronics)		
Electrical connection	Cable 1.5 m with M23 connector (male) 9 pin		
Cable length	≤ 30 m with HEIDENHAIN cable		
Voltage supply	5 V DC ± 0.25 V/< 70 mA		

* Please select when ordering
1) Mechanically permissible

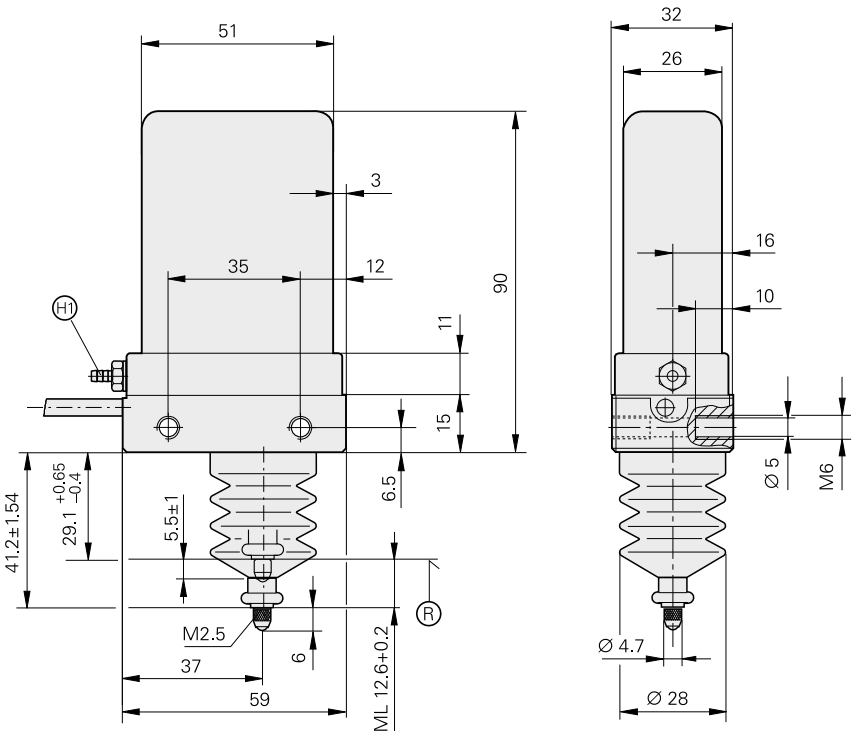
HEIDENHAIN-METRO

MT 12W, MT 25W series

- **Splash-proof, sturdy design**
- **Plunger actuation through the workpiece or negative gauge pressure**

MT 12W





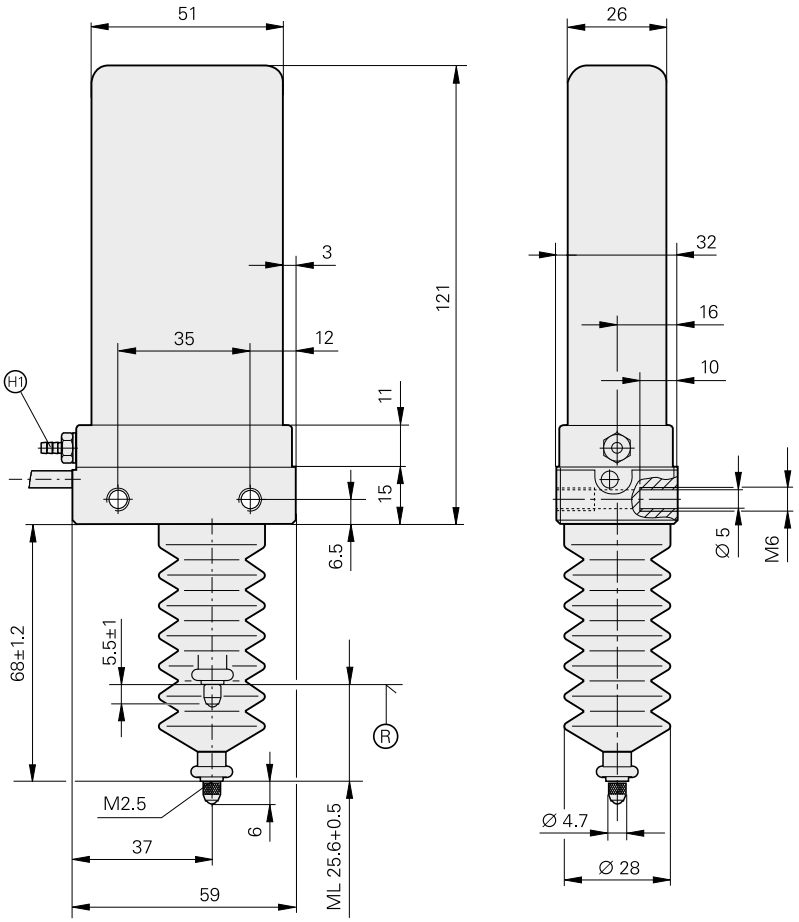
mm

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

ML = Measuring length
® = Reference mark position
Ⓗ1 = Air connection for 2 mm tube

MT 25W





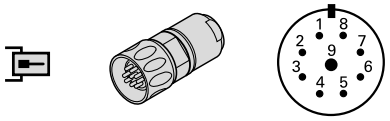
Specifications		MT 12W MT 25W	
Plunger actuation		Through measured object or application of negative gauge pressure (0.8 bar absolute)	
Position of plunger at rest		Extended	
Plunger guideway		Sliding guide	
Measuring standard		DIADUR grating on glass; grating period 10 µm	
System accuracy		± 1 µm	
Reference mark		Approx. 5 mm below upper stop	
Measuring range	*MT 12* *MT 25*	12 mm 25 mm	
Gauging force Vertically downward Vertically upward Horizontal		*With extending plunger* 3.5 N to 0.5 N 3 N to 0.2 N 3.25 N to 0.35 N	*With retracting plunger* 4.4 N to 1.4 N 3.8 N to 1.4 N 3.95 N to 1.05 N
Radial force[1]		≤ 0.2 N	
Operating attitude		Any	
Vibration 55 to 2000 Hz **Shock** 11 ms		≤ 100 m/s^2 (EN 60068-2-6) ≤ 1000 m/s^2 (EN 60068-2-27)	
Protection EN 60529		IP 64	
Operating temperature **Storage temperature**		10 °C to 50 °C; reference temperature 20 °C –30 °C to 70 °C	
Fastening		Plane surface 59 mm x 14 mm; 2 M6 screws	
Weight without cable	*MT 12* *MT 25*	400 g 500 g	
Interface		⁓ 11 µA$_{PP}$	
Measuring velocity		≤ 60 m/min (plunger coupled; depending on the subsequent electronics)	
Electrical connection		Cable 1.5 m with M23 connector (male) 9 pin	
Cable length		≤ 30 m with HEIDENHAIN cable	
Voltage supply		5 V DC ± 0.25 V/70 mA	

[1] Mechanically permissible

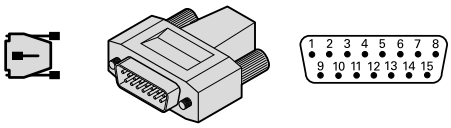
Electrical connection

Pin layout

9-pin connector, M23



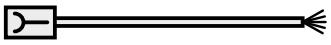
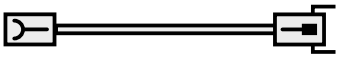
15-pin D-sub connector
For ND 28x/PWM 20 or on encoder



	Voltage supply				Incremental signals					
	3	**4**	**Housing**	**9**	**1**	**2**	**5**	**6**	**7**	**8**
	4	**2**		**6**	**1**	**9**	**3**	**11**	**14**	**7**
	U_P	**0 V**	**External shield**	**Internal shield**	**I_1+**	**I_1–**	**I_2 +**	**I_2–**	**I_0 +**	**I_0–**
	Brown	White	–	White/ Brown	Green	Yellow	Blue	Red	Gray	Pink

U_P = Power supply
Vacant pins or wires must not be used!

Shield on housing
Color assignment applies only to extension cable.

PUR connecting cable Ø 8 mm [3(2 × 0.14 mm²) + (2 × 1 mm²)]; A_V = 1 mm²		
Complete With M23 coupling (female), 9-pin and D-sub connector (male), 15-pin for ND 28x, EIB 741; only 1 V_{PP}: ND 11xx, ND 12xx		653231-xx
Complete With M23 coupling (female), 9-pin and D-sub connector (female), 15-pin, for ND 780, PT 880, IK 220		368172-xx
With one connector With M23 coupling (female), 9-pin		309780-xx
Complete With M23 coupling (female), 9-pin and M23 connector (male)		309774-xx

A_P: Cross section of power supply lines

HEIDENHAIN

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

For more information
- Catalog: *Length Gauges*

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