

# MAGNESCALE

digital gauge



## Series DT

Key-Features:

- Measurement ranges: 12, 32 mm (DT Series)
- Resolution up to 1  $\mu\text{m}$
- Linearity up to 2  $\mu\text{m}$
- Output signal A/B, TTL-Linedriver, EIA-422 with MT17
- USB (2.0 FS) interface with MT30 - free evaluation software for download
- Protection class up to IP64
- Spring loaded and pneumatic versions
- Resistant against water and oil
- Life cycle up to 30 million strokes

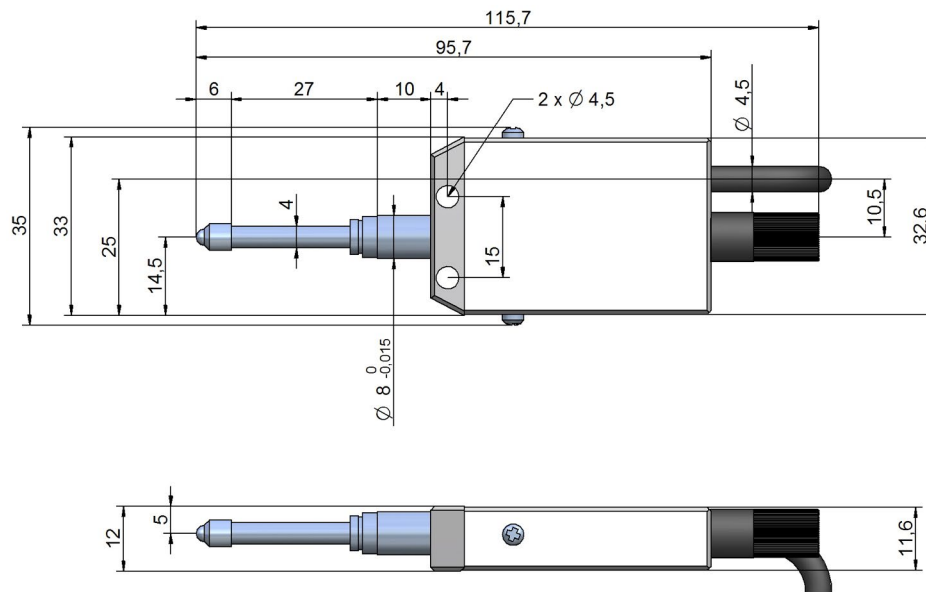
**Content:**

# DIGITAL GAUGES DT12, DT512

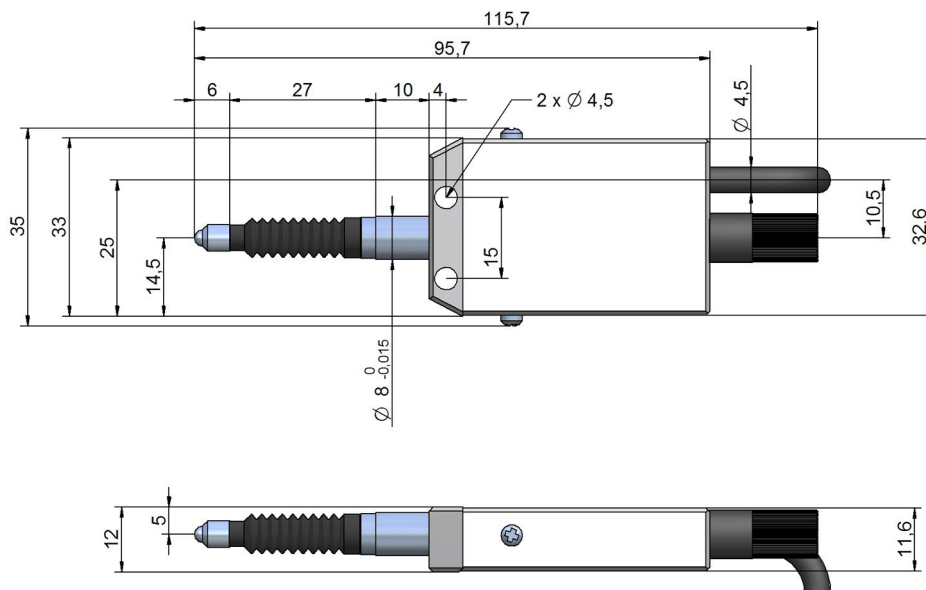
Model		DT12N	DT12P	DT512N	DT512P
Measurement range	[mm]	12			
Resolution	[ $\mu\text{m}$ ]	5			1
Linearity (20°C)	[ $\mu\text{m}$ ]	10			6
Displacement speed max.	[m/min]	depending on the unit to be connected: 1 channel displays (e.g. LT10A-105): 100 / 2 channel displays (e.g. LT11A-201): 80			
Rod principle		Spring push-out			
Reference point		none			
Working temperature	[°C]	0...50			
Storage temperature	[°C]	-10...60			
Measuring force	[N]	0.8 $\pm$ 0.5	1.7 or less	0.8 $\pm$ 0.5	1.7 or less
Protection class *		-	IP64	-	IP64
Weight	[g]	75	80	75	80
Life cycle		up to 30 million strokes			
Feeler		Steel ball tip $\varnothing$ 3 mm, screw M2,5			
Cable length	[m]	2			
compatible display		LT10A		LT11A	

\*Excluding the interpolation box and connector

## DT12N, DT512N



## DT12P, DT512P

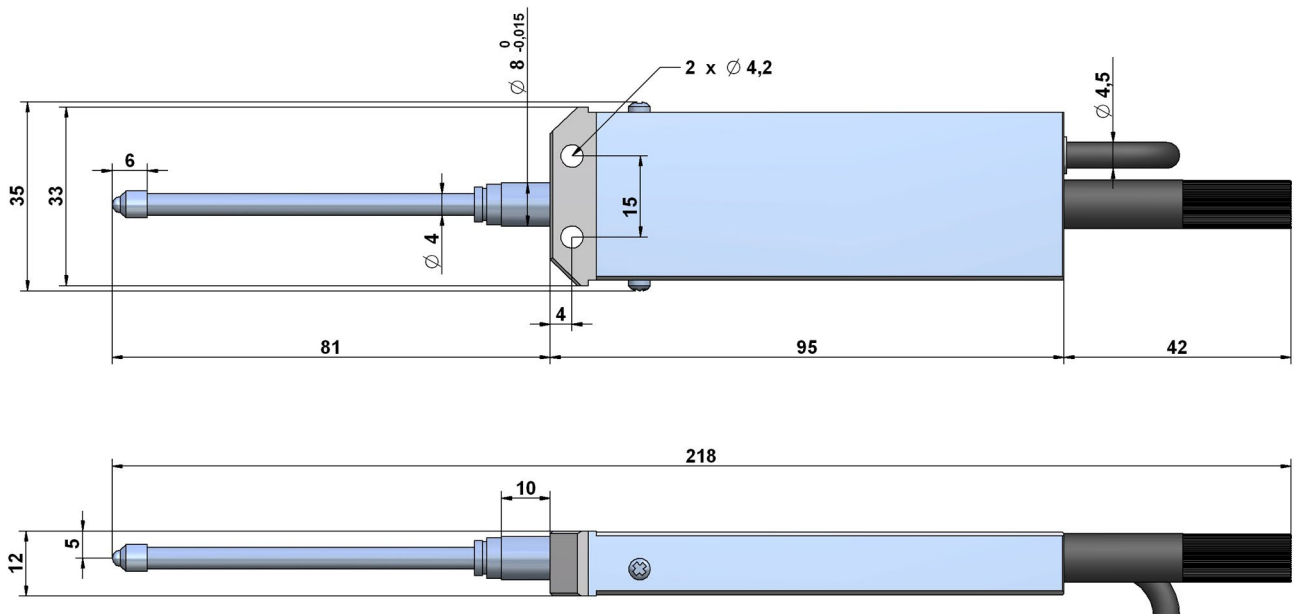


# DIGITAL GAUGE DT32

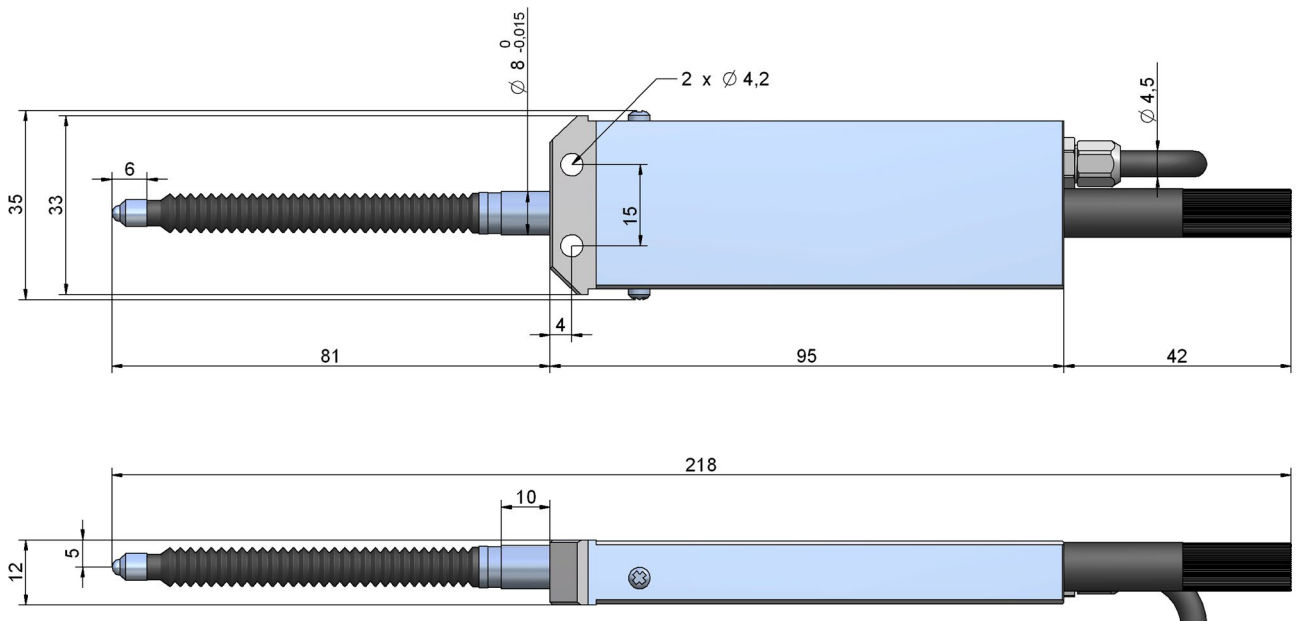
Model		DT32N	DT32NV	DT32P	DT32PV
Measurement range	[mm]			32	
Resolution	[ $\mu\text{m}$ ]			5	
Linearity (20°C)	[ $\mu\text{m}$ ]			10	
Displacement speed max.	[m/min]	depending on the unit to be connected: 1 channel displays (e.g. LT10A-105): 100 / 2 channel displays (e.g. LT10A-205): 80			
Rod principle		spring push-out	Pneumatic push	spring push-out	Pneumatic push
Reference point		none			
Working temperature	[°C]	0...50			
Storage temperature	[°C]	-10...60			
Measuring force	[N]	1.3 $\pm$ 0.8		2.9	9
Protection class *					IP64
Weight	[g]	approx. 120	approx. 140	approx. 120	approx. 140
Life cycle		up to 30 million strokes			
Feeler		Steel ball tip $\varnothing$ 3 mm, screw M2,5			
Cable length	[m]	2			
compatible display		LT10A			

\*Excluding the interpolation box and connector

**DT32N**

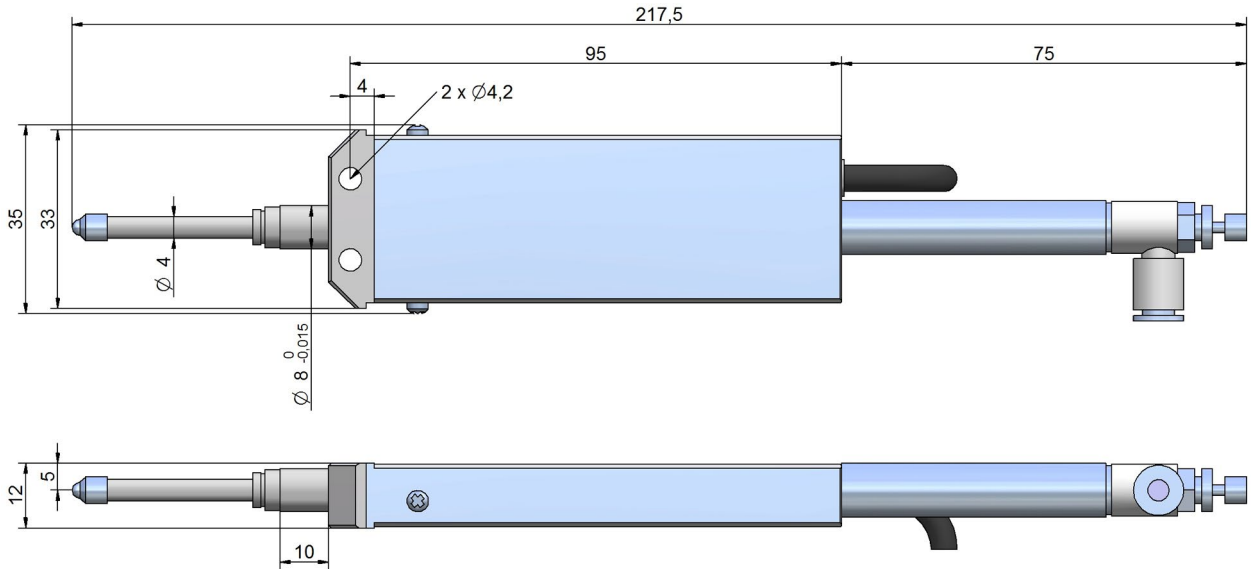


**DT32P**

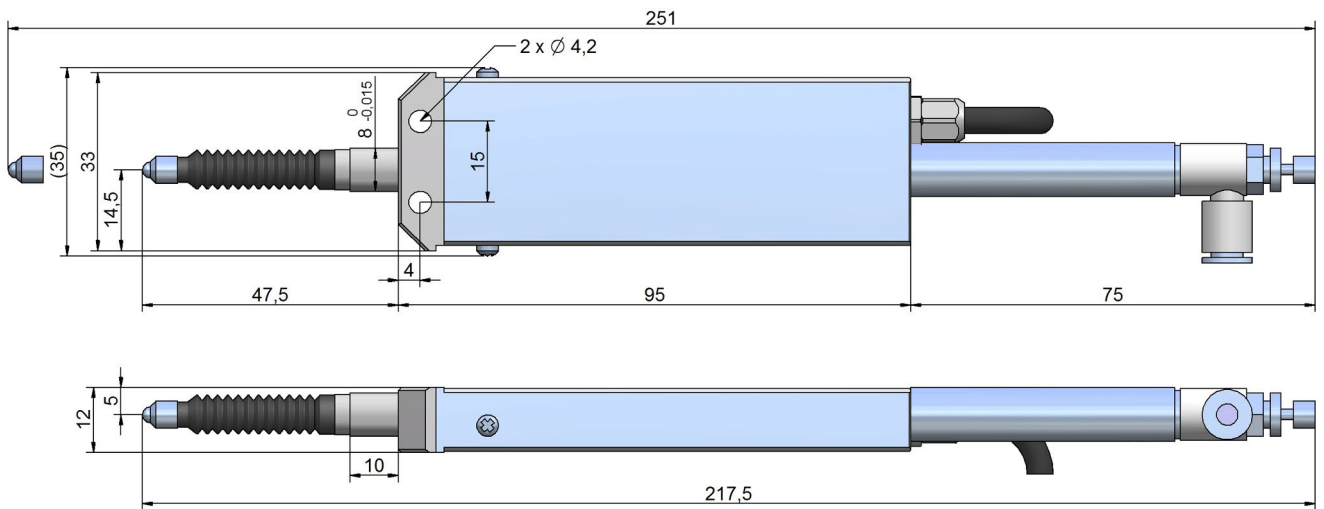


# DIGITAL GAUGE DT32

## DT32NV

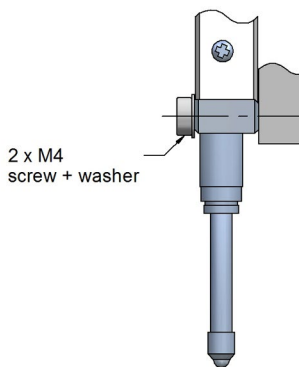


## DT32PV

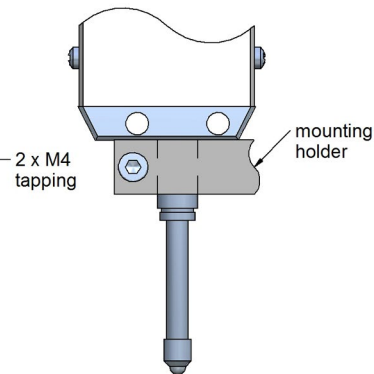


# INSTALLATION INSTRUCTION

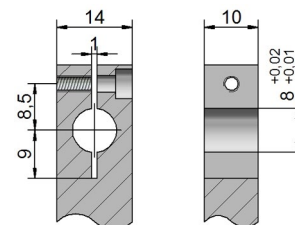
Mounting method using mounting hole



Mounting method using holder



Mounting holder dimensions and tolerance



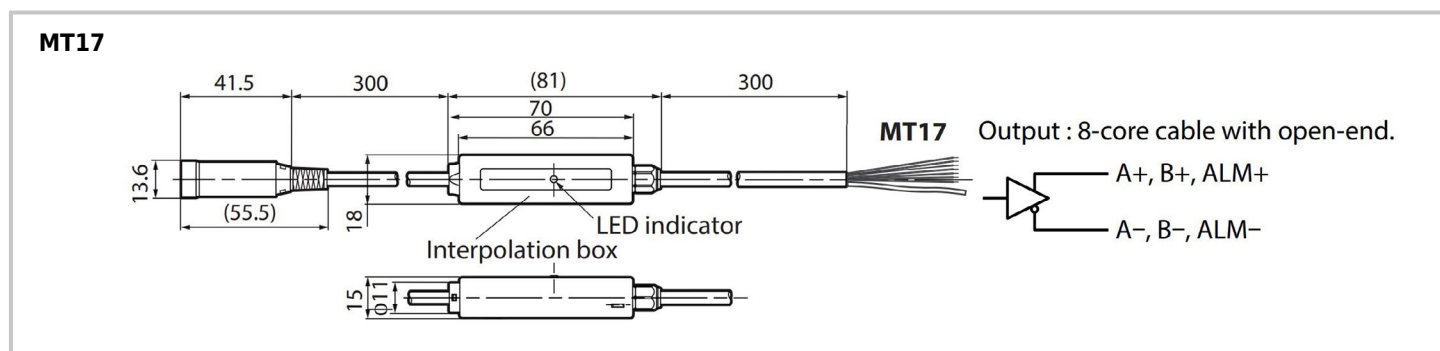
## INTERPOLATOR MT17

Using the interpolator unit MT17 the digital gauges of the series DT12, DT32 and DT512 can directly be connected to PLCs etc.

		MT17-01	MT17-05
Resolution	[ $\mu\text{m}$ ]	1	5
Compatible measuring unit		DT512 Series	DT12, DT32 Series
Accuracy	[ $\mu\text{m}$ ]	6	10
Displacement speed max.	[m/min]	100	
Output signal		Voltage-differential line driver output (compliant with EIA-422)	
Working temperature	[ $^{\circ}\text{C}$ ]	0...50	
Storage temperature	[ $^{\circ}\text{C}$ ]	-10...60	
Supply	[VDC]	5, $\pm 4\%$	
Consumption	[W]	0,9 (when output load of 120 $\Omega$ is connected)	
Weight	[g]	approx. 50	

Description	Cable color
+ 5 V	red
0 V	white
A+	yellow
A -	blue
B+	grey
B -	orange
alarm+	purple
alarm -	green
FG	shield

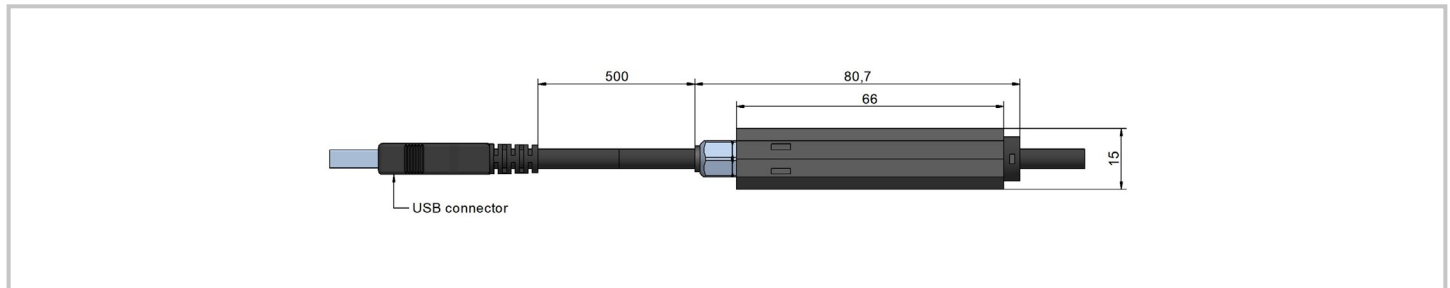
0 V and the shield (FG) are connected with a capacitor.



## INTERPOLATOR MT30

Using the interpolator unit MT30 the digital gauges DT12, DT32 and DT512 can be connected to the USB port of a PC.

Model		MT30-01	MT30-05
Resolution	[ $\mu\text{m}$ ]	1	5
Connectable digital gauge		DT512	DT12, DT32
Accuracy (20°C)	[ $\mu\text{m}$ ]	6	10
Protection class		IP40	
Vibration resistance	$\text{m/s}^2$	100 (20Hz to 2kHz)	
Impact resistance	$\text{m/s}^2$	1000 (11 ms)	
Communication interface		USB2.0FS	
Power supply	[VDC]	5 $\pm$ 5%	
Power consumption	[mA]	120 max.	
Operating temperature	[°C]	0...50	
Storage temperature	[°C]	-10...60 (90% RH or less)	
Power supply	[VDC]	5, $\pm$ 5 %	
Mass	[g]	approx. 50	
Cable length	[m]	Gauge <=> Interpolator: 0,3, Interpolator <=> USB: 0,5	
System requirement		CPU: Intel Core i3 or higher; RAM: 1 GB or higher; OS: Windows7, Windows10 (32 bit/64 bit)	



## USB SOFTWARE

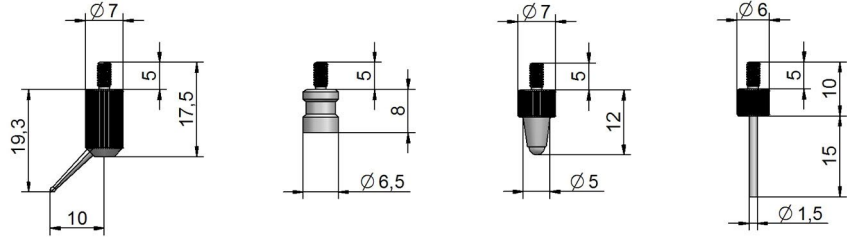
With the free basic software tool the measuring values can be read out and saved in an excel or csv file.

- Up to 8 gauges can be connected
- Easy to operate and setup
- Comparator function
- Calibration (Reset) function
- Scaling function
- Available in various languages
- Compatible with Windows 7/8/10 (XP possible)

# ACCESSORIES DT SERIES

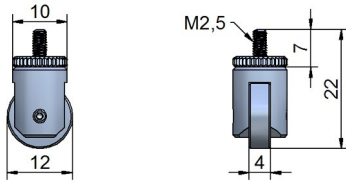
## Feeler Set DZ5100:

1. Off-center contact point:  $\varnothing 1,0$  mm steel ball
2. Flat carbide contact point  $\varnothing 6,5$  mm
3. Plastic ball contact point  $\varnothing 3,0$  mm, nylon ball
4. Pin contact point  $\varnothing 1,5$  mm



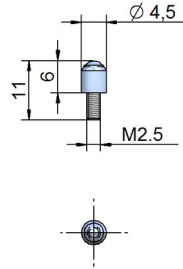
## Roller DZ100:

Tolerance  $< 3 \mu\text{m}/\text{turn}$



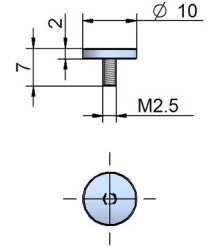
## Tastkopf-01 \*

Tastkopf-01: steel (standard)  
 Tastkopf-01-HM: cemented carbide  
 Tastkopf-01-R: ruby  
 Tastkopf-01-K: ceramics

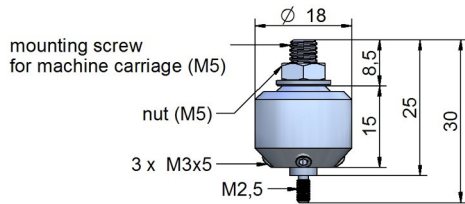


## Tastkopf-02

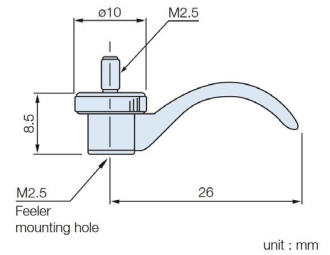
Tastkopf-02: steel  
 Tastkopf-02-HM: cemented carbide



## Coupling DZ191:



## Lift lever DZ161



## \* Material of the feeler balls:

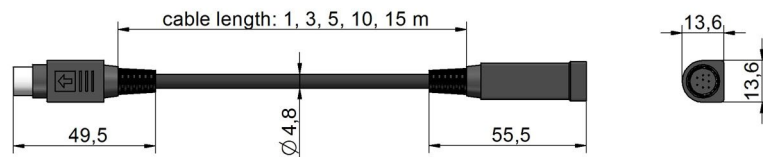
steel: for standard applications

ruby: much harder and wear resistant than steel, non-conductive, for all applications except for measuring on aluminium and cast iron

ceramics: comparable to ruby, best choice for measuring on aluminium and cast iron

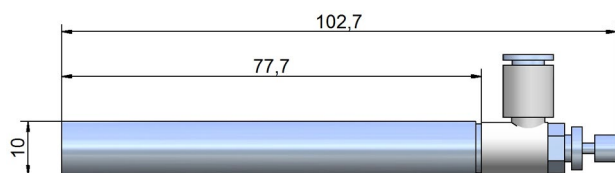
**Extension cable CK-T (high flex):** CK-T12 (1 m), CK-T13 (3 m), CK-T14 (5 m), CK-T15 (10 m), CK-T16 (15 m)

**Extension cable CE08:** CE08-01 (1 m), CE08-03 (3 m), CE08-05 (5 m), CE08-10 (10 m), CE08-15 (15 m)



## ACCESSORIES DT SERIES

### Airlifter DZ176



#### Mode of operation:

- Use an air tube with an outer diameter of 4mm.
- The supply air should be cleaned by using a filter.
- Without the airlifter a spring inside of the sensor pushes the rod outwards.
- With the airlifter installed the rod will be pulled inside by a stronger spring inside of the airlifter.
- When air is supplied the rod will be pushed out again and the measurement can begin.
- The rod retraction speed can be adjusted by the speed controller mounted on the DZ176.

Measuring range	[mm]	0...12
Digital gauge		DT12, DT512
Air pressure	[kPa]	250...700
Working temperature	[°C]	0...50
Storage temperature	[°C]	-10...60
Weight	[g]	41
life cycle		up to 30 million strokes



# DISPLAYS

	LT10A		LT11A	
Suitable gauges	DT12, DT32		DT512	
Standard (without interface)	LT10A-105 (1 channel model)	LT10A-205 (2 channel model)	LT11A-101 (1 channel model)	LT11A-201 (2 channel model)
With BCD interface	LT10A-105B (1 channel model)	LT10A-205B (2 channel model)	LT11A-101B (1 channel model)	LT11A-201B (2 channel model)
With RS232 interface	LT10A-105C (1 channel model)	LT10A-205C (2 channel model)	LT11A-101C (1 channel model)	LT11A-201C (2 channel model)
LCD Display	5 digits		5 digits	
Resolution	5/ 10 $\mu$ m, selectable		1/ 5/ 10 $\mu$ m, selectable	
ADD/ SUB-Function	-	model LT10-2xx: A+B, A-B, B-A	-	model LT11-2xx: A+B, A-B, B-A
Working temperature	0...+40 °C		0...+40 °C	
Storage temperature	-10...+50°C		-10...+50°C	
Weight	220 g to 270 g (depending on the model)			
Consumption	1.8 W to 4 W (depending on the model)			
Supply	9.0 to 26,4 VDC			

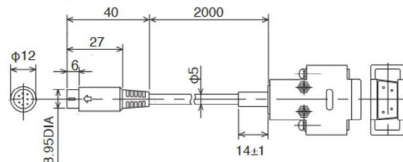
### Key Features

- Resolution : selectable
- Suitable for panel mounting
- Direct interfacing from display unit to PLC or computer
- Current values, maximum, minimum, peak-to-peak values and GO/NO GO evaluation included as standard functions.
- ADD/SUB function (2-channel model)
- Full lineup for various applications



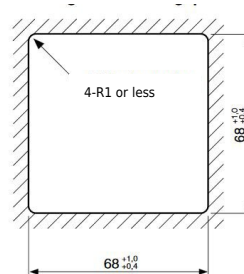
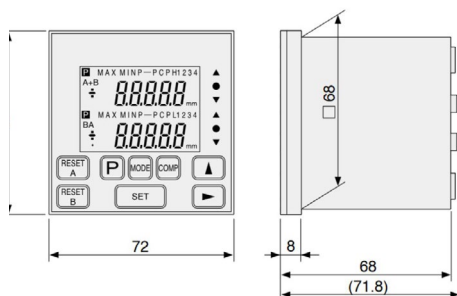
### Connection cable DZ252 for LT Display with RS232 interface for connection to a PC, RS232 card, etc.

DZ252 cable for RS232C (for LT and U series), round 8-pin male <-> D-sub 9-pin female

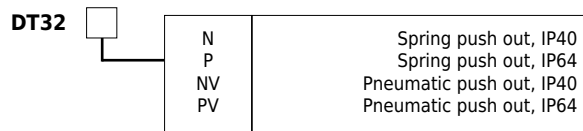
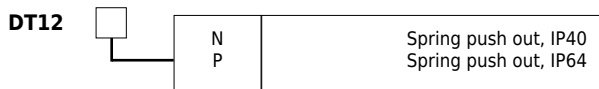


### LT10A, LT11A

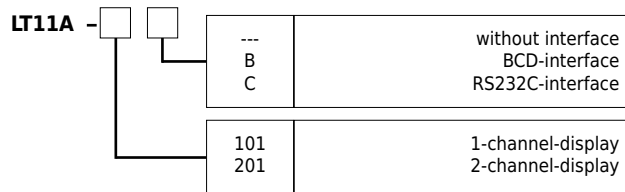
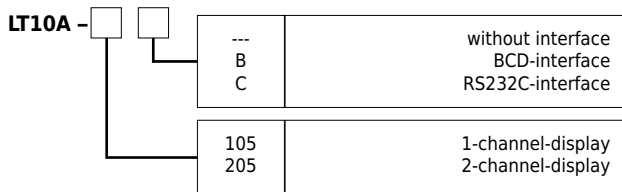
### Panel cut-out



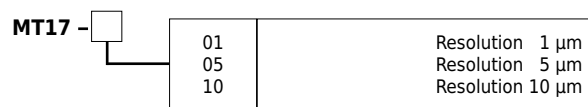
## ORDER CODE DIGITAL GAUGE



## ORDER CODE DISPLAY



## ORDER CODE INTERPOLATOR



## ACCESSORIES

Accessories	
DZ100	Roller
DZ176	Air lifter
DZ191	Coupling
DZ5100	Feeler Set
DZ161	Feeler Set
DZ252	RS232 cable (for LT.C Display), Sub-D connector
Tastkopf-01	Standard (included in delivery)
Tastkopf-01-HM	Cemented carbide ball
Tastkopf-01-R	Ruby ball
Tastkopf-01-K	Ceramics ball
Tastkopf-02	Steel plate
Tastkopf-02-HM	Cemented carbide plate

Connection cable	
CE08-1	1 m, extension cable
CE08-3	3 m, extension cable
CE08-5	5 m, extension cable
CE08-10	10 m, extension cable
CE08-15	15 m, extension cable
CK-T12	1 m, high flex extension cable
CK-T13	3 m, high flex extension cable
CK-T14	5 m, high flex extension cable
CK-T15	10 m, high flex extension cable
CK-T16	15 m, high flex extension cable
USB-extension cable	
CE38-01	1 m, USB
CE38-02	2 m, USB
CE38-04	4 m, USB



Subject to change without prior notice.

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