

MAGNESCALE

digital gauge



Series DT, Series U

Key-Features:

- Measurement ranges: 12, 32 mm (DT Series)
- Measurement ranges: 12, 30, 60 mm (U Series)
- Resolution up to 1 μm
- Linearity up to 6 μm
- Output signal A/B, TTL-Linedriver, EIA-422
- Working temperature 0...+50 °C
- Protection class up to IP64
- Spring loaded and pneumatic versions
- Resistant against water and oil
- Easy mounting
- Life cycle up to 5 million strokes

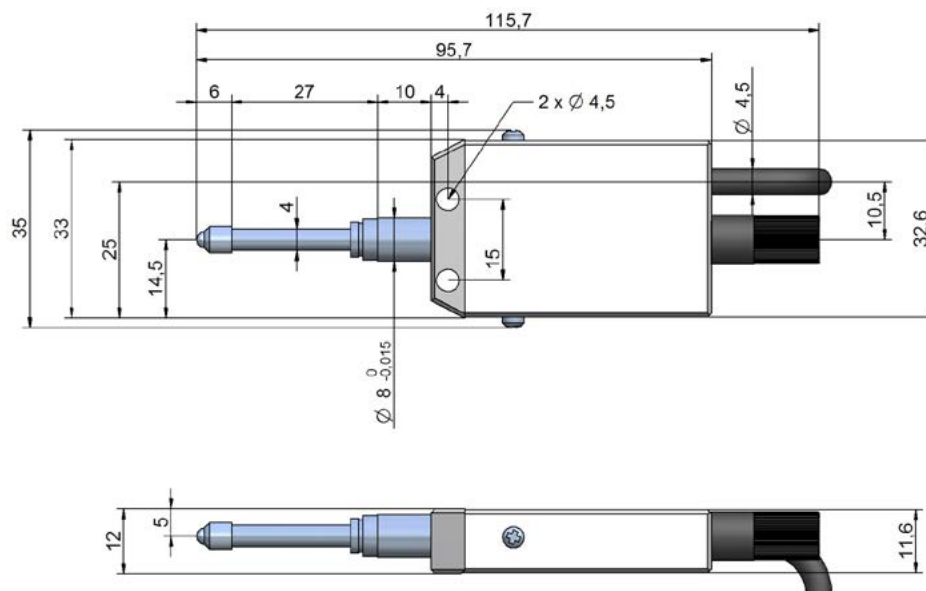
Content:

MAGNESCALE DIGITAL GAUGES DT12, DT512

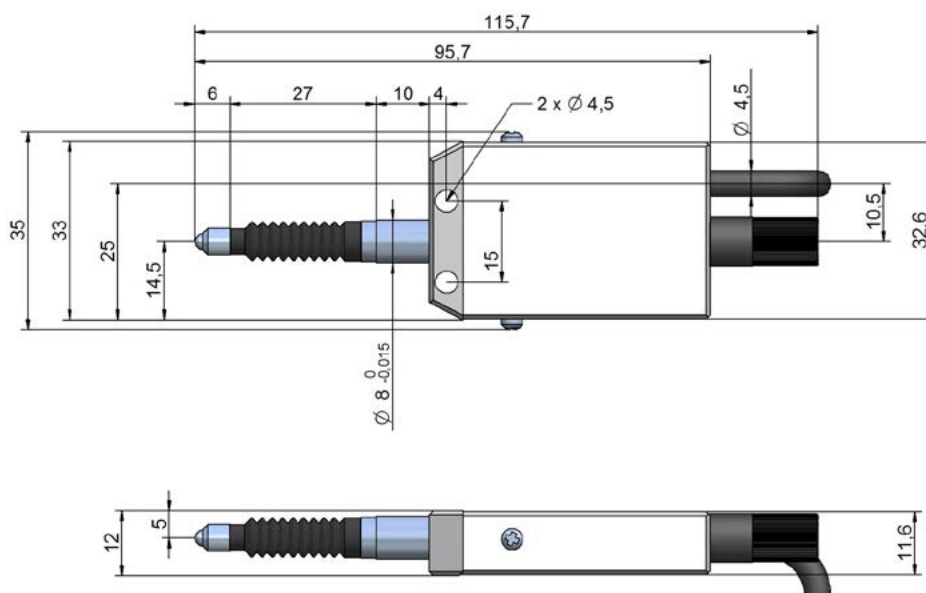
Model		DT12N	DT12P	DT512N	DT512P
Measurement range	[mm]	12			
Resolution	[μm]	5		1	
Linearity (20°C)	[μm]	10		6	
Displacement speed max.	[m/min]	depending on the unit to be connected: 1 channel displays (e.g. LT10A-105): 100 / 2 channel displays (e.g. LT11A-201): 80			
Rod principle		Spring push-out			
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 5 million strokes			
Feeler		Steel ball tip \varnothing 3 mm, screw M2,5			
Cable length	[m]	2			
Display		LT10A		LT11A	

*Excluding the interpolation box and connector

DT12N, DT512N



DT12P, DT512P

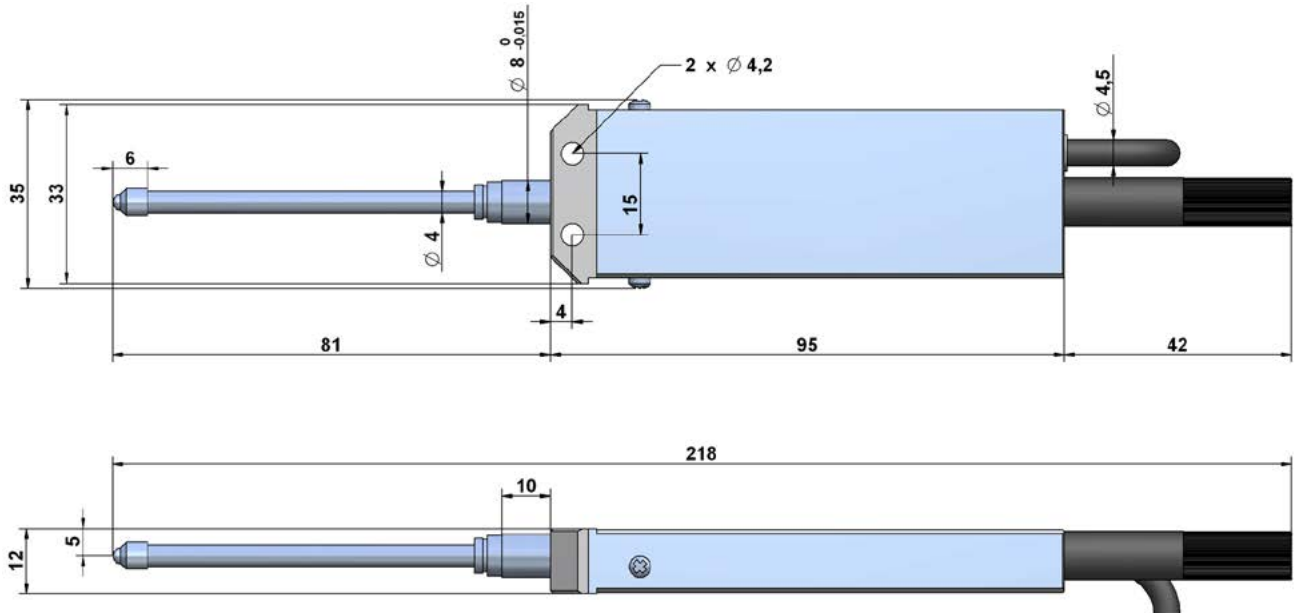


MAGNESCALE DIGITAL GAUGE DT32

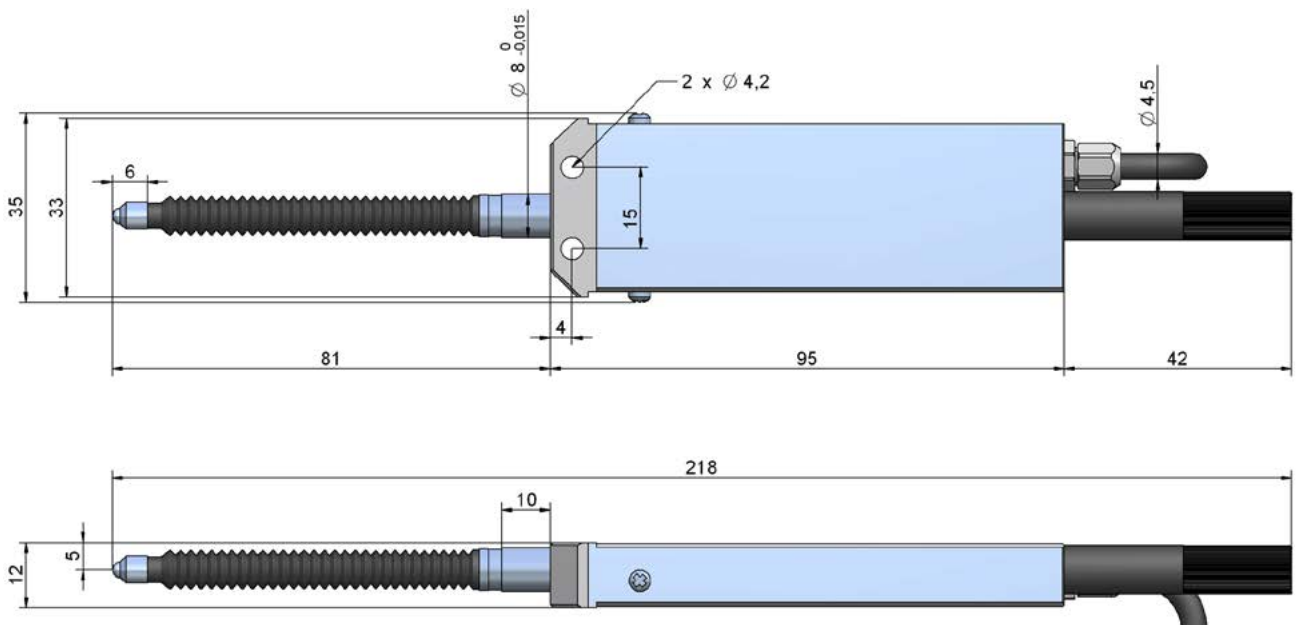
Model		DT32N	DT32NV	DT32P	DT32PV
Measurement range	[mm]			32	
Resolution	[μm]			5	
Linearity (20°C)	[μm]			10	
Displacement speed max.	[m/min]	depending on the unit to be connected: 1 channel displays (e.g. LT10A-105): 100 / 2 channel displays (e.g. LT10A-205): 80			
Rod principle		spring push-out	Pneumatic 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 5 million strokes			
Feeler		Steel ball tip \varnothing 3 mm, screw M2,5			
Cable length	[m]	2			
Display		LT10A			

*Excluding the interpolation box and connector

DT32N

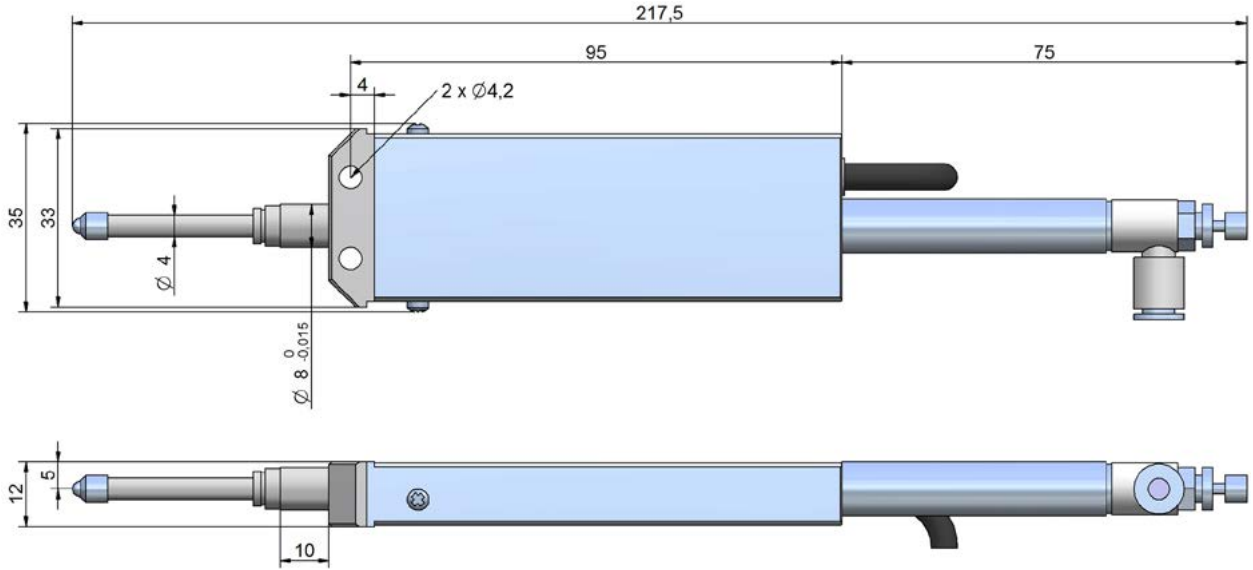


DT32P

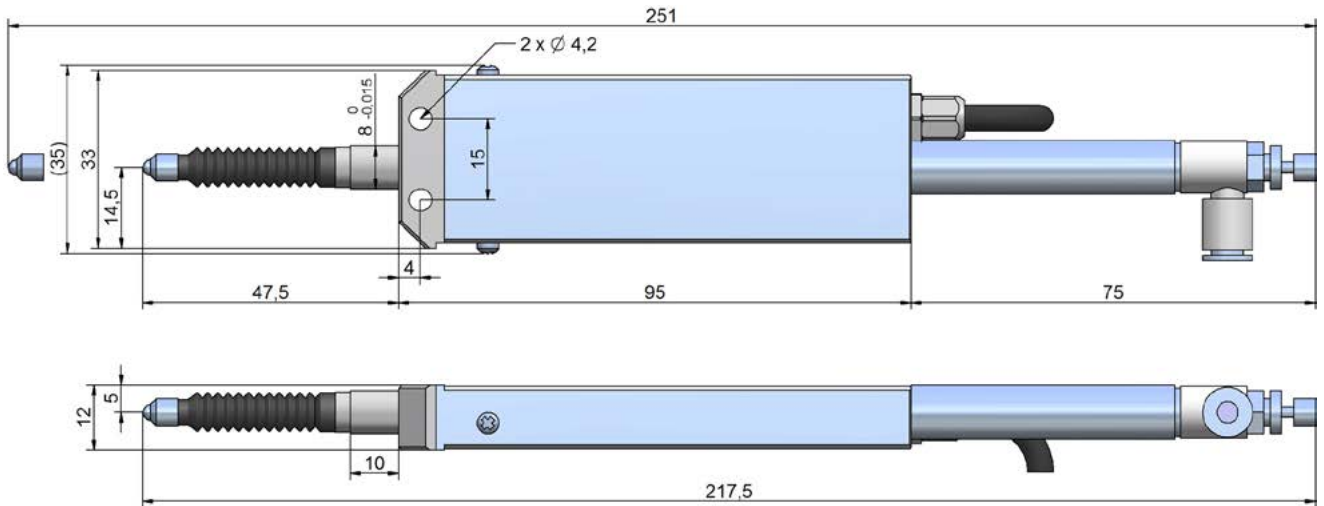


MAGNESCALE DIGITAL GAUGE DT32

DT32NV

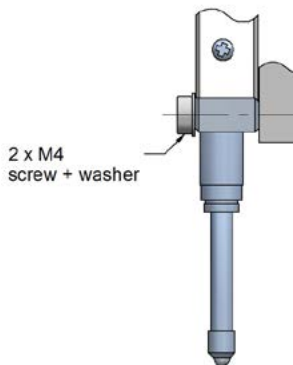


DT32PV

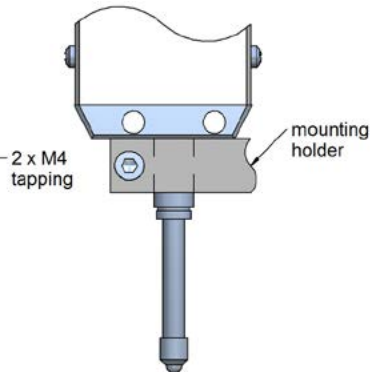


INSTALLATION INSTRUCTION

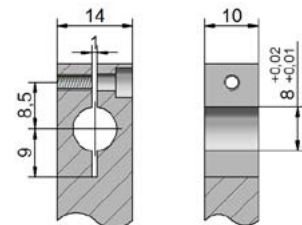
Mounting method using mounting hole



Mounting method using holder



Mounting holder dimensions and tolerance



INTERPOLATOR MT14

Using the interpolator unit MT14 the digital gauges of the series DT12, DT32 and DT512 can directly be connected to PLCs etc.

		MT14
Resolution	[μm]	MT14-01: 1 / MT14-05: 5 / MT14-10: 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, $\pm 5\%$
Consumption	[W]	1.2 (when output load of 120 Ω is connected)
Weight	[g]	approx. 90

Description	Cable color
+ 5 V	red
0 V	white
0 V	brown
0 V	black
A	yellow
A nicht	blue
B	grey
B nicht	orange
Alarm	purple
Alarm nicht	green
FG	shield

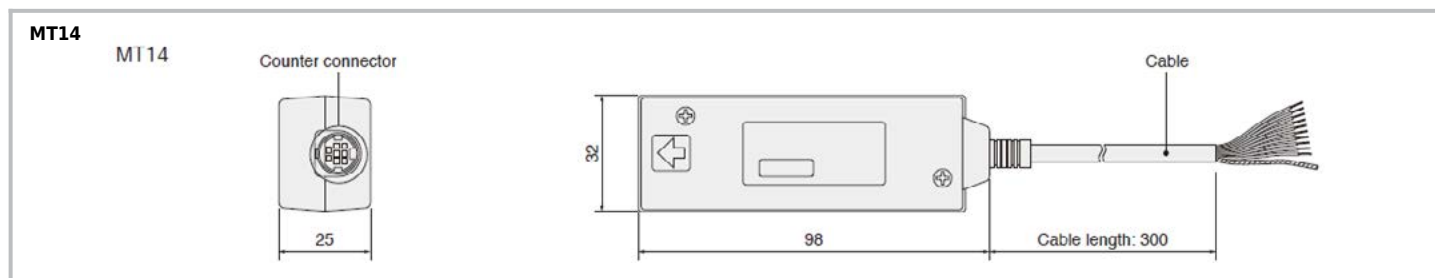


* 0 V and the shield (FG) are connected with a capacitor.

Phase difference for phase A/B output in depending on the displacement speed v [m/min]

MT14-01	MT14-05	MT14-10	Ausgang Phasendifferenz [μs]
$0 < v \leq 2.5$	$0 < v \leq 12.5$	$0 < v \leq 25$	20
$2.5 < v \leq 6.25$	$12.5 < v \leq 31.25$	$25 < v \leq 62.5$	8
$6.25 < v \leq 12$	$31.25 < v \leq 60$	$62.5 < v \leq (100)^*$	5
$12 < v \leq 24$	$60 < v \leq (100)^*$		2.5
$24 < v \leq 60$			1
$60 < v \leq (100)^*$			0.5

* An alarm is output at a traveling velocity of 100 to 115 m/min. The sampling frequency of the output signal is 120 μs .



MAGNESCALE DIGITAL GAUGE U

Model		U12B	U30B	U60B
Measurement range MB	[mm]	12	30	60
MB when using air release DZ173	[mm]	12	30	32
Resolution	[µm]		1	
Linearity (20°C)	[µm]		2	3
Measurement force (20°C)	[N]	1.3 or less	1.5 or less	2.2 or less
Display		LCD Display, 6 digits, minus display		
Displacement speed maximal	[m/s]		0.4	
Reference point			none	
Working temperature	[°C]		0...40	
Storage temperature	[°C]		-10...50	
Supply *	[VDC]	6 VDC ±10 % (with DC IN jack) 6 to 9 VDC ±10 % (with data connector used)		
Consumption	[W]		1	
Feeler		Carbide ball tip, Mounting screw M2.5		
Weight	[g]	approx. 190	approx. 230	approx. 300
Included in delivery		Instruction Manual, lift lever, and dedicated spanner		

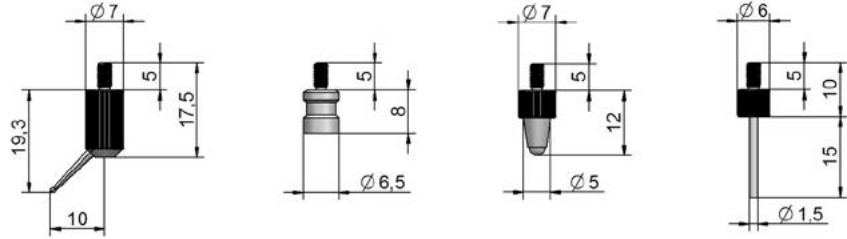
* Power supply unit AC-K02 please order separately

<p>U12B</p>	<p>U30B</p>
<p>U60B</p>	<p>Accessory: Stand DZ521</p>

ACCESSORIES DT SERIES

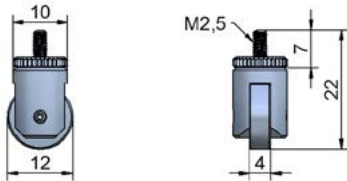
Feeler Set DZ5100:

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



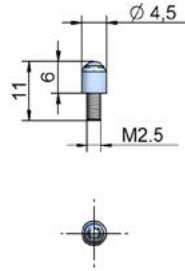
Roller DZ100:

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



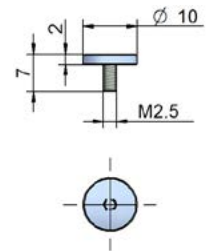
Tastkopf-01 *

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

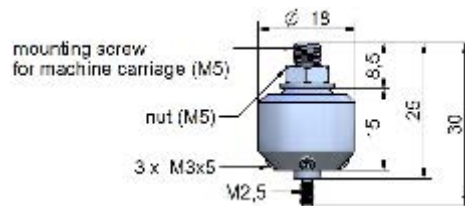


Tastkopf-02

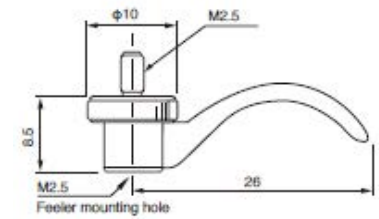
Tastkopf-02: steel
 Tastkopf-02-HM: cemented carbide



Coupling DZ191:



Lift lever DZ161

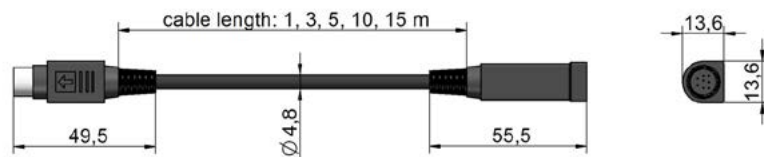


* Material of the feeler balls:

- 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

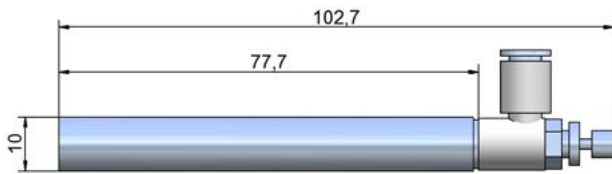
Extension cable CK-T (high flex): CK-T12 (1 m), CK-T13 (3 m), CK-T14 (5 m), CK-T15 (10 m), CK-T16 (15 m)

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



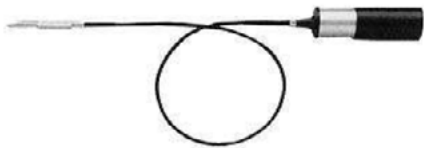
Mode of operation:

- 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.

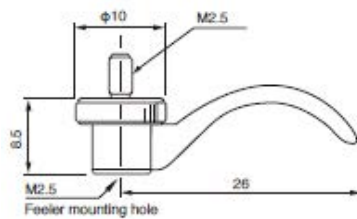
Messbereich	[mm]	0...12
für Messtaster		DT12, DT512
Luftdruck	[kPa]	250...700
Betriebstemperatur	[°C]	0...50
Lagertemperatur	[°C]	-10...60
Gewicht	[g]	41
Lebensdauer		bis 5 Millionen Zyklen

ACCESSORIES U SERIES

Air release DZ173

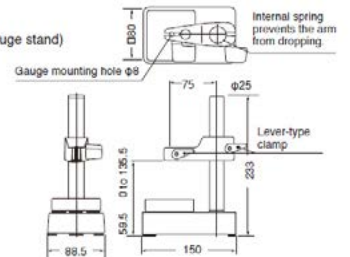


Lift lever DZ161 (included in delivery)



Stand DZ521

DZ521
(Digital gauge stand)



MAGNESCALE DISPLAYS

	LT10A		LT11A	
Gauges suitable for direct connection	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 µm, selectable		1/ 5/ 10 µm, 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			

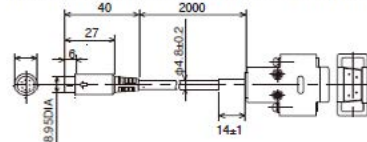
Key Features

- Compact size : DIN standard (72 mm x 72 mm / 2.83" x 2.83" W x H)
- 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

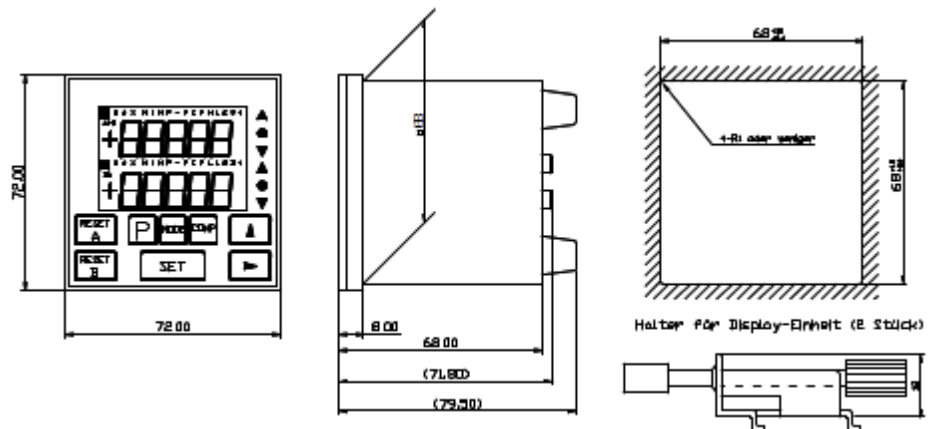


Connection cable DZ252 for LT Display with RS232 interface for connection to a PC, RS232 card, etc.

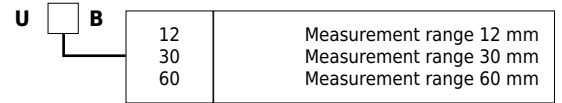
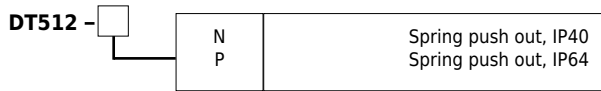
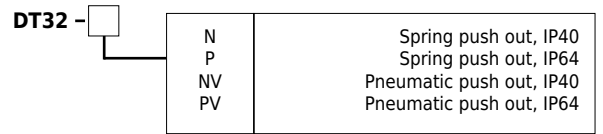
Cable for DZ252 RS232C
(For LT and U Series) round 8-pin male ↔ D-sub 9-pin female



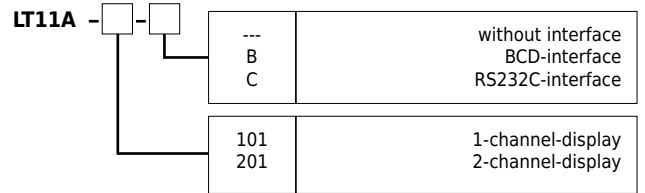
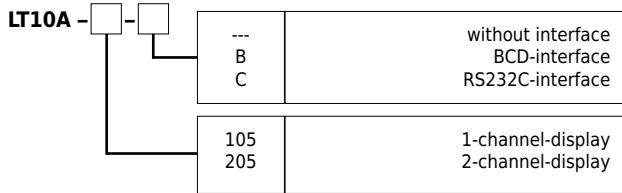
LT10A, LT11A



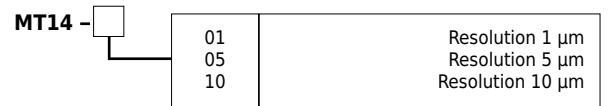
ORDER CODE DIGITAL GAUGE



ORDER CODE DISPLAY



ORDER CODE INTERPOLATOR



OVERVIEW

DT12N
DT12P
DT32N
DT32P
DT32NV
DT32PV
DT512N
DT512P
U12B
U30B
U60B
MT14-01
MT14-05
MT14-10

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

Accessories for Series U	
AC-K02	Power supply unit
DZ173	Air lifter
DZ521	Stand
DZ5100	Feeler Set

LT10A-105
LT10A-105B
LT10A-105C
LT10A-205
LT10A-205B
LT10A-205C
LT11A-101
LT11A-101B
LT11A-101C
LT11A-201
LT11A-201B
LT11A-201C

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
CKT12	1 m, high flex extension cable
CKT13	3 m, high flex extension cable
CKT14	5 m, high flex extension cable
CKT15	10 m, high flex extension cable
CKT16	15 m, high flex extension cable



Subject to change without prior notice.