

# MAGNESCALE

digital gauge



## Series DK

Key-Features:

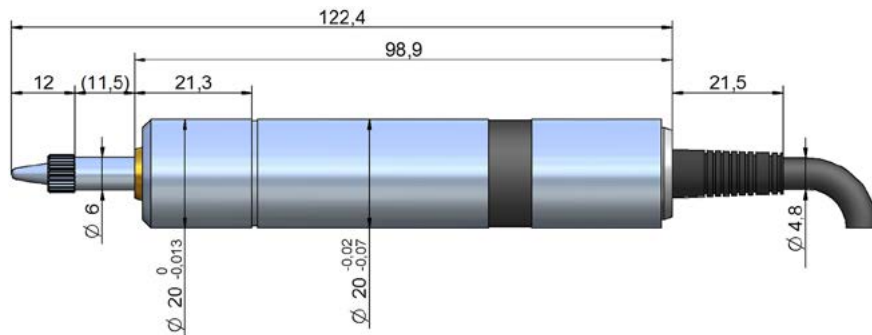
- Available measurement ranges: 10, 25, 50, 100, 155 and 205 mm
- Resolution 0.5  $\mu\text{m}$
- Linearity up to 2  $\mu\text{m}$
- Output signal A/ B/ reference point, TTL- Linedriver according to EIA-422
- Integrated reference point
- Displacement speed up to 250 m/min
- Working temperature 0...+50 °C
- Protection class up to IP64
- Spring loaded versions up to 100 mm range
- Easy mounting
- Resistant against water and oil

**Content:**

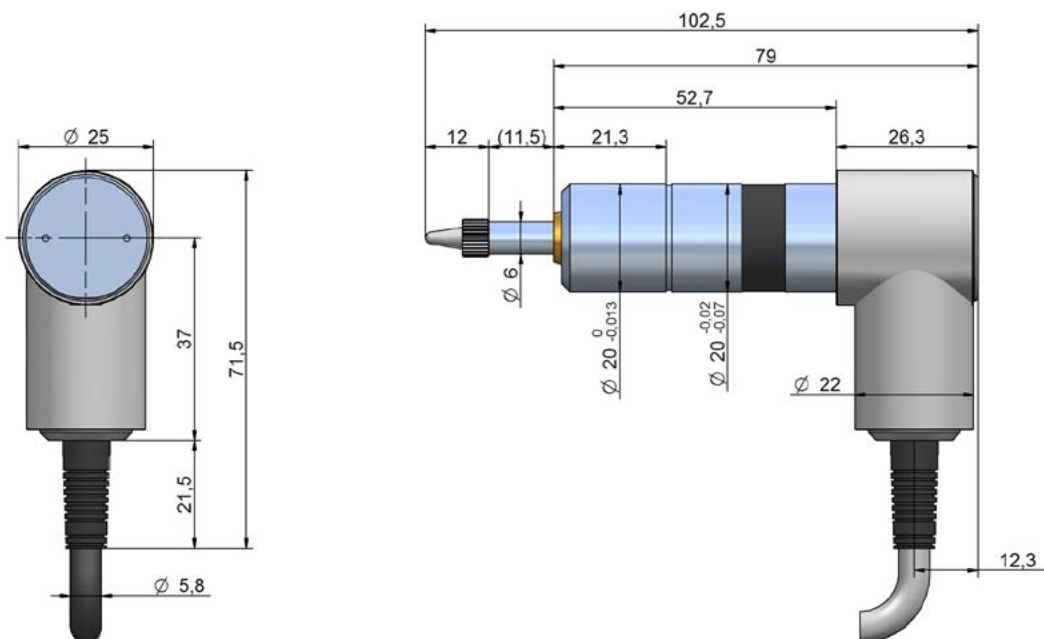
## MAGNESCALE DIGITAL GAUGES DK10, DK25

Model	DK10NR5	DK10PR5	DK10PLR5	DK25NR5	DK25PR5	DK25NLR5	DK25PLR5
Measurement range	10 mm			25 mm			
Resolution	0,5 µm						
Accuracy (20°C)	2 µm						
Displacement speed max.	250 m/min						
Output	A/ B/ reference point, TTL-Linedriver according to EIA-422						
Supply	5 VDC ± 5 %						
Consumption	1 W						
Reference point	at 1 mm						
Working temperature	0...50 °C						
Storage temperature	-20...60 °C						
Measuring force	0.6 ± 0.3 N	4.9 N or less		0.7 ± 0.35 N	4.9 N or less	0.7 ± 0.35 N	4.9 N or less
Rod principle	Federtaster						
Protection class	IP50	IP64		IP50	IP64	IP50	IP64
Vibration	10...2000 Hz, 150 m/s <sup>2</sup>						
Shock	1500 m/s <sup>2</sup> , 11 ms						
Weight	230 g (without interpolator, cable and connector)			300 g (without interpolator, cable and connector)			
Feeler	Carbide ball tip, mounting screw M2.5 (different types available)						
Cable length	2.4 m						
Displays	LT30 (directly), LY71, LY72 (with connection cable CE29)						

### DK10NR5, DK10PR5

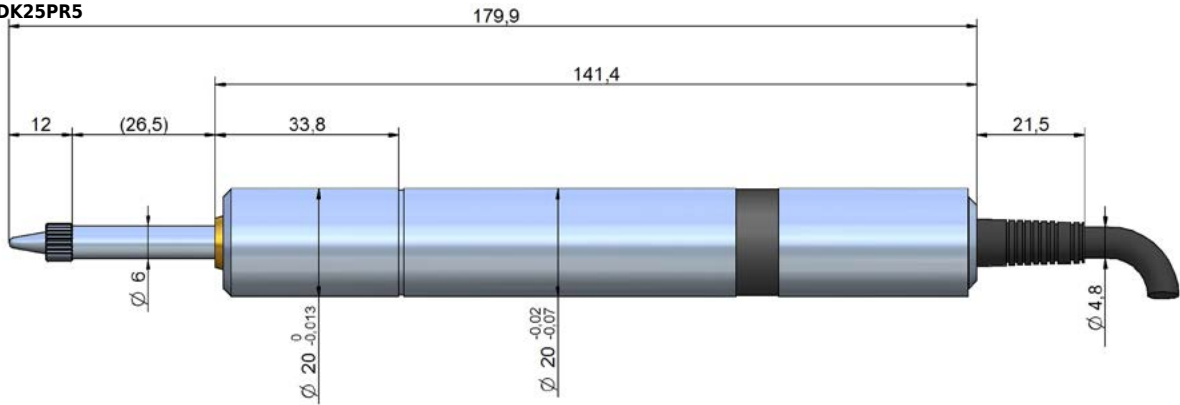


### DK10PLR5

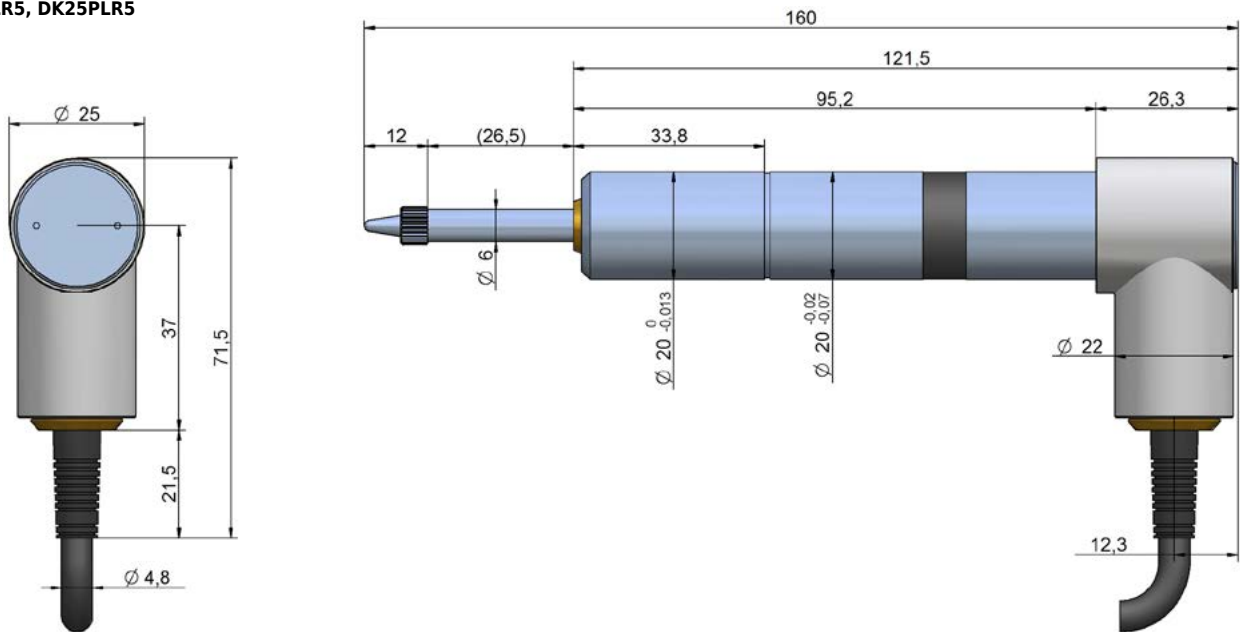


## MAGNESCALE DIGITAL GAUGE DK25

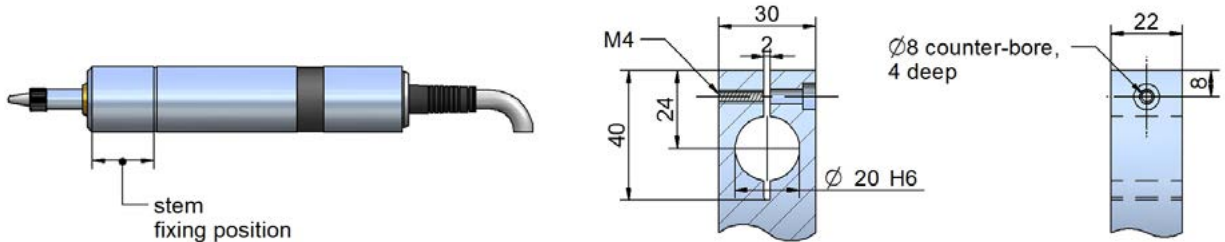
DK25NR5, DK25PR5



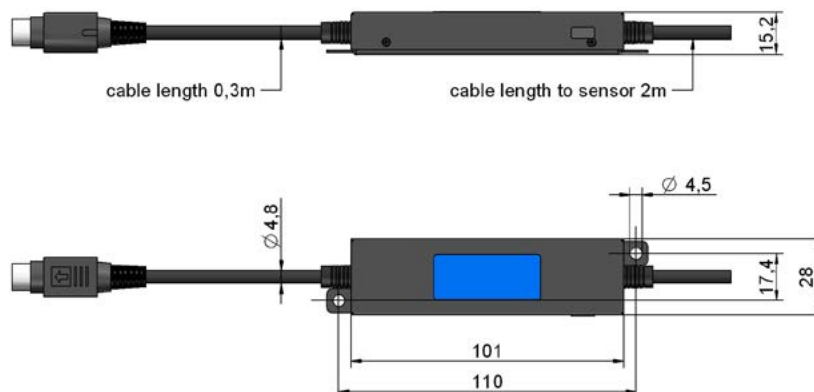
DK25NLR5, DK25PLR5



Instruction for installation DK10, DK25



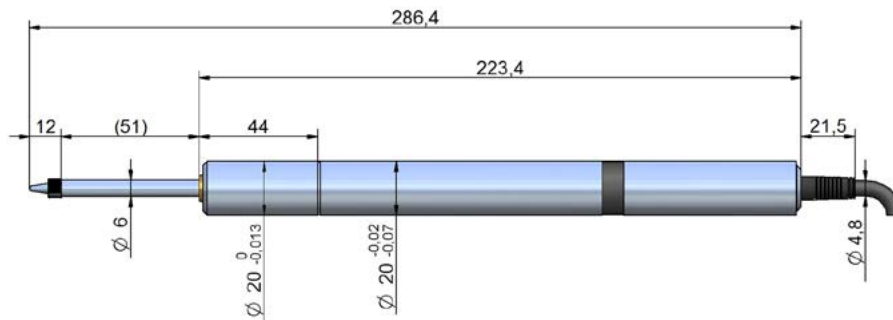
## INTERPOLATOR UNIT



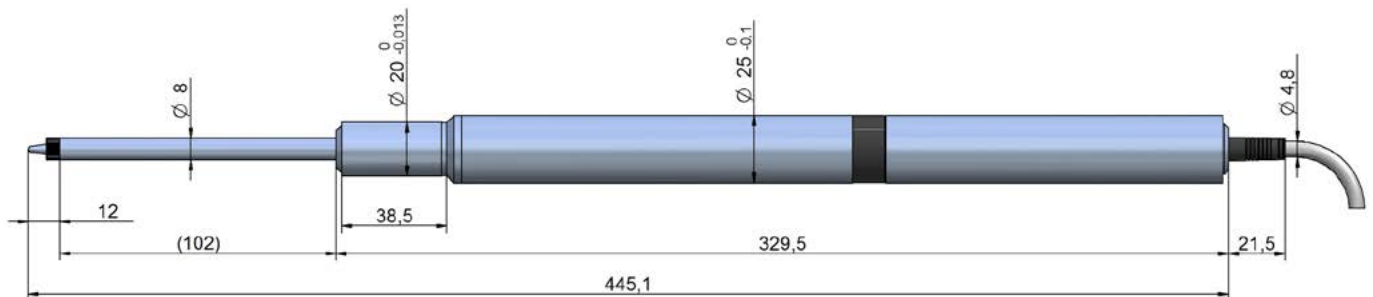
# MAGNESCALE DIGITAL GAUGE DK50, DK100

Model	DK50NR5	DK50PR5	DK100NR5	DK100PR5
Measurement range	50 mm		100 mm	
Resolution	0.5 µm			
Accuracy (20°C)	2 µm		4 µm	
Displacement speed max.	250 m/min			
Output	A/ B/ reference point, TTL-Linedriver according to EIA-422			
Supply	5 VDC ±5 %			
Consumption	1 W			
Reference point	at 1 mm			
Working temperature	0...50 °C			
Storage temperature	-20...60 °C			
Measuring force	0.9 ±0.4 N	6.2 N or less	1.8 ±0.65 N	9.3 N or less
Rod principle	Spring push-out			
Protection class	IP50	IP64	IP50	IP64
Vibration	10...2000 Hz, 150 m/s <sup>2</sup>			
Shock	1500 m/s <sup>2</sup> , 11 ms			
Weight	360 g (without interpolator, cable and connector)		630 g (without interpolator, cable and connector)	
Feeler	Carbide ball tip, mounting screw M2,5 (different types available)			
Cable length	2.4 m			
Displays	LT30 (directly), LY71, LY72 (with connection cable CE29)			

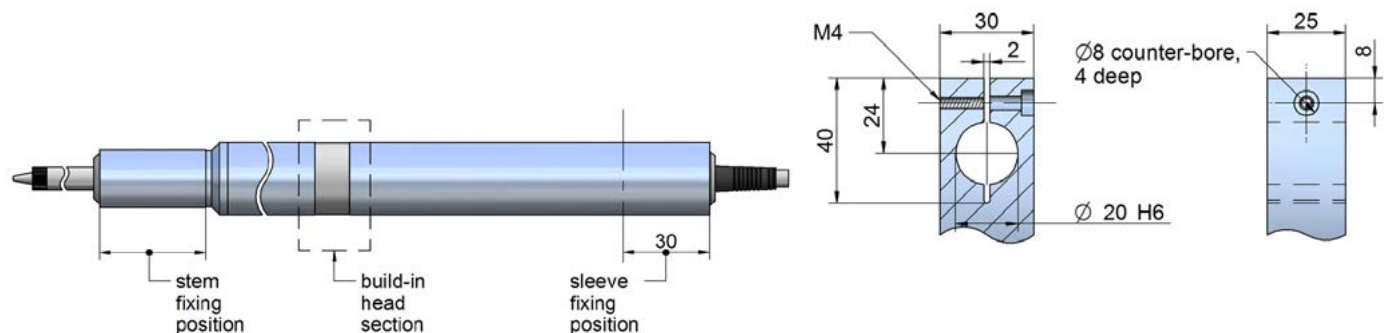
## DK50NR5, DK50PR5



## DK100NR5, DK100PR5



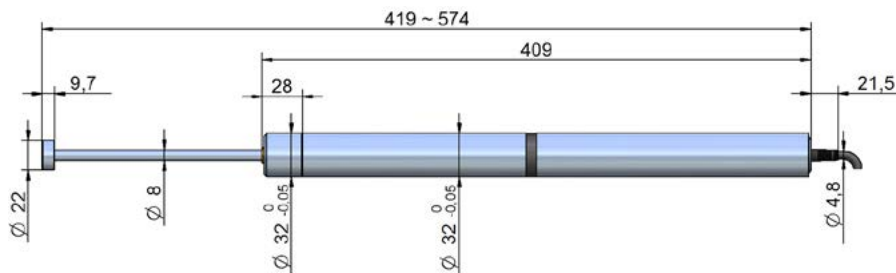
## Instruction for installation DK50, DK100



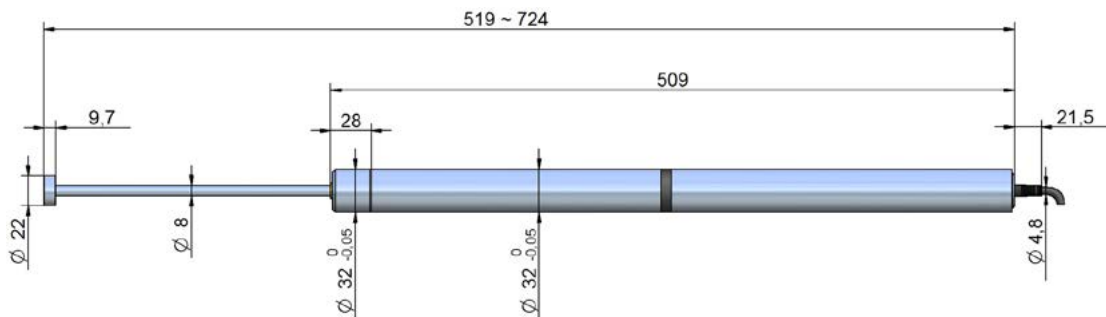
## MAGNESCALE DIGITAL GAUGES DK155, DK205

Model	DK155PR5	DK205PR5
Measurement range	155 mm	205 mm
Resolution	0.5 $\mu$ m	
Accuracy (20°C)	5 $\mu$ m	6 $\mu$ m
Displacement speed max.	250 m/min	
Output	A/ B/ reference point, TTL-Linedriver according to EIA-422	
Supply	5 VDC $\pm$ 5 %	
Consumption	1 W	
Reference point	at 5 mm	
Working temperature	0...50 °C	
Storage temperature	-20...60 °C	
Measuring force	0.9 $\pm$ 0.4 N	6.2 N or less
Rod	8 mm, radial swing: 0.04 mm max., weigh 400 g	
Protection class	IP64	
Vibration	10...2000 Hz, 150 m/s <sup>2</sup>	
Shock	1500 m/s <sup>2</sup> , 11 ms	
Weight	1100 g (without interpolator, cable and connector)	1300 g (without interpolator, cable and connector)
Feeler	Magnetic attraction: 10 N, resistance against horizontal slip: 2.7 N, Provided with a $\varnothing$ 4 mm carbide ball tip	
Cable length	2.4 m	
Displays	LT30 (directly), LY71, LY72 (with connection cable CE29)	

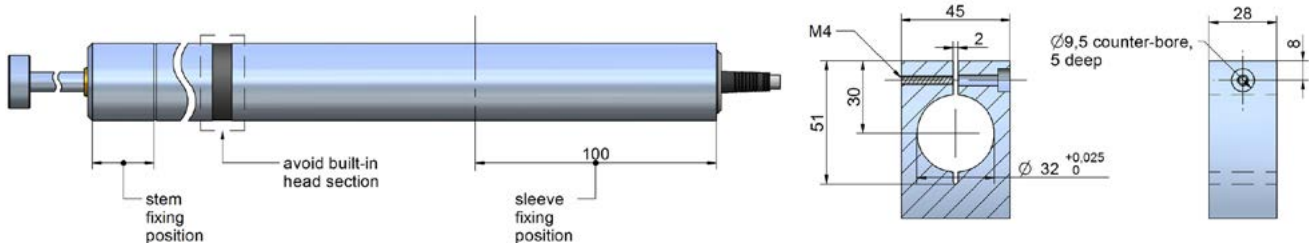
### DK155PR5



### DK205PR5



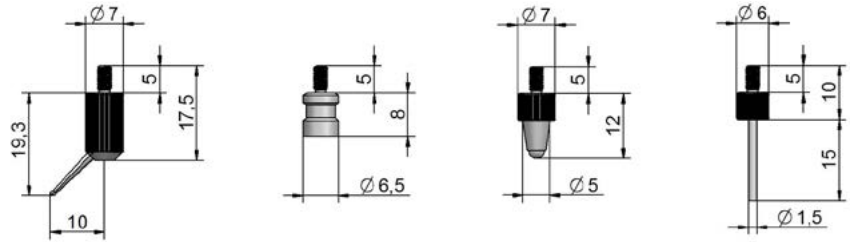
### Instruction for installation DK155, DK205



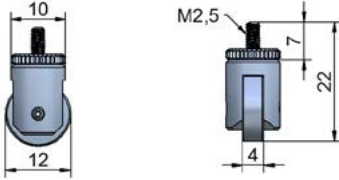
# ACCESSORIES

## Feeler Set DZ5100:

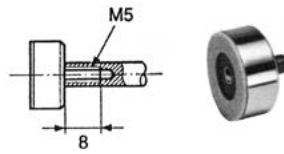
1. Off-center contact point:  $\varnothing 1,0$  mm steel ball
2. Flat carbide contact point  $\varnothing 6,5$  mm
3. Plastic ball contact point  $\varnothing 3,0$  mm, nylon ball
4. Pin contact point  $\varnothing 1,5$  mm



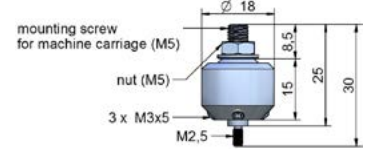
## Roller DZ100: Tolerance <math>< 3 \mu\text{m}/\text{turn}</math>



## Magnetic Feeler DZ181 (for DK155, DK205)

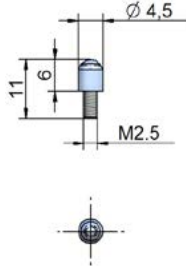


## Coupling DZ191 (for DK10...DK100)



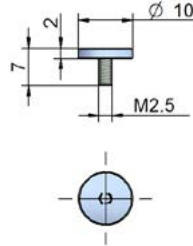
## Tastkopf-01 \*

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



## Tastkopf-02

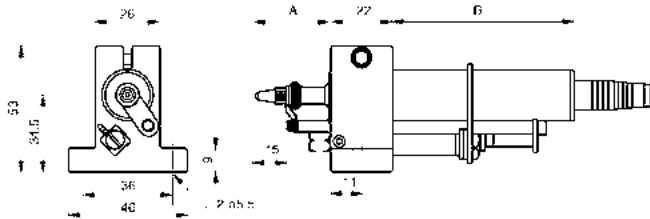
- Tastkopf-02: steel
- Tastkopf-02-HM: cemented carbide



## \* Material of the feeler balls:

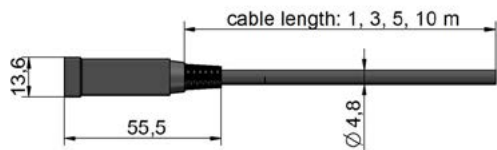
- steel: for standard applications
- ruby: much harder and wear resistant than steel, non-conductive, for all applications except for measuring on aluminium and cast iron
- ceramics: comparable to ruby, best choice for measuring on aluminium and cast iron

## Air lifter DZ174 for DK10, DK25, DK50



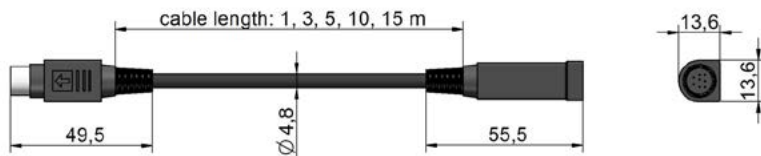
Typ	A	B
DK10NR5, DK10PR5	32,5	75,5
DK10PLR5	32,5	56
DK25NR5, DK25PR5	47,5	118
DK25NLR5, DK25PLR5	47,5	98,5
DK50NR5, DK50PR5	72	200

## Extension cable, open end: CE22-01 (1 m), CE22-03 (3 m), CE22-05 (5 m), CE22-10 (10 m)

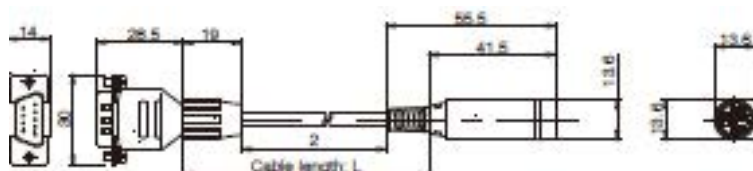


Kabelbelegung offenes Kabelende								
Funktion	+Vcc	0 V	A	A*	B	B*	Z	Z*
Kabelfarbe	rot	weiß	blau	gelb	orange	grau	grün	violett

## Extension cable, high flex (for connection to display LT30): CK-T12 (1 m), CK-T13 (3 m), CK-T14 (5 m), CK-T15 (10 m), CK-T16 (15 m)



## Adapter cable (for connection to displays LY70, LY71): CE29-01 (1 m), CE29-03 (3 m), CE29-05 (5 m), CE29-10 (10 m)





## OUTPUT OPTIONS

### Connection to PLC, counter, etc.



Connection to CE22 and CE26 with open end for PLCs, counters A/A\*, B/B\*, Z

Type	Description	For connection to	Available lengths
CE22	Connection cable, open end	PLC, counter A/A*, B/B*, Z	1, 3, 5, 10 m

### Connection to display



Connection cable for displays LY71/72 (cable CE29)  
(for display LT30 no additional cable is necessary)  
Extension cable CKT12...16

e. g. LT30



Type	Description	For connection to	Available lengths
CE29	Connection cable, Sub-D connector	Displays, LY71/72	1, 3, 5, 10 m
CK-T12 to 16	Extension cable	MG10/20/30, CE22, CE29	1, 3, 5, 10, 15 m

### Connection to MG Module, BCD Module



Digital gauge with MG module, RS232 output, Ethernet or go/no-go by BCD Module

Extension cable CK-T12...16



Type	Description	For connection to	Available lengths
CE22	Extension cable	SPS, Counter und Zähler A/A*, B/B*, Z	1, 3, 5, 10 m

## COMPACT COUNTER LT30

Compatible with digital gauges of the DK and DK-S series (without additional cable)

### Features:

- Zero point detection
- Data storage
- BCD and RS-232C I/O models available
- Comparator
- Reset/Preset
- Alarm for exceeded max. displacement speed
- 2 axis ADD/SUB (2 axis model only)



## MULTIFUNCTIONAL COUNTER LY71, LY72

Digital gauges of the DK-Series can be connected to the multifunctional counters LY71, LY72 using the adapter cable CE29.



### Features LY71:

- Various outputs are enabled by mounting extension boards.
  - BCD output (option)
  - Comparator function: Relay/open collector (option)
- Peak hold function convenient for statistical data collection
- Various external input functions convenient for automatic measurement
- Display resolution switching
- Data storage
- Reset/preset/restart
- Reference-point detection of measuring unit
- Scaling
- Flicker control
- The power supply requires an optional AC adapter.
- Input axis 1 to 2 axes

### Features LY72:

- Equipped with RS-232C function as standard
- Peak hold function convenient for statistical data collection
- Various external input functions convenient for automatic measurement
- Display resolution switching
- Data storage
- Reset/preset/restart
- Reference-point detection of measuring unit
- Scaling
- Flicker control
- The power supply requires an optional AC adapter.
- Input axis 1 to 3 axes

