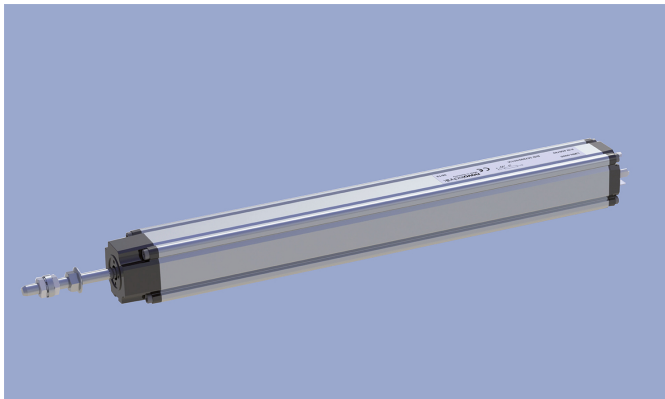
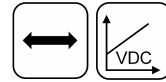


**Transducer  
Potentiometric**

**LWH**



**Special Features**

- Long life up to 100 Mio. movements, depending on application
- Outstanding linearity up to  $\pm 0.04\%$
- High resolution better than 0.01 mm
- Very high operating speed
- Connection via plug and socket to DIN EN 175301-803 (previous DIN 43650, hydraulic connector)
- Protection class IP55

**Applications**

- Manufacturing Engineering (plastic injection molding, textile, packaging, sheet metal and wood work machinery)
- Automation technology

Position transducers made from conductive plastic for direct, accurate measurement of travel in display- or feedback applications. High resolution combined with a stroke length of up to 900 mm permits the accurate measurement of linear displacement. Rack and pinions or similar devices are not required because the design of the transducers is such that they may be built directly into the mechanical system. Tighter tolerances on the extruded body combined with a special surface treatment permit high operating speeds and reduced wear. A pivoting front bearing over comes „stick-slip“ type of operation even where some angular or out of parallel errors are present. The technique for fixing and making connections to the resistance track ensures the highest degree of reliability even under harsh working conditions.

By mounting overhead on difficult-to-reach spaces it is possible to premount the clamps to the mounting surface and then simply “snap-on” the transducer. The transducer has mounting grooves on all four housing surfaces. Thus the transducer can always be mounted with the resistance element directed upwards (recognizable by the position of the middle mounting groove directly across from the resistance element), independent of the mounting surface. Erosion particles from inside the transducer will therefore not remain on the resistance element, improving the life of the sensor.

**Description**

Material	Housing: aluminium, anodized Actuating rod: stainless steel AISI 303, 1.4305, rotatable, external thread M6
Mounting	Adjustable clamps and cylinder screws M4x20 (included in delivery)
Fastening torque of mounting	max. 200 Ncm
Bearing	Slide bearing, pendular fixed
Resistance element	Conductive plastic
Wiper	Precious metal multi-finger wiper, elastomer damped
Electrical connection	Plug socket to DIN EN 175301-803, 4-pin (mating plug connector GDM 3009 for cable $\varnothing$ 4.5 ... 7 mm and sealing gasket GDM 3-16 included in delivery)

**Mechanical Data**

Type	LWH 0075	LWH 0100	LWH 0130	LWH 0150	LWH 0175	LWH 0200	LWH 0225	LWH 0250	LWH 0275	LWH 0300	LWH 0325	LWH 0350	LWH 0360	LWH 0375	LWH 0400	LWH 0450	LWH 0500	LWH 0550	LWH 0600	LWH 0750	LWH 0900
Dimensions	See dimension drawing																				
Length of housing [mm] (dim. A $\pm 2$ mm)	146	171	201	222	248	273	298	324	349	375	400	425	436	451	476	527	578	629	680	832	984
Mechanical travel [mm] (dim. B $\pm 2$ mm)	85	110	140	161	186	212	237	262	288	313	339	362	374	390	415	466	516	567	618	770	923
Weight [g]	220	250	290	320	350	380	410	440	470	500	530	560	570	590	620	680	740	805	870	1050	1230
Weight actuating rod with wiper [g]	50	55	60	65	72	78	85	90	95	100	105	112	115	120	125	135	145	160	170	210	245
Operating force, horizontal	$\leq 10$ N																				
Operating force, vertical	$\leq 10$ N																				

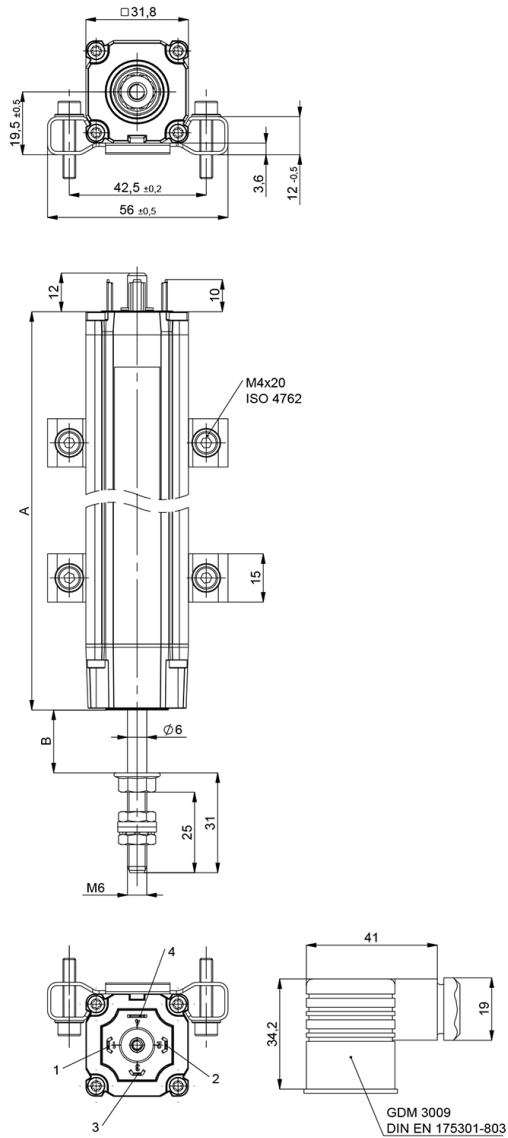
## Ordering Specifications

P/N	Type	
400024502	LWH-0050 (special length)	Product data see separate data sheet "LWH Special Lengths"
400024503	LWH-0075	
400024504	LWH-0100	
400024560	LWH-0110 (special length)	Product data see separate data sheet "LWH Special Lengths"
400024505	LWH-0130	
400024506	LWH-0150	
400024507	LWH-0175	
400024508	LWH-0200	
400024509	LWH-0225	
400024510	LWH-0250	
400024511	LWH-0275	
400024512	LWH-0300	
400024513	LWH-0325	
400024561	LWH-0350	
400024514	LWH-0360	
400024515	LWH-0375	
400024516	LWH-0400	
400024517	LWH-0425 (special length)	Product data see separate data sheet "LWH Special Lengths"
400024518	LWH-0450	
400024520	LWH-0500	
400024522	LWH-0550	
400024524	LWH-0600	
400024526	LWH-0650 (special length)	Product data see separate data sheet "LWH Special Lengths"
400024530	LWH-0750	
400024532	LWH-0800 (special length)	Product data see separate data sheet "LWH Special Lengths"
400024536	LWH-0900	

### Accessories included in delivery

- Adjustable clamps (snap in on all sides) and cylinder screws M4x20
- Mating plug connector GDM 3009 for cable Ø 4.5 mm ... 7 mm, includ. sealing gasket GDM 3-16

**Drawing**



CAD data see  
[www.novotechnik.de/en/download/cad-data/](http://www.novotechnik.de/en/download/cad-data/)

## Technical Data

Type	LWH 0075	LWH 0100	LWH 0130	LWH 0150	LWH 0175	LWH 0200	LWH 0225	LWH 0250	LWH 0275	LWH 0300	LWH 0325	LWH 0350	LWH 0360	LWH 0375	LWH 0400	LWH 0450	LWH 0500	LWH 0550	LWH 0600	LWH 0750	LWH 0900
Electr. measuring range [mm]	77	102	132	152	178	203	228	254	279	304	330	355	366	381	406	457	508	559	610	762	914
Defined electr. range [mm]	75	100	130	150	175	200	225	250	150	300	325	350	360	375	400	450	500	550	600	750	900
Output signal	Voltage divider																				
Resistance value [kΩ]	3	3	3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	10	10
Resistance tolerance	± 20 %																				
Independent linearity [± %FS]	0.1	0.1	0.09	0.08	0.07	0.07	0.07	0.07	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04
Repeatability	≤ ±0.01 mm																				
Recommended operating wiper current	≤ 1 μA																				
Max. wiper current in case of malfunction	10 mA																				
Max. permissible supply voltage Ub	42 VDC																				
Effective temp. coefficient of the output-to-applied voltage ratio	typ. 5 ppm/K																				
Insulation resistance (500 VDC)	≥ 10 MΩ																				
Dielectric strength (500 VAC, 50 Hz)	≤ 100 μA																				
<b>Environmental Data</b>																					
Max. operational speed	10 m/s																				
Operational acceleration	200 m/s <sup>2</sup>																				
Vibration IEC 60068-2-6	20 g, 5 ... 2000 Hz, Amax = 0.75 mm																				
Shock IEC 60068-2-27	50 g, 11 ms																				
Protection class ISO 20653	IP55 (with fastened connector)																				
Operating temperature	-30 ... +100°C																				
Life	> 100 Mio. movements																				
Functional safety	If you need assistance in using our products in safety-related systems, please contact us																				
Traceability	Serial number on type labeling: production batch of the sensor assembly and relevant sensor components																				

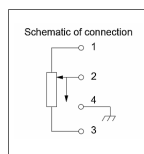
### Important:

All values specified in this data sheet for linearity, lifetime and temperature coefficient are only valid for a sensor used as a voltage divider with virtually no load applied to the wiper ( $I_e \leq 1 \mu A$ ).

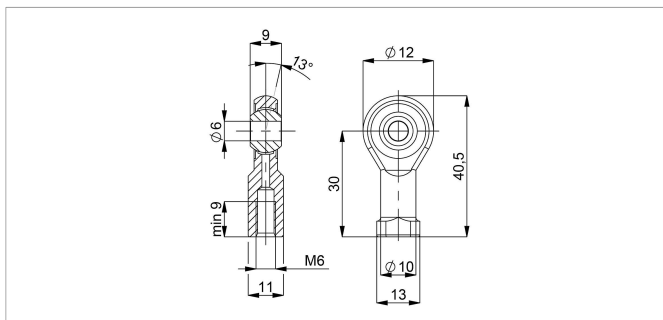
### Connection Assignment

Signal	Connector
Connection 1	Pin 1
Connection 2 Signal output	Pin 2
Connection 3	Pin 3
Connection 4 Housing	Pin 4

Direction of output characteristic while extending the rod:  
 increasing: supply voltage Ub at connection 3  
 falling: supply voltage Ub at connection 1



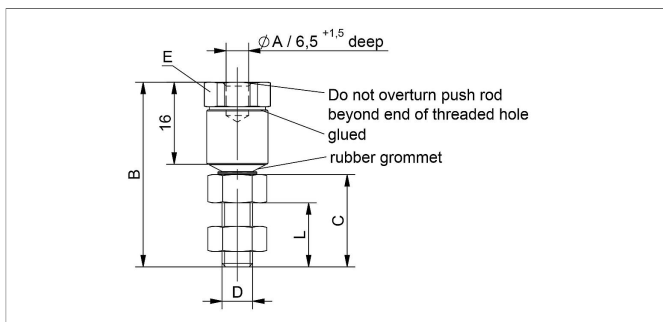
## Sensor Mounting



### Z-G60

Pivot head with internal thread M6. Tilt angle max. 13°.

P/N	Pack. unit [pcs]
400058100	1



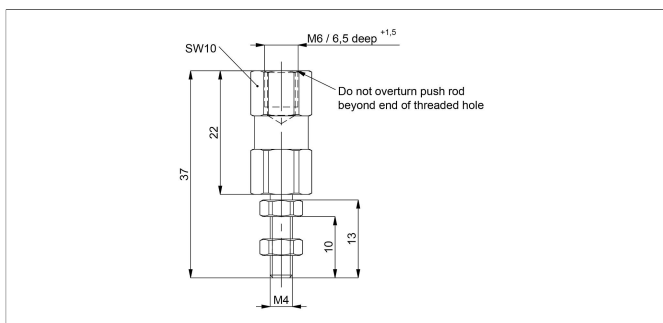
### Z-301-M6/M6

Ball coupling avoids side loads. No backlash with tensile load. Mounting via internal thread A = M6 at rod, secured with lock nut.

D = M6, E = AF14

Displacement parallel  $\leq \pm 1.2$  mm, angled  $\leq \pm 15^\circ$

P/N	Type	L / B / C [mm]
400058001	Z-301-M6/M6	13 / 36 / 18



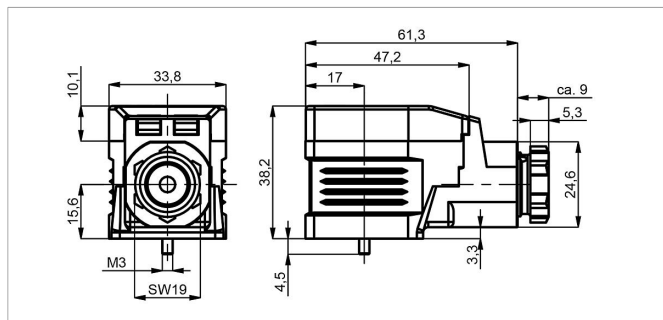
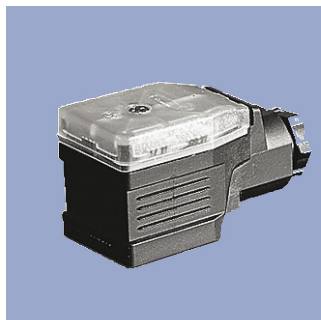
### Z-301-M6/M4

Ball coupling avoids side loads. Mounting via internal thread M6 at rod, secured with lock nut.

Displacement parallel  $\leq \pm 1.2$  mm, angled  $\leq \pm 15^\circ$

P/N	Type
40005679	Z-301-M6/M4

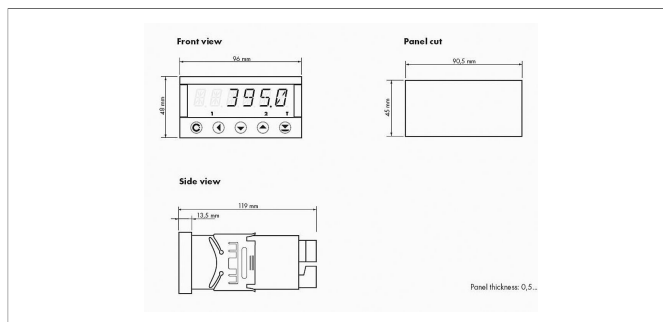
## Signal Processing



### MUW

Signal conditioner integrated in mating plug connector with 24 V and standard output signals.  
 MUW-200: range and zero point not adjustable  
 MUW-250: range and zero point adjustable  
 Detailed data see separate data sheet.

P/N	Type	Output
400054101	MUW-200-0	0 ... 20 mA
400054102	MUW-200-1	0 ... 10 V
400054103	MUW-200-4	4 ... 20 mA
400054151	MUW-250-0	0 ... 20 mA
400054152	MUW-250-1	0 ... 10 V
400054153	MUW-250-4	4 ... 20 mA



### MAP-4000

Multifunctional measuring device with digital display for direct connection of potentiometric and normalized signals.

- Supply voltage 10...30 VDC, 80...250 VDC or AC
- High accuracy up to 0.1%
- Adjustable supply voltage for sensors 5...24 V
- Temperature coefficient 100 ppm/K
- Optional RS 232, RS 485, analog output, limited switch
- Complete data see separate data sheet

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