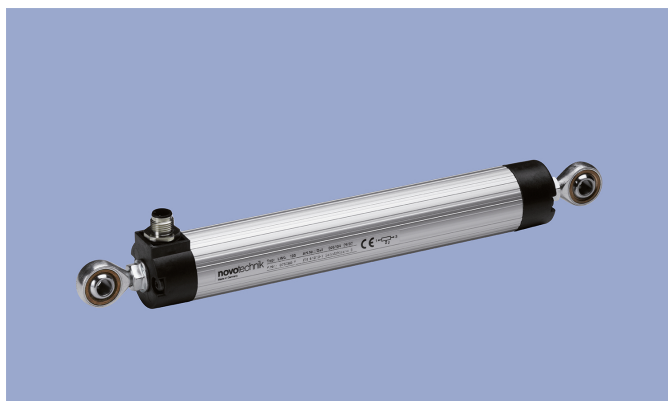
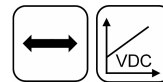


**Transducer  
Potentiometric**

**LWG-0825  
Pivot Head Mounting**



**Special Features**

- Rod and cylinder design with twin slide bearings and lip seal
- Backlash free mounting via spherical rod end bearings with large pivot angle of  $\pm 12.5$  degrees
- Outstanding linearity
- Resolution better than 0.01 mm
- Long life typ. 10 Mio. movements, depending on application
- Protection class IP65
- Cable or connector version available

**Applications**

- Machine Tools
- Industrial Automation
- Off-Highway Vehicles
- Robotics technology

This linear transducer series is characterized by its robust housing and easy mounting via rod end bearings. The wiper block is mechanically decoupled backlash-free from the actuating rod, hereby ensuring high accuracy and long life.

The sensor can be used in a wide range of closed-loop control applications, including linear position sensing in industrial automation, mobile electronics and also in very fast robotics, e.g. simulator actuation. The simplicity of the measurement system – being electrically passive and providing absolute output even after power loss – makes the sensor impervious to electronic interferences and magnetic interferences.

**Description**

Material	Housing: aluminium, anodized Actuating rod: SS 1.4305 / AISI 303, rotatable
Mounting	Pivot Head Mounting (SS pivot heads on request)
Bearing	Slide bearing
Resistance element	Conductive plastic
Wiper	Precious metal multi-finger wiper, elastomer damped
Electrical connection	Connector M12x1, 4-pin, A-coded / Cable 3x 0.34 mm <sup>2</sup> (AWG 22), PVC, shielded, L = 1 m

**Mechanical Data**

Type	LWG 0825
Length of housing [mm] (dim. A $\pm 2$ mm)	1097
Mechanical travel [mm] (dim. B $\pm 2$ mm)	841
Min. distance between pivot heads [mm] (dim. C, nominal)	1143
Operating force*	typ. $\leq 15$ N

\*) Initial operating force is dependent on ambient temperature and inactive time.

## Ordering Specifications

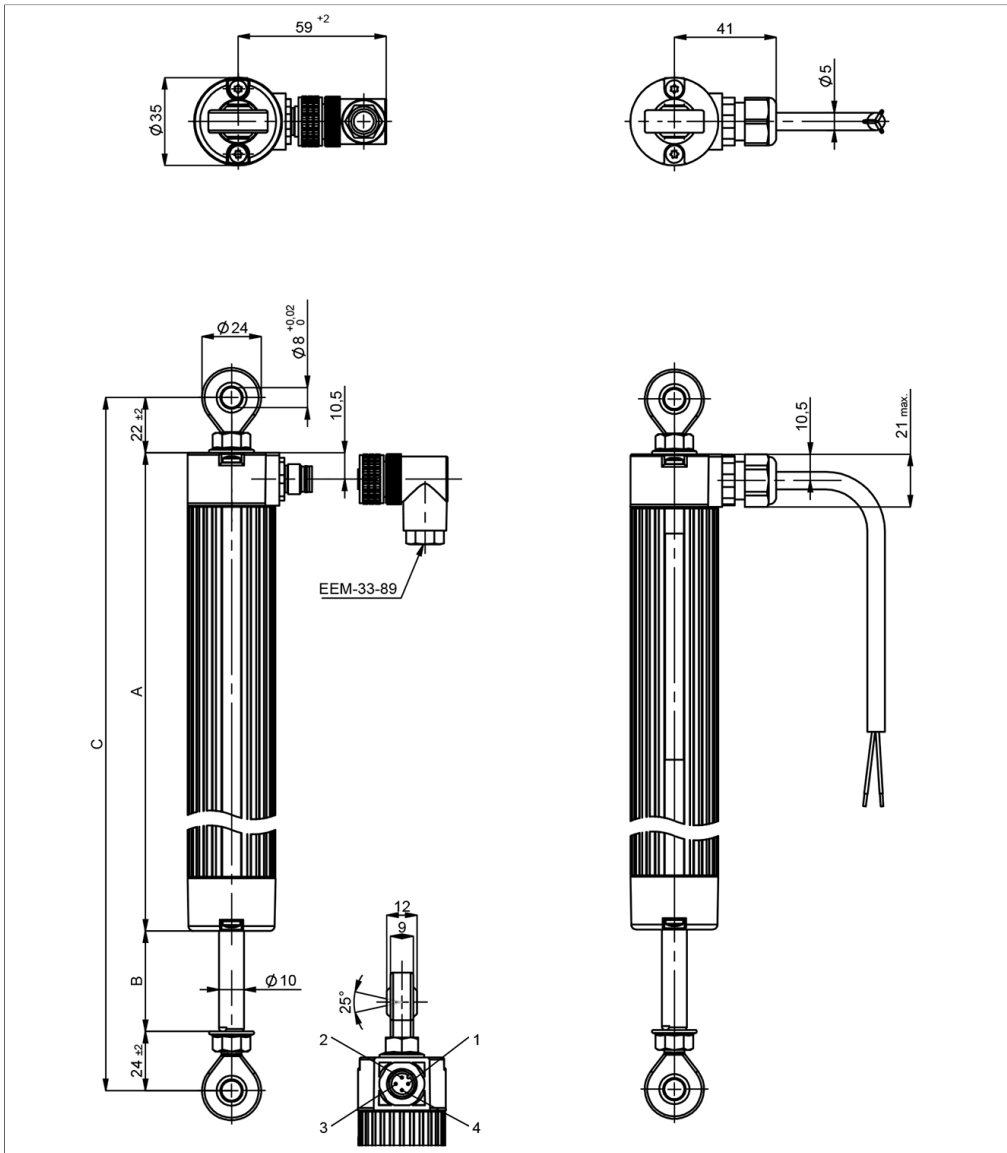
<b>P/N</b>	<b>Type</b>	<b>Defined electr. range [mm]</b>	<b>Electrical connection</b>
400026133	LWG-0825	825	Connector
400026233	LWG-0825-000-201	825	Cable

### Accessories included in delivery

- Mating female connector EEM-33-89 (see connector system M12)

**Drawing**

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



## Technical Data

Type	LWG 0825
Electr. measuring range [mm]	838
Defined electr. range [mm]	825
Resistance value [kΩ]	10
Resistance tolerance	± 20 %
Independent linearity [± %FS]	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>	
Vibration IEC 60068-2-6	5 g, 5 ... 2000 Hz, Amax = 0.75 mm *
Shock IEC 60068-2-27	50 g, 11 ms
Protection class DIN EN 60529	IP65
Operating temperature	-30 ... +80°C
Operating humidity	0 ... 95 % R.H. (no condensation)
Life	typ. > 10 Mio. movements
Installation	To comply with the technical data, vertical installation is required.
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
Conformity/Approval	CE, UKCA see <a href="https://www.novotechnik.de/en/downloads/certificates/declarations-of-conformity-eu/uk">https://www.novotechnik.de/en/downloads/certificates/declarations-of-conformity-eu/uk</a> WEEE see <a href="https://www.novotechnik.de/en/downloads/certificates/eu-directive-weee/">https://www.novotechnik.de/en/downloads/certificates/eu-directive-weee/</a>

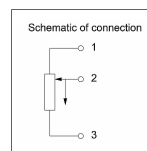
### Important:

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 ( $I_e \leq 1 \mu\text{A}$ ).

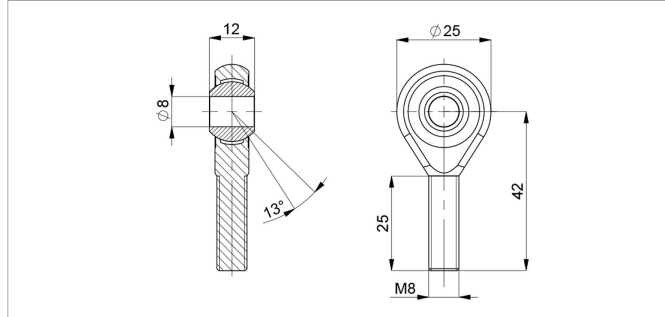
### Connection Assignment

Signal	Connector	Cable
Connection 1	Pin 1	BN
Connection 2 Signal output	Pin 2	BK
Connection 3	Pin 3	RD
Do not connect	Pin 4	-

The signal output slope on pin 2 (or black wire) is rising while extending the rod with "+" of the power supply at pin 3 (or red wire) and falling with power supply "+" at pin 1 (or brown wire).



## Sensor Mounting

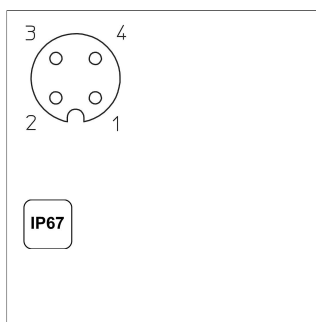
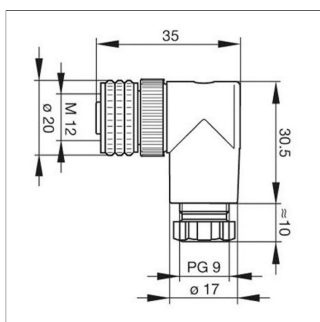


### Z-G-03

Conversion kit for series LWG and LWX: SS  
version with 2 pivot heads and 2 lock nuts.

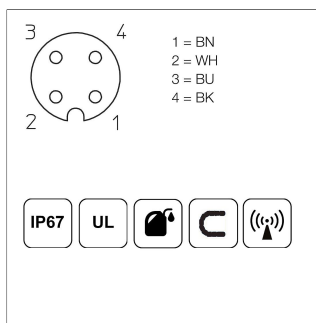
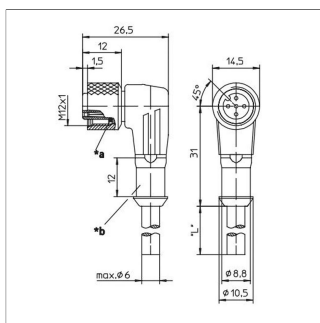
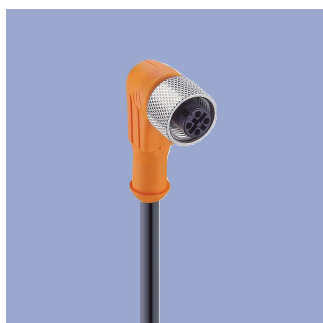
P/N	Pack. unit [pcs]
400108551	2

## Connector System M12



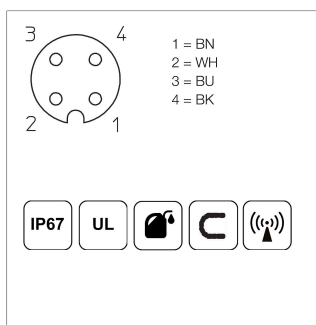
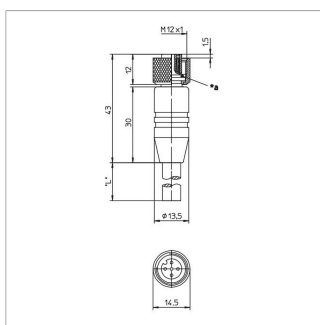
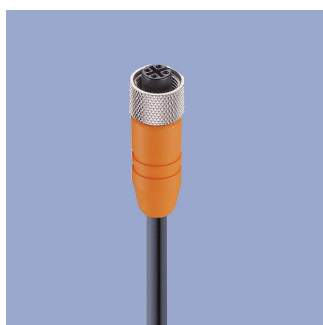
**EEM-33-89 (Included in delivery)**  
M12x1 Mating female connector, 4-pin, angled, A-coded, with coupling nut, screw termination, IP67, not shieldable  
Operating temp. -25 ... +90°C  
Plug housing PBT  
For wire gauge 6 ... 8 mm, max. 0.75 mm<sup>2</sup>

P/N	Type
400005634	EEM-33-89



**EEM-33-33/63/99**  
M12x1 Mating female connector, 4-pin, angled, A-coded, with molded cable, shielded, IP67, open ended  
Plug housing PA  
Cable sheath PUR, Ø = max. 6 mm, -25 ... +80°C (moved), -50 ... +80°C (fixed)  
Lead wires PP, 0.34 mm<sup>2</sup>

P/N	Type	Length
400005601	EEM-33-33	2 m
400005610	EEM-33-63	5 m
400005696	EEM-33-99	10 m



**EEM-33-32/62/97**  
M12x1 Mating female connector, 4-pin, straight, A-coded, with molded cable, shielded, IP67, open ended  
Plug housing PA  
Cable sheath PUR, Ø = max. 6 mm, -25 ... +80°C (moved), -50 ... +80°C (fixed)  
Lead wires PP, 0.34 mm<sup>2</sup>

P/N	Type	Length
400005600	EEM-33-32	2 m
400005609	EEM-33-62	5 m
400005650	EEM-33-97	10 m

**IP67** Protection class IP67 DIN EN 60529

**IP68** Protection class IP68 DIN EN 60529

Very good Electromagnetic Compatibility (EMC) and shield systems

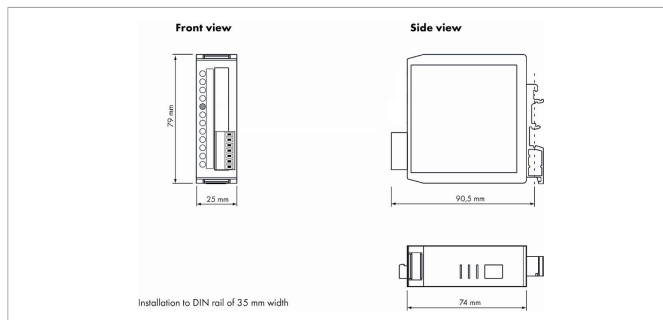
Very good resistance to oils, coolants and lubricants

**C** Suited for applications in dragchains

**UL** UL - approved

CAN-Bus

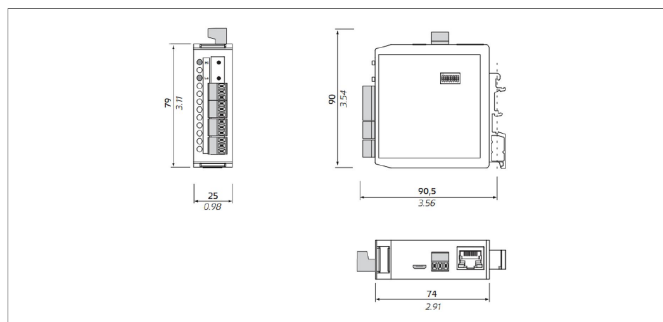
## Signal Processing



### MUP-080

Cost-efficient signal conditioner with fixed output range, voltage or current output. Not adjustable. Detailed data see separate data sheet.

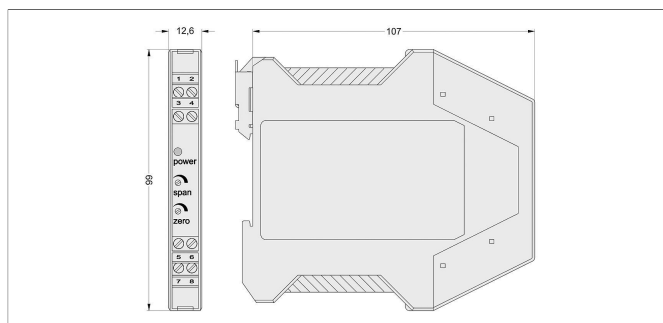
P/N	Type	Output
400054220	MUP-080-111	0 ... 10 V
400054221	MUP-080-113	4 ... 20 mA



### MUP-410

Signal conditioner with simple teach-in function to adapt start and end point. Switchable current or voltage outputs. With galvanic isolation. Detailed data see separate data sheet.

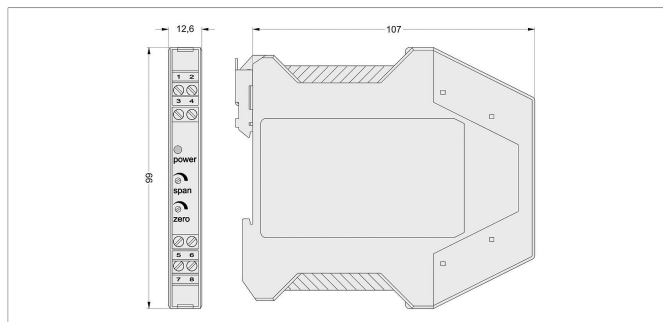
P/N	Type	Output
400108799	MUP-410-11	4 ... 20 mA, 0 ... 10 V, 0 ... 2/5 V, ± 10 V, 0 ... 5/20 mA



### MUP-110

Signal conditioner in compact size with voltage or current output, adjustable zero and span. Detailed data see separate data sheet.

P/N	Type	Output
400054010	MUP-110-0	0 ... 20 mA
400054011	MUP-110-1	0 ... 10 V
400054014	MUP-110-4	4 ... 20 mA

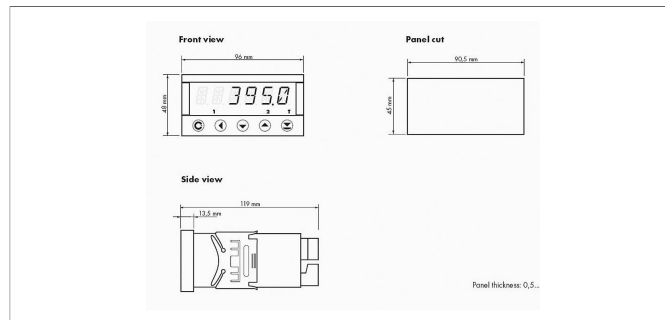


### MUP-160

Signal conditioner in compact size with voltage or current output, adjustable zero and span. With galvanic isolation. Detailed data see separate data sheet.

P/N	Type	Output
400054060	MUP-160-0	0 ... 20 mA
400054061	MUP-160-1	0 ... 10 V
400054064	MUP-160-4	4 ... 20 mA

## Signal Processing



### 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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