

Industrial LVDT Displacement Transducer AML/IE

Key Features:

- Stroke Ranges: $\pm 0.5\text{mm}$ to $\pm 500\text{mm}$
- AC mV/V Output or DC Voltage / Current Output
- Environmental Protection: IP65
- Optional IP68 Submersible & High Temperature Versions
- Stainless Steel Construction
- Core + Extension, Spring-Loaded & Rod-End Bearings Versions
- Simple Installation
- Wide Variety of Different Outputs; mVac, 0-5Vdc, 0-10Vdc, 4-20mA, $\pm 2.5\text{Vdc}$
- 3 Year Warranty



Image shows IP68 rated version with option R rod ends

The [AML/IE industrial LVDT displacement transducers](#) can be AC or DC powered and are sealed to IP65 as standard with the option of IP68 making them ideally suited for harsh and demanding applications where conditions are humid, wet, dusty or dirty. Typical applications include process plants, paper mills, and industrial test rigs.

The AML/IE industrial displacement transducers are constructed from stainless steel and fitted with a tough cable and can be supplied in a variety of mechanical configurations including captive guided core & extension rod, which is standard, plus spring-loaded core & extension rod with ball-end or guided core & extension with spherical rod-end bearings.

The AML/IE is supplied in a variety of packaging formats, enabling engineers to select quickly and precisely, the product required for a particular application.

An AC mV/V output is available as standard, with a range of DC voltage signal output options also offered including 0-5Vdc, 0-10Vdc and $\pm 2.5\text{Vdc}$, as well as a 3-wire 4-20mA current output, please speak to our technical sales team.

The AML/IE is supported with a versatile range of instrumentation to enable engineers to implement the sensor with the minimum of fuss within a system. Supporting instrumentation includes trip amplifiers, indicators, PC interfaces, rack systems, and more, please [contact us](#) to discuss your requirements.

Options:

- Variety of Mechanical Configurations Available
- Longer Cable Lengths
- Higher Temperature Versions
- Custom Design Versions Available
- $\pm 0.25\%$ Accuracy
- IP68 Sealing to 5bar (50 metres depth)
- Integral Bayonet Lock Connector
- Axial Cable Exit
- USB Version (via DSC-USB)
- Wireless Versions (via T24 instrumentation)
- Single or Multi-Channel PC-Based Monitoring & Data Logging System.

Applications:






- Process Plants
- Paper Mills
- Industrial Test Rigs
- Harsh & Demanding Applications (IP68)

Specification:








| CHARACTERISTICS | AML/IE--- | AML/IEJ--- | AML/IEU--- | AML/IEU--- -10 | AML/IEI--- | AML/IED--- | UNITS |
|---|---|------------|------------|----------------|----------------------------|-----------------|-------------------|
| Stroke Measurement Range: | ±0.5, ±2.5, ±5, ±10, ±12.5, ±15, ±25, ±50, ±75, ±100, ±125, ±150, ±175, ±200, ±250 ±300, ±400, ±500 (maximum stroke is ±100 for Sprung Loaded Core & Extension) | | | | | | millimetres |
| Signal Output: | See Table Below | | 0-5volt | 0-10volt | 4-20mA | ±2.5volt | |
| No. of Wires | 6 | 4 | 3 | 3 | 3 | 4 | |
| Supply Voltage (unregulated): | 2 to 5Vrms @ 1 to 5kHz | | 10-24Vdc | 14-24Vdc | 14-24Vdc | 12Vdc regulated | |
| Supply Current: | - | | 35mA @ 15V | 35mA @ 15V | 35mA typ. | 35mA @ 12V | |
| Max. Loop Resistance: | - | | - | - | 300 @ 30V | - | ohms |
| Max. Output Sink Current: | - | | 0.5 | 1 | - | 0.1 | milliamps |
| Non-Linearity: | <0.50 (<0.25 optional) | | | | | | ±% Stroke Range |
| Repeatability: | <0.10 | | | | | | ±% Stroke Range |
| Output Bandwidth (flat): | 100 | | 100 | 100 | 100 | 100 | Hz |
| Output Ripple: | - | | 30mV max. | 30mV max. | 0.1% @ 20mA | 30mV max. | |
| Operating Temperature Range: | AML/IE & IEJ: -30 to +85 Standard / -30 to +150 Optional | | | | -20 to +85 on DC/DC models | | °C |
| Zero Temperature Coefficient: | <0.020 | | <0.010 | | | | ±%Stroke Range/°C |
| Span Temperature Coefficient: | <0.020 | | <0.030 | | | | ±%Stroke Range/°C |
| Vibration Resistance: | 20g up to 2kHz | | | | | | |
| Shock Resistance: | 1000g for 10milliseconds | | | | | | |
| Construction Materials: | Body & Extension Rod: 303 St/Steel, Core: 416 St/Steel, Cable Gland: Nickel-Plated Brass, Spring: 316 St/Steel, Rod-End Bearings: Mild Steel (St/Steel on IP68 version) | | | | | | |
| Connecting Cable: | 2 metre screened PVC cable* (*IP68 = PUR / Hi-Temp = PTFE). | | | | | | |
| Environmental Sealing: | IP65 (IP68 optional) | | | | | | |
| Note: On DC output version (0Vdc / 4mA) is given with the core in the extended / outwards position. This can be reversed if required, please request Option Y on your order. | | | | | | | |

Wiring:





4-wire AC Version

| Wire | Designation |
|---|---------------------------------------|
|  Red | Primary +ve |
|  Yellow | Primary -ve |
|  Blue | Secondary +ve |
|  Green | Secondary -ve |
|  Ground | Screen (not connected to sensor body) |

6-wire AC Version

| Wire | Designation |
|--|---------------------------------------|
|  Yellow | Primary +ve |
|  Black | Primary -ve |
|  Green | Secondary 1 +ve |
|  Red | Secondary 1 -ve (centre tap) |
|  White | Secondary 2 +ve |
|  Blue | Secondary 2 -ve (centre tap) |
|  Ground | Screen (not connected to sensor body) |

3-wire DC Versions (4-20mA, 0-5Vdc, 0-10Vdc, ±2.5Vdc)

| Wire | Designation |
|---|---------------------------------------|
|  Red | Supply |
|  Blue | 0V common |
|  Green | Signal |
|  Ground | Screen (not connected to sensor body) |

Dimensions (mm):

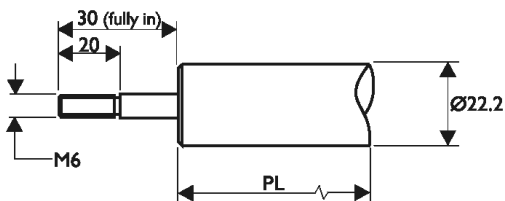
Dimension for AC Units (AML/IE & AML/IEJ only)

| Stroke (mm) | Core Extension STANDARD | Core Extension OPTION S | Core Extension OPTION R | AML/IE & IEJ Output Sensitivity @ 3kHz (mV/V) |
|-------------|-------------------------|-------------------------|-------------------------|---|
| | PL | SL | EL | |
| ±0.5 | 80 | 80 | 146 | 50 |
| ±2.5 | 90 | 90 | 166 | 90 |
| ±5 | 115 | 115 | 181 | 80 |
| ±10 | 130 | 130 | 196 | 280 |
| ±12.5 | 160 | 160 | 226 | 300 |
| ±15 | 175 | 175 | 241 | 230 |
| ±25 | 235 | 235 | 301 | 240 |
| ±50 | 320 | 320 | 386 | 320 |
| ±75 | 390 | 390 | 456 | 350 |
| ±100 | 450 | 390 | 516 | 190 |
| ±125 | 500 | n/a | 566 | 300 |
| ±150 | 560 | n/a | 626 | 330 |
| ±175 | 615 | n/a | 681 | 310 |
| ±200 | 700 | n/a | 766 | 300 |
| ±250 | 810 | n/a | 876 | 350 |
| ±300 | 920 | n/a | 986 | 400 |
| ±400 | 1150 | n/a | 1216 | 460 |
| ±500 | 1410 | n/a | 1476 | 390 |

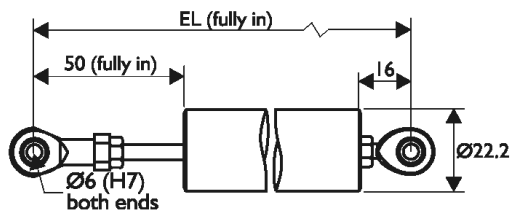
Dimensions for DC units only (AML/IEU, AML/IEU-10, AML/IEI & AML/IED)

| Stroke (mm) | Core Extension STANDARD | Core Extension OPTION S | Core Extension OPTION R |
|-------------|-------------------------|-------------------------|-------------------------|
| | PL | SL | EL |
| ±0.5 | 130 | 130 | 196 |
| ±2.5 | 140 | 140 | 206 |
| ±5 | 165 | 165 | 231 |
| ±10 | 180 | 180 | 246 |
| ±12.5 | 210 | 210 | 276 |
| ±15 | 225 | 225 | 291 |
| ±25 | 285 | 285 | 351 |
| ±50 | 370 | 370 | 436 |
| ±75 | 440 | 440 | 506 |
| ±100 | 500 | 440 | 566 |
| ±125 | 550 | n/a | 616 |
| ±150 | 610 | n/a | 676 |
| ±175 | 665 | n/a | 731 |
| ±200 | 750 | n/a | 816 |
| ±250 | 860 | n/a | 926 |
| ±300 | 970 | n/a | 1036 |
| ±400 | 1200 | n/a | 1266 |
| ±500 | 1460 | n/a | 1526 |

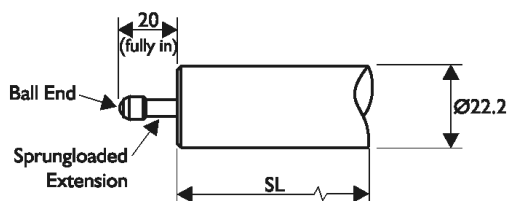
STANDARD Plain Core & Extension



OPTION R Guided Core & Extension with Rod End Bearings

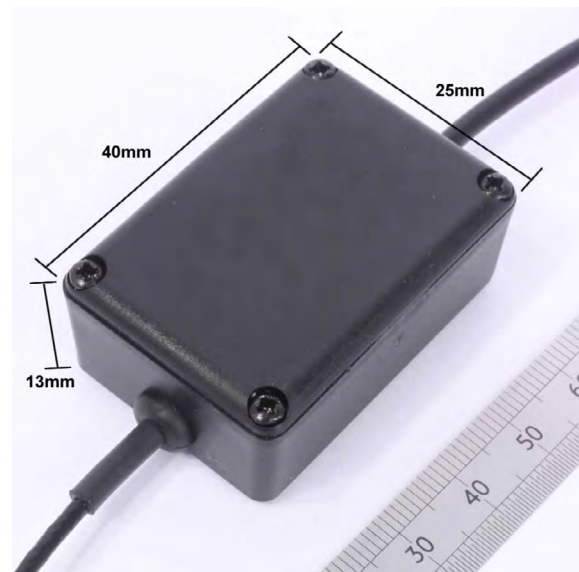


OPTION S Sprung Loaded Core & Extension



Optional In-Line Amplifier Housing Dimensions:

Required for high temperature versions with conditioned output. Can also be used with any AC version to give a DC output when minimum LVDT body length is required.



Ordering Codes:

| AML/IEU10+/-500mm-WR0A-0.2-000 | AML/IE | U10 | +/-500mm | - | WR | O | A | - | 0.2 | - | 000 |
|--|--------|-------|-----------|---|----|---|---|---|-----|---|-----|
| <i>Example Code</i> | | | | | | | | | | | |
| Product Family | | | | | | | | | | | |
| AML/IE | AML/IE | | | | | | | | | | |
| Electrical Output | | | | | | | | | | | |
| Blank = 6-wire AC mV/V | | Blank | | | | | | | | | |
| J = 4-wire AC mV/V | | J | | | | | | | | | |
| U = 0-5Vdc | | U | | | | | | | | | |
| U10 = 0-10Vdc | | U10 | | | | | | | | | |
| I = 4-20mA | | I | | | | | | | | | |
| D = ±2.5Vdc (12Vdc regulated supply required) | | D | | | | | | | | | |
| Stroke Range | | | | | | | | | | | |
| +/-0.5mm (0-1mm) | | | +/-0.5mm | | | | | | | | |
| +/-2.5mm (0-5mm) | | | +/-2.5mm | | | | | | | | |
| +/-5mm (0-10mm) | | | +/-5mm | | | | | | | | |
| +/-10mm (0-20mm) | | | +/-10mm | | | | | | | | |
| +/-12.5mm (0-25mm) | | | +/-12.5mm | | | | | | | | |
| +/-15mm (0-30mm) | | | +/-15mm | | | | | | | | |
| +/-25mm (0-50mm) | | | +/-25mm | | | | | | | | |
| +/-50mm (0-100mm) | | | +/-50mm | | | | | | | | |
| +/-75mm (0-150mm) | | | +/-75mm | | | | | | | | |
| +/-100mm (0-200mm) | | | +/-100mm | | | | | | | | |
| +/-125mm (0-250mm) | | | +/-125mm | | | | | | | | |
| +/-150mm (0-300mm) | | | +/-150mm | | | | | | | | |
| +/-175mm (0-350mm) | | | +/-175mm | | | | | | | | |
| +/-200mm (0-400mm) | | | +/-200mm | | | | | | | | |
| +/-250mm (0-500mm) | | | +/-250mm | | | | | | | | |
| +/-300mm (0-600mm) | | | +/-300mm | | | | | | | | |
| +/-400mm (0-800mm) | | | +/-400mm | | | | | | | | |
| +/-500mm (0-1000mm) | | | +/-500mm | | | | | | | | |
| Mechanical Configuration | | | | | | | | | | | |
| G = Guided Core & Extension Rod | | | | | G | | | | | | |
| S = Spring Loaded Core & Extension Rod with Ball-Tip (±100mm max range) | | | | | S | | | | | | |
| SW = IP68 Rated to 5bar/50m with Spring Loaded | | | | | SW | | | | | | |
| R = Rod-End Bearings (with Guided Core) | | | | | R | | | | | | |
| H = 150°C High Temperature Version (DC output only with in-line amplifier @ 70°C max.) | | | | | H | | | | | | |
| HR = 150°C High Temperature Version with Rod-End Bearings | | | | | HR | | | | | | |
| W = IP68 Rated - Waterproof/Submersible to 5bar External Pressure (50 metres) | | | | | W | | | | | | |
| WR = IP68 Rated with Rod-End Bearings - Waterproof/Submersible to 5bar External Pressure (50 metres) | | | | | WR | | | | | | |
| <i>Continued on next page</i> | | | | | | | | | | | |

| AML/IEU10+/-500mm-WR0A-0.2-000 | AML/IE | U10 | +/-500mm | - | WR | O | A | - | 0.2 | - | 000 |
|---|---------------|------------|-----------------|----------|-----------|----------|----------|----------|------------|----------|------------|
| <i>Example Code</i> | | | | | | | | | | | |
| Output Direction (only affects DC output versions) | | | | | | | | | | | |
| 0 = Zero with core extended, Full Scale with core retracted | | | | | | 0 | | | | | |
| Y = Full Scale with core extended, Zero with core retracted | | | | | | Y | | | | | |
| Cable Exit Direction | | | | | | | | | | | |
| A = Axial (not available on rod-end bearing version) | | | | | | | A | | | | |
| R = Radial | | | | | | | R | | | | |
| Cable Length (in metres) | | | | | | | | | | | |
| 02 = 2 metres (standard) | | | | | | | | | 02 | | |
| 0,2 = 0.2 metres | | | | | | | | | 0,2 | | |
| 10 = 10 metres | | | | | | | | | 10 | | |
| Specials Code | | | | | | | | | | | |
| 000 = No Special Requirements | | | | | | | | | | | 000 |
| 024 = Improved ±0.25% accuracy | | | | | | | | | | | 024 |
| 021 = Extension Rod Wiper | | | | | | | | | | | 021 |
| Sales To Provide Specials Codes As Required | | | | | | | | | | | |
| Example code | | | | | | | | | | | |
| AML/IEU10+/-500mm-WR0A-0.2-000 | AML/IE | U10 | +/-500mm | - | WR | O | A | - | 0.2 | - | 000 |

Associated Products:



[AML/M Miniature LVDT Displacement Sensor](#)



[Standard LVDT Displacement Sensor AML/E](#)



[INT4-P LVDT Digital Panel Meter](#)



[IL4-P Low Cost LVDT Indicator](#)