APPLIED MEASUREMENTS LTD.
Transducer Specialists...

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AML/M Miniature LVDT Displacement Transducer

Key Features:

- Stroke Ranges: ±0.25mm to ±50mm
- AC mV/V Output or DC Voltage / Current Output
- Environmental Protection: IP55
- Core-Only, Core + Extension & Spring Loaded Versions
- Magnetically Shielded
- Wide Variety of Different Outputs; mVac, 0-5Vdc, 0-10Vdc, 4-20mA
- Stainless Steel Construction
- Small Physical Size
- Simple Installation
- Ideally Suited for OEM Applications
- 3 Year Warranty

Image shows miniature LVDT with spring loaded option.

Click to watch the product video

The AML/M miniature LVDT displacement transducers are AC powered devices and are available in either 4-wire or 6-wire configurations. Typical applications include OEM and general purpose applications such as material testing machines, automotive/aerospace test rigs and actuators, etc. Their small physical size also makes them ideally suited for use in load cells, pressure transducers, weighing systems and in general closed loop control.

The AML/M is supplied in a variety of packaging formats, enabling engineers to select quickly and precisely, the product required for a particular application. In addition, the miniature LVDT is available in one of 3 mechanical configurations; plain core-only, plain core & extension rod and spring loaded core and extension rod.

The AML/M LVDT requires a sinusoidal AC supply voltage and provides an AC mV/V output signal which is linearly proportional to displacement. For a 0-5Vdc, 0-10Vdc or 4-20mA output, a compact in-line DC in/DC out signal conditioner can be provided, please speak to our technical sales team.

Options:

- Core-Only, Core + Extension & Spring Loaded Versions Available
- Longer Cable Lengths
- Higher Temperature Versions
- Custom Design Versions Available
- Miniature In-Line Signal Conditioner to Provide 0-5Vdc, 0-10Vdc or 4-20mA Output Signal.
- Wireless Version (via T24 instrumentation)
- Single or Multi-Channel PC-Based Monitoring & Data Logging System.

Applications:

- OEM and General Purpose Applications
- Material Testing Machines
- Automotive/Aerospace Test Rigs & Actuators
- Quality Assurance Testing
- General Closed Loop Control

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Specification:

CHARACTERISTICS	AML/M	AML/MJ	AML/MU	AML/MU10	AML/MI	UNITS
Stroke Measurement Range:	±0.5, ±1, ±2.5, ±5, ±10, ±12.5, ±15, ±25, ±50					millimetres
Signal Output:	See Table Below		0-5volt	0-10volt	4-20mA	
No. of Wires	6	4	3	3	3	
Supply Voltage (unregulated):	2 to 5Vrms @ 1 to 5kHz		10-24Vdc	14-24Vdc	14-24Vdc	
Supply Current:	-		35mA @ 15V	35mA @ 15V	35mA typ.	
Max. Loop Resistance:	-		-	-	300 @ 30V	ohms
Max. Output Sink Current:	-		0.5	1	-	milliamps
Non-Linearity:	<1.0					±% Stroke Range
Repeatability:	<0.10					±% Stroke Range
Output Bandwidth (flat):	100		100	100	100	Hz
Output Ripple:	-		30mV max.	30mV max.	0.1% @ 20mA	
Operating Temperature Range:	AML/M & MJ: -30 to +85 Standard / -30 to +150 and -30 to +200 Optional 0 to +70 for in-line conditioner (where fitted)					°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					
Connecting Cable:	2 metre screened PTFE cable. Axial or radial exit available - see order codes for full details. **Spring-loaded version ONLY available with radial cable exit.					
Environmental Sealing:	IP55					

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.

**The spring-loaded version is only available with a radial cable exit due to the rear extension of the LVDT.

Note: On versions with in-line signal conditioner zero output (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.

Miniature LVDT AC Version

Wiring AC Version:

4-wire PTFE

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

6-wire PTFE

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

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Dimensions AC Versions (mm):

Stroke (mm)	All	Standard (Plain)		All			
	Body Length (mm)	Core Length (mm)	Null Position (mm)	Sensitivity @ 3kHz with 50K Load (mV/V FRO)	NULL (mV)	Primary Resistance (ohms)	Secondary Resistance (ohms)
±0.25	25	10	10	32.5	3	50	100
±0.5	25	10	10	74	4	125	200
±1	32	15	14	150	7	73	365
±2.5	40	17	18	165	7	120	470
±5	55	25	25	280	10	180	710
±10	69	25	33	290	8	152	390
±12.5	84	27	40	285	7	190	510
±15	99	42	48	330	8	98	190
±25	150	55	70	220	6	145	200
±50	220	94	108	390	8	60	98

For sprung-loaded dimensions and outline drawing see page 5.

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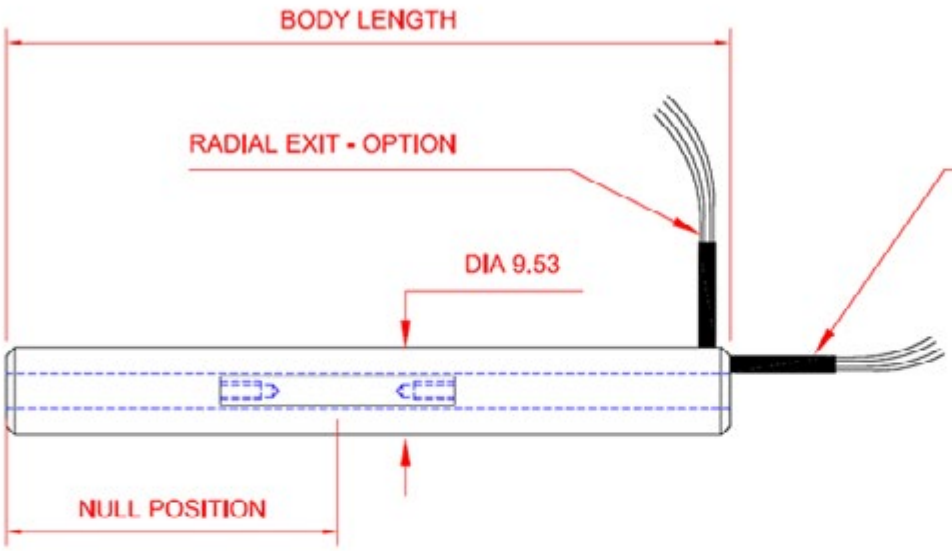

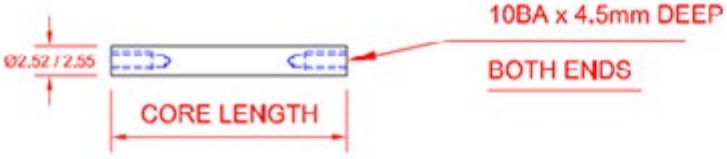

Plain Core
AML-M Miniature
AC Version
(mm)

Options:
A = axial cable exit
R = radial cable exit
J = 4-wire device
H = high temperature 150°C
VH = very high temperature 200°C

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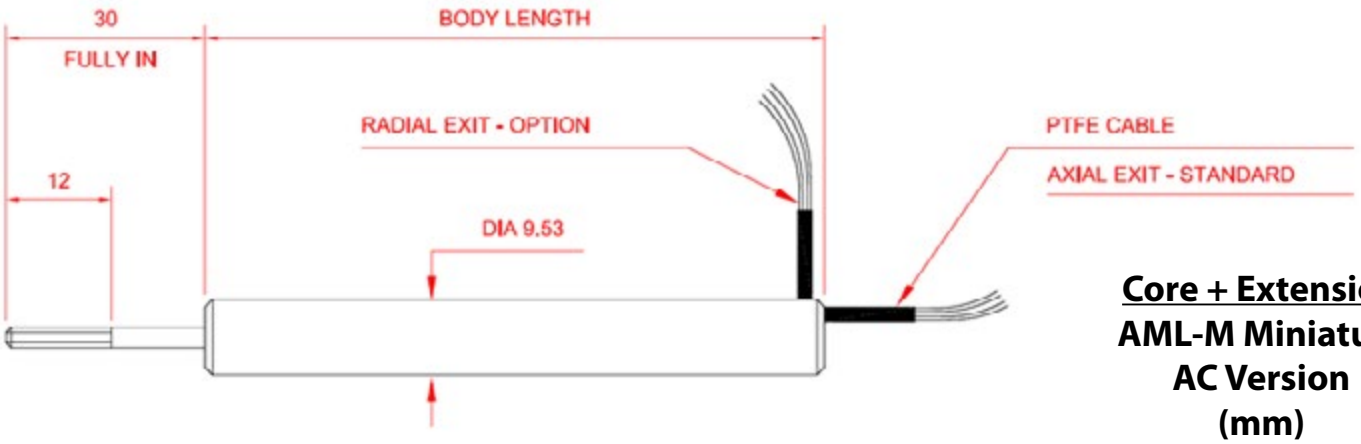
Dimensions AC (mm) continued:



Core + Extension
AML-M Miniature
AC Version
(mm)

Options:
A = axial cable exit
R = radial cable exit
J = 4-wire device
H = high temperature 150°C
VH = very high temperature 200°C

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Dimensions AC (mm) continued:

Dimensions AC Sprung-Loaded Option S

Stroke (mm)	Body Length (mm)	Sensitivity @ 3kHz with 50K load (mV/V FRO)	NULL (mV)	Primary Resistance (ohms)	Secondary Resistance (ohms)	Front Extension (mm)	Rear Extension (mm)	Spring Rate (N/mm)
±0.25	25	32.5	3	50	100	20	10	0.1090
±0.5	25	74	4	125	200	20	10	0.1090
±1	32	150	7	73	365	20	10	0.0908
±2.5	40	165	7	120	470	23	11	0.0778
±5	55	280	10	180	710	29	12	0.0605
±10	69	290	8	152	390	50	18	0.0363
±12.5	84	285	7	190	510	53	20	0.0303
±15	99	330	8	98	190	58	23	0.0259
±25	150	220	6	145	200	70	30	0.0210
±50	220	390	8	60	98	120	57	0.0109

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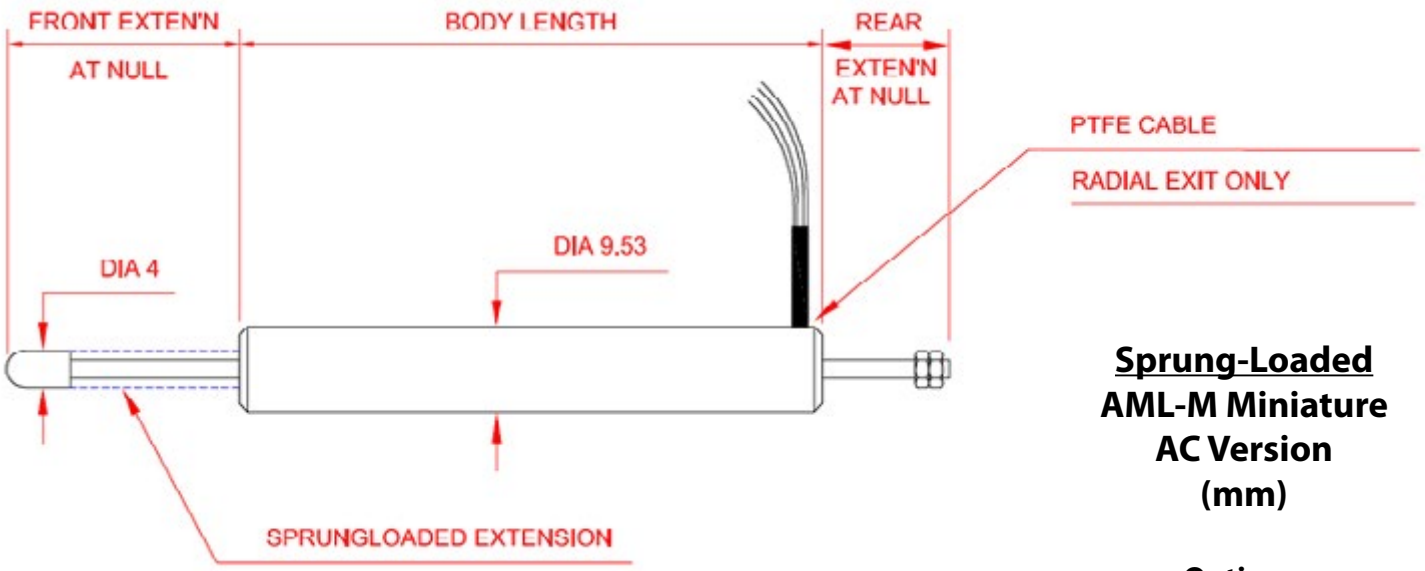

Sprung-Loaded
AML-M Miniature
AC Version
(mm)

Options:
R = radial cable exit only
J = 4-wire device
H = high temperature 150°C
VH = very high temperature 200°C

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Miniature LVDT DC Version

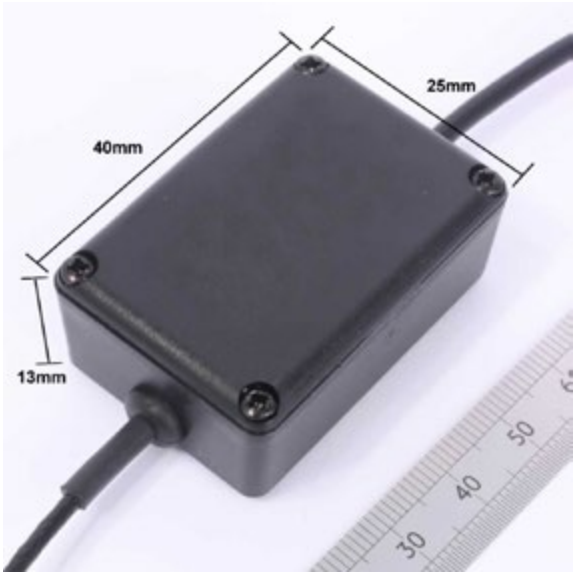
Wiring DC Version:

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

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

Optional In-Line Amplifier Housing Dimensions:

(Required for all conditioned output versions)



Compact in-line signal conditioner available if a DC output is required without compromising on space.

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Associated Products:

LVDT Amplifier / Signal Conditioner

In-Line LVDT Amplifier

Intuitive4-P Process Digital Indicator

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Ordering Codes:

AML/MJ+/-50mm-S0A-02-000	AML/M	J	+/-50mm	-	S	O	A	-	02	-	000
Example Code											
Product Family											
AML/M	AML/M										
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									
* Provided by external amplifier mounted in-line on cable.											
Stroke Range											
+/-0.25mm (0-0.5mm)			+/-0.25mm								
+/-0.5mm (0-1mm)			+/-0.5mm								
+/-1mm (0-2.5mm)			+/-1mm								
+/-2.5mm (0-5mm)			+/-2.5mm								
+/-5mm (0-10mm)			+/-5mm								
+/-12.5mm (0-25mm)			+/-12.5mm								
+/-25mm (0-50mm)			+/-25mm								
+/-50mm (0-100mm)			+/-50mm								
Mechanical Configuration											
C = Core Only					C						
X = Un-Guided Core & Extension Rod					X						
S = Spring Loaded Core & Extension Rod with Ball-Tip (±50mm / 0-100mm max range)					S						
H = 150ºC High Temperature Version (DC output only with in-line amplifier @ 70ºC max.) Core Only					H						
HX = 150ºC High Temperature, with PTFE cable (AC output only) Unguided Core + Extension Rod					HX						
HS = 150ºC High Temperature, with PTFE cable (AC output only) Spring Loaded Core + Extension Rod with Ball Tip					HS						
VH = 200ºC Very High Temperature Version (DC output only with in-line amplifier @ 70ºC max.) Core Only					VH						
VHX = 200ºC Very High Temperature, with PTFE cable (AC output only) Unguided Core + Extension Rod					VHX						
VHS = 200ºC Very High Temperature, with PTFE cable (AC output only) Spring Loaded Core + Extension Rod with Ball Tip					VHS						
Continued on next page											

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Ordering Codes:

AML/MJ+/-50mm-S0A-02-000	AML/M	J	+/-50mm	-	S	O	A	-	02	-	000
Example Code											
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 spring loaded 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
Sales To Provide Specials Codes As Required											