



APPLIED MEASUREMENTS LTD.
Transducer Specialists...

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<https://appmeas.co.uk>

AML/SGD Strain Gauge Displacement Transducer

Key Features:

- Stroke Ranges: 0-5mm to 0-100mm
- mV/V Output
- Environmental Protection: IP54
- Spring Loaded
- High Accuracy: $<\pm 0.1\%$ (0-5mm to 0-25mm)
 $<\pm 0.2\%$ (0-50mm to 0-100mm)
- Strain Gauge Based Design
- Compact Size - Simple to Install
- 3 Year Warranty



Click to watch product video

The [AML/SGD strain gauge displacement transducers](#) utilise strain gauge technology to provide a linearly proportional voltage output in relation to the movement of a captivated spindle. The AML/SGD's compact size and rugged construction makes them ideal for use in a diverse range of applications such as Geotechnical Testing, R&D, Aerospace, Civil Engineering and Automotive.

The AML/SGD strain gauge displacement transducer offers excellent accuracy of better than 0.1% on ranges up to 0-25mm and 0.2% on the 0-50mm and 0-100mm versions, coupled with high resolution and long-term stability.

The design principle incorporates a 4-arm active wheatstone bridge with a nominal impedance of 350ohms. This concept ensures an excellent non-linearity, good temperature stability and low current consumption. This low current consumption makes the AML/SGD suitable for use in battery-powered systems and equipment.

Being strain gauge based, they are compatible with a broad range of standard analogue and digital instrumentation as used on load cells, pressure transducers and torque sensors.

[See our range of displacement transducers.](#)

Options:

- Customised Versions
- Longer Cable Lengths
- In-Line Analogue Signal Conditioner (ICA)
- USB Version (via DSC-USB)
- Vacuum Application Version
- Wider Operating Temperature Range
- Wireless Version (via T24 instrumentation)
- Single or Multi-Channel PC-Based Monitoring & Data Logging System.
- TEDS (Transducer Electronic Data Sheet)
- TEDS Allows Plug & Play with TEDS Enabled Instrumentation.

Applications:

- Geotechnical Testing Material Testing Machines
- Research & Development
- Aerospace
- Civil Engineering
- Automotive



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Specification:

CHARACTERISTICS	AML/SGD					UNITS
Stroke Length:	0-5	0-10	0-25	0-50	0-100	millimetres
Rated Output:	5.0	5.4	7.3	8.8	7.5	mV/V (nominal)
Non-Linearity:	<0.10		<0.20			±% of Rated Output
Repeatability:	<0.10					±% of Rated Output
Operating Temperature Range:	-10 to +60					°C
Temperature Effect On Output:	<0.010					±% of Rated Output/°C
Temperature Effect On Zero:	<0.010					±% of Rated Output/°C
Safe Overload:	See note 4 below					
Excitation:	10 recommended (2-15 acceptable)					Volts AC or DC
Current Consumption:	<30 @ 10Vdc					mA
Input Resistance:	350					Ohms (nominal)
Output Resistance:	350					Ohms (nominal)
Insulation Resistance:	>2000					Megohms
Output Bandwidth:	100					Hz (nominal)
Spring Force:	50-250 (100-400 on 100mm)					gf (progressive)
Construction:	Stainless Steel/Aluminium					
Environmental Protection:	IP54					
Cable:	2 Metre 4 Core Screened, bend radius 10mm					
Weight (excluding cable):	125	130	140	180	320	grams
Operational Notes: 1. The outer case must not be distorted when clamping the sensor. A full diameter clamp is advised. 2. The sensor is not recommended for use in hostile environments without additional protection. 3. Special tools are required to remove the plunger tip (anvil) to avoid damage to the spindle. 4. With the plunger tip (anvil) attached this forms a positive overload protection stop. If the anvil is removed, the threaded end of the plunger must not be allowed to enter the case.						

Wiring Diagram:

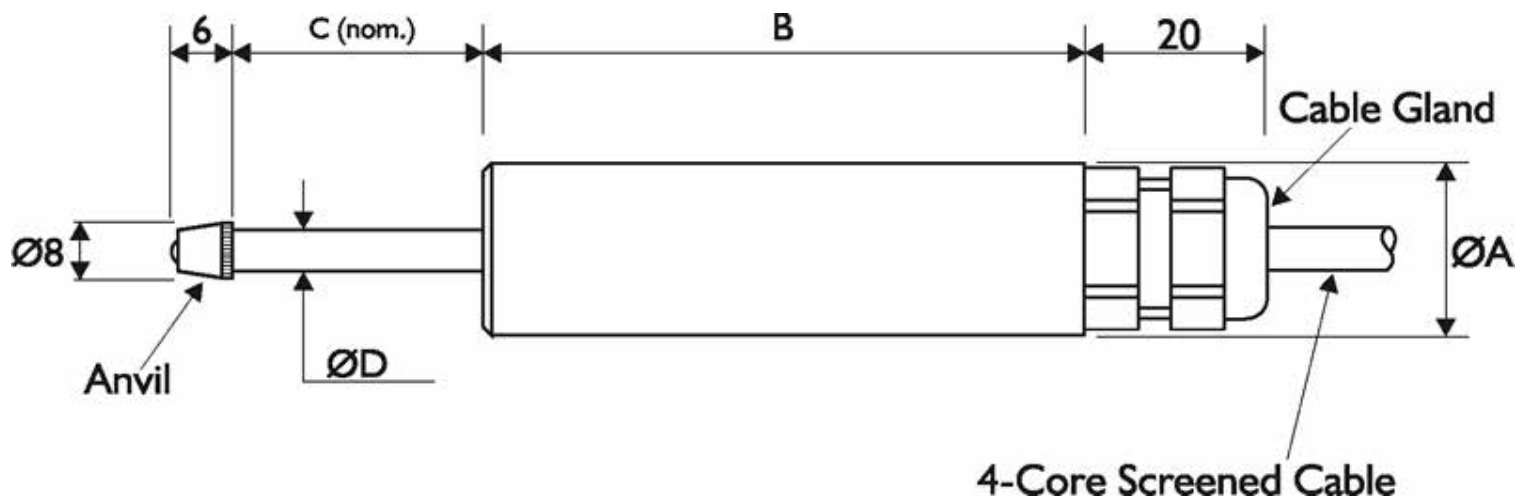
Wire	Designation
Red	+ve excitation
Blue	-ve excitation
Green	+ve signal
Yellow	-ve signal
Screen	To ground - not connected to load cell body



Dimensions (mm):

Dimension for AC Units with Radial Cable Exit (AML/E & AML/EJ only)

Stroke Range	ØA	B	C	ØD
5mm	17.4	88.8	6	4.8
10mm	17.4	88.8	11	4.8
25mm	17.4	104.5	26	4.8
50mm	17.4	157	51	4.8
100mm	25.4	264	102	4.8



Ordering Codes:

AML/SGD-25mm-002-000	AML/SGD	-	25mm	-	002	-	000
<i>Example Code</i>							
Product Family							
AML/SGD	AML/SGD						
Capacity / Range including eng. units)							
5mm (0-5mm)			5mm				
10mm (0-10mm)			10mm				
25mm (0-25mm)			25mm				
50mm (0-50mm)			50mm				
100mm (0-100mm)			100mm				
Cable Length (in metres)							
0,2 = 0.2 metres					0.2		
002 = 2 metres					002		
Specials Code							
000 = Standard Product (as per datasheet)							000



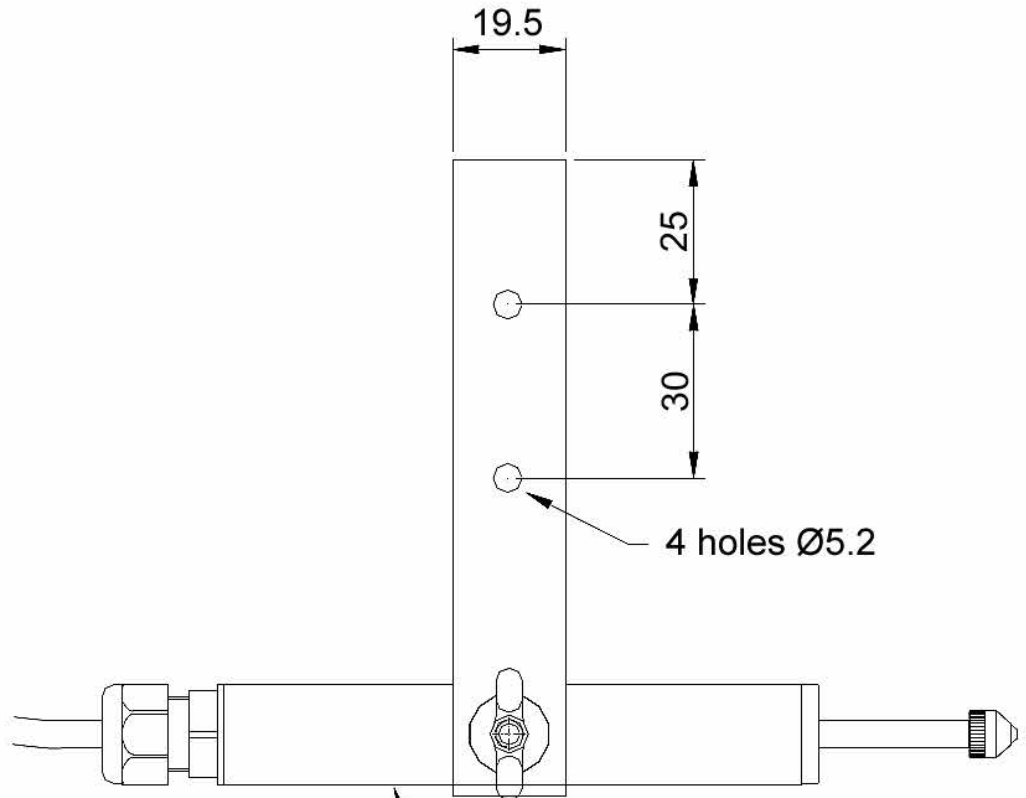
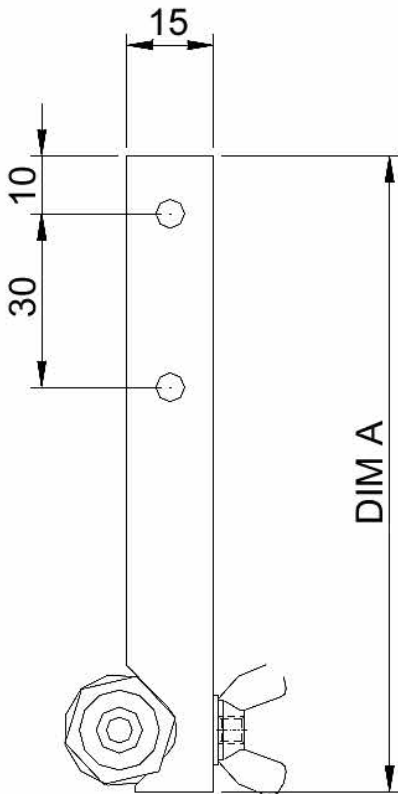
AML/SGD Displacement Sensor Mounting Clamps:

Single End Clamp Types:

- SMC 17
- SMC 20
- SMC 25

Materials Clamp Bar Anodised Aluminium
Ring & Fixings Stainless Steel

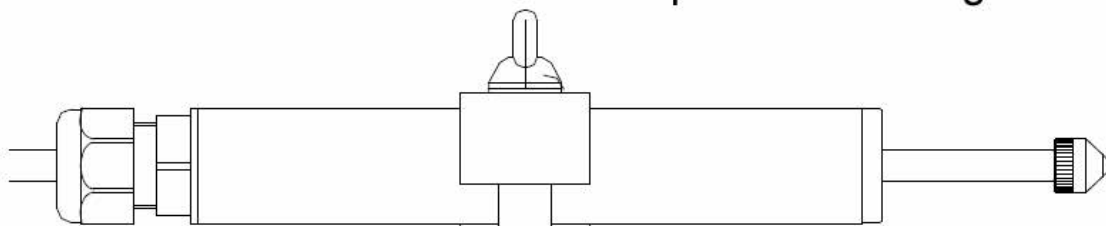
Note: Clamp bar can be machined to suit applications.



Type	DIM A	Sensor Diameter
SMC-17	110	Ø17.4
SMC-19	110	Ø19
SMC-25	115	Ø25.4

Displacement sensor shown for reference only

Wing nut can be replaced by M5 full nut for permanent fixing



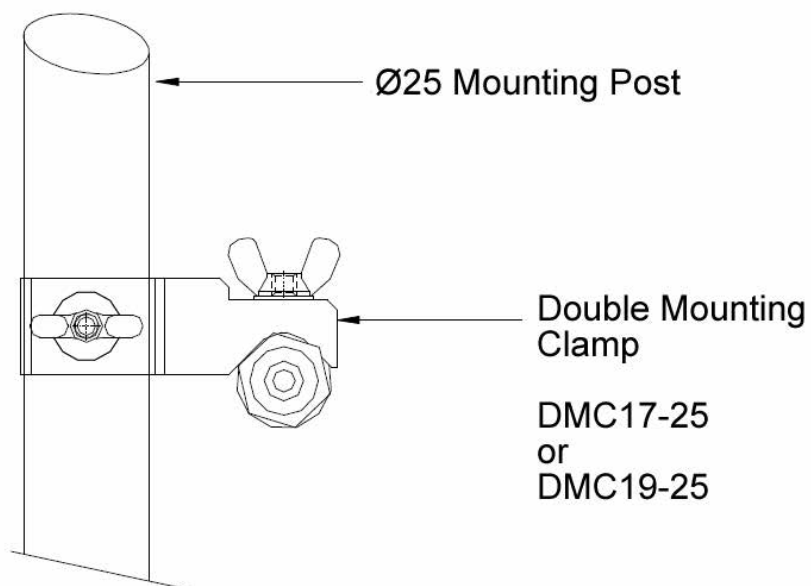
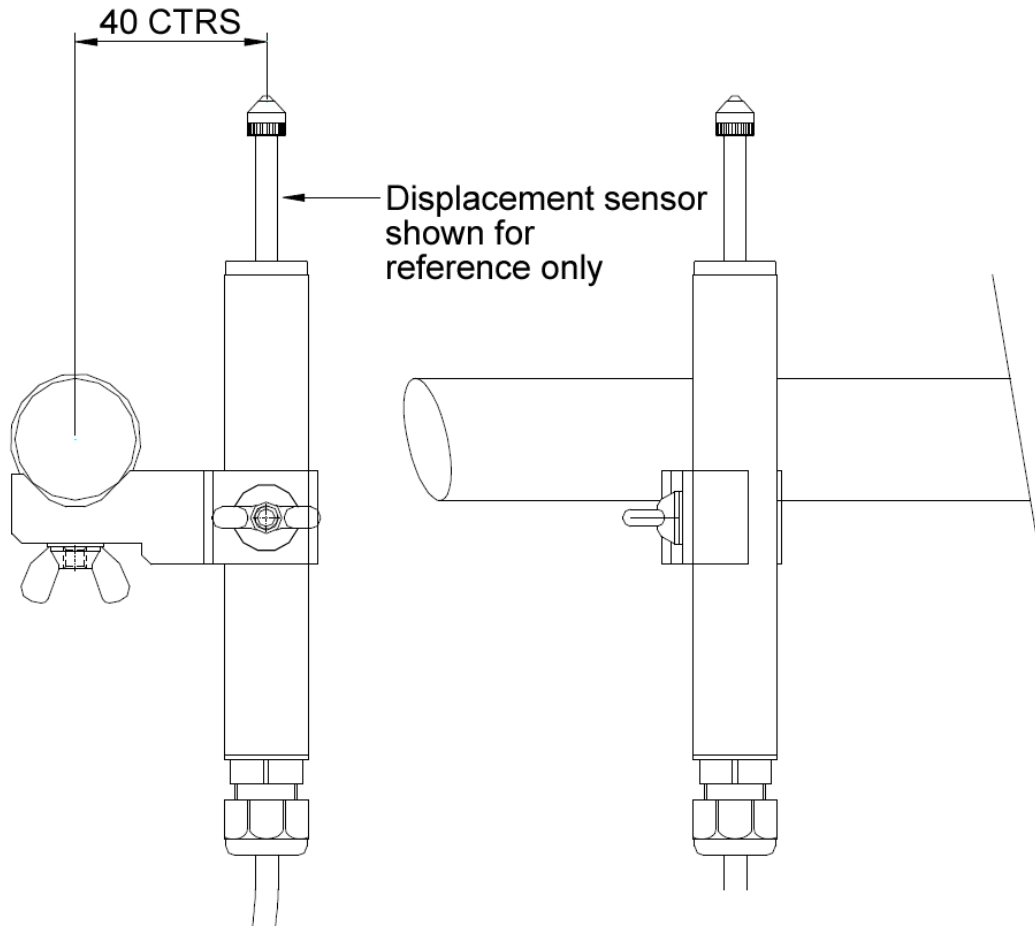


AML/SGD Displacement Sensor Mounting Clamps:

Double End Clamp Types:

- DMC 17-25
- DMC 19-25

Materials Clamp Bar Anodised Aluminium
Ring and Fixings Stainless Steel





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Clamp Ordering Codes:

Code	Details
AML/SGD-DMC17	Double mounting clamp for AML/SGD 5-50mm post clamp
AML/SGD-DMC25	Double mounting clamp for AML/SGD-100mm with 19mm post clamp
AML/SGD-SMC17	Mounting clamp for AML/SGD 5mm to 50mm ranges
AML/SGD-SMC25	Mounting clamp for AML/SGD-100mm



Image of SMC mounting clamps

Associated Products:



[TR150 Handheld Indicator](#)



[T24 Wireless Telemetry Range](#)



[Intuitive4-L Panel-Mount Indicator](#)



[DSC-USB USB Signal Digitiser](#)



[ICA Miniature Strain Gauge Amplifier](#)



[SGA Signal Conditioner/Amplifier](#)



[FUSION Large Digital Display](#)