

PIONEER RANGE

Hermetically Sealed Instruments



Proven Pivot & Jewel Movement
Instrument Parameters Ac:Dc
Overload Capability
National – International Quality Approvals
Engineered for Extreme Applications
Extensive movement options available
Reliability, Established and Proven

The PIONEER range of instruments are ideally suited for extreme, harsh environmental applications. The main areas of use are military, industrial and marine. Developed originally for the Ministry of Defence, these products have been customer led, giving rise to the extensive product range now available.

These instruments are available with Moving Coil, 90° and 240° pivot and jewel movements, Moving Iron, 90° sapphire jewels, bearings and carbon steel pivots. A miniature instrument is available with 230° movement.



Manufactured for Ac and Dc applications, for heavier duties the range is supported by a full selection of current transformers and shunts.

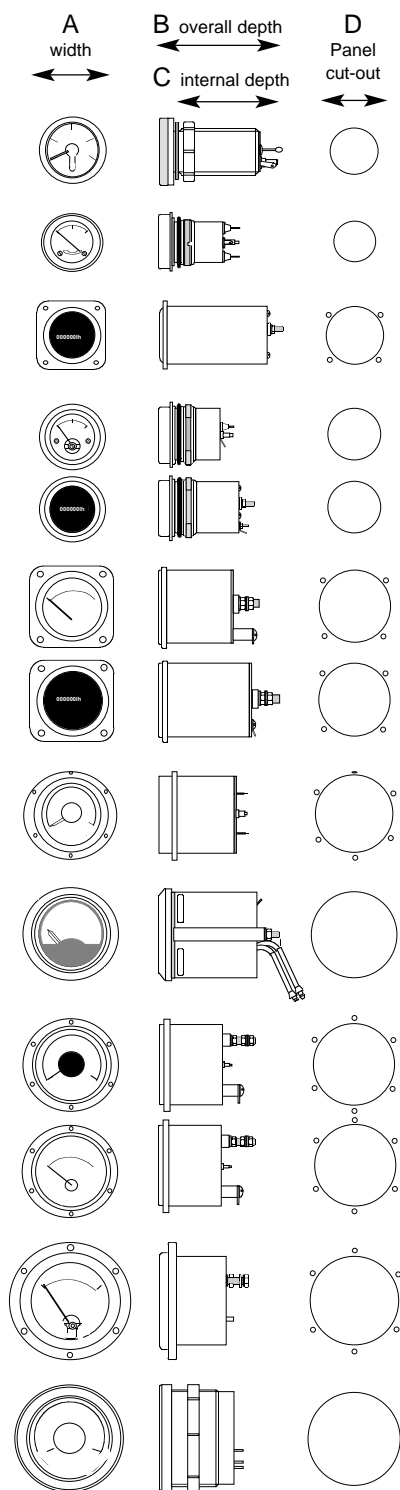
Type tested and approved to defence standard DEF 66-7 and 66-9, these instruments are subject to stringent test and inspection procedures. These tests relate to temperature, sealing, insulation, overload, resistance, fogging, acceleration and all requirements of the standard (full test details are available on request).

With our knowledge and experience in this field we are also able to respond to special requirements and have demonstrated this on many occasions. If required, we offer a "one-off" service, useful for prototype development, these products are designed and developed to the same exacting standard that is applied to all of our product. We do not compromise.

Quality Assurance and Manufacturing are in strict accordance to the requirements of ISO 9002 and the Ministry of Defence Def 66-7 and 66-9.



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	A	B	C	D
50HS	22.7	39.6	33.0	17.0

	A	B	C	D
100HS	31.7	38.0	32.5	26.0

	A	B	C	D
40mmsq H.R.C.	40.0	76.0	71.0	35.0

	A	B	C	D
150HS	45.0	37.5	27.5	39.0

	A	B	C	D
150HS H.R.C.	45.0	60.0	50.0	39.0

	A	B	C	D
200hsq	58.0	46.3	40.3	51.0

	A	B	C	D
200hsq HRC	58.0	57.5	51.5	51.0

	A	B	C	D
200HS 240°	60.0	55.5	44.5	58.0

	A	B	C	D
200HS	61.5	76.0	67.0	58.5

	A	B	C	D
250HS 240°	82.9	60.7	54.0	68.0

	A	B	C	D
250H 90°	82.9	60.7	54.0	68.0

	A	B	C	D
350HS 90°	108.5	58.5	49.0	84.0

	A	B	C	D
350HS 240°	94.0	48.5	41.5	86.0

all sizes in mm

Movement Details

Moving Coil Pivot & jewel movements instruments are available in 90° and 240° formats.

Standard operating range **Voltmeters** 60mV - 1000V

Ammeters 100uA - 100mA (type 50HS - 150HS)

100uA - 25A (type 200HSQ - 350HS)

Ammeters can be used in conjunction with external shunts to achieve higher operating applications.

Frequency 45 - 65Hz (90° only)

Class Accuracy $\pm 2\%$

Moving Iron 90° instruments utilise sapphire sprung jewel, oil filled bearings, and carbon steel pivots.

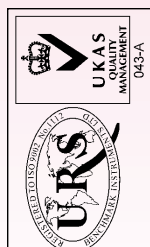
Standard operating range **Voltmeters** 10V - 600V

Ammeters 1A - 60A

Ammeters can be used in conjunction with current transformers to achieve higher operating applications.

Class Accuracy $\pm 2.5\%$

Illumination (optional) if required, please specify normal operating conditions. For further information on this range of instruments or to discuss specific requirements please contact the sales office.



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