

SMART DIRECTIONAL MODULE

✓ M-ARY ENCODING ✓ QDT COMPATIBLE TELEMETRY ✓ ADVANCED PARAMETERS

JAE's SMART directional module is the complete downhole package. Engineered for quality using JAE's proprietary sensor technology. This is a best-in-class wellbore navigation system, designed for continuous downhole measurements using advanced features that exceed the demands of today's drilling operation.

STANDARD FEATURES

- ✦ Digital Directional Module.
- ✦ MWD Microcontroller / Microprocessor.
- ✦ 24-bit ADC for Precise 6-Axis Surveys.
- ✦ Calibration Coefficients Stored On-Board.
- ✦ Compact, uni-body chassis.
- ✦ Designed for continuous downhole operation.
- ✦ Integrated azimuthal gamma controller.
- ✦ Operating temperatures up to 190°C.
- ✦ Lifetime operating statistics.

ADVANCED TELEMETRY

- ✦ Wellbore position; inclination, azimuth, toolface (MagTF, GravTF).
- ✦ Raw 6-axis vector variables: $A_x \cdot A_y \cdot A_z + M_x \cdot M_y \cdot M_z$
- ✦ Dynamic inclination & azimuth.
- ✦ Temperature & battery statistics.
- ✦ Drilling dynamics stick-slip & RPM.
- ✦ Multi-axial shock & vibration.
- ✦ Babelfish mnemonics.
- ✦ Azimuthal gamma up to 16 bins per packed parameter.



MPU

MEMORY

AZIMUTHAL GAMMA
CONTROLLER

74.2 cm (29.2 in.)

MAGNETOMETER
PACKAGE

ACCELEROMETER PACKAGE

SPECIFICATIONS

SMART DM	L22 (165°C)	P23X (175°C)	S22 (185°C)
Length	74.2 cm [29.2 in.]	74.2 cm [29.2 in.]	74.2 cm [29.2 in.]
Diameter	3.45 cm [1.36 in.]	3.45 cm [1.36 in.]	3.45 cm [1.36 in.]
Temperature – Operating	-20°C to 165°C	-20°C to 175°C	-20°C to 185°C
Temperature – Survival	-40°C to 175°C	-40°C to 185°C	-40°C to 190°C
Vibration	20G RMS, 10-500Hz,	20G RMS, 10-500Hz,	20G RMS, 10-500Hz,
Shock	500G, 1ms. Half-sine	500G, 1ms. Half-sine	500G, 1ms. Half-sine
Current @28V	80mA	80mA	55mA
Memory	48MB	48MB	48MB
Inclination	±0.10°	±0.10°	±0.10°
Azimuth @ 90°	±0.25°	±0.25°	±0.25°
Azimuth @ 10°	±0.50°	±0.50°	±0.50°
Azimuth @ 5°	±1.00°	±1.00°	±1.00°
Dip Angle	±0.20°	±0.20°	±0.20°
Gravity Field	±1.25mG	±1.25mG	±1.25mG
Magnetic Field	±125 nT	±125 nT	±125 nT
Tool-Face	±0.20°	±0.20°	±0.20°

