

AG-131P-10W System Specification

Physical

Downhole Sonde

Length	
Electronics	69.03"
Electronics, gamma	83.38"
Battery	73.56"
Pressure case O.D.	2.0"
Pressure rating	15,000 PSI
Temperature rating (see battery)	125° C
Material	Nitronics 50/60
Centralization	3 webbed rubber fins
EM Wave contact	3 BeCu springs

Antenna Dimensions

<i>Size</i>	3	3 1/2	4 3/4	6 1/2	8
Length	38	32	30	35	38
Threads ⁱ	-	-	3 1/2 IF	4 1/2 IF	6 5/8 FH
Max Flow (gpm)	-	-	250	400	1000
Weight (lbs)	-	84	142	196	440
Torque ⁱⁱ (lb-ft)	12886	20820	45417	79391	116967
Tension (lbs)	135642	194177	302023	383995	457945

ⁱ Customer can select required API box-pin threads on all antennas.

ⁱⁱ These values represent maximum calculated torque (twist) and tension (pull) allowed for each antenna size. Safety factor is 1, these are the absolute maximums and represent the forces required to fail the part. The API box is normally put on the uphole end, this is called the mandrel. The pin is normally put on the downhole end, this is called the sleeve and is where the deflector is attached. A new antenna from the factory that does not have the API box-pin will have a hole and threads used for lifting during assembly.

Power

EM Transmit power

Dynamically variable	0.1 to 10 watts
Power levels	4

Battery

<i>Type</i>	<i>Amp hours</i>	<i>Volts</i>	<i>Size</i>	<i>Cells</i>	<i>Max °C</i>
Alkaline	20 AH	13.5v	“D”	18	90
Lithium	58 AH	13.5v	“F”	8	125

Life in Hole

This table is calculated using a nominal set of parameters at 4 bits/sec.
Transmission setup is completely configurable by user.

<i>Transmission Setup</i>	Data
Full surveys:	1
Short surveys:	7
Toolfaces with each survey:	3
Time for resync	6 min
Time for toolface	11 secs
Time for short survey	18 secs
Time for full survey	43 secs

Table 1 Transmission Times

<i>Power level</i>	<i>0.5 ohm load</i>		<i>0.1 ohm load</i>	
	Alkaline	Lithium	Alkaline	Lithium
0.5 watt	231	671	212	615
1.0 watt	175	506	163	474
2.0 watt	123	355	107	309
4.0 watt	76	221	62	179
10.0 watt	35	100	28	80

Table 2 Hours in hole

* this table assumes no power savings due to sleep, rotary, idle, etc.
all power saving actions will provide extra time in hole
assumes carrier transmission at 4hz and 4 bits/sec
option for dual lithium batteries available

Directional Surveys

Accuracy

Azimuth	$\pm 0.3^\circ$
Inclination	$\pm 0.1^\circ$
Toolface	$\pm 0.5^\circ$
MagToolface	$\pm 0.3^\circ$

Resolution

Accelerometers	0.1mg
Magnetometers	0.1mGauss

Directional sensor (16 bits transmitted for each channel)

Transmitted Survey Data

Azimuth	0.022° (14 bits)
Inclination	0.022° (13 bits)
Toolface	2.2° (7 bit)

Features

Downhole Sonde

- 4 transmit power levels controllable via rotary command and timers
- 192 kb flash data storage
- 25g dual accels for shock and vibration
- Optional focused windowed Gamma
- Data rates selectable from 2 bits/sec to 12 bits/sec

Uphole System

- Windows XP Based
- Internet Control Option
- Support Standard Drillers Displays
- Realtime graphs for signal processing
- System Software configurable per job
- WITS Interface