EPHD157033/034

Energy spectrum measurement while drilling

1.Overview

EPHD157033/034 scintillation detector (drilling) is a high-temperature resistant and anti-vibration scintillation detector. It integrates high temperature NaI (Tl) crystal, high temperature PMT and voltage divider circuit. The unique design ensures the stable performance of the detector in high temperature vibration environment This product has the advantages of simple and convenient use, high reliability and not easy to damage. It is mainly used in density logging in oil logging environment. The detector is divided into long source distance detector and short source distance detector.

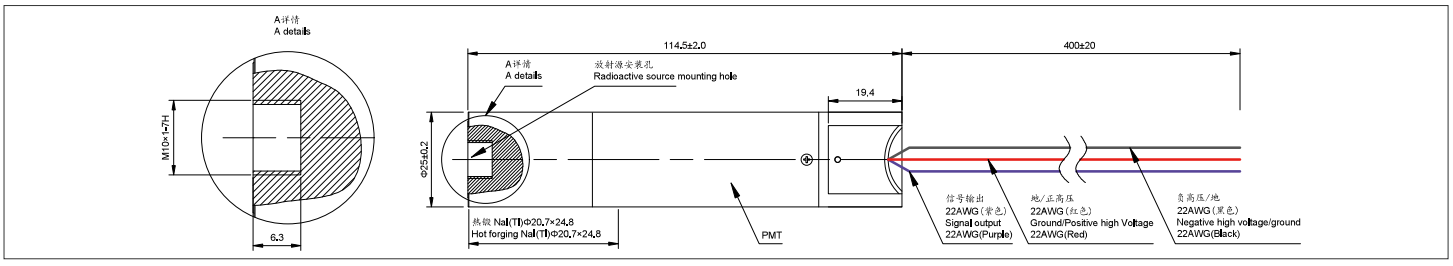
2.Specifications

Detector diameter (mm)	25.0
Detector length (mm)	114.5
Scintillator size (mm)	EPHD157033：Φ20.7×24.8；EPHD157034：Φ12.7×12.7
Input voltage Max. (V)	1800
Plateau length 175℃ Min. (V)	100
Pulse amplitude resolution 25℃ Max.	12%
Pulse amplitude resolution 175℃ Max.	16%
High temperature output pulse amplitude decreases[2] 175℃ relative to 25℃ Max.	80%
Counting rate change induced by vibration Max. (s^{-1})	√BASE[3]
Output pulse amplitude change induced by vibration Max.	5%
High temperature life[4] Min.(h)	400
Vibration[5]	30g rms， 50Hz～1000Hz
Shock	1000g，0.5ms
Operating temperature[6] (℃)	-30～175
Storage temperature[6] (℃)	-30～70

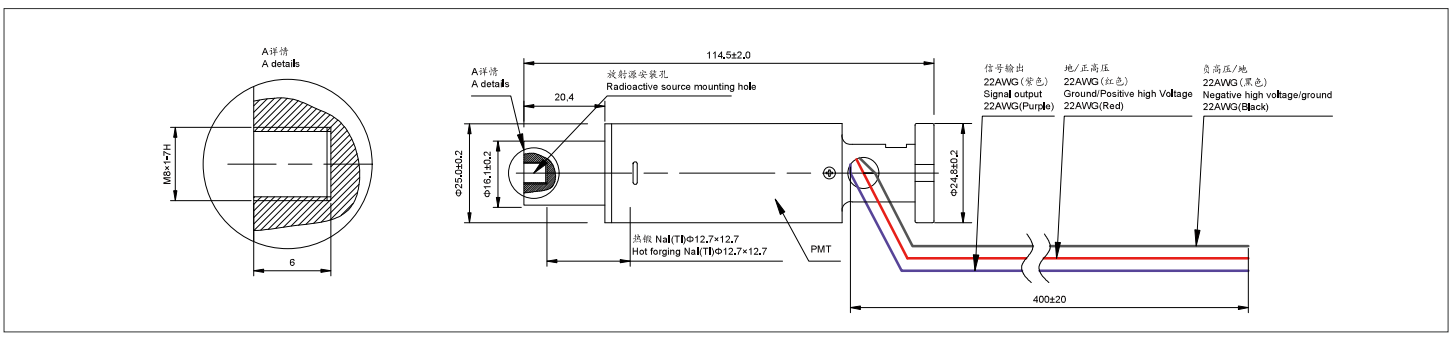
- Performance tests us ^{137}Cs
- High temperature output pulse amplitude decrease =(Output pulse amplitude at 25°C - Output pulse amplitude at 175℃)/ Output pulse amplitude at 25°C × 100%
- BASE: The average counting rate of continuous acquisition for 300s when the detector operates in non-vibration state
- High temperature life: Total time accumulated in high temperature operation when the output pulse amplitude drops to 50% of the initial value or the noise edge exceeds 60 keV when the detector is operating at high temperature
- Resonance frequency ≥1000Hz
- Tempreature change rate during detector operation and storage≤3℃/min

3.Overall dimensions and connection methods (unit: mm)

- EPHD157033（long source distance）



- EPHD157034（short source distance）



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