

2002 2

- (1) 12-lead . 12-lead
 ,
 ,
 가 .
- (2) : ±9V,
 : 100000, : 0.5 ~ 30Hz, dc offset : 300mV,
- (3) , A/D , microprocessor .
 Microprocessor PC .
 , PC
 earth ground 가 . , ,
 , ADC, microprocessor, , PC .
- (4) .
 (a) 2- 4- .
 (b) $Z = R + jX$. Phase-sensitive
 demodulator R X .
- (5) Gage factor 가 +100 p-type Si strain gage 2 -100 n-type Si strain
 gage 2 . Cantilever
 p-type Si strain gage 2 n-type Si strain
 gage 2 .
 (a) 4 strain gage . ,
 strain gage type .
 dc 1V .
 (b) Cantilever 가 , cantilever
 가 . 가
 strain gage ±0.05% , strain gage
 200Ω . 가 ±5V
 (c) calibration .