

APPLICATION NOTE – FAST OXYGEN MEASURING OPTION

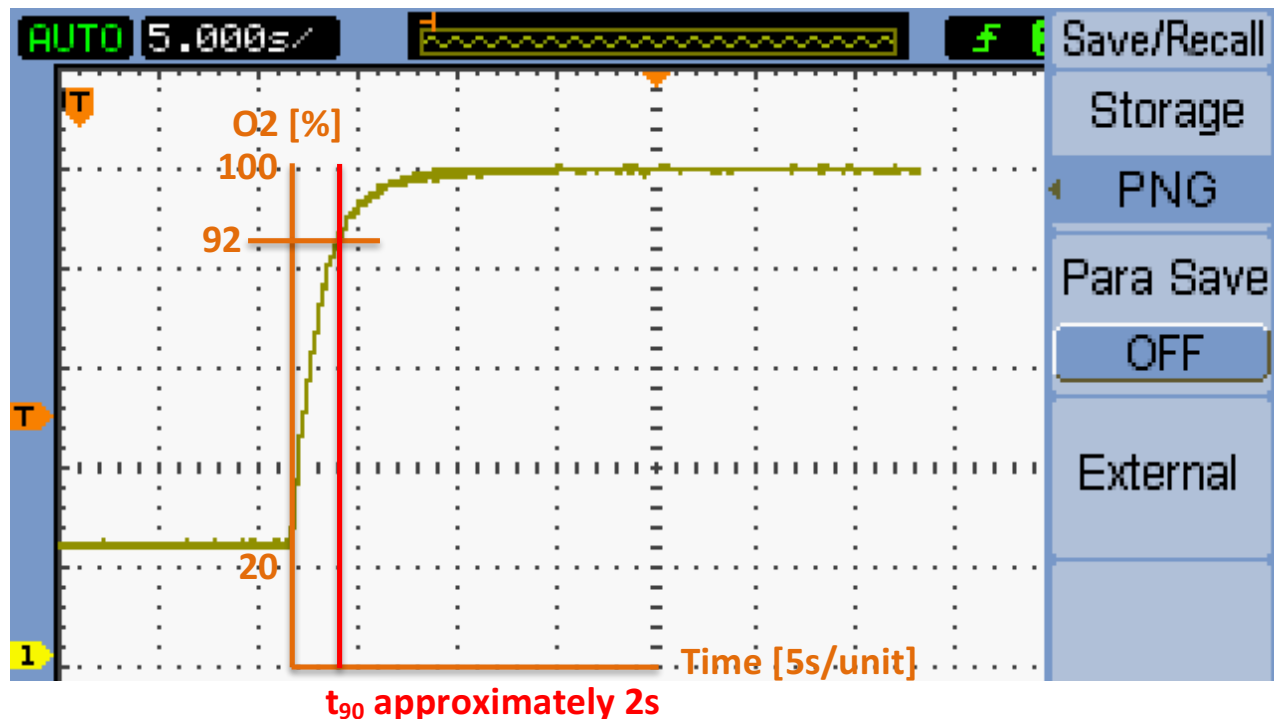
Purpose: This Application Note describes the performance of the FOM Option (Fast Oxygen Measurement Module, please see User’s Manual for the ASL 5000 Breathing Simulator) in the different configurations, 1) standard cylinder and 2) Premie (2.5”) cylinder.

1. GENERAL NOTES ON PERFORMANCE

The ASL 5000 uses a high performance paramagnetic sensor in a side stream configuration for its measurement of oxygen (range of 0 to 100%). The flow of oxygen through the measurement cell is approximately 90 mL/min. The response time of the Sensormex (Hummingbird) PM1111E sensor used is given by the manufacturer as < 600 msec (rise time and fall time for 21 to 100% O₂) at 100 mL/min in the fast response configuration used in the ASL 5000.

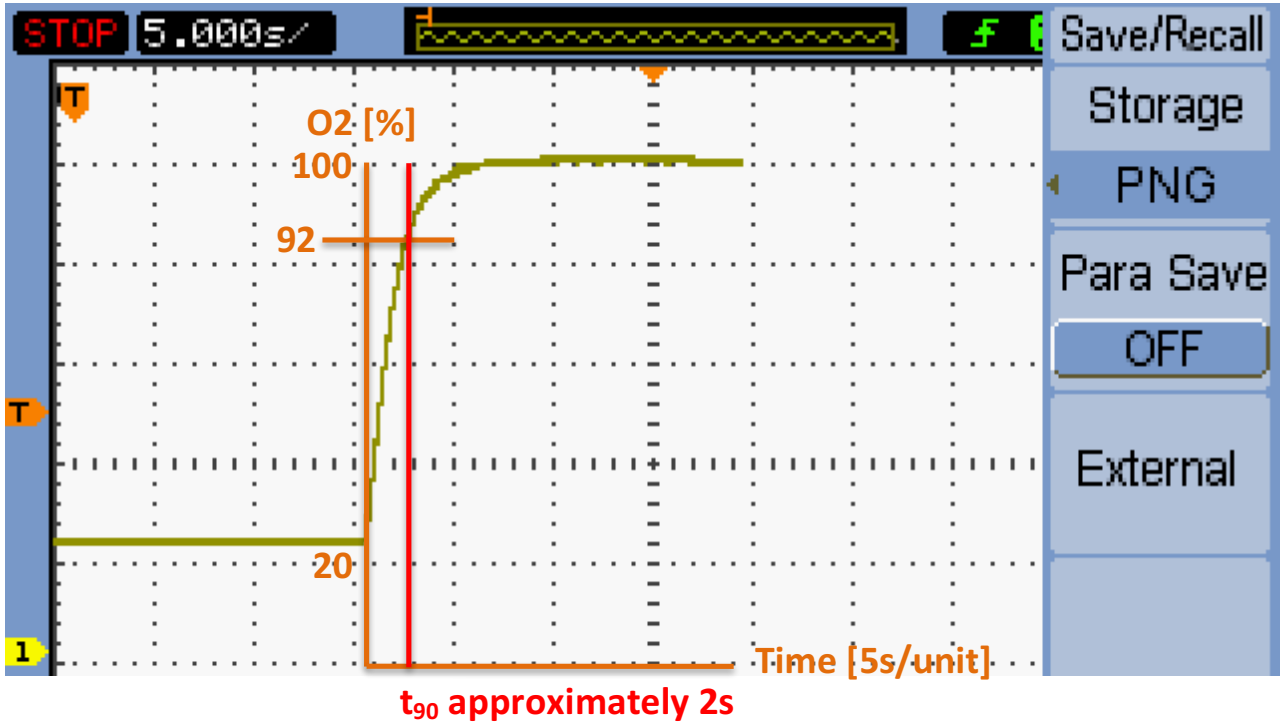
1.1 Performance of the O₂-option with the standard 7.5” ASL 5000 cylinder

The diagram below shows a recording of the analog O₂ output signal when used with the standard cylinder of the ASL 5000. O₂ is flushed in at 15 L/min while the piston position is maintained at 300 mL (200 mL “dead space” and URC setting of 100 mL, see also page 168-169 in the User’s Manual).



Application Note: ASL 5000 FOM, Rev.1 © IngMar Medical, Ltd. 2016

The diagram below shows a recording of the analog O2 output signal when used with the Premie cylinder for the ASL 5000 attached and O2 drawn from there. O2 is flushed in again at 15 L/min while the piston position is maintained again at 300 mL to maintain similar conditions (25 mL “dead space” and URC setting of 275 mL).



In both cases, the t90 for a change of oxygen concentration from 21 to 100% is shorter than 2 seconds.

Document Name	Part No.	Revision History	Date	Notes
FOM Application Note	80 31 809	Rev. 1	12/12/2016	Authored by: SF